



26 August 2025

Dear Sir / Madam,

**Tender Reference No. (413) in P/AE/PUR/AGC**  
**Invitation to Tender for the Term Contract for Provision of Repair and Maintenance**  
**of Electrical and Mechanical Works and Builder's Works cum Onsite Technician**  
**Services for the Construction Industry Council**

You are invited to submit a tender for the Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council as specified in the tender documents.

1. Your tender proposal, **in copies specified in the tender**, should be submitted in two separate sealed envelopes.
2. The tenderer shall deposit two separate sealed envelopes with labels as specified below into the tender box located at **G/F, Hong Kong Institute of Construction - Kowloon Bay Campus, 44 Tai Yip Street, Kowloon Bay, Kowloon, Hong Kong** **not later than 12:00 noon on 10 September 2025**. Late tenders will NOT be considered.
  - a) Label with "Technical Proposal for Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council"
  - b) Label with "Fee Proposal for Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council"

Please note that the envelope labelled with "Technical Proposal" shall **NOT** include any pricing details. Failure to do so will render the tender null and void. Tenders submitted after the above time or tenders deposited at places other than that stated above will **NOT** be considered.

The Estimated Expense is for indicative purpose only. Actual requirements will be confirmed on an as-required basis and the CIC has no commitment on the quantity ordered.

Any qualification of tender or of the tender documents may cause the tender to be disqualified

3. The tenderer shall provide the completed 'Application Form for Inclusion in the CIC Vendor List' as provided in the tender invitation, containing basic information of the

interested tenderer (For Non-CIC Registered Vendor only).

4. In the event of Typhoon Signal No. 8 or above, or Black Rainstorm Warning is hoisted or Extreme Condition as announced by the Hong Kong Government within the office hour (8:30 a.m. – 6:18 p.m.) on the tender closing date, the closing time will be postponed to 12:00 noon of the next working day.
5. Construction Industry Council is not bound to accept any proposal it may receive. In addition, it will reject bids which are considered to have been priced unreasonably low.
6. It should be noted that the Council will not be responsible for the reimbursement of any cost incurred by you for the preparation of the submission.
7. The invited tenderer who has decided to decline the bid shall return the Reply Slip for Declining Bid provided in Appendix F of the Conditions of Tender.
8. There will be a briefing session and site visit session **at 10:00 a.m. on 29 August 2025, Lecture Chamber 2. [RW1] HKIC - Kowloon Bay Campus, 44 Tai Yip Street, Kowloon Bay, Kowloon.** Interested tenderers shall complete and return the reply slip in **Appendix G** by fax 2100 9439 or e-mail: [ronaldwong@cic.hk](mailto:ronaldwong@cic.hk) no later than 5:00 p.m. on 28 August 2025 confirming the attendance of the said tender briefing and site visit session and state clearly the number of attendees for CIC's arrangement.
9. The tender documents can be downloaded from CIC's website: [http://www.cic.hk/eng/main/aboutcic/procurement/tender\\_details/](http://www.cic.hk/eng/main/aboutcic/procurement/tender_details/).
10. During the tender evaluation stage, the tenderer is requested to attend a tender interview which will be held in September 2025 (tentatively) to present his tender. Upon receipt of a request from the CIC, the tenderer shall provide a tender presentation to demonstrate whether the proposal can fulfill the requirements specified in the Assignment Brief.
11. For queries regarding this tender invitation or/and tender process, please contact Mr Ronald WONG, Assistant Manager, on telephone 2100 9750 or via e-mail: [ronaldwong@cic.hk](mailto:ronaldwong@cic.hk).

Yours sincerely,



Eric LEE  
Manager – Procurement  
Encl.



### **Checklist for Submission of Tender**

Please go through the following checklist to ensure that all necessary information and documents for the tender have been provided in your tender submission. Please note that the checklist is for guidance and reference purposes only and shall not be deemed to form part of the Tender Document. The address labels at the bottom of this checklist may be used on the envelopes for submitting the tender.

Tenderers should note that their tenders may be invalidated if the information in the tender submission is incorrect or the required documents are not provided together with the tender document.

<b>Particulars</b>	<b><u>Reference</u></b>
<b>Technical Proposal</b>	
1. Tenderer's Track Record & Project Reference	Conditions of Tender, Appendix A Clauses 1.1 to 1.4
2. Tenderer's Staff Resources	Conditions of Tender, Appendix A Clauses 2.1.1 to 2.1.4
3. Methodology and Approach to (i) fulfill the technical requirements and (ii) deliver all deliverables outlined in the Assignment Brief and its Annexes (a) Method Statement (b) Works Implementation Plan (c) Health and Safety Plan (d) Works Quality Assurance Plan	Conditions of Tender, Appendix A Clauses 3.1 and 3.2
4. A duly completed Standard Letter for complying with Anti-Collusion Clause	Conditions of Tender, Appendix B
5. All documents mentioned in the Technical Assessment Marking Scheme	Conditions of Tender, Appendix E
6. Documents to be submitted include: <ul style="list-style-type: none"><li>▪ Statements of Convictions or No Convictions under Cap 57, Cap 59, Cap 115 and Cap. 509</li><li>▪ Confirmation of Compliance on Safety Requirements</li><li>▪ Copy of certificate of General Building Contractor Registration / Minor Works Contractor Registration (Class 1), Registered Safety Officer (RSO), Registered Electrical Contractor (REC)</li><li>▪ List of sub-contractors / sub-consultants</li></ul>	Special Conditions of Tender
<b>Fee Proposal</b>	
7. Form of Tender	Conditions of Tender, Appendix C
8. Fee Proposal	Conditions of Tender, Appendix D

Note: The tenderer is required to submit all information specified in Appendix A of the Conditions of Tender and the Special Conditions of Tender (if any) with his tender. In addition, the tenderer shall submit with his tender a duly signed and witnessed letter in the form set out in Appendix B of the Conditions of Tender. Should the tenderer fails to submit all information mentioned above with his tender, his tender may not be considered.

**“Please be reminded that NO COMMERCIAL OR COST INFORMATION SHALL BE INCLUDED IN TECHNICAL SUBMISSION. You are reminded that should any commercial or cost information be included in this Technical Submission, you may be disqualified from this Tender.”**

## Construction Industry Council

### Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council

Please adhere the following labels on separate sealed envelope of your submitted tender.

<b>"Confidential"</b>	
<b>Technical Proposal</b>	<b>Construction Industry Council (CIC)</b> <b>The Tender Box</b> <b>G/F, Hong Kong Institute of Construction –</b> <b>Kowloon Bay Campus, 44 Tai Yip Street,</b> <b>Kowloon Bay, Kowloon, Hong Kong</b>
	<b>Ref. No.: [(413) in P/AE/PUR/TDTC]</b> <b>Term Contract for Provision of Repair and Maintenance of</b> <b>Electrical and Mechanical Works and Builder's Works cum</b> <b>Onsite Technician Services for the Construction Industry</b> <b>Council</b>
<b><u>NO FEE PROPOSAL</u></b>	<b>Name of Tenderer: _____</b>
	<b>Closing Time and Date: <u>12:00 noon on 10 September 2025</u></b>



<b>"Confidential"</b>	
<b>Fee Proposal</b>	<b>Construction Industry Council (CIC)</b> <b>The Tender Box</b> <b>G/F, Hong Kong Institute of Construction –</b> <b>Kowloon Bay Campus, 44 Tai Yip Street,</b> <b>Kowloon Bay, Kowloon, Hong Kong</b>
	<b>Ref. No.: [(413) in P/AE/PUR/TDTC]</b> <b>Term Contract for Provision of Repair and Maintenance of</b> <b>Electrical and Mechanical Works and Builder's Works cum</b> <b>Onsite Technician Services for the Construction Industry</b> <b>Council</b>
	<b>Name of Tenderer: _____</b>
	<b>Closing Time and Date: <u>12:00 noon on 10 September 2025</u></b>

Tender Documents  
for  
Term Contract for Provision of Repair and  
Maintenance  
of  
Electrical and Mechanical Works and Builder's  
Works  
cum  
Onsite Technician Services  
for  
the Construction Industry Council

**Employer**

**Construction Industry Council (CIC)  
38/F, COS Centre,  
56 Tsun Yip Street,  
Kwun Tong, Kowloon,  
Hong Kong**

**August 2025**

**Term Contract for Provision of Repair and Maintenance of  
Electrical and Mechanical and Builder's Works cum  
On Site Technician Services for the Construction Industry Council**

**List of Tender Documents**

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6.	General Conditions of Contract	CC-1 to CC-60
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8.	Contractor's Safety Requirements	82 Pages
9.	Guidelines On Work-Above-Ground	21 Pages
10.	Delivery Order Template	2 Pages
11.	Flow Chart of Term Contract	1 Page

Conditions of Tender  
for  
Term Contract for Provision of Repair and  
Maintenance  
of  
Electrical and Mechanical Works and Builder's  
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cum  
Onsite Technician Services  
for  
the Construction Industry Council

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## 1 Notes to Tenderers

- 1.1 All tenderers shall read the instructions contained in this Conditions of Tender carefully prior to preparing their tender submissions. Any tender submission, which does not follow these instructions is deemed to be incomplete and may be disqualified.
- 1.2 The tender documents consist of:
  - a) Conditions of Tender;
  - b) Appendices to Conditions of Tender;
  - c) Special Conditions of Tender;
  - d) Assignment Brief and its Annexes;
  - e) Not used;
  - f) General Conditions of Contract;
  - g) Special Conditions of Contract;
  - h) Contractor's Safety Requirements;
  - i) Guidelines On Work-Above-Ground Safety.

## 2 Invitation

- 2.1 Tenderers are invited by the Construction Industry Council (hereinafter referred to as the "CIC") to submit proposal and bid for Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical and Builder's Works cum On Site Technician Services for the Construction Industry Council. Further details are given in the **Assignment Brief and its Annexes**.
- 2.2 The tender shall be submitted in accordance with the **Conditions of Tender**.
- 2.3 If the tender is accepted and the contract is awarded, the tender documents specified in Clause 1.2 above, the tender proposal submitted by the tenderer and other relevant contract correspondence as agreed by the tenderer and CIC will form part of the contract.

## 3 Tenderers' Response to CIC Enquiries

- 3.1 In the event that the CIC determines that clarification of any tender is necessary, it will advise the tenderer to supplement its tender. Unless otherwise specified in the request for clarification, the tenderer shall thereafter have THREE (3) working days to submit such requested information. Any clarification made shall be at the tenderer's own cost and expense.

## 4 Completion of Tender

- 4.1 The tenderer is required to submit all information specified in **Appendix A** of the Conditions of Tender and the **Special Conditions of Tender** with his tender. In addition, the tenderer shall submit with his tender a duly signed and witnessed letter in the form set out in **Appendix B** of the Conditions of Tender. Should the tenderer fails to submit all information mentioned above with his tender, his tender may not be considered.
- 4.2 If CIC's participation is required, the tenderer should clearly state the details and the expected resources, skills, level of participation, responsibilities, and duration.
- 4.3 The tenderer shall state in his proposals the implementation plan of delivering the deliverables as described in the **Assignment Brief and its Annexes**.
- 4.4 The tenderer must submit his offer in Hong Kong Dollars. **OFFERS SUBMITTED IN OTHER CURRENCIES SHALL NOT BE CONSIDERED.**
- a) The tenderer is required to submit the completed **Form of Tender as per Appendix C** of the Conditions of Tender.
  - b) In addition, the tenderer is required to submit **the Fee Proposal** using the prescribed form provided in **Appendix D** of the Conditions of Tender. There shall be no adjustment for any price fluctuations; and
  - c) The tenderer should ensure that the fee quoted is sufficient before submitting the tender. Under no circumstances will the CIC accept any change of quoted lump sum fee on the ground that a mistake has been made in the tender price.
- 4.5 A two-envelope approach is adopted for tender submission, i.e. the tenderers should submit all information specified in **Appendix A** of the Condition of Tender and the **Special Conditions of Tender**, and the letter annexed in **Appendix B** and mentioned in Clause 4.28 of the Conditions of Tender (collectively known as "technical proposal") in one envelope and the completed Form of Tender using the prescribed form provided in **Appendix C** of the Conditions of Tender and the Fee Proposal using the prescribed form provided in **Appendix D** of the Conditions of Tender (collectively known as "fee proposal") in a separate envelope. Failure to do so will render the tender void.
- 4.6 The tenderer shall submit **ONE (1)** hard copy and corresponding files in electronic form (e.g. in MS Word / MS Excel / PDF format) stored in an electronic medium (eg: USB / CD-ROM / DVD-ROM) of the technical proposal in a sealed envelope marked "Technical Proposal" and **ONE (1)** hard copy of the fee proposal in a separate sealed envelope marked "Fee Proposal" clearly indicating the tenderer's name and tender title. In the event of discrepancies between original and electronic versions of the Tender Submission, the former shall prevail.
- 4.7 Tender should be submitted to the Tender Box of CIC at **G/F, Hong Kong Institute of Construction - Kowloon Bay Campus, 44 Tai Yip Street, Kowloon Bay, Kowloon, Hong Kong by 12:00 noon on 10 September 2025**. Late submission will NOT be considered. Failure to do so shall render the tender void.
- 4.8 In the event that a Typhoon Signal No. 8 or above or Black Rainstorm Warning is hoisted or Extreme Condition as announced by the Hong Kong Government within the office hour (8:30



am – 6:18 pm) on the tender closing date, the tender closing time will be postponed to 12:00 noon on the following working day.

- 4.9 The CIC will not reimburse any cost incurred by tenderers for the preparation and submission of the tender.
- 4.10 The CIC may reject a tender which in CIC's opinion is unreasonably low in terms of price and may therefore affect the tenderer's capability in carrying out and complete the services and delivering the deliverables in accordance with the Assignment Brief and its Annexes.
- 4.11 Any amendments to the Tendered Trade Percentage offered must be signed by the person who signs the tender. Failure to do so will render the tender null and void.
- 4.12 Unless otherwise stated, tenders shall be valid for 120 days from the specified closing date. If no letter of acceptance or order is placed within the validity period of the offer, the tenderer may assume that the offer has not been accepted.
- 4.13 This is an invitation to offer. The CIC is not bound to accept the lowest tender or the highest combined scores under the technical and fee proposal or any tender.
- 4.14 The CIC reserves the right to negotiate with any or all tenderer(s) on the terms of the tender.
- 4.15 Tenderer should ascertain the prices quoted are sufficient before submitting his tender. Under no circumstances will the Employer accept any request for price adjustment due to any mistake made in the tender prices.
- 4.16 The CIC shall have the right, in its absolute discretion, to disclose to any person and for any purpose, any information submitted to the CIC as part of the tender or otherwise in connection with the awarded contract, without further notification to the successful tenderer. In submitting the tender, the tenderer irrevocably consents to such disclosure.
- 4.17 In the event that a tenderer discovering a genuine error in his tender after it has been deposited, he may in writing draw attention to the error and submit amendment which may be accepted, provided that the amendment has been deposited on or before the closing time fixed for the receipt of tenders.
- 4.18 The CIC will not consider prices missing in Unit Rate, Total Value and Total Amount. The Unit Rate will be used should the Total Value and / or Total Amount have any discrepancy with the Unit Rate. No adjustment will be made for fluctuations in salaries, material prices and exchange rates of currencies, freight charges, insurance premium or for any other reason whatsoever.
- 4.19 Should examination of a tender reveal errors of such magnitude as in the opinion of the CIC would involve the tenderer in serious loss then the nature and amount of such errors will be communicated to the tenderer and he will be asked to confirm in writing that he is prepared to abide by his tender or withdraw his tender.
- 4.20 The tenderer shall be required to check the numbers of the pages of the tender documents against the page numbers given in the contents. If the tenderer finds any missing, in duplicate or indistinct, he must inform the CIC at once and have the same rectified.
- 4.21 Should the tenderer for any reason whatsoever be in doubt as to the precise meaning of any item or description, he must inform the CIC in order that correct meaning may be decided before the date for submission of tender.

- 4.22 Tenderer shall inspect the Site and make themselves thoroughly acquainted with the existing condition of the premises, location, the existing structure / accessibility, restrictions for loading and unloading materials, and all the materials, and all other aspects which may affect the delivery of the deliverables. Tenderer shall make due and proper allowance when estimating their rates and prices for the information obtained or which ought to have been obtained during the site inspection. (for Tenders that involve field work only)
- 4.23 No liability will be admitted, nor claim allowed in respect of errors in the tenderer's tender due to mistakes in the tender documents which should have been rectified in the manner described above.
- 4.24 Tenderer shall be deemed to be in possession of a valid business registration certificate and, if necessary, be registered with the relevant authority authorizing him to carry out the works described in the tender documents.
- 4.25 Tenderer shall comply with the Special Conditions of Contract, General Conditions of Contract and CIC's General Conditions of Contract. The tender price shall deem to be included all cost incurred.
- 4.26 Any qualification of tender or of the tender documents may cause the tender to be disqualified.
- 4.27 No unauthorized alteration or erasure to the text of the tender documents will be permitted. Any tender containing such alteration or erasure may not be considered.
- 4.28 The tenderer shall strictly comply with the following anti-collusion clause:
- (1) (a) Subject to sub-clause (2) of this Clause, the tenderer shall not communicate to any person other than the CIC the amount of the tender price or any part thereof until the tenderer is notified by the CIC of the outcome of the tender exercise.  
  
(b) Further to paragraph (a) of this sub-clause, the tenderer shall not fix the amount of the tender price or any part thereof by arrangement with any other person, make any arrangement with any person about whether or not he or that other person will or will not submit a tender or otherwise collude with any person in any manner whatsoever in the tendering process.  
  
(c) Any breach of or non-compliance with this sub-clause by the tenderer shall, without affecting the tenderer's liability for such breach or non-compliance, invalidate his tender.
  - (2) Sub-clause (1)(a) of this Clause shall have no application to the tenderer's communications in strict confidence with:
    - (a) his own insurers or brokers to obtain an insurance quotation for computation of tender price;
    - (b) his consultants or sub-contractors to solicit their assistance in preparation of tender submission; and
    - (c) his bankers in relation to financial resources for the Contract
  - (3) The tenderer shall submit with his tender a duly signed and witnessed letter in the form set out in Appendix B of the Conditions of Tender. The signatory to the letter shall be a

person authorized to sign CIC contracts on the tenderers's behalf.

- (4) The tenderer shall indemnify and keep indemnified the CIC against all losses, damages, costs or expenses arising out of or in relation to any breach of or non-compliance with sub-clause (1) of this Clause by the tenderer, including but not limited to additional costs due to price escalation, costs and expenses of re-tendering and other costs incurred.
- 4.29 The tenderer shall not and shall ensure that his agents and employees shall not give or offer any advantages as defined under the Prevention of Bribery Ordinance to any agent or employee of CIC. Any breach of the clause by the tenderer shall, without affecting the tenderer's liability for such breach, invalidate his tender.
- 4.30 The invited tenderer who has decided to decline the bid shall return the Reply Slip for Declining Bid provided in Appendix F of the Conditions of Tender.

## **5 Tender Briefing and Site Visit Session**

- 5.1 Tenderer is invited to attend a tender briefing session and site visit at the time and place as stated in the tender invitation.
- 5.2 Interested tenderers should complete and return the reply slip in Appendix G by fax or e-mail to the Procurement Officer at least 1 working day before the stated time confirming the attendance of the said briefing session and site visit and state clearly the number of attendees for the CIC's arrangement.
- 5.3 The CIC may record the queries raised by the tenderers attending the tender briefing and may issue a Replies to Tender Queries to all tenderers for information.

## **6 Tender Interview**

- 6.1 During the tender evaluation stage, the tenderer is requested to attend a tender interview which will be held in September 2025 (tentatively) to present his tender proposals. Upon receipt of a request from the CIC, the tenderer shall provide a tender presentation to demonstrate whether the proposal can fulfill the requirements specified in the Assignment Brief and its Annexes.
- 6.2 The presentation shall be set up with the tenderer's own resources and expense. The CIC shall not bear any costs associated with the presentation.
- 6.3 The presentation should at least include the project team profile, the approach to fulfill the objectives described in the Assignment Brief and its Annexes and an outline programme for completing the assignment. The presentation shall be conducted, where possible, by the leader of the proposed project team for performing the project management.
- 6.4 In view that tender interview forms part of the technical assessment, tenderers should NOT disclose any fee related information during the interview including PowerPoint presentation and handouts. Failure to do so may result in disqualification of tender.

- 6.5 Each interview presentation should be no longer than 15 minutes, including a 10-minute questions and answers session.

## 7 Tender Evaluation

- 7.1 Tenderers shall note that their tender proposals, presentations and responses to CIC's queries in connection with the tender will be assessed in accordance with **the tender evaluation procedures and criteria** specified in **Appendix E** of the Conditions of Tender.

## 8 Tenderer's Commitment

- 8.1 All information and responses from the tenderer must be submitted in writing. The relevant provisions of this invitation to tender and such documents so submitted shall be the representation of the tenderer and may be incorporated into and made part of the Contract between the CIC and the successful tenderer.
- 8.2 The CIC reserves the right to disqualify any tender that directly or indirectly attempts to preclude or limit the effect of the requirements as mentioned on the Assignment Brief and its Annexes.
- 8.3 Tender shall remain valid and open for acceptance for **120 days** after the tender closing date.

## 9 Amendments

- 9.1 The CIC reserves the right to amend or withdraw the Assignment Brief and its Annexes before acceptance of a tender.
- 9.2 The CIC may issue Tender Addendum and / or Replies to Tender Queries no later than SEVEN (7) days before tender closing if CIC found it necessary.

## 10 Award of Contract

- 10.1 The successful tenderer will receive a letter of acceptance as an official notification of acceptance. Unless and until a formal contract agreement is prepared and executed, this letter of acceptance together with the tender submission shall constitute a binding contract between the successful tenderer and the CIC. Tenderers who do not receive any notification within the validity period of their offer shall assume that their tenders have not been accepted.
- 10.2 The CIC reserves the right of not awarding the contract after receipt of submissions by the tenderer.

- 10.3 In order to ensure the fairness of the tender process, all answers to tender queries / tender clarifications and tender addendums will be uploaded to CIC's website. All tenderers have to take note of this arrangement. Any claim for extension of time or additional payment due to ignorance of this clause shall not be entertained by the CIC.

## **11 Rights to Exercise**

- 11.1 The CIC may, at any time during the contract period by notice of writing, direct the Contractor to alter, amend, omit, add to, or otherwise vary any of the work items stated in the Contract and/or works required as specified by the CIC, and the Contractor shall carry out such variations. The contract sum will be adjusted all in accordance with the relevant provisions specified else in the tender documents and/or works required as specified by the CIC.

## **12 Submitted Documents**

- 12.1 All submitted documents will not be returned.

## **13 Enquiries**

- 13.1 In case the tenderer has any tender enquiries or/ and tender clarification queries, he should submit in writing to the procurement department with details as below:-

Mr. Ronald Wong  
Assistant Manager, Procurement  
Construction Industry Council  
38/F, COS Centre,  
56 Tsun Yip Street, Kwun Tong,  
Kowloon, Hong Kong

Tel : (852) 2100-9750  
Fax: (852) 2100-9439  
Email: ronaldwong@cic.hk

## APPENDIX A – Details for Technical Submission

**To be included  
in  
Technical Proposal**

The Tenderer is required to provide all details as described in the technical submission therein.

### 1. Tenderer's Company Profile, Track Record and Project Reference

- 1.1 The tenderer is required to provide company's profile, background and expertise.
- 1.2 The tenderer is required to provide certificate/ evidence for below qualification:
  - i. Registered Electrical Contractors (REC)
  - ii. Registered Minor Works Contractor (RMWC) or Registered General Building Contractor (RGBC) under Building Ordinance of the HKSAR
- 1.3 The tenderer is required to provide a full list of project references undertaken in the **past 5 years** (as of the tender closing date) for projects similar to this Assignment, giving the details by adhering to the submission format as specified in Section 1.4 below.
- 1.4 The tenderer shall submit a list of **relevant project references** in the following format with support of copies of job references or recommendation letters from previous clients.

	Name of your Client / Organization		
Scope of works			
Project Type (Scale and complexities)			
Organisation Type		Involved Stakeholders Type	
Contract Value (in HK\$)		Project Duration	
Completion Date			

- 1.5 In case the tenderer is unable to disclose of track record and project reference due to the signing of confidentiality agreement with its previous clients, please specify in the tender submission accordingly. In this circumstance, the tenderer shall describe this information in the tender submission at best endeavours and will be asked to describe where appropriate this information to the Assessment Panel during the tender interview.

## 2. Tenderer's Staff Resources

### 2.1 Organization and Qualification of Proposed Project Team

2.1.1 The tenderer shall submit:

- a) The composition and organization of proposed project team with qualifications, experience and capability of team members in carrying out similar works.
- b) Sub-contractors' profile, background and expertise if applicable.
- c) An Organization Chart indicating the proposed project team's structure and strength of the proposed project team. The project team shall include members and all sub-contractors who have experience in supplying the Deliverables as outlined in the Assignment Brief and its Annexes, in particular the Contract Manager, Building Services Engineer(s), Site Supervisor(s), Registered Safety Officer and other Technical / Field Staff / Safety Staff as stated in Section 8 of the Assignment Brief.

2.1.2 The project team members shall possess the required **Qualifications, Professional Knowledge and Relevant Experience** to supply the Deliverables as outlined in the Assignment Brief and its Annexes.

2.1.3 The project team proposed in the tender submission shall form part of the Agreement. The tenderer shall provide the details included but not limited to the following information of proposed project team members in the tender submission:

- a) Name
- b) Post / Title in this Project
- c) Core Team or Supporting Team Members (Yes/No)
- d) Language (Chinese/English/Both)
- e) Qualifications
- f) Duties and Responsibilities in the Assignment
- g) Repair and Maintenance knowledge and Years of Relevant Experience
- h) Relevant experience in projects of similar nature mentioned in the Assignment Brief

**Project Team Structure and Qualifications**  
(using the following format to list the team information)

	Proposed Roles / Title / Post in this project		
Name of Proposed Team Member		Core Team or Supporting Team	
Language		Degree holder	

<b>List of relevant certificates and/or qualifications</b>			
<b>Duties and responsibilities in the assignment</b>			
<b>Years of services in your company</b>		<b>Years of relevant experiences</b>	
<b>Relevant experience in projects of similar nature</b>			

#### 2.1.4 Organization of Proposed Call Centre and Project Team

- a) The proposed staff of the Call Centre shall possess the required qualifications, knowledge, relevant experience and 24-hour emergency support to supply the Deliverables as outlined in the Assignment Brief.
- b) The Call Centre in the tender submission shall form part of the Agreement. The tenderer shall provide the curriculum vitae including but not limited to the following information of the Call Centre's staff in the tender submission:-
  - (i) Name (English and Chinese)
  - (ii) Post / Title in this Term Contract
  - (iii) Language Capability (Chinese / English / Both)
  - (iv) Call Centre, Customer Service and Administration Work Experience
  - (v) Qualifications
  - (vi) Duties and Responsibilities in the Assignment
- c) The tenderer is required to provide the following details regarding the Call Centre:-
  - (i) Physical location / address of the Call Centre;
  - (ii) No. of fixed telephone lines provided;
  - (iii) No. of workstations provided;
  - (iv) No. of telephone handsets provided; and
  - (v) Availability of extra fixed telephone lines to cater for augmented call volume.



### 3. Methodology and Approach

- 3.1 The tenderer is required to submit the following to demonstrate his capabilities in fulfilling the project approach and technical requirements and to present all the deliverables outlined in the Assignment Brief and its Annexes:-
- 3.1.1 Methodology Statement - The tenderer is required to submit the methodology statement including, as a minimum, the following aspects:-
- (a) Tenderer's method of complying with the requirements of Section 6.2 and 6.3 of the Assignment Brief regarding the response times for Emergency Works including how he/she will mobilize additional equipment and resources to deal with such orders. The tenderer shall also state the philosophy he will apply to cope with fluctuation workload.
  - (b) Evidence of the tenderer's ability to establish a readily available source of supply of spare parts and materials required for the repair works and planned preventive maintenance for the building services system installations. The tenderer shall also state the philosophy he will apply to define the level of spare parts and materials to be held in his warehouse/store for the execution of the Works and how he will procure materials for emergency repair.
  - (c) A mobilization, recruitment and training programme of contractor's staff to meet the specified requirements for Pre-commencement familiarization of the maintenance of the Works.
  - (d) Details of the tenderer's proposed mobilization of labour and equipment including tenderer's method to recruit trained staff to obtain training for its staff.
- 3.1.2 Works Implementation Plan - The tenderer is required to submit an implementation plan in order to demonstrate a full understanding of the Assignment Brief and its Annexes, the works implementation plan, should include but not limited to, the followings:-
- (a) Access to the Site for materials delivery;
  - (b) Noise, vibration and dust control during the Works to minimize disruption;
  - (c) Approach to the Completion of the Works timely; and
  - (d) Site Waste Management Plan.
- 3.1.3 Health and Safety. The Tenderer shall include the following:-
- (a) An **Outline Health & Safety Plan** contains sufficient information to demonstrate the tenderer's proposals for achieving effective and efficient health & safety procedures;
  - (b) Nominations with CV's of personnel to be responsible for implementing the Health and Safety Policy;
  - (c) A diagram showing reporting responsibilities and method by which any conflicts of interest between Health and Safety and other project objectives and restrictions will be resolved;
  - (d) Accident statistics covering a period of two years to date, inclusive of subcontracted labour with the method of calculation and definitions clearly shown.
  - (e) The Contractor shall follow the CIC's Daily Safety Operation and Mechanism during the course of the site works, including Workspace Entry Permit (Permit-to-work), Smart Site Safety System (4S), Digital Works Supervision System (DWSS) and other monitoring systems provided and launched by the CIC from time to time. In view of

the site safety during work period from time to time, the Contractor shall proceed Dynamic Risk Assessment on site as per CIC's requested or instructed. It is compulsory for the Contractor to apply APPs with e-form by their own devices or written form for their daily maintenance services/operation, including works space entry notification (WSEN), Dynamic Risk Assessment report/template and etc.

- (f) The Contractor shall have a Registered Safety Officer to manage and monitor the site safety issues, daily site operation, and performance of their workers, etc. in order to ensure the compliance of all statutory safety requirements and the CIC's safety requirements. The Registered Safety Officer shall provide the regular safety induction training (at least quarterly) and dynamic risk assessment & safety briefing to the site workers before carrying out the daily maintenance works. The Contractor shall submit a detailed portfolio of Registered Safety Officer in the tender submission.

3.1.4 Works Quality Assurance Plan - The tenderer shall include, as a minimum, the following in the plan:-

- (a) Submit the Quality Assurance Plan including company policy, organizational structure, responsibilities of employees, quality control system to ensure the works completed in a high quality manner.

3.2 The tenderer shall refer to the other requirements laid down in the Assignment Brief and its Annexes of the tender document.

#### 4. Documents and Information to be submitted for the Technical Proposal

4.1 The Tenderer is required to provide the following documents and information in the technical submission as described in the tender documents:

<u>Particulars</u>	<u>Reference</u>
<b>Technical Proposal</b>	
1. Tenderer's Track Record & Project Reference	Conditions of Tender, Appendix A Clauses 1.1 to 1.5
2. Tenderer's Staff Resources	Conditions of Tender, Appendix A Clauses 2.1.1 to 2.1.4
3. Methodology and Approach to (i) fulfill the technical requirements and (ii) deliver all deliverables outlined in the Assignment Brief and its Annexes (a) Method Statement (b) Works Implementation Plan (c) Health and Safety Plan (d) Works Quality Assurance Plan	Conditions of Tender, Appendix A Clauses 3.1 and 3.2
4. A duly completed Standard Letter for complying with Anti-Collusion Clause	Conditions of Tender, Appendix B
5. All documents mentioned in the Technical Assessment Marking Scheme	Conditions of Tender, Appendix E
6. Documents to be submitted include: - Statements of Convictions or No Convictions under Cap 57, Cap 59, Cap 115 and Cap. 509 - Confirmation of Compliance on Safety Requirements - Copy of certificate of General Building Contractor Registration / Minor Works Contractor Registration (Class 1), Registered Safety Officer (RSO), Registered Electrical Contractor (REC) - List of sub-contractors / sub-consultants	Special Conditions of Tender
<b>Fee Proposal</b>	
7. Form of Tender	Conditions of Tender, Appendix C
8. Fee Proposal	Conditions of Tender, Appendix D

**Note:** The tenderer is required to submit all information specified in Appendix A of the Conditions of Tender and the Special Conditions of Tender with his tender. In addition, the tenderer shall submit with his tender a duly signed and witnessed letter in the form set out in Appendix B of the Conditions of Tender. Should the tenderer fails to submit all information mentioned above with his tender, his tender may not be considered.

**“Please be reminded that NO COMMERCIAL OR COST INFORMATION SHALL BE INCLUDED IN TECHNICAL SUBMISSION. You are reminded that should any commercial or cost information be included in this Technical Submission, you may be disqualified from this Tender.”**

## APPENDIX B – Standard Letter for complying with Anti-Collusion Clause

To: Construction Industry Council (CIC)

Date:

**To be included  
in  
Technical Proposal**

Dear Sir/Madam,

Tender Ref: \_\_\_\_\_ (413) in P/AE/PUR/TDTC

Tender Title: Term Contract for Provision of Repair and Maintenance of  
Electrical and Mechanical and Builder's Works cum On Site Technician  
Services for the Construction Industry Council

\*[I/We], [( \_\_\_\_\_ )] of

name of the tenderer

( \_\_\_\_\_ )<sup>1</sup>,

address of the tenderer

refer to \*[my/our] tender for the above Contract.

\*[I/We] confirm that, before \*[I/We] sign this letter, \*[I/We] have read and fully understand this letter and the anti-collusion clause in Conditions of Tender Clause 4.28.

\*[I/We] represent and warrant that in relation to the tender for the above Contract:

- (i) \*[I/We], other than the Expected Communications referred to in the last paragraph of this letter, have not communicated and will not communicate to any person other than the CIC the amount of the tender price or any part thereof until \*[I/We] have been notified by the CIC of the outcome of the tender exercise;
- (ii) \*[I/We] have not fixed and will not fix the amount of the tender price or any part thereof by arrangement with any person;
- (iii) \*[I/We] have not made and will not make any arrangement with any person as to whether \*[I/We] or that other person will or will not submit a tender; and
- (iv) \*[I/We] have not otherwise colluded and will not otherwise collude with any person in any manner whatsoever in the tendering process.

\*[I/We] shall indemnify and keep indemnified the CIC against all losses, damages, costs or expenses arising out of or in relation to any breach of any of the representations and/or warranties above, including but not limited to damages for delay, costs and expenses of re-tendering and other costs incurred.

In this letter, the expression "Expected Communications" means \*[my/our] communications in strict confidence with:

- (i) \*[my/our] own insurers or brokers to obtain an insurance quotation

for computation of tender price;

- (ii) \*[my/our] consultants or sub-contractors to solicit their assistance in preparation of tender submission; and
- (iii) \*[my/our] bankers in relation to financial resources for the Contract.

Signed for and on behalf of [ \_\_\_\_\_ ]  
name of the tenderer

by [ \_\_\_\_\_ ]<sup>2</sup>:  
name and position of the signatory

\_\_\_\_\_  
Name of Witness: \_\_\_\_\_

Signature of Witness: \_\_\_\_\_

Occupation: \_\_\_\_\_

Note:

\* Delete as appropriate

1. Where the tenderer comprises two or more persons or companies acting in partnership, joint venture or otherwise, this part in square brackets should be expanded to include the respective names and addresses of such persons or as the case may be companies.

2. Where the tenderer comprises two or more persons or companies acting in partnership, joint venture or otherwise, all such persons or as the case may be companies must sign. The signatory for each of such persons or companies shall be a person authorised to sign CIC contracts on behalf of that person or as the case may be company.

## **APPENDIX E – Tender Evaluation Procedures and Criteria**

### **1. INTRODUCTION**

- 1.1 A two-envelope approach is adopted for tender submission, i.e. Tenderer should submit the technical proposal including all information specified in **Appendix A of the Conditions of Tender** and **Special Conditions of Tender**, and the letter annexed in **Appendix B** and mentioned in Clause 4.28 of the Conditions of Tender in one envelope and the fee proposal comprising the completed Form of Tender using the prescribed form provided in **Appendix C of the Conditions of Tender** and the Fee Proposal using the prescribed form provided in **Appendix D of the Conditions of Tender** in a separate envelope. Fee proposal would only be opened after the technical assessment is completed subject to Clause 1.4 below.
- 1.2 A marking scheme as described below will be used for evaluating the tenders. Tender proposals shall be evaluated based on two separate aspects, namely the technical assessment and the fee assessment.
- 1.3 The pre-determined weights for technical and fee assessments are 30% and 70% respectively.
- 1.4 If the technical assessment mark in Table 1 below is less than 50% of the maximum marks, the tender proposal will be rejected and will NOT be further assessed and its fee proposal envelope will NOT be opened.
- 1.5 The rejected tender proposal will NOT be included in the weighted technical assessment score formula in Clause 2.2 and the weighted fee assessment score formula in Clause 3.2 below. The CIC reserves its right to cancel this tender exercise and re-tender thereof without further notice to the tenderer.
- 1.6 An assessment panel will be established for tender evaluation. The proposal received will be evaluated in accordance with the requirements in this Appendix.

### **2. TECHNICAL EVALUATION**

- 2.1 Detailed evaluation of the technical proposal including all information specified in Appendix A of the Conditions of Tender shall be made in accordance with the assessment criteria described in Table 1.

Table 1 – Technical assessment marking scheme

Assessment Criteria	Assessed Marks (%)	Maximum Marks (%)
Assessment will be based on the following criteria:-		
<p>1. Tenderer's company profile, background, organization chart, qualification, expertise and experience in carrying out the term contract</p> <p>The following sub-criteria shall be considered:</p> <p>(a) Organization and Size of Proposed Technical Team, Proposed Call Centre and the Project Team <b>(10%)</b></p> <p>(b) Qualification, Experience and Capability of Proposed Technical Team <b>(10%)</b></p> <p>(c) Registered Electrical Contractor (REC) and Registered Minor Works Contractor (RMWC, Class 1) or Registered General Building Contractor (RGBC), Registered Safety Officer (RSO) (MANDATORY)*</p>		<b>20%</b>
2. Job reference of the Tenderer in carrying out term contract of similar nature and scale in the past FIVE (5) years		<b>10%</b>
<p>3. Methodology and Approach and Requirements to fulfill the objectives and carry out and complete all the tasks described in the Assignment Brief and its Annexes</p> <p>The following sub-criteria shall be considered:</p> <p>(a) Method Statement <b>(10%)</b></p> <p>(b) Works Implementation Plan <b>(10%)</b></p> <p>(c) Health and Safety Plan <b>(30%)</b></p> <p>(d) Works Quality Assurance Plan <b>(10%)</b></p>		<b>60%</b>
4. Tenderer's Performance in CIC's Past Projects		<b>10%</b>
<b>Total:</b>		<b>100%</b>

Remark:

\* Tenderer who fails to provide the certificate/ evidence may be considered disqualified in its technical submission.

- 2.2 The weighted technical assessment score of a tender shall be determined in accordance with the following formula:

$$30 \times \frac{\text{Technical assessment mark of the subject tender}}{\text{Highest technical assessment mark of all tenders}}$$

### **3. FEE EVALUATION**

- 3.1 Tender fee for evaluation shall be the lump sum quoted in Appendix D – Fee Proposal of the Conditions of Tender.
- 3.2 The weighted fee assessment score of the tender proposal shall be worked out in accordance with the following formula:

$$70 \times \frac{\text{Lowest total lump sum fee of all tenders}}{\text{Total lump sum fee of the subject tenders}}$$

### **4. CALCULATION OF COMBINED SCORES**

- 4.1 The combined assessment score of a tender proposal shall be the sum of the weighted technical assessment score (Cl.2.2) and the weighted fee assessment score (Cl.3.2).



## APPENDIX F – Reply Slip for Declining Bid

With reference to your tender invitation (Tender Reference: P/AE/PUR/TDTC, Closing Date: 10 September 2025), I/we regret that I am/we are unable to bid due to the following reason(s):

*(Please tick against the box(es) where applicable)*

☐ Inadequate time to prepare tender proposal. Suggested timeframe for proposal preparation: \_\_\_\_\_ days

☐ Invitation document contains insufficient details.  
Suggested \_\_\_\_\_ supplementary \_\_\_\_\_ details:

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☐ Work scope too broad. Would you consider bidding if the work scope is reduced?

☐ Yes

☐ No

Or which part(s) of the work scope shall be reduced to facilitate your consideration in bidding (please specify)?

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☐ Work scope too narrow. Would you consider bidding if the work scope is broadened?

☐ Yes

☐ No

Or what supplementary details shall be added to facilitate your consideration in bidding (please specify)?

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☐ Not interested in this type of service.

- ☐ Working at full capacity at the moment.
- ☐ Work scope beyond firm's / organisation's expectation.
- ☐ Cannot meet project time schedule. Suggested timeframe for the project:  
\_\_\_\_\_ months
- ☐ Requirements / Specifications too restrictive.
- ☐ Others (please specify): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Signature: \_\_\_\_\_

Full Name of Contact Person: \_\_\_\_\_

Position: \_\_\_\_\_

Name of Company: \_\_\_\_\_

Telephone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

E-mail: \_\_\_\_\_

Date: \_\_\_\_\_

Note:

- 1) Please return the completed reply slip to E-mail: [ronaldwong@cic.hk](mailto:ronaldwong@cic.hk) or fax no: 2100 9439 no later than 12:00 noon on 10 September 2025.
- 2) Please contact Ronald Wong at Tele: 2100 9750 or E-mail: [ronaldwong@cic.hk](mailto:ronaldwong@cic.hk) for any enquiry.

## APPENDIX G – Reply Slip for Tender Briefing and Site Visit Session

I/We would like to attend the tender briefing and site visit session for the tender name at 10:00 a.m. on 29 August 2025 at Lecture Chamber 2. HKIC - Kowloon Bay Campus, 44 Tai Yip Street, Kowloon Bay, Kowloon.

<u>Full Name of Attendee(s)</u>			<u>Post/Title</u>	
<u>Company Name:</u>				
<u>Contact Person:</u>			<u>Post/Title</u>	
<u>Address:</u>				
<u>Telephone No : :</u>			<u>Fax No:</u>	
<u>Mobile Phone No:</u>			<u>E-mail :</u>	

### Note:

1. Each Tenderer shall register three attendees at most.
2. Please return the completed reply slip to E-mail: [ronaldwong@cic.hk](mailto:ronaldwong@cic.hk) or fax no: 2100 9439 no later than 5:00 p.m. on 28 August 2025.
3. Please contact Ronald Wong at Tele: 2100 9750 or E-Mail: [ronaldwong@cic.hk](mailto:ronaldwong@cic.hk) for any enquiry.

**Special Conditions of Tender**

**for**

**Term Contract for Provision of Repair and Maintenance**

**of**

**Electrical and Mechanical Works and Builder's Works**

**cum**

**Onsite Technician Services**

**for**

**the Construction Industry Council**

August 2025

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**Special Conditions of Tender**
**To be included  
in  
Technical Proposal**
**1. Statement of Convictions or No Convictions**

- 1.1 For the 12-month period prior to the closing date set for receipt of tenders, we \*do not have any / have the following conviction with respect to the offences under the following Ordinances: Cap 115, Cap 59 and Cap 57 in relation to our performance in any Government or private contract.

Please provide details of offence, if any, in the below table:

Date of Offence	Particulars of Offence	Date of Conviction	Offence/ Regulation Breached	Conviction and Date when Appeal / Review is expected to be heard

(Use separate sheets if required)

- 1.2 We hereby declare that all information given above and additional sheets, if any, attached hereto are true and correct.
- 1.3 We hereby authorize the CIC to obtain information from all Government departments and give consent to the Government departments concerned to release and provide the documents or information in relation to any of our conviction of offences under the Ordinances stated above for the purposes of assessment of our tender in this tender evaluation and subsequent management of the Contract.

**To be included  
in  
Technical Proposal**

## **2. Confirmation of Compliance on Safety Requirements**

We confirmed that we fully understand and comply with the safety requirements as stated in the Tender Document. All provisions of the safety requirements are considered in our Tender Submission.

Authorised Signature & Company Chop: \_\_\_\_\_

Name of Person Authorized to Sign:  
(in Block Letters) \_\_\_\_\_

Name of Tenderer in English \_\_\_\_\_

Tel No.: \_\_\_\_\_ Fax No.: \_\_\_\_\_ Date: \_\_\_\_\_  
(\* Please delete as appropriate)

**3. Registration for Electrical Contractor (REC) and Minor Works Contractor (RMWC) / General Building Contractor (RGBC) and Specialist Trade Contractor (RSTC)**

- 3.1 The tenderer **MUST** submit the copy of valid certificates of Registered Electrical Contractor (REC) and Registered Minor Works Contractor (RMWC, Class 1) or Registered General Building Contractor (RGBC) showing the registered number and the date of expiry of registration. The Contractor shall submit organization and seek CIC's approval if Sub-contract agreement/partnership is proposed for this term contract. The Tenderer can provide substantiation of another company, which qualified with RGBC/RMWC/REC, that to confirm the intention to enter into any Sub-contract agreements/partnership with the Tenderer for the execution of the scope of works of this contract.
- 3.2 The tenderer **MUST** submit the copy of valid certificate of Registered Safety Officer under Labour Department showing the registered number and the date of expiry of registration.

**4. Selected Domestic Sub-Contractor**

- 4.1 The tenderer shall **submit with his tender a list of sub-contractors** to whom the tenderer proposes to sublet section(s) of works stating its willingness to enter into a domestic sub-contract with the tenderer to carry out the works mentioned in this tender.

**Assignment Brief**  
**of**  
**Term Contract for Provision of Repair and Maintenance**  
**of**  
**Electrical and Mechanical Works and Builder's Works**  
**cum**  
**Onsite Technician Services**  
**for**  
**the Construction Industry Council**

August 2025

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**Assignment Brief**  
**Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council**

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- Annex 8 – Registered Safety Officer's Specification
- Annex 9 – Supplementary Safety Document

## **1. Background**

- 1.1 The Construction Industry Council (the “CIC”) is vested with the responsibility for the repair & maintenance and planned preventive maintenance for the electrical and mechanical (E&M) works cum builder’s works of the CIC Headquarters, Mega Box Offices, Trade Testing Centre, Service Centre, CIC - Zero Carbon Park, three (3) Campuses and seven (7) Training Grounds and other CIC’s premises which contain many facilities and building works such as power supply system, air-conditioning system, plumbing & draining system, sewage collection tanks, building elements of ceiling, wall, floor and façade, etc. as well as the provision of onsite technician services.
- 1.2 The CIC has decided to commission a term maintenance contractor (the “Contractor”) to conduct the planned preventive maintenance and day-to-day repair & maintenance for the above-mentioned premises in a timely manner by streamlining the Works issuance workflow by the CIC (the “Works”).

## **2. Contractor’s Objectives**

- 2.1 The Estates Office (the “EO”) of the CIC will issue an electronic Delivery Order form (the “DO”) instructing the Contractor to carry out the Works.
- 2.2 To provide high quality of works, to complete the Works within the agreed schedule and cost according to the Schedule of Rates (SOR), and in compliance with all relevant statutory requirements as laid down by the regulatory bodies such as the Electrical and Mechanical Services Department, Buildings Departments, Fire Services Department, Water Supplies Department, Drainage Services Department, Labour Department, Environmental Protection Department, etc..
- 2.3 To provide a 24-hour Call Centre Service to receive maintenance request calls from the respective Campuses, Offices, Trade Testing Centre, Training Grounds and Service Centres of the CIC, and compile the maintenance log record for review by the CIC.
- 2.4 To carry out the assigned routine inspection & maintenance and complete the Works instructed under Works issued by the CIC in a safe manner in accordance with the

safety guidelines as laid down by the CIC, including Contractor's Safety Requirement, supplementary safety documents and etc.

- 2.5 To organize and coordinate with different parties to complete the Works including the end-users, sub-contractors, the CIC and other contractors appointed by the CIC.
- 2.6 To attend and complete the emergency call-out repair and maintenance jobs in a timely manner in order to minimize the service / operation interruption to the premises of the CIC.

### 3. Scope of Works

- 3.1 The scopes of works under the Assignment includes the following:-

- 3.1.1 To carry out **Planned Preventive Maintenance** to the Building Services Systems as specified in this Contract.

- 3.1.2 To carry out repair and maintenance via Delivery Order in different trades of **Building Services Systems, Builder's Works and Onsite Technician Services**, including but not limited to, the following:-

- (a) Building Services Systems

- (i) Mechanical and air-conditioning installation system;
      - (ii) Plumbing and drainage system;
      - (iii) Indoor air quality measurement; and
      - (iv) Electrical installation system

- (b) Builder's Works

- (i) Demolition;
      - (ii) Concrete bricks / blocks works;
      - (iii) Concrete works;
      - (iv) Concrete repair works (Concrete Spalling Repair Works);
      - (v) Wall Tiling;
      - (vi) Flooring;
      - (vii) Carpentry and joinery;
      - (viii) Painting;
      - (ix) Roofing and waterproofing;

- (x) Glazing;
- (xi) Steel and metal works;
- (xii) False ceiling system;
- (xiii) Fittings and sundries;
- (xiv) Partitions and cubicle system;
- (xv) Site accommodation; and
- (xvi) Provision of workforce.

(c) Onsite Technician Services

- (i) Provision of Technicians for technical support onsite

3.1.3 To carry out **Emergency Call-Out Services and Minor Repair Works** upon request by the CIC within the timeframe as specified in this Contract.

### 3.2 Additional Services

3.2.1 Other items of works directly or indirectly related to this Contract may be added by the CIC with the agreement of the Contractor and shall form part of the overall scope of the works and be covered by the terms of the Agreement with additional fees that mutually agreed by the CIC and the Contractor.

3.3 The locations of Works under this Contract shall include the following CIC's premises (the "Site").

Item	Location	Address
<b>Main Office and Back Office</b>		
1	CIC Headquarters (HQ)	Whole of 38/F and Units A, B & C of 39/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon, Hong Kong
2	CIC Megabox Office (MBO)	Whole of 29/F, Tower 2, Enterprise Square Five, 38 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong
<b>Hong Kong Construction Industry Trade Testing Centre (TTC)</b>		
3	Hong Kong Construction Industry Trade Testing Centre (TTC)	95, Yue Kwong Road, Aberdeen, Hong Kong

<b>The Hong Kong Institute of Construction (HKIC) - Campuses</b>		
4	Kowloon Bay Campus (KBC)	44 Tai Yip Street, Kowloon Bay, Kowloon, Hong Kong
5	Kwai Chung Campus (KCC)	7-11 Kwai Hop Street, Kwai Chung, New Territories, Hong Kong
6	Sheung Shui Campus (SSC)	1 Fung Nam Road, Sheung Shui, New Territories, Hong Kong
<b>The Hong Kong Institute of Construction (HKIC) – Training Grounds</b>		
7	Siu Lun Street Training Ground (SLSTG)	Area 14, Siu Lun Street, Tuen Mun, New Territories, Hong Kong (Opposite to Siu Lun Sports Ground)
8	Tai Po Training Ground (TPTG)	Area 33, Dai Wah Street, Tai Po, New Territories, Hong Kong
9	Tat Mei Road Training Ground (TMRTG)	Tat Mei Road, Kwai Chung, New Territories, Hong Kong
10	Tin Yuet Road Training Ground (TYRTG)	Area 123, Tin Yuet Road, Tin Shui Wai, New Territories, Hong Kong
11	Tuen Mun Training Ground (TMTG)	Lot No. 16, Tuen Yee Street, Tuen Mun, New Territories, Hong Kong
12	Tung Chau Street Training Ground (TCSTG)	Tung Chau Street, Sham Shui Po, Kowloon, Hong Kong (Opposite to No. 184 of Tung Chau Street and underneath West Kowloon Corridor)
13	Lam Tei Training Ground (LTTG)	STT No. MX18030, underneath Kong Sham Western Highway off Wong Kong Wai Road, Tuen Mun
14	Siu Lam Training ground (SLTG) (To be setup and handed over in 2025)	Area 56, Tuen Mun, N.T.
<b>Service Centre</b>		
15	Kowloon Bay Service Centre (KBCSC)	G/F, 44 Tai Yip Street, Kowloon Bay, Kowloon, Hong Kong
16	Nam Cheong Service Centre (NCSC)	Shop 6, Nam Cheong MTR Station, Kowloon, Hong Kong
<b>Other Premises</b>		
17	Construction Innovation and Technology Application Centre	8 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong

	(CITAC)	
18	Sheung Wan Office	Rooms 2001-2003, 20/F, Alliance Building, 130-136 Connaught Road Central, Hong Kong
19	CIC - Zero Carbon Park (CIC - ZCP)	8 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong
20	CIC - Zero Carbon Park – MiC (MiC)	8 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong
21	Construction Sector Imported Labour Quarters (CSILQ)	61 Castle Peak Road Tam Mi, Yuen Long, N.T.
22	Other new locations of the CIC may be assigned under the conditions of this Contract	Subject to further advice

#### **4. Presentations**

4.1 Upon the necessity or request from the CIC, the Contractor shall conduct the following tasks during the courses of the Works in this Contract: -

4.1.1 To attend the regular or ad hoc meetings with the concerned parties and the CIC's representatives;

4.1.2 To report the progress of the Works to the concerned parties and the CIC;

4.1.3 To submit and present the relevant material submission(s) for the Works to the concerned parties and the CIC; and

4.1.4 The presentation materials shall be bilingual in Traditional Chinese and English as necessary and required.

#### **5. Deliverables**

5.1. The Works and all deliverables shall comply with the Contract requirements to the satisfaction of the CIC. All Works issued by the CIC shall be completed in accordance with the instruction by the CIC. Should there be different interpretations between the CIC and the Contractor against any requirements in this Contract, the

CIC shall have the final jurisdiction on the explanation and approach of the implementation for the requirements. The Contractor shall follow the explanation of the requirements and the instructions given by the CIC to implement the solution to the satisfaction of the CIC.

- 5.2. To provide a 24-hour Call Centre Service with a fixed telephone line manned by sufficient manpower during the office hours' period from 08:30 to 18:00 from Monday to Saturday and non-office hours' period from 18:01 to 08:29 on Monday to Sundays and Statutory Holidays to receive the daily maintenance request phone calls and emergency calls from various venues of the CIC.
- 5.3. The Contractor shall require to submit the monthly maintenance request logs record to the CIC for review and follow-up actions. The format of the request log shall be designed by the Contractor and subsequently approved by the CIC prior to implementation.
- 5.4. To submit organization chart, contact list, emergency contact list, insurance coverage certificates with associated documents, etc. for the CIC's approval upon award of this Contract. Any update on the aforesaid documents shall be informed to the CIC instantly.
- 5.5. To prepare and submit the preventive maintenance schedule for the Building Services System according to the maintenance frequency as detailed in the Schedule of Rates for approval by the CIC and subsequent notification to the affected end-users at regular time intervals.
- 5.6. To submit programme of the Works prior to commencement of the Works for subsequent notification to the affected end-user. Seven (7) working days advanced notice shall be provided to the affected end-user for necessary coordination.
- 5.7. To prepare working schedule, material sample, design drawing, shop drawing, etc. for the CIC's approval prior to commencement of Works depending on the nature of the Works instructed under the Works. All submissions including drawings, material samples, etc. prepared by the Contractor shall be subject to the acceptance by the CIC. The CIC will endeavor to response to the submission within One (1) week as practical as possible. The Contractor shall revise, rectify and supplement the submissions within One (1) week upon receiving comments from the CIC.
- 5.8. To prepare and submit material sample, catalogue, Material Safety Data Sheet

(MSDS), etc. for the CIC's approval prior to material ordering and commencement of the Works depending on the nature of Works.

- 5.9. All documents shall be submitted electronically in MS Word format, MS Excel format, pdf file format or any other formats as applicable which are readily printable.
- 5.10. All submission must be submitted in English or Traditional Chinese, depending on the nature of Works, to the satisfaction of the CIC.
- 5.11. The copyright(s) of all reports, documents, recommendations, data and any other information prepared or collected by the Contractor, its specialist(s) and the sub-consultant(s) / sub-contractor(s) and their employees and agents in the course of this Contract shall belong to the CIC.

## **6. Timeline for Deliverables**

- 6.1 The period of this Contract shall be TWENTY-FOUR (24) months commencing tentatively from 1 January 2026 to 31 December 2027 (the "Contract Period") or subject to the written confirmation from the CIC for the contract commencement date.
- 6.2 The Contractor undertakes to carry out the routine repair and maintenance works instructed under Delivery Order and submit the Deliverables as stipulated in this Assignment Brief and in accordance with the timeframe as specified in Section 6.6 below or as directed / agreed by the CIC from time to time subject to the actual operational need of the affected end-users.
- 6.3 For Emergency Works, the Contractor shall have available at all time skilled workers / tradesmen in relevant trades with sufficient tools and equipment to carry out Emergency Works at the designated locations **within TWO (2) hours for Electrical and Air-conditioning Systems and FOUR (4) hours for Plumbing & Drainage System or within allowed time specified in Schedule of Rates / this Assignment Brief.** This service pledge of response time shall be defined by the time period between the time of instructing the Emergency Works (either verbal or in writing) by the CIC and time of arrival by Contractor's staff. The Contractor shall also complete the Works within the time specified in the instruction.
- 6.4 Supplementary information or reports other than the Deliverables stated below shall



be prepared and delivered at a timely manner upon the CIC's request.

- 6.5 The following activities' deadlines shall be taken into consideration upon contract award and confirmation of receipt of Delivery Orders:-

<b>Task</b>	<b>Description of Deliverables</b>	<b>Deadline</b>
1	To submit a documentary proof for a fixed telephone line for the 24-hour Call Centre Service and format of the monthly maintenance request logs for the CIC's approval as specified in Sections 5.2 and 5.3.	Within FOURTEEN (14) working days upon contract award
2	To provide Employee's Compensation (EC), Contractor's All Risk (CAR), organization charts, project contact list, emergency contact list as specified in Section 5.4.	Within SEVEN (7) working days upon contract award
3	To submit preventive maintenance schedule / plan for different building service installations as specified in Section 5.5.	TWO (2) months prior to the first date of the scheduled maintenance
4	To submit material sample, design drawing, shop drawing schedules, etc. as specified in Sections 5.7 and 5.8.	Upon the agreed timeframe with the CIC and subject to the job nature
5	To arrive on Site and complete the Emergency Works as specified in Sections 6.2 and 6.3.	To arrive the Site within TWO (2) hours for Electrical and Air-conditioning System and 4 hours for Plumbing & Drainage System upon receipt of the Emergency Works and complete the Works within the time specified in the instruction issued by the CIC

<b>Task</b>	<b>Description of Deliverables</b>	<b>Deadline</b>
6	To provide monthly duty report, daily work sheet and attendance report of Onsite Technicians as specified in Section 12.12	Within SEVEN (7) days from the end of each month
7	To submit programme of Delivery Order prior to works commencement (except for Emergency Works as specified in Section 6.3)	Within SEVEN (7) calendar days upon acknowledged receipt of the Delivery Order, and at least FOURTEEN (14) calendar days before the commencement of the site works

## **7. Management of the Contractor**

- 7.1 The Contractor shall be directed and supervised by the CIC.
- 7.2 The Contractor shall obtain the approval of the CIC (where appropriate) before commencement of the Assignment.
- 7.3 The Contract Manager and Site / Supervisor(s) of the Contractor shall attend all meetings held by the CIC as required and necessary.

## **8. Contractor's Office and Staffing**

- 8.1 Apart from the staffing requirement as described in Section 8.3 below, the Contractor is required to provide the Call Centre Service manned by sufficient manpower with details as described in Section 5.2 above.
- 8.2 The Contractor shall provide an adequately qualified and experienced working team(s) for the purpose of this Contract. The team members are required to attend regular / ad-hoc meetings with the CIC and its representative(s) to review the progress, work performance, complaints, etc. as requested by the CIC.

- 8.3 The Contractor's maintenance team shall comprise of, at least, the following team members:

(a) Contract Manager

The Contract Manager shall be fully responsible for overall contractual, managerial, technical, safety and co-ordination matters who shall possess the following minimum qualifications and experiences: -

- (i) be a Corporate Member of HKIE in Civil, Structure, Building, Building Services, Electrical or Mechanical or a Corporate Member of HKIS in Building Surveying or equivalent professional bodies;
- (ii) has a minimum of EIGHT (8) years in Building Services, E&M Engineering and Builder's Works or related working experience in the Hong Kong construction industry with at least FIVE (5) years working experience in handling of repair and maintenance term contract or similar work nature to the Contract;
- (iii) has excellent command in spoken English & Cantonese; and written English & Chinese;
- (iv) has the responsibility and absolute authority for the overall contract administration, technical resolution and control of all his staff, including the deployment and redeployment of personnel and their removal from the Contract; and be given the overall responsibility for procurement of materials required for the Contract Works; and
- (v) be provided with a mobile telephone at the Contractor's expense to allow immediate contact by the CIC and be reachable TWENTY-FOUR (24) hours per day, SEVEN (7) days per week.

(b) Building Services Engineer(s) / Building Engineer(s)

The Building Services Engineer(s) / Building Engineer(s) shall assist the Contract Manager and be fully responsible for overall technical and site management, safety and co-ordination matters who shall possess the following minimum qualifications and experiences: -

- (i) has a minimum of FIVE (5) years in related working experience in the Hong Kong construction industry with at least THREE (3) years working experience in handling of repair and maintenance term contract or similar work nature to the Contract;
- (ii) has excellent command in spoken English & Cantonese; and written English & Chinese;
- (iii) has the responsibility for the contract administration and control of all his site staff, working schedule & site activates and handling & resolving of any technical issues; and
- (iv) be provided with a mobile telephone at the Contractor's expense to allow immediate contact by the CIC and be reachable TWENTY-FOUR (24) hours per day, SEVEN (7) days per week.

(c) Site Supervisor(s)

The Contractor shall provide Site Supervisor(s) for this Contract who shall assist the Contract Manager and Building Services Engineer(s) / Building Engineer(s) in liaising with the CIC and arrange the site matters including, operation, safety, progress control and monitoring, labour forces, emergency services, acquisition of materials, upkeeping of contractor's service teams and managing all Scope of Works specified in the Contract, etc. The Site Supervisor(s) shall possess the following minimum qualifications and experiences:-

- (i) has a minimum of FIVE (5) years' supervisory experience in construction engineering works, the last THREE (3) years of which shall relate to similar nature to the Contract;

- (ii) proficient in spoken English and Cantonese, written English and Chinese;
- (iii) has the authority and responsibility for day-to-day administration of the engineering and construction Works, including control and supervision of the tradesmen/skilled workers in the routine Works, planned preventive maintenance and emergency call-out services; and
- (iv) be provided with a mobile telephone at the Contractor's expense to allow immediate contact by the CIC and be reachable TWENTY-FOUR (24) hours per day, SEVEN (7) days per week.

(d) Tradesmen / Skilled Workers

The Contractor shall provide qualified Skilled Tradesmen and Skilled Workers to ensure that the routine and emergency Works and be satisfactorily carried out in a safe manner and meeting the performance targets and timeframe.

- (i) The Contractor's Tradesmen/Skilled Workers shall have, as a minimum, one of the following qualifications and experiences: -
  - an approved apprenticeship in a related field; or
  - have at least FIVE (5) years working experience in relevant field.
- (ii) The Contractor's Tradesman/Skilled Workers shall be qualified with the appropriate grades/registration in compliance with the statutory regulations.

(e) Onsite Technicians

The Contractor shall provide qualified and experienced Onsite Technicians for the purpose of this Contract. The Onsite Technicians shall be required to maintain the daily operations, maintenance works and minor repair works for facilities and building elements for the designated location as described in Schedule of Rates.

- (i) has a minimum of THREE (3) years solid working experiences in handling of repair and maintenance works or similar work nature to the Contract;
- (ii) able to read and write Chinese and simple English;

- (iii) able to speak Cantonese fluently;
- (iv) holder of a valid Grade A or above registered electrical worker under EMSD registration;
- (v) holder of a valid certificate of Mandatory Basic Safety Training (generally known as "Green Card");
- (vi) has a knowledge and able to use of computer in general usage, e.g. Microsoft Words, Excel, Acrobat Reader, etc.; and
- (vii) be provided with a mobile telephone at the Contractor's expense to allow immediate contact by the CIC and be reachable TWENTY-FOUR (24) hours per day, SEVEN (7) days per week.

(f) Registered Safety Officer (RSO)

The Contractor shall provide qualified and experienced Registered Safety Officer for the purpose of this Contract. The shall be required to maintain the daily operations, maintenance works and minor repair works for facilities and building elements for the designated location as described in Schedule of Rates. In addition, employed RSO shall be also referred to Attachment 15 for detailed specification.

- (i) Registered under Cap59Z the Factories and Industry Undertakings ( Safety Officers and Safety Supervisors) Regulation (SOSSR) and possess the scheduled as specified in the Third Schedule of SOSSR scheduled qualification A, B, C and D.
- (ii) has a minimum of THREE (3) years solid working experiences in handling of repair and maintenance works and at least FIVE (5) year of similar work nature to the Contract;
- (iii) Registered Safety Officer from Labour Department
- (iv) able to read and write Chinese and simple English;
- (v) able to speak Cantonese fluently;

- (vi) The duties of Safety Supervisor shall be as stipulated in the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations
- (vii) Carry out safety inspections on requested activities on the Site including temporary works, scaffolding, work's method statement, electrical works and etc. The safety inspection shall identify any unsafe operation of potential hazards;
- (viii) The Contractor shall empower the Safety Officer to order any person working on the Site to suspend any unsafe operation or to take urgent action to make safe the Site or the Works or to disallow any practice which may infringe the Safety Plan or any statutory safety requirement;
- (ix) Prepare risk assessment reports for the following month and recommend measures to remove or minimize hazards;
- (x) Attend site safety meeting, prepare safety report for presentation if needed;
- (xi) Report accidents and dangerous occurrence as defined in the Factories and Industrial Undertakings Regulations to LD in the prescribed Form 2 with Supplementary Information on Accidents on Construction Sites & Dangerous Occurrence Report Form;
- (xii) All persons employed on the Works or in connection with the Contract whether in the employ of the Contractor or his sub-contractor shall receive site specific induction training. The induction training shall cover contents to alert persons new to the Site to know specific hazards related to the Site or works nature and activities in operation, and necessary precautionary measures. This training should be carried out within 2 working days of any such employee commencing work on the Site. Thereafter, he / she shall be given refresher training at intervals of about 6 months depending on the amount of changes to the site condition. The course shall be conducted by Safety Officers;
- (xiii) The Safety Officer shall comply all CIC's safety requirement, such as Dynamic Risk Assessment, Digital Works Supervision System, Work-permit to work, Smart Site Safety System, to achieve site monitoring and

safety supervision for site works;

- (xiv) The safety officer shall be responsible for delivering all CIC's Contractor Safety Requirements and supplementary relevant safety requirement to site technical staffs, including management of contractor, supervisor, engineers, technicians, works and etc, and conducting safety training sections. A safety test/assignment shall be implemented for the staffs with acceptable evaluation before any work's commencement. Additionally, the training records and elevation forms shall be properly documented in order to facilitate CIC's review if necessary.
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- 8.4 The Contractor shall provide the CIC with full details of staff to be employed on the term maintenance works contractor together with their curriculum vitae and proof of qualifications for prior approval from the CIC. Separate approval from the CIC should be obtained for any subsequent changes of staff.
  - 8.5 The works project team shall provide all specialist and sub-contractor services (not limited to those specified requirements above) required for the satisfactory completion of the Works and planned preventive maintenance works. No additional fees or expenses for the provision of such services rendered locally or overseas shall be payable by the CIC.
  - 8.6 The Contract Manager, Building Services Engineer(s) / Building Engineer(s) and Site Supervisor(s) shall attend all the meetings as may be called upon request by the CIC.
  - 8.7 The Contractor shall provide staff and manpower input in accordance with the technical proposal made at the tender stage, and that the CIC shall have the right to check the time-log record of the Contractor's staff deployed for the works project.
  - 8.8 In the event of any deviation or change of team members with respect to the submitted tender, prior approval from the CIC must be sought.
  - 8.9 In the event, for reasons beyond his control, the Contractor is unlikely to provide or maintain any key staff as specified in the proposal, he should report to the CIC as soon as practicable and propose for the CIC's approval of a substitute staff having qualification and experience comparable with the staff who is leaving the works project team.



- 8.10 The staffs/workers of the Contractor who shall be entering and/or working in the CIC premises MUST comply with the latest requirements and measures against the anti-epidemic situation required by the CIC.

## **9. General Specifications**

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## 9.1 General

- 9.1.1 The Contractor shall complete the Works in accordance with the time period as specified in Section 6.6 above in this Assignment Brief and shall follow the time schedule as stated below:

Stage	Description	Timeline
1	<b>Pre-construction Stage</b> – The Contractor shall submit working programme, shop drawings and material samples for the CIC's approval	Within SEVEN (7) calendar days upon confirmation of receipt of the Delivery Order
2	<b>Construction Stage</b> – The Contractor shall complete the Works in their best endeavor and obtain the Practical Completion of the Works in accordance with their working programme	As per the CIC's approved working programme of the Delivery Order
3	<b>Defects Liability Period</b> – Completion of rectification of any defects after Practical Completion. (SIX (6) months or specified otherwise in SOR / Assignment Brief)	Within TWELVE (12) months upon Practical Completion of the Works as confirmed in writing by the CIC

- 9.1.2 Works programme for each Delivery Order shall be submitted for approval by the CIC as mentioned in Sections 5.5, 5.6 and 5.7 above of this Assignment Brief.
- 9.1.3 The Contractor shall carry out the Emergency Works in accordance with the timeframe as specified in Sections 6.2 and 6.3 above of this Assignment Brief.

9.2 Site Visits before Submission of Tender

- 9.2.1 Before completing and submitting tenders, the tenderers are advised to attend the Tender Briefing and Site Visit Session at Construction Industry Council - Zero Carbon Park, 8 Sheung Yuet Road, Kowloon Bay, Kowloon, Hong Kong as described in Attachment 14 to appreciate and familiarize the extent of the Works. The technical details given for indication of the approximate information only and the tenderer shall have no time and cost claim against the CIC should the actual details vary considerably from the list.

9.3 Information to be Submitted to the CIC

- 9.3.1 In addition to the requirements stated in Section 34.3 of Attachment 5, the tenderer shall also submit the following:
- a) Methodology Statement
  - b) Works Implementation Plan
  - c) Health and Safety Plan
  - d) Works Quality Assurance Plan

9.4 Insurance

- 9.4.1 The Contractor shall arrange insurance for the Employees' Compensation (EC) and Contractor's All Risks and Third Party Insurance (CAR) at his own cost. For EC, such policy shall be endorsed to cover the CIC as an insured party and shall include endorsements W338, W348 and W204; For CAR, a minimum coverage for third party liability is HK\$30,000,000.00 and shall be endorsed joint name with the CIC.

9.5 Safety Requirements and Precautionary Measures

- 9.5.1 The Contractor shall fully comply with all safety requirements as required by the Factory and Industrial Undertakings Ordinance (Cap. 59) and Occupational Safety and Health Ordinance (Cap. 509). Any cost arises from the compliance of the safety requirements shall be fully borne by the Contractor and shall be deemed to be allowed in the tender.
- 9.5.2 The Contractor shall also take all necessary safety measures in a reasonable and practical manner, e.g. use of barriers, warning signs, fencing etc. to the satisfaction of the CIC, to prevent general public or others contractual entrant from getting access into the working / construction area accidentally during the execution of the Works.
- 9.5.3 The Contractor shall provide their staff with suitable and sufficient safety equipment and shall supervise and direct their staff to be in proper dressing in the construction site areas. Should the situation of the job require using personal protective equipment (PPE) such as safety belts together with fall arrestor and independent lifelines, goggles, gloves, masks, breathing apparatus or ear plugs, the Contractor shall be so equipped as to furnish their staff with such equipment and shall compel them to use the same effectively.
- 9.5.4 The Contractor must submit safety plan, method statements, risk assessments material safety data sheets, and other safety related documents as requested by the CIC within the prescribed period.
- 9.5.5 The CIC will inspect the Sites regularly and to monitor whether the Contractor and their staff have breached any regulations and will issue verbal or written warnings in case of breaches, or failure to follow outstanding matters or recommendations. If the Contractor fails to complete the safety measures within the prescribed time after receiving such warning, the CIC could suspend the Contractor's works until such safety measures are properly addressed to the CIC's satisfaction.

9.6 Safety Supervision

- 9.6.1 The Contractor shall assign their management and/or supervising representative(s) or appoint a safety officer/supervisor to manage and monitor the Site safety issues and performance of their workers in order to ensure the compliance of safety regulations & ordinances and the CIC's safety requirements.

9.7 Contractor's Obligation

- 9.7.1 The Contractor **MUST** be either a Registered Electrical Contractors (REC) and Registered General Building Contractor (RGBC) or Registered Minor Works Contractor (RMWC, Class 1) under the Buildings Ordinance and Registered Specialist Trade Contractor (RSTC), and shall comply with all relevant statutory requirements of the HKSAR. The Contractor shall submit organization and seek CIC's approval if Sub-contract agreement/partnership is proposed for this term contract. The Tenderer can provide substantiation of another company, which qualified with RGBC/RMWC/REC/RSTC, that to confirm the intention to enter into any Sub-contract agreements/partnership with the Tenderer for the execution of the scope of works of this contract.
- 9.7.2 The information provided in the tender documents only indicates the design intent and minimum performance requirements. The quantities, capacities and sizing contained should not be assumed to be the exact extent of the Works. The Contractor should be responsible for the full design and developing a complete system fit for the intended purpose and in accordance with the design intent.
- 9.7.3 The staff organization chart shall be submitted in commencement of the Contract for the CIC's approval. The Contractor shall provide the staff organization chart and contact list which shall be regularly updated for re-submission as and when necessary due to subsequent change of details previously.

- 9.7.4 The Contractor shall directly employ sufficient, suitably skilled and experienced workmen as described in Section 8 for carrying out the Works of this Assignment Brief. The Contractor shall ensure adequate staff is provided in carrying out the periodic inspections & maintenance and arrange separate team to attend **24 hours around the clock and 365 days throughout the Contract Period** emergency calls within the response time as described in Sections 6.2 and 6.3 of this Assignment Brief.
- 9.7.5 In order to provide prompt service and to eliminate adverse effect to the users / staffs, the Contractor shall submit details of the duty engineers before the commencement of the Contract. The Contractor shall equip the emergency contact list with mobile telephones at the Contractor's expenses, for the efficient and effective operation of the Contract. All mobile phones shall be at 'Standby' mode at any time. The Contractor shall also provide his staff with adequate means of transportation for emergency attendance to the Site upon request.
- 9.7.6 The emergency contact list shall be posted at a conspicuous place near working area and site office, if any. The contact list shall be updated regularly.
- 9.7.7 All workmen shall wear clean uniform with Contractor's badge and carry the Company identity card bearing the employee's photograph whilst on duty.
- 9.7.8 The Contractor shall take measures to ensure that his employees shall **NOT** commit any of the following acts at the Site: -
- a) Enter any area other than those necessary for the performance of the Works;
  - b) Cause damage to any property;
  - c) Gambling;
  - d) Commit any criminal offence;
  - e) Consume alcoholic beverage;
  - f) Fight and/or quarrel;
  - g) Use foul languages;
  - h) Behave in a manner likely to endanger himself or any other person or cause damage to any property; and
  - i) Fail to wear uniform and Company ID card whilst on duty.

- 9.7.9 Submission of the proposed material, sample boards, detail sketches, etc. to the CIC for comment / approval prior to the commencement of the Works as necessary.
- 9.7.10 Submit method statement / testing procedures to the CIC for approval and carry out all necessary testing for the Works according to the latest version of procedures approved by the CIC as necessary.
- 9.7.11 Relevant submission(s) together with correspondence(s) & form(s) to the Electrical and Mechanical Services Department (EMSD), Buildings Department (BD) and other government departments of the HKSAR for the Works in compliance with the statutory requirements at the Contractor's own cost if required.
- 9.7.12 Resume of any other trade works and make good any affected areas after the Works.
- 9.7.13 The Contractor shall liaise closely with the CIC for detailed planning / execution of the Works for Delivery Orders or Planned Preventive Maintenance.
- 9.7.14 The Contractor, in the execution of the Works, shall keep the materials and all things connected with the Works in good order, neatly trimmed and stacked, and shall remove any items no longer required from the Site or surrounding areas as soon as possible and at frequent intervals during the course of the contract so as to maintain unhindered access to, and easy inspection of, all work, the plant, materials and all things connected with the Works.
- 9.7.15 Provide all necessary temporary works, shoring, strutting, steel works, plates, fixing brackets and / or other necessary components in order to complete the Works as necessary.
- 9.7.16 Provide THREE (3) sets of as-fitted record documents / drawings / sections / sketches for the alternated and addition system as installed in both hard copy and electronic files stored CD-ROM / DVD-ROM if the Works required.



- 9.7.17 Provide quotation for subsequent operation & maintenance (if applicable) and unit rate for major components that may incur for **additional / alteration works with validity for at least ONE (1) year' time after DLP.**
- 9.7.18 The Contractor shall also abide by all the current statutory regulations, by-laws, or any legislation not stated in this document and abide by any subsequent amendment made within the effective period of this Contract.
- 9.8 Temporary Protection, Hoarding, Walkways, Screen, etc.
- 9.8.1 The Contractor shall provide, erect, alter if necessary and maintain screens, catch fans, safety nets, catch platforms or similar protective measures to prevent objects from falling inside or outside the building boundary and to alleviate dust pollution throughout the work to the satisfaction of the CIC, Labour Department, the Building Authority, and other relevant government departments. All hoardings, covered walkways, screens, etc. are to be removed on completion of the Works and the locations made good.
- 9.8.2 Canvas / protective plastic sheets / timber hoarding shall be provided for protecting the CIC premises and/or for dust / water ingress / noise control if necessary or required by the CIC. Temporary timber covered passage shall also be provided at all ingress / egress points for public safety enhancement. All these protections shall be provided at the Contractor's own cost.
- 9.8.3 Provide all necessary warning notices, signage, labels, protection and temporary lighting facilities to pedestrian when needed in order to cope with all relevant statutory requirements.
- 9.9 Ordinance, Regulation and Codes
- 9.9.1 Relevant standards, codes, guidelines, regulations and other documents issued by international / local statutory authorities shall be followed by the Contractor to complete the Works.

9.9.2 All inspection, checking, adjusting, servicing, modifying, testing, maintenance and repairing services for those installations not exempted from such Regulations shall be carried out by competent persons provided by the Contractor in a safe, prompt and workman-like manner to the satisfaction of the CIC.

9.10 Environmental Requirements

9.10.1 The Contractor shall be required to observe all Environmental Protection Department's requirements including the disposal of construction waste materials and generation of construction noise. The Contractor shall be required to submit necessary documents and substantiate to the CIC upon request by the CIC.

9.11 Working Hours, Rates of Wages, etc.

9.11.1 The Contractor shall comply with any current legislation or regulations regarding working conditions, working hours including house rules set by the CIC's premises and accept the risk of any impending legislation or other conditions which alters any obligations or imposes new obligations.

- 9.11.2 Notwithstanding the foregoing, work on the Site must generally take places as below:-

All premises of the CIC except CIC - Zero Carbon Park

- a) Monday to Saturday : From 08:30 to 18:30
- b) Sunday, Public Holiday and Statutory : Subject to the CIC's approval  
Holiday or Non-office hours

For CIC - Zero Carbon Park

- a) Monday to Sunday including : From 08:30 to 18:30  
Public Holiday and Statutory Holiday
- b) Non-office Hours : Subject to the CIC's approval

- 9.11.3 The CIC reserves the right to change the working hours if necessary.
- 9.11.4 For all Works inside the Workshop, the working hours shall be subject to the CIC's arrangement and coordination with the Site-in-Charge of the CIC.
- 9.11.5 The Contractor shall require to work on Sunday, Public Holiday, Statutory Holiday and overnight subject to the instruction of the CIC.
- 9.11.6 The above times are inclusive of all Works associated with the removal of debris or construction waste, etc. off-site. Should the Works outside these hours be required or requested, written approval of the CIC must first be sought and obtained.

9.12 Equipment and Appliances Offered

- 9.12.1 The equipment and appliances offered shall be rated at 380 volts, 3 phase 4-wire/220 volts single phase two wire  $\pm 6\%$  at 50Hz, subject to the actual site condition.

9.13     Inspection, Measurement and Test Equipment

9.13.1     The Contractor shall use calibrated equipment for the Supply of Calibrated Inspection, Measurement and Test Equipment. All equipment and ancillaries shall be checked, calibrated and maintained in good working order and available for use at all times.

9.14     Scaffolding / Working Platform

9.14.1     Bamboo scaffolding shall be erected in compliance with relevant code of practice and the CIC's requirements. Periodic inspections are not only required, but also after tropical cyclone warning signal no. 8 signal or black rainstorm warning signal is hoisted. Inspection and tie up any loose part of bamboo scaffolding is necessary when there is a forecasted tropical cyclone warning signal no. 8.

9.14.2     Working platform / scaffolding shall be erected when working at a height 2m or above under this Contract. Periodic inspection conducted and Form 5 shall be issued in accordance with the current safety regulations and requirements.

9.14.3     The scaffolding / platforms should comprise of all necessary items such as the stepping board, keys, etc. to form a complete installation to suit safety and Labour Department's requirements. All platforms and scaffolding must be safe, secured and closely monitored/ checked/ reviewed by a competent person / registered safety officer / licensee according to Labour Department's requirements and / or statutory requirements. The Contractor is required to make good of all building penetration caused by the erection and / or demolition of the scaffolding / platform at their own cost.

9.14.4     Toe boards and all necessary safety measures shall be provided at the outer edge of the working platform.

9.14.5 Without prejudice to the other provisions, working platforms shall be constructed for any workplace where any person may be falling from a height of 2 metres or above. All sides of the working platform shall have protective guardrails (900 – 1150 mm high), intermediate guardrails (450 mm – 600 mm high), toe board (200 mm high) and passageway for going up and down. The platform surface for standing purpose should be covered entirely.

9.15 Provision of PPE, Tools, Ladders and Trestles

9.15.1 Where the Works can be safely carried out with the use of ladders or trestles under Labour Department at whatever height, the Contractor has to provide these facilities at no extra cost.

9.15.2 The Contractor shall provide all tools, helmets, trestles and Personal Protective Equipment (PPE) such as protective goggles etc. as required at their own cost for the execution of duties as required by this Contract and associated statutory requirements.

9.15.3 Use of wooden ladder for work within Site shall NOT be allowed.

9.16 Removal of Construction Waste and Debris

9.16.1 Designated area for temporary storage of construction waste and debris may be granted by the CIC. The Contractor shall clear construction waste / debris that in the working area daily. Construction waste / debris accumulated at the working platform, particularly at bamboo scaffolding working platform, is not allowed.

9.16.2 Upon a period of time / completion of the Works / rectification work during DLP, the Contractor shall remove, to an appropriate disposal point as stated in the Ordinance, all old parts, construction waste or debris arising out of the Works periodically at the Contractor's own cost. The Contractor shall keep the equipment and its surrounding area clean and tidy to the satisfaction of the CIC.

9.16.3 The Contractor shall be responsible for keeping each installation on Site in a clean, tidy and orderly condition to the satisfaction of the CIC at no extra cost.

9.16.4 In particular, each time after the execution or completion of Works, the Contractor shall clean the floor and carry away from the Site all debris and rubbish. Should the Contractor fail to comply with this requirement, the CIC will instruct cleaning work to be carried out by others and subsequently reimburse the full cost of the work from the Contractor.

9.17 Advice of Orders Placed

9.17.1 The Contractor is required to forward copies of all orders placed for major items and equipment which are necessary to be imported from overseas to the CIC for reference within two weeks after approval of the corresponding equipment by the CIC. Copies of all orders placed shall be forwarded to the CIC for information & record.

9.18 Addition and Deletion of Installation

9.18.1 The CIC shall have the right during the Contract Period to instruct additional installations into this Contract and the Contractor shall execute such additional works in accordance with the Conditions of this Contract and at the unit rate as specified in the Schedule of Rates.

9.18.2 The CIC shall have the right during the Contract Period to instruct for omission of installation works from the Contract.

9.18.3 Within SEVEN (7) calendar days of written notification by the CIC of any addition or deletion of the installation works, the Contractor shall review his staffing level to ensure the proper execution of the Works and if necessary seek approval from the CIC for any change to the staffing level required.

9.19 Security

9.19.1 Prior to the commencement of the Works, the Contractor shall issue to the CIC a list of all personnel to be engaged on the Works. Such a list shall contain the names, green card number and worker registration card number.

9.19.2 The Contractor's Representative and all such personnel engaged on the Works shall sign in daily at a location to be designated by the CIC for the duration of the Works.

9.19.3 The Contractor shall ensure that the Works included in this Contract are properly and adequately executed in good working order, safe operating condition and for its efficient performance. Before leaving the Site and upon completion of execution of work each time, the Contractor shall be responsible for keeping all tools, materials in safe custody, and relevant access doors and panels locked.

9.20 Remedy on Contractor's Failure to Perform

9.20.1 If the Contractor fails to carry out any Works required under this Contract or refuses to comply with any instruction or order given by the CIC in accordance with the Contract within a reasonable time, the CIC may give the Contractor SEVEN (7) calendar days' notice in writing to carry out such Delivery Order or comply with such instruction.

9.20.2 If the Contractor fails to comply with such notice, the CIC shall be entitled to carry out such work by itself or by his own workmen or by other contractors. Without prejudice to any other remedy, all additional expenditure properly incurred by the CIC in having such work or instruction carried out shall be recoverable by the CIC from the Contractor by deduction from money due to the Contractor under this Contract or under any other contract between the CIC and the Contractor.

9.21 Industrial Training and Pneumoconiosis Levies

9.21.1 The Contractor's attention is drawn to his obligations under the Industrial Training (Construction Industry) Ordinance (Cap. 317) and the Pneumoconiosis (Compensation) Ordinance (Cap. 360) and the Contract Sum shall include the amounts payable in respect of these levies with regard to all Works included in this Contract.

9.22 Site Office and Material Storage Area

- 9.22.1 Site office and material storage area may be granted to the Contractor for solely use for the Works during Contract Period. The Contractor shall be responsible for all cleaning works and keep tidy within the designated areas and its surroundings. Upon completion of the Works, the site office and material storage areas shall be reinstated and handed over to the CIC within SEVEN (7) calendar days. The reinstatement cost shall be borne by the Contractor.
- 9.23 Temporary lighting, Power and Water Supply
- 9.23.1 The Contractor shall be responsible for the power and water supply for the Works. In addition, the Contractor shall also be responsible for all necessary connection and disconnection of temporary water and power supply at its own cost.
- 9.23.2 Before commencing these temporary connection works, the Contractor should notify in advance to the CIC and seek his approval. Upon the completion of the Works, the Contractor shall be required to reinstate the original facilities to the satisfaction of the CIC at his own cost.
- 9.23.3 The Contractor is to provide all temporary lighting including temporary wiring required for the execution of and in connection with the Works including the works of separate direct contractors and the testing of permanent installations, including the provision and removal of all temporary electric wiring and other works.
- 9.23.4 Electricity will be provided free of charge to the Contractor at points as designated by the CIC. The Contractor is to provide the meter and restores all supply points to their original condition on completion of the Works.
- 9.23.5 The Contractor shall supply and fix all temporary wiring and accessories required and remove all temporary installations, make good all works disturbed, etc. on completion of the Works.
- 9.23.6 All electrical connection and fitting used for this purpose shall be in good and safe condition and conform with relevant guidelines and regulations issued by the Labour Department and Electrical and Mechanical Services Department.



- 9.23.7 The power connection point and rating shall be as specified by the CIC. Otherwise, the Contractor has to find out their alternative power supply (e.g. Power generator) at Contractor's own cost.
- 9.23.8 The main switch used for this purpose should include the protection functions against suitable rating overload and earth faults. The switch and connection method should be submitted for CIC's approval prior to commencement of works.
- 9.23.9 All electrical installations should be done by registered electrical worker and the contractor / Sub-contractor must be registered Electrical Contractor under the Electricity Ordinance.
- 9.23.10 Checking of meter and/or tariff meter is required to record the consumption of electricity and water if necessary.
- 9.23.11 The whole temporary installation is to comply with the relevant regulations and statutory requirements approved by the government authorities.
- 9.24 Fire Precautions
- 9.24.1 The Contractor shall provide adequate and efficient fire-fighting equipment as necessary during the Contract Period and comply with all Fire Services Regulations and other requirements to prevent loss or damage from fire during construction. Smoking is strictly prohibited at all site areas and the CIC's premises.
- 9.24.2 The Contractor shall also provide a training course to their labours / workers for the use of fire-fighting equipment. The mean of escape route and assembly point shall be communicated to every worker.
- 9.25 Supplementary Specification

9.25.1 Wherever there is any provision of which Particular Specification of this Contract has not covered, the following latest versions of standard specification and technical standard will be used to supplement the Technical Specifications of this Contract as below:-

- a) British Standard and Codes of Practice of current edition published by British Standard institution;
- b) General Specification for Building published by Architectural Services Department, Hong Kong;
- c) Green Specifications issued by the Environmental Protection Department, Hong Kong;
- d) General Specifications for Electrical Installations published by Electrical and Mechanical Services Department, Hong Kong;
- e) Technical Specifications for Drainage Services Installations published by the Drainage Services Department, Hong Kong;
- f) Mechanical and Electrical Standard Specifications published by the Water Supplies Department, Hong Kong;
- g) General Specification for Civil Engineering Works published by the Civil Engineering Office and Highways Department, Hong Kong;
- h) General Specification of Plumbing and Drainage Installation in Government Buildings, published by the Architectural Services Department, Hong Kong;
- i) Code of Practice for Safe Use and Operation of Suspended Working Platforms & Code of Practice for Bamboo Scaffolding Safety published by the Labour Department, Hong Kong;
- j) Hong Kong Waterworks Standard Requirements for Plumbing Installation in Buildings published by the Water Supplies Department, Hong Kong;
- k) General Specification for Electrical Installation in Government Buildings published by the Architectural Services Department, Hong Kong;
- l) General Specification for Fire Services Installation in Government Buildings published by the Architectural Services Department, Hong Kong;
- m) Electricity Ordinance and its Regulations;
- n) British Standard Code of Practice (relevant codes);
- o) British Standard Specification (relevant standards);
- p) Regulations for Electrical Installations issued by the Institution of Electrical Engineers, 16th Edition and its latest amendment and/or edition; and

q) The Code of Practice for the Electricity (wiring) Regulations.

9.25.2 Where any ambiguity, discrepancy or conflict arises between the General Specifications and the Technical Specifications of this Contract, the Technical Specifications shall take precedence.

9.25.3 In case of any disputes or discrepancies on the standard of Specifications, workmanship and materials and any interpretation of any clauses and contents of the contract documents, the decision of the CIC shall be final and binding.

9.26 Provision of Labour

9.26.1 The Contractor shall provide skilled technicians and a competent foreman whilst carrying out the Works.

9.26.2 Such workforce shall comply with all reasonable instructions or directions given to them by the CIC whilst working on the Site.

9.26.3 All work carried out by such workforce shall be performed in accordance with the General Specification and to the satisfaction of the CIC.

9.26.4 Notwithstanding clauses above such workforce shall at all times be deemed to remain under the direct supervision and control of the Contractor.

9.26.5 The Contractor shall ensure that a foreman fluent in English and Cantonese is on duty at all times.

9.26.6 The Contractor is to ensure that only persons who are lawfully employable as defined in the Immigration Ordinance are allowed to be employed on Site.

9.27 Provision of Material

9.27.1 Without prejudice to any other warranty expressly given or implied by operation of law the Contractor warrants that:-

- a) All materials, goods and things provided by the Contractor in accordance with the Contract correspond as to description quality and condition with the terms stated in the Contract;
- b) All materials or goods provided by the Contractor in accordance with the Contract are of merchantable quality and of sound materials and good workmanship;
- c) All materials or goods provided by the Contractor in accordance with the Contract will conform with any sample, mock-up, pattern, drawing or design approved by the CIC or any other CIC engaged by the CIC;
- d) All persons engaged or employed by any Contractor in the performance of the Contract are suitably skilled, experienced and qualified to perform the work allotted to them;
- e) Where matters of design, specification or selection of materials are carried out by the Contractor that specialist skill and care has been or shall be applied in carrying out the same and that the same shall be fit for their purpose; and
- f) The Contract Works when completed shall comply with all requirements of the laws then in force in the Hong Kong Special Administrative Region and shall be fit for their intended purposes.

9.27.2 All materials and goods to be provided by the Contractor in accordance with the Contract shall be subjected from time to time to such tests as the CIC may direct at the place of manufacture or fabrication or at such other place or places whether on or off the Site as the CIC may direct or at all or any of such places. The Contractor shall provide such assistance, instruments, machines, labour and materials as are normally required for examining, measuring and testing the same and shall supply samples of materials, goods or things before incorporation in the Works for testing as may be required by the CIC. The cost of the same shall be payable to the Contractor to the extent that the same is expressly stated in the Contract.

9.27.3 The Contractor shall give notice to the CIC on Site prior to the covering up of any works and in default of so doing the CIC may require the same to be uncovered at the Contractor's own cost.

9.27.4 The Contractor shall give and shall procure that his sub-contractors of any tier give to the CIC, as the case may be, and their respective representatives, full access to the Contract Works and to the workshops or other places where work is being prepared or goods or materials are being manufactured for the Works so that they may test, inspect or examine the same. The Contractor shall assist the CIC and their respective representatives during the course of any such visits as aforesaid.

9.28 Interference with Services

9.28.1 The Contractor must take all steps necessary to prevent interference with services, such as gas, water, electricity, lights and power, telephones, buried cables or other installations.

9.29 Noisy Works

9.29.1 Demolition, drilling and other excessively noisy operations, if required, are to be carried out at times to be agreed on Site with the CIC, and in compliance with the legislative requirement governing noisy works laid down by the Environmental Protection Department.

9.30 Schedule of Condition

9.30.1 Prior to the start of the Works the Contractor shall agree with the CIC a Schedule of Condition describing the condition of the existing buildings or services within the vicinity of the Works. Should there be any damage to the existing buildings or services arising during the Works and not previously scheduled, such damage shall be put right at the Contractor's expenses.

9.31 Occupation of Premises

- 9.31.1 The Contractor's attention is drawn to the fact that the building in which the Site is occupied and the Contractor must carry out the Works and arrange for deliveries of materials and the like in such a manner and at such times that shall cause the least possible inconvenience and disturbance to other contractors, occupants and the users of the building. The Contractor shall be required to ensure that the Site is left in a safe, tidy and clean condition on completion of each day's work.
- 9.32 Spare Parts
- 9.32.1 The Contractor shall maintain in the Contract Period an adequate level of spare parts in Hong Kong of different trades taking into consideration of the anticipated frequency of the involved repair and maintenance works.
- 9.33 All Works must be submitted with schedule, detailed descriptions, method statement, risk assessment and work procedure as required for the CIC's approval prior to any Works being implemented.
- 9.34 The Works shall include the relevant application, submission including the relevant cost incurred in compliance with the latest statutory requirements and regulations for the Works.
- 9.35 The working platform and platform ladder for all Works should be included at the Contractor's own cost. Working platform should be certified by competent person with valid Form 5, platform ladder should be complied with EN131-7 standard.
- 9.36 For the promotion of good work practices shall refer to "Contractor's Safety Requirements" of this Tender Document.

9.37 The Contractor is required to attend a half-day safety briefing to be organized and held at the premises of the CIC (free-of-charge) for acknowledgement of the safety requirements and obtaining the attendance proof before commencement of the Works. Renewal of attendance proof is required.

## **10. Technical Specifications (E&M Works)**

### Specification and Frequency

The Contractor shall be responsible for the provision of management, supervision, competent mechanics, certified & registered workers, trained technicians, materials, tools, transportation, ladder/working platform/scaffolding and all necessary equipment to undertake the Works as listed below during the Contract Period.

### **Part 1 – Core Items**

#### **10.1 Mechanical Ventilation Air Conditioning (MVAC) System**

##### **10.1.1 Duct Type and Cassette Type Air Conditioner Cleaning Procedure**

- a) Turn off the electricity to the air conditioner.
- b) Remove the cover. Depending on the type of air conditioner, the cover may be kept in place with screws or with locking push tabs.
- c) Slide out or unclip the filter from the unit and wash out any buildup of dirt by high pressure water jet.
- d) Submerge the filter in the cleaning solution and allow it to soak for about an hour if you clean the filter often. If the filter is particularly dirty, allow it to soak for several hours.
- e) Lift the filter out of the liquid and allow to drain. Do rinse and dry it.
- f) When thoroughly dry, return it to its place and put the cover back on.

g) Clean the cover of air conditioner and condensate drain pipe (30 meters run).

h) Turn on the electricity of the air conditioner and function testing.

i) Design Specifications of FAP and Location

**Brand: Mitsubishi Electric**

Model: LGH-75RBD-HK-2 (FAP-01)

Model: LGH-100RBD-HK-2 (FAP-02)

Model: LGH-200RBD-HK-2 (FAP-03)

FAP-01, Q:208 l/s (SSC, KCC, KBC)

FAP-02, Q:280 l/s (KCC, KBC)

FAP-03, Q: 556 l/s (SSC, KBC)

j) Design Specifications of Indoor Units of VRV and Location

**Brand: Mitsubishi Electric**

Model: PLFY-P32VEM-PA (IU-01 & IU-02; SIU-01 & SOU-01)

Model: PLFY-P50VEM-PA (IU-03)

SIU-01, P: 2.2kW (SSC)

SOU-01, P:2.2kW (SSC)

IU-01, P:2.2kW (SSC, KCC, KBC)

IU-02, P: 3.6kW (SSC, KCC, KBC)

IU-03, P: 5.6kW (SSC, KCC, KBC)





k) Design Specifications of Outdoor Units of VRV and Location

**Brand: Mitsubishi Electric**

Model: PUHY-P200YDK (-BS) (22kW)

Model: PUHY-P250YDK (-BS) (28kW)

Model: PUHY-P500YDK (-BS) (55kW)

Model: PUHY-P750YDK (-BS) (81.5kW)

Model: PUHY-P950YDK (-BS) (103kW)

Model: PUHY-P1000YDK (-BS) (110kW)

Model: PUHY-P1200YDK (-BS) (135kW)

Model: PUHY-P1450YDK (-BS) (158kW)

Model: PUHY-P200YDK (-BS) (165kW)

OU-UF -01, P:11.2kW (SSC)

OU-SER-01, P:28kW (SSC)

OU-6F-01, P: 40kW (SSC)

OU-6F-02, P: 40kW (SSC)

OU-2F-01, P: 56kW (SSC)

OU-3F-01, P: 56kW (SSC)

OU-4F-01, P: 56kW (SSC)

OU-5F-01, P: 56kW (SSC)

OU-6F-01, P: 56kW (SSC)

OU-7F-01, P: 56kW (SSC)

OU-1F-01, P: 68kW (SSC)

OU-MF-01, P: 81.5kW (SSC)

OU-7F-02, P: 81.5kW (SSC)

OU-7F-03, P: 81.5kW (SSC)

OU-GF-01, P: 104kW (SSC)

OU-6F-04, P: 104kW (SSC)

OU-6F-05, P: 104kW (SSC)

OU-6F-06, P: 104kW (SSC)

OU-7F-04, P: 104kW (SSC)

OU-7F-05, P: 104kW (SSC)

OU-7F-06, P: 104kW (SSC)

VRV-MF-01, P:40kW (KCC)  
VRV-1F-01, P:50kW (KCC)  
VRV-3F-01, P:56kW (KCC)  
VRV-4F-01, P:56kW (KCC)  
VRV-7F-01, P:56kW (KCC)  
VRV-5F-01, P:61.5kW (KCC)  
VRV-2F-01, P:78.5kW (KCC)  
VRV-6F-01, P:111.9kW (KCC)  
VRV-GF-01, P:151kW (KCC)  
VRV-SER-01, P:28kW (KBC)

VRV-4F-01, P:101.5kW (KBC)  
VRV-4F-02, P:101.5kW (KBC)  
VRV-1F-01, P:134.5kW (KBC)  
VRV-1F-02, P:134.5kW (KBC)  
VRV-3F-01, P:134.5kW (KBC)  
VRV-3F-02, P:134.5kW (KCC)  
VRV-2F-01, P:156.5kW (KBC)  
VRV-2F-02, P:156.5kW (KBC)  
VRV-2F-03, P:156.5kW (KBC)  
VRV-GF-01, P:179kW (KBC)  
VRV-1F-02, P:134.5kW (KBC)

#### 10.1.2 Window Type Air conditioner Cleansing Procedure

- a) Spray the two coils liberally with a can of foaming air conditioner coil cleaner. Allow the cleaner to sit on the coils as recommended by the manufacturer.
- b) Wipe down the air conditioners fan blades using a general household spray cleaner and a soft cloth. Open any of the fan motor's plastic- or rubber-capped oiling ports and lubricate them with a drop or two of electric motor oil for lubrication.

- c) Vacuum the unit's filter or replace it with a new one, especially if you see any mold spores on it or smell mildew in the air. Pour a cup of bleach into the access opening of the condensation drain line to kill any mold and mildew that's growing in it.
- d) Put on a pair of protective latex or plastic gloves and wipe the water drip pan using a cloth dipped into bleach. Allow all of the parts to thoroughly dry before reassembling the air conditioner unit and placing it back into the window.

#### 10.1.3 Split Type AC Indoor Unit Cleansing Procedure

- a) Turn the indoor unit to the "Off" position, and disconnect the power supply to ensure safety during the cleaning process.
- b) Remove the front panel of the indoor unit. Dampen a cloth with cold water, and wipe down the front panel. Wipe it using a dry cloth.
- c) Lift the air filter out of the front of the unit. Vacuum, and/or clean the filter and housing with water. Dry the filter housing with a dry cloth.
- d) Spraying the chemical detergent over the coils for coil cleaning. Spray onto the cooling fins' surface as well as directly into the coils. Make sure the solution can reach as far into the coils as possible.
- e) Flush the coil and rotary blades with a water sprayer and see all the dirt and grime flow out via the air conditioners drainpipe.
- f) Wipe the remote control unit and indoor unit housing with a damp cloth, and dry it with a dry cloth. Remove greasy fingerprint smudges with a mild dilute dish detergent, and rinse with plain water.
- g) Re-assembly and turn on the unit to ensure the unit running in normal condition.

#### 10.1.4 Install or Replace Ventilation Fan Unit

- a) Remove the Window Pane.

- b) Before you can install an exhaust fan into a window you will need to remove the window pane or existing fan.
- c) Outline/install Exhaust Fan onto centre glass.
- d) Using the casing of the exhaust fan as a guide, you can trace the outline onto the center of the glass piece.
- e) Seal up the gap by glass silicon.
- f) Connect the power and function testing.

10.1.5 Install or Replace Air Conditioner Unit

- a) Supply and install or replace air conditioner with all necessary accessories include the following:
- b) Power connect from air conditioner to existing power point (within 2 meters).
- c) All supporting (aluminum) of Indoor & Outdoor Unit.
- d) Control system and emergency stop.
- e) Refrigerant Copper Tube, dryer, valve with Class 0 insulation (within 5 meters).
- f) Drainages pipe with Class 0 insulation (within 5 meters).
- g) Replace the Special Process Paper Filter of Fresh Air Processor (FAP) Units.

10.1.6 Recharge 50 lbs R410A refrigerant for the split type AC unit.

10.1.7 Supply and replace chilled water flow switch, motorized valves for the chilled water main pipe including power/ control cable reconnection, testing and commissioning.

10.1.8 Rewind and overhaul the chiller condenser fan motor including necessary accessories and testing and commissioning.

10.1.9 To refrigerant dryer for the chiller unit including reconnection of refrigerant pipe.

Install or Replace Kitchen Refrigeration and Cold Room

10.1.10 (a) Supply and install or replace Kitchen Refrigeration System with all r accessories include following:

(b) Digital control, high pressure cut out controller.

(c) Humidity controller and temperature sensor.

(d) Receiver and door hinges (if any).

(e) Recharge 50 lbs R22 refrigerant for the split type AC unit.

(f) Power / control cable reconnection and testing and commissioning.

For Fire Damper

10.1.11 i) Check and clean fire damper and repair if necessary.  
ii) Replace fusible link if necessary.  
iii) Issue ventilation certificate to Fire Services Department according to (Ventilation Systems) Regulations after completion of the above mai services.

10.1.12 Water-Cooled Chiller System **Monthly** Maintenance Procedure at CIC - ZCP

- a) For Water-cooled Chiller Unit
  - i) Check the unit piping and coils for visible signs of leaks.
  - ii) Check cleanliness of condenser coil.
  - iii) Check the conditions of Heat Exchangers.
  - iv) Check the compressor oil level from sight glass.
  - v) Run chiller unit, inspect and report system of operating conditions.
  - vi) Observe any abnormal noise and vibration.
  - vii) Check refrigerant level in the sight glass for any foaming or fluctuation.
  
- b) For Primary Air Handling Unit
  - i) Check fan belt tension and wear.
  - ii) Check bearing of fan and motor, lubricate if necessary.
  - iii) Clean air filters.
  - iv) Observe any abnormal noise and vibration.
  - v) Check and clean drain pan to ensure draining pipe is not blocked.
  - vi) Check flexible duct connection.
  - vii) Check anti-vibration supports.
  - viii) Check operation of control valve.
  
- c) For Chilled Water Pump
  - i) Check pump shaft for excessive leakage, adjust if necessary.
  - ii) Observes any abnormal noise and vibration.
  - iii) Check bearing of pump and motor, lubricate if necessary.
  - iv) Check motor ventilation hole free from blockage, clean if necessary.
  - v) Check all drain lines and clean if necessary.
  - vi) Clean strainer, if necessary.
  - vii) Check coupling alignment and adjust if necessary.
  - viii) Check electrical, safety controls and control connection.
  - ix) Check and vacuum clean starter panel.
  - x) Clean Suction strainer.
  
- d) For Chilled Water Treatment
  - i) Check and adjust dosage of chemical treatment.
  - ii) Sample test of system water and submit water analysis report.

- e) For Fan Coil Unit
  - i) Check unusual noise and vibration.
  - ii) Lubrication motor bearing if necessary.
  - iii) Check and clean drain pan and drain pipe if necessary.
  - iv) Check tightness of holding bolt.
  
- f) For DDC Control System
  - i) Check all DDC logic control set point and functional, adjust if necessary.
  
- g) For VAV boxes
  - i) Clean air filters and ensure no clogging in cooling coils.
  - ii) Record supply air and room temperature.
  - iii) Check control valve operation.
  - iv) Inspect for undue noise and vibration.
  - v) Check motor bearings and lubricate if necessary.
  - vi) Check condensate drain pan and drain pipes to ensure no blockage.
  - vii) Check electrical and control equipment, and submit report.
  
- 10.1.13 a) For Water-cooled Chiller **Annually** Maintenance Procedure at CIC - ZCP
  - i) Check condition of MCBs, contacts, fuses and wire.
  - ii) Check electrical connections.
  - iii) Check setting, calibration and operation all control.
  - iv) Check and clean contacts, relay etc. if necessary.
  - v) Check & remove any rust, repaint with primer finish coating if necessary.
  - vi) To refit the isolating valve, globe valves, etc. if necessary.
  - vii) Check, test or replace as necessary, all control and safety devices.
  - viii) Check and re-tighten any loose bolts and nuts in proper sequence.



b) For Primary Air Handling Unit

- i) Check condition of fan blower.
- ii) Check pulley alignment and adjust if necessary.
- iii) Lubrication motor bearing if necessary.
- iv) Check electrical, safety controls and control connection.
- v) Check and vacuum clean starter panel.

c) For Fan Coil Unit

- i) Clean air filter and air grille.
- ii) Check electrical, safety controls and control connection.
- iii) Check both temperatures and speed controls.
- iv) Check the condensate pipe, ensure no blockage and at proper fall level.
- v) To conduct chemical cleaning for the cooling coil.

d) For Electro

- i) Check and clean fire damper and repair if necessary.
- ii) Replace fusible link if necessary.
- iii) Issue ventilation certificate to Fire Services Department according to Building (Ventilation Systems) Regulations after completion of the above maintenance services.

- e) Equipment List of Chillers System at CIC - ZCP are as follow:
- i) 3 sets of Water-cooled Chillers Systems (Model: Trane, Taiwan).
  - ii) 4 sets of Chilled Water Pumps (Brand: DP)
  - iii) 2 sets of Condenser Water Pumps (Brand: DP)
  - iv) 2 sets of Cooling Towers (Brand: BAC)
  - v) 6 sets of Air Handling Units (Savier)
  - vi) 67 sets of Chilled Beams (Brand: Flakwoods)
  - vii) 1 set of Expansion Tank (Reflex)
  - viii) 10 sets of Ceiling Fans (Brand: Big ASS)
  - ix) 1 set of Propeller Fans (Brand: Gelec)
  - x) 3 sets of Centrifugal Fans (Brand: Nicotra)
  - xi) 14 sets of In-Line Centrifugal Fans (Brand: Ostberg/Nicotra)
  - xii) 6 sets of Motorized Volume Dampers (Brand: Aerotech)
  - xiii) 1 lot VAV boxes
  - xiv) 5 sets Daikin Split Type A/C outdoor and indoor units

10.1.14 For Combined Cooling, Heating and Power (CCHP) System **Monthly** Maintenance Procedure at CIC – ZCP

a) Absorption Chiller

- i) Check the refrigerant (condenser/cooling water) and oil level/colour.
- ii) Check and test the operation of control panel.
- iii) Check and test the operation of the chiller and record all items of chiller running record and make analysis.
- iv) Note undue noise and vibration.
- v) Inspect the motor and refrigerant pump operation.
- vi) Inspect all safety controls.
- vii) Recommend if any routine maintenance is required.
- viii) Report if any replacement of parts and repairs are required.
- ix) Clean the water cooled condenser once per year.
- x) Issue the renew pressure vessel license of air compressor and submission of document to Labour Department.
- xi) Replacement of Work for vee belt of air compressor once per year.

b) Chilled/Condenser Water Pump

- i) Inspect the general conditions of the unit.
- ii) Check the unit operation.
- iii) Check the pump and motor, report if excessive vibration is found.
- iv) Inspect the motor and pump coupling conditions.
- v) Measure the operation and comparing against design.
- vi) Record the operating amperes and voltage and comparing against design.
- vii) Inspect the seals and report condition.
- viii) Grease the pump and motor as necessary.
- ix) Report if any replacement of parts and repairs are required.
- x) Water pump shaft alignment for annual maintenance.

c) Cooling Tower

- i) Observe any abnormal noise vibration or overheating.
- ii) Secure fan blade, grille and mounting.
- iii) Lubricate bearing and all lub. Points.
- iv) Check all bleed-off valves inlet valves and outgoing valves whether in normal operation condition.

- v) Check and inspect the drive belt for excessive tension and re-adjust as required.
  - vi) Check drive and pulley for tightness and alignment.
  - vii) Inspect condition of electrical controls and associated devices.
  - viii) Record running amperes and compare against rated figures.
  - ix) Clean the condenser covers and inspect end sheets.
  - x) Submit monthly operation and maintenance records and reports.
  - xi) Replacement Work for vee belt of cooling tower once per year.
  - xii) Clean the water basis and fill per quarter maintenance.
- d) Water Treatment for Chilled Water System
- i) On site water quality testing, including submission of the lab report.
  - ii) Checking and adjusting treatment chemical dosage.
  - iii) Feeding treatment chemicals.
  - iv) Sampling for complete laboratory analysis and submit report.
  - v) Providing advice to your plant attendant for any adverse effect on system water.
- e) Heat Exchanger
- i) Inspect the general conditions of the unit.
  - ii) Observe any water leakage and blockage.
  - iii) Check and record the leaving/entering water temperature.
  - iv) Chemical cleansing of heat exchangers by using water circulating pump once per year.
- f) Ventilation System (Fire Damper)
- i) Clean and lubricating nuts of fire damper.
  - ii) Clean the rust and touch up the fire damper.
  - iii) Label checked date in access panel.
  - iv) Report the fire damper condition and state the improvement.
  - v) Issue the building ventilation certificate.

g) Bio-Diesel Generator Set System

- i) To visual check the conditions of diesel engine, alternator, starter, radiator, battery charger and batteries.
- ii) Check air filter, fuel filter and lubricant filter condition.
- iii) Check conditions of electrical connections, wiring, controls indicating lights exhausted system.
- iv) Rectify minor defects if found during inspection.
- v) Test run the generator at no-load condition if necessary.
- vi) Replace lubrication oil and lubrication oil filter.
- vii) Clean fuel/water separator.
- viii) Replace of fuel filter.
- ix) Submit Monthly Service Report.

10.1.15 Combined Cooling, Heating and Power System. Annually Maintenance Procedure at CIC - ZCP

- a) Carry out item a to item g as stated in “Monthly Services” in Section 10.1.15.
- b) Carry out functional check for ComAP Gen-set Control System, SCANIA Engine Control System and Bio-Diesel Supply Control System.
- c) Replace engine coolant.
- d) Test run the generator at building-load condition.
- e) To visual check and clean the surface of chimney economizer.
- f) Carry out PITC for WR2 regarding bio-diesel fuel tank.
- g) Renew D.G. license for the bio-diesel fuel tank.
- h) Submit Yearly Services Report.
- i) Recommend any consumables and parts shall be replaced.

10.2 Plumbing and Drainage System

10.2.1 Clear blocked trap and pipe of floor drain.  
(Diameter not exceeding 100mm)

10.2.2 Clear blocked trap and pipe of floor drain.  
(Diameter from 150mm to 300mm)

10.2.3 Clear blocked trap and pipe of urinal.

- 10.2.4 Clear blocked trap and pipe of W.C. bowl.
- 10.2.5 Clear blocked trap and pipe of wash basin.
- 10.2.6 Clear blocked manhole c/w drainage pipe.
- 10.2.7 Clear blocked manhole c/w drainage pipe by high pressure water jetting or other machinery.
- 10.2.8 Clear blocked flushing water supply pipe.  
(Diameter not exceeding 25mm)
- 10.2.9 Clear blocked flushing water supply pipe.  
(Pipe Diameter 32mm to 50mm)
- 10.2.10 Clear blocked strainer of fresh/ flushing water system. (Pipe Diameter not exceeding 50mm).
- 10.2.11 Clear blocked strainer of fresh/ flushing water system. (Pipe Diameter 75mm to 100mm).
- 10.2.12 Supply and install / replace PVC / UPVC/PE pipe c/w necessary accessories / fittings.
- 10.2.13 Supply and install / replace PVC / UPVC U-trap /socket / elbow / reduce / tee.
- 10.2.14 Supply and install / replace PVC / UPVC/PE ball / gate valve.
- 10.2.15 Supply and install / replace cast iron/ epoxy lined cast iron pipe c/w necessary accessories / fittings.
- 10.2.16 Supply and install / replace cast iron/epoxy lined cast iron pipe U-trap / socket / elbow / reduce / tee / other accessories.
- 10.2.17 Supply and install / replace copper pipe c/w necessary accessories.

- 10.2.18 Supply and install / replace copper U-trap / socket / elbow / reduce / tee / other accessories.
- 10.2.19 Supply and install / replace copper ball / gate valve/solenoid valve.
- 10.2.20 Supply and install / replace W.C. bowl c/w necessary piping, fittings and accessories.  
(Brand : American Standard, model : TF 3253PJ or equivalent)
- 10.2.21 Supply and install / replace W.C. bowl c/w necessary piping, fittings and accessories.  
(Brand : TOTO, model : CW822NJ or equivalent)
- 10.2.22 Supply and install / replace cistern c/w necessary piping, fittings and accessories.  
(Brand : American Standard, model : TF 3253PJ or equivalent)
- 10.2.23 Supply and install / replace cistern c/w necessary piping, fittings and accessories.  
(for Brand : TOTO, model : CW822NJ or equivalent)
- 10.2.24 Supply and install / replace seat cover of W.C. bowl, size and shape matching W.C. bowl.
- 10.2.25 Supply and install / replace cistern ball float valve complete set.
- 10.2.26 Supply and install / replace cistern siphon complete set.
- 10.2.27 Supply and install / replace cistern auto-siphon complete set.
- 10.2.28 Supply and install / replace angle valve c/w flexible pipe.
- 10.2.29 Supply and install / replace urinal c/w necessary piping, fittings and accessories.  
(Brand: American Standard, model : TF 412 or equivalent)
- 10.2.30 Supply and install / replace urinal c/w necessary piping, fittings and accessories.  
(Brand: American Standard, model : WP-6727.322.04 or equivalent)

- 10.2.31 Supply and install / replace wash basin c/w necessary piping, fittings and accessories.  
(Brand: American Standard, model : TF 0951 or equivalent)
- 10.2.32 Supply and install / replace wash basin c/w necessary piping, fittings and accessories.  
(Brand: American Standard, model : TF-470L Under Counter Basin or equivalent)
- 10.2.33 Supply and install / replace faucets with solar power sensor c/w necessary piping, fittings and accessories.  
(Brand: SLOAN, model : EFX-275.X0X.0X0X or equivalent)
- 10.2.34 Supply and install / replace faucet c/w necessary piping, fittings and accessories.  
(Brand: TOTO, model : TLNW32A; Grohe or equivalent)
- 10.2.35 Supply and install / replace urinal sensor c/w necessary piping, fittings and accessories.  
(Brand: SLOAN, model : ELG-130 or equivalent)
- 10.2.36 Supply and install / replace sensor c/w valve necessary piping, fittings and accessories.  
(Brand: TOTO, model : ELG-130 or equivalent)
- 10.2.37 Supply and install / replace WC sensor c/w valve necessary piping, fittings and accessories.  
(Brand: TOTO, model: DCE605Ue (Satin. Fin.) or equivalent)
- 10.2.38 Supply and install / replace water valve necessary piping, fittings and accessories.  
(for Items #10.2.36 or 10.2.37)
- 10.2.39 Supply and install / replace U-trap of basin.
- 10.2.40 Supply and install / repair leaking connection of W.C. bowl / urinal / cistern.
- 10.2.41 Supply and install / repair leaking connection of wash basin, plastic flexible pipe behind toilet bowl.



- 10.2.42 Conduct cleaning work for sewage tank by Suction truck on job basis upon request.
- 10.2.43 Supply and install/replace Flush Water Pump / Upfeed Pump/Pantry Sump Pump/Booster Pump c/w necessary accessories, pipe work/ power and control wiring reconnection.
- a) Flush water pump
  - b) Fresh water pump
  - c) Pantry Sump Pump (Pantry Sump Tank capacity up to 30 litres)
  - d) Booster Pump (Break Tanks capacity up to 500 litres)
- 10.2.44 Provide **Monthly / Quarterly** Maintenance Service of Plumbing and Drainage System.
- a) Carry out functional and operational test of pump control panels.
  - b) Check and test for leaks at the pumping system when the pumps are in operation.
  - c) Check and fix the leakage of mechanical seals and ensure that it is not run dry.
  - d) Test the performance of all pumps and pump motors and report on log sheet.
  - e) Check, record and adjust all pressure gauges and pressure switches.
  - f) Check and adjust the packing for pump, gate valves, non-return valves and globe valves for piping, ball float and ball valve for water tanks including cleansing of internal parts and replacement of O-ring, rubber parts or consumable parts if necessary.
  - g) Check and clean all starters, control panels and motors.

- h) Check and test general operation condition of the up-feed, booster and sump pumps (By means of manual operating pumps).
- i) Adjust all water pumps and valves packing.
- j) Check the condition of control gear including contacts, overload safety devices and control relays.
- k) Lubricate all motors, pumps, bearings according to manufacturer's recommendation.
- l) Carry out inspection and report any corrosion and rusting etc. of all equipment, pipework and pump room and reporting of defects, clean and repaint where necessary.
- m) Check and test all float switches and high / low levels warning switches inside all water tanks.
- n) Check for vibration caused by pump and motor sets, rectify the abnormal vibration where necessary.
- o) Clean and remove any stones, sand or foreign matters accumulated in strainers.
- p) Clear and cart away all rubbish arising during the execution of the work and to clear up the Site leaving all tidy.
- q) Carry out visual inspection to the plumbing systems, submit inspection and maintenance report (in designated forms and endorsed by licensed plumber) including necessary technical data for system defects.
- r) The Contractor shall appoint a competent person to carry out risk assessment and submit the Risk Assessment Report (RAR) for work in the confined space.

- s) Check, adjust and recharge the potable and flushing water air pressure vessels when necessary.
- t) The Contractor shall remove the waste out of the Site for all Works.
- u) Maintenance of Toilet Fitments
  - i) Check the toilet fitments in all male, female and disabled toilets including but not limited to cisterns, toilet bowls, toilet seat covers, urinals, urinal and toilet bowl sensors, washing basins, faucets and the associated pipe fittings connecting the toilet fitments.
  - ii) The Contractor shall remove the waste out of the Site for all Works.
  - iii) Submit checking reports and provide recommendation for repairing works within FOURTEEN (14) days after completion of the Works.

10.2.45 Provide **Quarterly / Half-yearly** Maintenance Services of Water Tank

- a) Carry out regular cleansing/testing of potable water tanks, flushing water tanks, sewage water tanks and associated Y-strainers, etc. and the Works shall be carried out in accordance with the Factory and Industrial Undertakings (confined spaces) Regulation. The Contractor shall remove the waste out of the Site for all Works.
- b) The Contractor is reminded that the cleansing of potable and flushing water tanks may not be arranged in the same day and the Contractor shall allow the cleansing work be carried in Weekdays, Saturdays, Sundays, Statutory Holidays or Public Holidays, subject to the CIC's representative direction.

10.2.46 Provide **Monthly / Bi-Monthly** Maintenance Services of Pantry Sump Tank

- a) Carry out regular cleansing / testing of sump tanks under sinks (about 20 Litres), sump pumps and associated parts. The Contractor shall remove the waste out of Site for all Works.

- b) The Contractor is reminded that the cleansing works shall be carried in Weekdays, Saturdays, Sundays, Statutory Holidays or Public Holidays, subject to the CIC's representative direction.

10.2.47 Provide **Monthly / Quarterly** Pouring of Urinal Acid

- a) Carry out regular and on-job basis cleaning services of urinals in all male toilets with urinal clean acid. The Works involves:-
  - i) Close the gate valves of flushing water supply to urinals;
  - ii) Pour 500ml urinal clean acid in each urinals in all toilets and wait for 10 minutes;
  - iii) Open the gate valves and rinse the urinals by flushing water;
  - iv) Brand of urinal clean acid: BioAqua;
  - v) The Works shall be completed in one day in each designated premises of the CIC; and
  - vi) Report with photos should be submitted within FOURTEEN (14) days after completion of the Works.

10.2.48 Provide the Logic Control Panel for the water pumps in water supply system in accordance with the latest Guidelines and CoP of EMSD

- a) Supply and install the electronic components and mechanical parts for Logic Control Panels;
- b) Cable wiring , T&C shall be complied with the latest Guidelines and CoP of EMSD; and
- c) Provide the WR1 after electrical installation works.

10.2.49 Provide Water quality test service and provide test report of fresh water, water dispenser by Certified HOKLAS laboratories in CIC premises.

- a) Provide water test report in accordance with WSD Circular Letter No. 10/2019 (latest version is required to comply)
- b) Provide water quality test services and test report of freshwater dispenser by certified HOKL laboratories for all CIC premises **in every half year**. All sampling protocol and commissioning test shall comply latest requirement of WSD for freshwater system.
- c) The acceptance criteria shall comply as below in accordance with latest WSD freshwater test parameters:

Table 1: Retesting Arrangement

Parameters	Scenarios		
	fail	pass	pass
Metal parameters	fail	pass	pass
Physical and Chemical parameters	pass or fail	fail	pass
Bacteriological parameters ( <i>E. coli</i> and Heterotrophic Plate Count (HPC))	pass or fail	pass	fail
<b>Parameters to be retested</b>	all parameters	all parameters other than metal	

Table 2: Acceptance Criteria

Parameter	Acceptance Criteria
<i>Chemical and Physical</i>	
Turbidity	≤ 3.0 NTU
Colour	≤ 5 Hazen Unit
pH at 25°C	≥ 6.5 and ≤ 9.2
Free Residual Chlorine	> 0 mg/L and ≤ 1.5 mg/L
Conductivity at 25°C	≤ 300 µS/cm
<i>Metals</i>	
Lead	≤ 10µg/L
Chromium	≤ 50µg/L
Nickel	≤ 70µg/L
Cadmium	≤ 3µg/L
Copper	≤ 2000µg/L
Antimony	≤ 20µg/L
<i>Bacteriological</i>	
HPC	≤ 20 cfu/mL
<i>E. coli</i>	0 cfu/100mL

#### 10.2.50 Greywater **Monthly** Maintenance Procedure at CIC - ZCP

- a) Collect water samples and send to the laboratory approved by the CIC for water sampling analysis;
- b) Water sampling shall include the below analysis: -
  - i) pH
  - ii) Suspended Solid (SS)
  - iii) Total Residual Chlorine (TRC)
  - iv) Biochemical Oxygen Demand (BOD)
  - v) E-coil
- c) Submit water sampling analysis report and provide remedial solution, if required, for those samples had exceed the operation parameters.

#### Equipment List for Greywater System at Lavatory 2 of CIC - ZCP

- a) 2 sets of Air Blowers
- b) 2 sets of Effluent Pumps
- c) 1 set of UV Disinfection System
- d) 1 set of Greywater Treatment System (Aqua2use GWTS1200)

- e) 1 set of Priming Tank (Capacity: 250L)
- f) 1 set of Transfer Tank (Capacity: 700L)
- g) 1 set of Prefilter
- h) 1 set of Prefilter Pump
- i) 1 set of Control Panel

Equipment List for Greywater System in Eco Café at CIC - ZCP

- a) 2 sets of Air Blowers
- b) 1 set of Influent Pump
- c) 2 sets of Effluent Pumps
- d) 1 set of UV Disinfection System
- e) 1 set of Greywater Treatment System (Aqua2use GWTS1200)
- f) 1 set of Priming Tank (Capacity: 250L)
- g) 1 set of Transfer Tank (Capacity: 700L)
- h) 1 set of Underground Cesspool (Capacity: 1,200L)
- i) 1 set of Prefilter
- j) 1 set of Prefilter Pump
- k) 1 set of Control Panel

10.2.51 Greywater **Bi-Monthly** Maintenance Procedure at CIC - ZCP

- a) Influent Pumps, Effluent Pumps, Permeate Pumps, Controls and Accessories
  - i) Check and inspect all pipe lines.
  - ii) Check motor ventilation hole free from blockage.
  - iii) Check pump shaft packing for leakage, adjust if required.
  - iv) Check vibration and abnormal noise, adjust if required.
  - v) Functional and operational test of control panel.
  - vi) Check electrical isolation and installation.
  - vii) Check and clean strainers.
  - viii) Grease and lubricate pipe fittings, valves, etc. if required.
  - ix) Check pipeline, valves and vibration joint for leakage, corrosion, distortion, etc.
  - x) Provide general cleaning to pump casing, shaft packing and all necessary accessories.
  - xi) Check the safety controls, if any.

- xii) Check conditions of pump starters including magnetic contactors, fuses, associated electrical control devices and wiring.
- xiii) Check all pressure switches to ensure that components are free of corrosion, securely mounted, and in working order.
- xiv) Perform functional and operational test of control panel.
- xv) Record pressure, voltage and ampere in operation.
- xvi) Check and record the effluent flowrate and to ensure the operation is within parameter, adjust if required.
- xvii) Submit monthly report of the above maintenance works to the CIC.

b) Grey Water Treatment System (Aqua2use GWTS1200)

- i) Check the condition and any leakage of the buffer tank and bio filtration tanks.
- ii) Check the function of all valves.
- iii) Carry out inspection and maintenance in accordance with manufacturer's recommendation.

c) Air Blower

- i) Check and inspect all pipe lines.
- ii) Check motor ventilation hole free from blockage for the air blowers.
- iii) Check vibration and abnormal noise for the air blowers and adjust, if required.
- iv) Functional and operational test of control panel.
- v) Check electrical isolation and installation.
- vi) Check the safety controls, if any.
- vii) Check conditions of air blower starters including magnetic contactors, fuses, associated electrical control devices and wiring.
- viii) Check all pressure switches to ensure that components are free of corrosion, securely mounted, and in working order.
- ix) Perform functional and operational test of control panel.
- x) Record voltage and ampere in operation for the air blowers.
- xi) Check and record the running noise level of the air blowers and to ensure they are working in operation parameter and adjust, if required.

d) Underground Cesspool, Priming Tank and Treated Water Transfer Tank

- i) Check and record the tank water level, adjust if required.
- ii) Check for any leakage of the priming tank and transfer tank.



iii) Check and operation function of the Priming Tank Influent Valve.

e) Prefilter

- i) Check and inspect the operation function of the prefilter pump.
- ii) Functional and operational test of control panel.
- iii) Check vibration and abnormal noise of the prefilter pump, adjust if required.
- iv) Check the safety controls, if any.
- v) Check conditions of pump starters including magnetic contactors, fuses, associated electrical control devices and wiring.
- vi) Perform functional and operational test of control panel.
- vii) Record voltage and ampere in operation.
- viii) Check for any leakage of the Prefilter box.
- ix) Check, record and clear away, if required, for the debris accumulated in the debris screen.

f) Accessories

- i) Check and inspect the operation function of UV lamps.
- ii) Check and inspect the change-over function of the UV lamps.
- iii) Check and inspect the operation function of the Ball Valves and adjust, if required.
- iv) Check and inspect the operation function of the Control Panel and adjust, if required.
- v) Check and inspect the operation function of the level sensor and adjust, if required.
- vi) Check and inspect the pH sensor and to ensure the pH level is within parameter and adjust, if required.
- vii) Check and inspect the EM Flowmeter and to record the flow reading.
- viii) Check, Inspect and collect sample for the permeate and to record the colour of the water sample.

10.2.52 Blackwater Sampling **Monthly** Services at CIC - ZCP

- a) Collect water samples and send to the laboratory approved by the CIC for water sampling analysis.
- b) Water sampling shall include the below analysis:
  - Suspended Solid (SS)
  - Total Residual Chlorine (TRC)

- Biochemical Oxygen Demand (BOD)
  - Chemical Oxygen Demand (COD)
  - Oil and Grease
  - Total Surfactants;
  - Nitrite + Nitrite Nitrogen
  - E-coil
- c) Submit water sampling analysis report and provide remedial solution, if required, for those samples had exceed the operation parameters.

Equipment List for Blackwater System at CIC - ZCP

- a) 2 sets of Air Blowers (Q: 0.21m<sup>3</sup>/min, H: 0.4bar)
- b) 2 sets of Influent Pumps (Q: 2.78 l/s, H: 10m)
- c) 2 sets of Effluent Pumps (Q: 2.78 l/s, H: 10m)
- d) 2 sets of Sludge Transfer Pumps (Q: 2.78 l/s, H: 10m)
- e) 2 sets of UV Disinfection Systems (P: 0.06kW, 0.28A, 220V)
- f) 1 set of Membrane Chamber
- g) 1 set of Equalization Tank (Capacity: 1,000L)
- h) 1 set of Electric Plug Valve
- i) 1 set of pH Adjustment System
- j) 1 set of Control Panel

10.2.53 Blackwater **Bi-Monthly** Maintenance Procedure at CIC - ZCP

- a) Influent Pumps, Effluent Pumps, Sludge Transfer Pump, Controls and Accessories
- i) Check and inspect all pipe lines.
  - ii) Check motor ventilation hole free from blockage.
  - iii) Check pump shaft packing for leakage, adjust if required.
  - iv) Check vibration and abnormal noise, adjust if required.
  - v) Functional and operational test of control panel.
  - vi) Check electrical isolation and installation.
  - vii) Check and clean strainers.
  - viii) Grease and lubricate pipe fittings, valves, etc. if required.
  - ix) Check pipeline, valves and vibration joint for leakage, corrosion and ampere.
  - x) Provide general cleaning to pump casing, shaft packing and all necessary accessories;
  - xi) Check the safety controls, if any.

- xii) Check conditions of pump starters including magnetic contactors, fuses, associated electrical control devices and wiring.
- xiii) Check all pressure switches to ensure that components are free of corrosion, securely mounted, and in working order.
- xiv) Perform functional and operational test of control panel.
- xv) Record pressure, voltage and ampere in operation.
- xvi) Submit monthly report of the above maintenance works to the CIC.

b) Equalization Tank

- i) Check and record the tank water level, adjust if required.
- ii) Check and record the sludge quantity accumulated on the screed and clearance of the accumulated sludge, if required.
- iii) Check and inspect the operation function of the chemical dosing pump.
- iv) Check and record the running parameter of the chemical dosing pump and to ensure it is working properly and adjust, if required.
- v) Check and record the control parameter of pH level and to adjust, if required.
- vi) Check and record the chemical dosing tank level and re-fill, if required (chemicals to be supplied by the CIC).

c) UV Disinfection System

- i) Check and inspect the operation function of UV lamps.
- ii) Check and inspect the change-over function of the UV lamps.
- iii) Check and inspect the operation function of the Actuated Plug Valve and to ensure the operation is within the pre-set parameter, if required.
- iv) Check and inspect the SMS automatic fault report function.
- v) Check and inspect the operation function of the PLC controller and adjust, if required.
- vi) Check and inspect the operation function of the ball valves status and adjust and cleaning of sludge, if required.
- vii) Check and inspect the operation function of the level sensor and adjust, if required.
- viii) Check and Inspect the pH sensor and to ensure the pH level is within parameter and adjust, if required.
- ix) Check and inspect the EM Flowmeter and to record the flow reading.
- x) Check, inspect and collect sample for the permeate and to record the colour of the water sample.

- xi) Record the effluent flow rate and to ensure the flow rate is within the pre-set parameter and adjust, if required.

10.2.54 Reclaimed Water **Monthly** Maintenance Procedure at CIC - ZCP

a) Laboratory Water Testing

- i) Collect water samples and send to the laboratory approved by Employer for water sampling analysis.
- ii) Submit water sampling analysis report and provide remedial solution, if required, for those samples had exceed the operation parameters.

10.2.55 Reclaimed Water **Quarterly** Maintenance at CIC - ZCP

a) Pumps, Filters, Controls and Accessories

- i) Check and inspect all pipe lines.
- ii) Check pump shaft packing for leakage, adjust if required.
- iii) Check vibration and abnormal noise, adjust if required.
- iv) Functional and operational test of control panel.
- v) Check electrical isolation and installation.
- vi) Check and clean strainers.
- vii) Grease and lubricate pipe fittings, valves, etc. if required.
- viii) Check pipeline, valves and vibration joint for leakage, corrosion, distortion, etc.
- ix) Provide general cleaning to pump casing, shaft packing and all necessary accessories.
- x) Check the safety controls, if any.
- xi) Check conditions of pump starters including magnetic contactors, fuses, associated electrical control devices and wiring.
- xii) Check all pressure switches to ensure that components are free of corrosion, securely mounted, and in working order.
- xiii) Perform functional and operational test of control panel.
- xiv) Record pressure, voltage and ampere in operation.
- xv) Submit report of the above maintenance works to the CIC.

b) Rain Water Tank

- i) Check and record the tank water level, adjust if required.
- ii) Check and record the sludge quantity accumulated on the screed and clearance of the accumulated sludge, if required.

- c) Chemical Dosing System
  - i) Check and inspect the operation function of the chemical dosing pump.
  - ii) Check and record the running parameter of the chemical dosing pump and to ensure it is working properly and adjust, if required.
  - iii) Check and record the control parameter of pH level and to adjust, if required.
  - iv) Check and record the chemical dosing tank level and re-fill, if required.
  
- d) UV Sterilization System
  - i) Check and inspect the operation function of UV lamps.
  - ii) Check and inspect the change-over function of the UV lamps.
  - iii) Check and inspect the operation function of the Actuated Plug Valve and to ensure the operation is within the pre-set parameter, if required.
  - iv) Check and inspect the operation function of the controller and adjust, if required.
  - v) Check and inspect the operation function of the ball valves status and adjust and cleaning of sludge, if required.
  - vi) Check and inspect the operation function of the level sensor and adjust, if required.
  - vii) Check and Inspect the pH sensor and to ensure the pH level is within parameter and adjust, if required.
  - viii) Check and inspect the EM Flowmeter and to record the flow reading.

10.2.56 Reclaimed Water **Annually** Maintenance at CIC - ZCP

- a) Rain Water Pumping System
  - i) Clean the pump filter.
  - ii) Submit report of the above maintenance works to the CIC.
  - iii) Replace the filter.
  
- b) Rain Water Tank
  - i) Clean the rain water tank (180,000L).
  
- c) Mixed Water Tank
  - i) Clean the mixed water tank (180,000L).
  
- d) UV Sterilizer
  - i) Clean the Quartz Sleeve.

e) Requirements of Reclaimed Water Quality

Parameter	Criteria
pH	6-9
Turbidity(deg)	$\leq 2$
BOD <sub>5</sub> (mg/L)	$\geq 1$
Cl <sub>2</sub> residual (mg/L)	$\geq 1$
Fecal Coliform (count/L)	0

f) Filter Maintenance

Description	Content	Maintenance Period
Outside surface of filter tank	Keep the environment around the housing shell clean and out of direct sun ray	Regularly
O-Ring	Leakage observation	<u>Replace when justified or when the sealing capacity of O-ring</u> lower.(when water droplet or dripping is detected of pressure abnormal
Filter Cartridge	Replacement (refer cartridge replacement procedures stated in individual manual)	When pressure drop above 35 psi When Outlet flow rate below the minimum production level
Performance Verification	Conduct water sample test to verify the performance of filter and re-set operation parameter when necessary	At least Quarterly (Monthly test will be conducted)

10.2.57 Chemical Dosing for Cooling Towers **Bi-Weekly** Maintenance at CIC - ZCP

a) Contractor shall refer to Code of Practice for Fresh Water Cooling Towers,

Part 2 and Part 3 and Code of Practice for Prevention of Legionnaires Disease (2016 Edition) but not limited to all the above said. The work shall compliance to all the regulation stated by the Hong Kong government, for cleaning and maintenance of cooling towers, and testing the standard of fresh water for condensing water in cooling tower system.

- b) Contractor shall carry out all sampling testing by an accredited laboratory including monthly testing of heterotrophic colony count and quarterly testing of total legionella count. The report shall submit to the CIC for record. Contractor shall also prepare the EMSD EE CT3 for the CIC submission.
- c) Visual check for any abnormal operation or condition of the cooling tower water system such as overflow, excess drift, biological growth contamination (e.g. algae) and etc,
- d) Check the water quality and treatment chemicals' concentration.
- e) Chemical refill according to the water consumption of the system.
- f) Slug dose bio-dispersal and biocide.
- g) Check and calibrate the NALCO 3D TRASAR Controller and sensors.
- h) Adjust the settings on MALCO 3D TRASAR Controller to cope with the change of the system water quality and to enhance water treatment result.
- i) Clean and calibrate the instrumentation sensors on NALCO 30 TRASAR Controller. **(Monthly)**
- j) Check for normal operation of chemical dosing pumps, control panel and auxiliary equipment. **(Monthly)**
- k) Slug dose bio-dispersal and biocide. **(Bi-weekly)**
- l) Inform to the plant-in-charge for any advice on the system water quality. **(Bi-weekly)**
- m) Collect samples oi cooling tower water **(Monthly)** incl bleed-off water

**(Quarterly)** for complete water analysis.

- n) Issue fully water analysis report with recommendation to consultant and engineer. **(Monthly)**
- o) Collect water samples for testing of legionella bacteria **(Quarterly)**
- p) Carry out on-line disinfection when legionella count is detected as  $\geq 10$  cfu/ml and  $< 1,000$  cfu/ml; or TBC test result is  $\geq 100,000$ cfu/ml and  $< 5,000,000$  cfu/ml.
- q) Carry out cleaning, desludging and disinfection programme. **(Half-Yearly)**

r) Cooling Tower Water Quality Requirements

Parameters	Recommended Range	Bi-weekly Check	Monthly Lab Report	Testing Method
pH Value	7.0-8.5	✓	✓	US EPA 9045 C
Suspended Solids	<180ppm		✓	APHA 2540 D
Conductivity	<1500 $\mu$ S/cm	✓	✓	APHA 2540 C
Total Dissolved Solid	<1500ppm	✓	✓	APHA 2540 C
Total Hardness	<500ppm	✓	✓	APHA 2340 C
Total Iron	<1.0mg/l		✓	'MN' Test Kit #914017
Sulphate	<200mg/l		✓	'MN' Test Kit #914034
Total Copper	<0.2mg/l			'MN' Test Kit #914034
Chlorides	<200mg/l	✓	✓	PALINTEST' Test Kit DC 534



Parameters	Recommended Range	Bi-weekly Check	Monthly Lab Report	Testing Method
BOD5	<200ppm		✓	APHA 5210 B
COD	<500ppm		✓	APHA 5220 D / in House Method Hach
NALCO 3DT 229	50ml/m3 product	Continuous monitoring by NALCO 3D TRASAR 5500 Controller		Trasar Pen
NALCO STABREX ST70	Keep 0.3-1 ppm as free residual chlorine	Continuous monitoring by NALCO 3D TRASAR 5500 Controller		Test Kit
NALCO 7330	100 ml/m3 as product sho dose by Bi-Weekly	✓	✓	Test Kit
Total Bacteria Count	<10 <sup>5</sup> cfu/ml		✓	APHA 9215 B
Legionella Bacteria Testing (Quarterly)	No detected	Quarterly Tested		AS/NZ 3896

s) Bleed-Water Quality Requirements

Parameters	Quarterly Check	On site Check	Quarterly Lab Check	Testing Method
Water Temp	✓			By Thermometer
BOD			✓	APHA 5210B
COD			✓	APHA 5220D/in House HACH
Suspended Solids			✓	APHA 2540D
Dissolved	✓		✓	APHA 4511OG

Parameters	Quarterly Check	On site Check	Quarterly Lab Check	Testing Method
Oxygen				
<u>Ammonical N</u>			✓	APHA 4500NH
Threshold Odour No			✓	APHA 2150B
Colour			✓	APHA 2120B
Turbidity			✓	APHA 2130B
Synthetic Detergents			✓	APHA 5540, B,C,D
“E Coil”			✓	DoE Section 7.8 & 7.9plus in-sit urease test
Corrosion inhibitors	✓			Test Kit
Biocides Concentration	✓			Test Kit
Scale inhibitor			✓	Test Kit

- t) Legionella bacteria testing shall be carried out **Quarterly**. Analytical method is AS3896 (AS = Australia Standard) and the practical quantitation limit is 10cfu/ml.
- u) APHA-American Public Health Association, American Water Works Association and Water Environment Federation, Standard Methods for the Examination of Water and Wastewater. APA-AWWA-NEF, USA
- v) The testing of total bacterial count, legionella bacteria and E. coli shall be carried out by our appointed laboratory which is accredited by Hong Kong Laboratory Accreditation Scheme.
- w) DoE: Department of the Environment (1994), the Microbiology of Water Part I, Drinking Water, UK.

10.2.58 Chemical Dosing for Chilled Water System **Bi-Weekly** Maintenance at CIC - ZCP

- a) Onsite testing of system water quality.
- b) Check for normal operation of dosing equipment if installed.
- c) Rectify system water quality to the control range if necessary.
- d) Refill chemical if necessary.
- e) Adjust chemical if necessary.
- f) Collect water samples for complete analysis.
- g) Advise plane attendants on treatment programme.
- h) Issue water analysis report on a **Monthly** basis.
- i) Chilled Water Quality Requirements

Parameters	Control Range	Testing Method
pH Value	8.0-9.5	US EPA 9045 C
Turbidity (F TU Scale)	<10 units	APHA 2130 B
Total Dissolved Solids	<2000 ppm	I APHA 2540 C
Total Iron Increment	<1.0 ppm	'MN' Test Kit #914017
Total Copper Increment	<0.1 ppm	'MN' Test Kit #914034
Total Bacterial Count	<10 npml	APHA 9215 B
Chlorides	<100 ppm	PALINTEST' Test Kit DC534
CT 400 (nitrite)	400-600ppm	'MN' Test Kit #91311

10.2.59 Provide **Monthly / Quarterly** Cleaning Works of Grease Trap in accordance with the latest Guidelines and CoPs of EPD and FEHD

- a) Clean the grease traps by vacuum tanker vehicle and / or appropriate equipment and dispose the waste properly to the location approved by Environment Protection Department.
- b) Vacuum water out of the interceptor, clean the sides and bottom of the interceptor. This may be done by “back flowing” the water from the pump truck or by using other equipment. Make sure the interceptor is completely clean.
- c) Make good, remedial, touch up painting and, etc. to resume the areas to original condition which affected by the Works, if any.
- d) Clear all debris, remove the waste out of the Site and clean up after the Works.

10.2.60 Provide Cleaning Works of Kitchen Exhaust System

- a) Carry out periodic cleaning services for the kitchen exhaust system and devices including the exhaust hood, grease filters, water scrubber, electrostatic precipitator (“E.P.”) and the associated parts and accessories in accordance with the table below:

Location	Equipment
Kowloon Bay Campus	2 nos. of water scrubbers (for 4 stoves each)
Sheung Shui Campus	1 no. of water scrubber (for 3 stoves)
	2 nos. of water scrubbers (for 4 stoves each)

	2 nos. of E.P. c/w 2 sets of ventilation fan
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10.2.61 Provide **Bi-monthly** Cleaning Works of for Cement/ Sand Sedimentation Pit of Waste Water Drainage System

- a) Clean the pit by vacuum sewage extraction vehicle and / or appropriate equipment and dispose the waste properly to the location approved by Environment Protection Department.
- b) Make good, remedial, touch up painting and, etc. to resume the areas to original condition which affected by the Works, if any.
- c) Clear all debris, remove the waste out of the Site and clean up after the Works.

10.2.62 Engineer Inspection for Slopes

The Contractor shall provide a Registered Professional Engineer (RPE) (Geotechnical) to carry out Engineer Inspections (EI), prepare and submit EI report endorsed by RPE(Geotechnical) and updating of Maintenance Manual in accordance with the scope set out in Geoguide 5, Guide to Slope Maintenance Works (latest version), issued by the Geotechnical Engineering Office (GEO), Civil Engineering and Development Department, Hong Kong for the following features (Details shall refer to Annex 8 of this Assignment Brief): -

- (i) 7SW-C/C72(2) at KCC
- (ii) 7SW-C/F195(1) at KCC
- (iii) 11SW-D/CR65 at TTC

The Contractor shall provide temporary access, platform and all necessary methodology for access to carry out the Engineer Inspection for slopes.

### 10.3 **Indoor Air Quality (IAQ) Measurement**

#### 10.3.1 **Proved **Annually** IAQ Test and Certificate Renewal in accordance with the latest guidelines and CoPs of EPD**

- a) Conduct a walkthrough inspection and sampling collection, etc.
- b) Conduct IAQ measurement, laboratory analysis, and diagnosis and certification report submission with recommendation in accordance with the IAQ Certification Scheme.
- c) Issuance of “Certificate of Indoor Air Quality for Offices and Public Places” by approved IAQ Signatory.

Location	Measuring Points and Area
The CIC Headquarter (HQ)	1) 38/F Office, 168m <sup>2</sup> 2) 38/F Office, 26.7m <sup>2</sup> 3) 38/F Meeting Room 2, 39m <sup>2</sup> 4) 38/F Office, 133.7m <sup>2</sup> 5) 38/F Office, 24m <sup>2</sup> 6) 38/F Office, 104m <sup>2</sup> 7) 38/F Pantry, 59m <sup>2</sup> 8) 38/F Reception, 33m <sup>2</sup> 9) 39/F Meeting Room 6, 28.4m <sup>2</sup> 10) 39/F Hot Desk, 52.5m <sup>2</sup> 11) 39/F Office, 109.2m <sup>2</sup> 12) 22/F Office, 255.0m <sup>2</sup>
Hong Kong Construction Industry Trade Testing Centre (TTC)	1) L5 Service Counter, 13m <sup>2</sup> 2) L5 Written Test Room 3, 8.7m <sup>2</sup> 3) L5 Conference Room, 29.2m <sup>2</sup> 4) L7 Reception, 37.5m <sup>2</sup> 5) L7 Meeting Room 1, 19m <sup>2</sup> 6) L7 Office Area, 949.5m <sup>2</sup>

Location	Measuring Points and Area
The CIC Mega Box Office (MBO)	1) 29/F Multi-purpose Area, 65m <sup>2</sup> 2) 29/F BIM Lab, 80.2m <sup>2</sup> 3) 29/F Meeting Room 6, 19.2m <sup>2</sup> 4) 29/F Open Office Area, 234m <sup>2</sup> 5) 29/F Open Office Area, 200m <sup>2</sup> 6) 29/F Board Room, 143.6m <sup>2</sup> 7) 29/F Office Room 1, 24.4m <sup>2</sup> 8) 29/F Office Room 2, 24.3m <sup>2</sup>
CIC - Zero Carbon Park (CIC – ZCP)	1) G/F Office 1, 324.6m <sup>2</sup> 2) G/F Office 2, 228m <sup>2</sup> 3) G/F Conference Room 1, 54m <sup>2</sup> 4) G/F Conference Room 2, 54m <sup>2</sup> 5) 1/F Office, 233m <sup>2</sup> 6) 1/F Bedroom, 67.5m <sup>2</sup>
Kowloon Bay Campus (KBC)	1) 1/F Office, 1,000m <sup>2</sup> 2) 4/F Office, 342m <sup>2</sup> and 4/F Meeting Room, 63m <sup>2</sup>
Sheung Shui Campus (SSC)	1) 7/F Office, 210m <sup>2</sup>
Kwai Chung Campus (KCC)	1) 7/F Office, 425m <sup>2</sup>

#### 10.4 **Electrical System**

10.4.1 Provide WR2 inspection work/ service/ testing in compliance with statutory requirements.

- a) Provide competent persons, certified workers, materials, safety equipment, and tools to provide WR2 inspection work/service/inspection.
- b) The Periodic Test Certificate (Form WR2) shall be submitted to EMSD for endorsement within 2 weeks of the date of certification.

- c) The Contractor is reminded that the work/service/inspection shall be carried in after office hours (23:00 to 06:00) of Weekdays, Saturdays, Sundays, or Statutory Holiday and Public Holidays, subject to the CIC's representative direction.
- 10.4.2 Supply and install/replace/repair the Electrical System as described in Appendix A – Schedule 2 (Attachment 2 - Schedule of Rates) for Repair and Maintenance Works
- 10.4.3 Schematic Diagrams of the CIC premises shall refer to Annex 4 for details.
- 10.4.4 Provide **Quarterly** Inspection and Maintenance for ECO Light at CIC - ZCP
- a) Check and inspect all equipment of ECO Lighting System including but not limited to PV panels, solar cells. Solar charge controller, hybrid control, inverters, timers, Wall washers Light, Point Light and Street Light and Fittings to ensure that they are working properly.
  - b) Check for any visible damages of PV panels and all panels are properly fixed, re-fix if loosen panel fixing is found.
  - c) Check for any visible broken, damages or discoloured solar cells.
  - d) Check the operation and function of the solar charger controller and hybrid control.
  - e) Check for any damages and leakage of the battery and record the battery level.
  - f) Check for any loosen of electrical connection and power cables and re-fix its loosen connection found.
  - g) Check the operation and function test for all inverters and timers to ensure they are properly fixed and with warning label provided, re-fix or re-label for any loosen fixing or mixing labels.
  - h) Check all exposed parts are properly earthed and re-fixe for any loosen or



- mixing equipotential bonding wires.
- i) Check and dust clean the AC distribution board inside switch room and to check all the labeling are properly fixed and re-fixed for any loosen of mixing label.
  - j) Check and dust clean the MCB board inside switch room and to check all the labeling are properly fixed and re-fixed for any loosen of mixing label.
  - k) Check for any damages of all lighting fittings and function test of all lighting fittings level.
  - l) Check and record of operation parameters of the whole ECO lighting system including running voltage and current, etc.
  - m) Repairing and replacement works.

#### Equipment List of ECO lighting

Equipment	Brand & Model No.	Quantity (Nos.)
<b>Point Light and Wall Washer Light System</b>		
PV panels	Peak Power Output: 225V	12
Solar Charge Controller	MPPT/ET6415BND)	1
Battery	Guangzhou Hailin NP12-250 (12V/250AH)	8
Inverter	Geoprotek/GSH3048	1
Timer	ANLY/APT-6S	2
LED Point Light	AC220V/3W IP65 Blue	225
LED Wall Washer	AC220V/18W IP65 CCT@3000K	25
<b>Solar Street Light System</b>		
Solar Panels	SYK150-18P	4
Hybrid Control	Hailin Electronic/EPRC-G	4
Battery	Guangzhou Hailin NP12-250 (12V/250AH)	4
LED lamp	DC12V/124V IP65 156W IP65/CCT@4500K	4
Control Panels		1 Lot

10.4.5 Provide **Quarterly** Inspection and Maintenance Works for Barrier Gate at CIC - ZCP

- a) Check and inspect all of appliances and components (Fadini, Model: AYT980).
- b) Functional test of all card reader and ensure the system in proper condition.
- c) Check and inspect the functions of gates, and adjust it if necessary.
- d) Check and inspect the barrier gate control panel appliances, and ensure the whole system is in proper operations.
- e) Check and clean the gate system.
- f) Check and test the system receiving condition, and adjust the system if necessary.
- g) Check and add lubricating oil to all movable and fixed mechanical appliances' joint (Door closer. Motor, bearing, floor hinge, pulley, chain, etc. if necessary; Check and tighten all joints of cable wire appliances, and screw and the other parts; Check and test whether the whole system is in proper operation.
- h) Check the fuses, and replace if necessary. The material cost and labour cost are included in the maintenance fee.
- i) Check whether the motors are in proper operation. To notify the facility manager immediately if any water damage or mechanical fault is found.

10.4.6 Supply and install / replace outdoor universal electric vehicle charger c/w necessary power connection, accessories, fittings (with 1 year defect liability period)

Brand: StarCharge (Shun Hing Electric Service Centre Ltd.)

Model : Arc 22 or equivalent; 3-phase 7.4kW ~ 22kW/32A max.



Brand: EV Power (Hong Kong EV Power Limited)

Model : EVC-32NTK or equivalent; 3-phase 21kW/32A max.



Brand: Skytec (Skytech Technology Company Limited)

Model : SKYTEC Smart EV charger or equivalent; 1-phase 32A 7.2KW or 3-phase 32A 22KW EV charger



**Part 2 – Emergency Call-Out Services and Minor Repair Works**  
**(Rate-only items upon request by the CIC)**

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10.5     Electrical System

10.5.1   Supply competent workers, tools and equipment to carry out Emergency Call Out Services and Minor Repair Works for the Electrical System. The Contractor shall arrive to the Site within 2 hours upon request received.

- a)   Supply of Grade A Registered Electrical Worker
  
- b)   Supply of Grade B Registered Electrical Worker
  
- c)   Supply of Grade C Registered Electrical Worker
  
- (i)   Period I:   Monday to Saturday from 08:30 to 18:30 (excluded Sunday, Public Holiday and Statutory Holiday)
  
- (ii)   Period II:   Monday to Saturday from 18:31 to 08:29 next day (excluded Sunday, Public Holiday and Statutory Holiday) counted from commencement of the Works
  
- (iii)   Period III:   Sunday, Public Holiday and Statutory Holiday from 08:30 to 18:30
  
- (iv)   Period IV:   Sunday, Public Holiday and Statutory Holiday from 18:31 to 08:29 next day

10.6     Air-conditioning System

10.6.1   Supply competent workers, tools and equipment to carry out Emergency Call Out Services and Minor Repair Works for Air-conditioning System. The Contractor shall arrive to the Site within 2 hours upon request received.

- a)   Supply competent worker.
  
- (i)   Period I:   Monday to Saturday from 08:30 to 18:30 excluded Sunday, Public Holiday and Statutory Holiday

- (ii) Period II: Monday to Saturday from 18:31 to 08:29 next day (excluded Sunday, Public Holiday and Statutory Holiday) counted from commencement of the Works
- (iii) Period III: Sunday, Public Holiday and Statutory Holiday from 08:30 to 18:30
- (iv) Period IV: Sunday, Public Holiday and Statutory Holiday from 18:31 to 08:29

10.7 Plumbing & Drainage System

10.7.1 Supply, competent workers, tools and equipment to carry out Emergency Call-Out Services and Minor Repair Works for the Plumbing & Drainage System. The Contractor shall arrive to the Site within 4 hours upon request received.

a) Supply competent worker.

- (i) Period I: Monday to Saturday from 08:30 to 18:30 (excluded Sunday, Public Holiday and Statutory Holiday)
- (ii) Period II: Monday to Saturday from 18:31 to 08:29 next day (excluded Sunday, Public Holiday and Statutory Holiday) counted from the work commence
- (iii) Period III: Sunday, Public Holiday and Statutory Holiday from 08:30 to 18:30
- (iv) Period IV: Sunday & Statutory Holiday from 18:31 to 08:29 next day

## **11. Technical Specification (Builder's Works)**

The Contractor shall be responsible for the provision of management, supervision, competent mechanics, certified & registered workers, trained technicians, materials, tools, transportation, ladder/working platform/scaffolding and all necessary equipment to undertake the Works as listed below during the Contract Period.

### **11.1 Minor Demolition Works**

- 11.1.1 Provide tools, materials and labour to dismantle and cart away concrete or other building materials and wastes including all block walls, partitions, fittings, finishes, building services, etc. within the premise including sufficient protective measures, working platform, temporary support, warning notices, etc.
- 11.1.2 The Works may be required to carrying out at night time subject to the CIC's instruction.

### **11.2 Concrete Bricks / Blocks Works**

- 11.2.1 Concrete bricks and blocks shall comply with BS EN 772-2:1998, BS EN 771-3:2003. The average compressive strength of a random selected sample of 10 bricks or blocks shall be not less than 7.0 MPa. Concrete blocks shall be of the thickness specified and other dimensions as approved by the CIC. Concrete bricks or blocks for fair faced work shall be selected for evenness, texture and sharpness of arris.
- 11.2.2 Fire resisting lightweight concrete block walling shall be bedded and pointed in fireproof mortar

### **11.3 Concrete Works**

- 11.3.1 All concrete works shall include:-
  - (a) Mobilization, maintenance and demobilization of concrete mixer, crane, hoist, concrete pump, vibrator and other plant necessary for the Works.
  - (b) Conveying, lowering, hoisting, pumping, placing in position, compacting with vibrator, curing and protection.
  - (c) Formwork to sides or edges of plain concrete.

- (d) Construction joints including formwork, water bars and waterstops.
- (e) Laying beds level or to falls, and laying beds or slabs in alternative bays including necessary formwork to joints between bays.
- (f) Finishing surfaces level or to falls, currents and cambers as required.
- (g) Casting kickers monolithically with base slab where these are required at base of walls and columns.
- (h) Forming all necessary sinkings in or hand packing of hardcore.
- (i) Forming or cutting all chases, grooves, notches, rebates, mortices, holes, grouting in ends with cement mortar including making good to match existing.
- (j) Forming all angles, ends, junctions, intersections, outlets and similar labours to curbs, channels and the like.
- (k) Casting in, building in and grouting in work to concrete inserts, puddle flanges, water stops, ducts and pipes, bolts and cramps, dowels, baluster ends and the like and making good.
- (l) Submission of samples and testing of materials before trial mix or making concrete for use in the works.
- (m) Carrying out trial mixes, sampling and testing on the same.
- (n) Carrying out tests including making concrete cubes and testing on the same including all necessary security handling of concrete cube.
- (o) Sampling of fresh concrete and finished concrete including taking core samples as required from the finished concrete works and tests on the same including all necessary security handling of core samples.
- (p) Filling core hole, tie bar holes with cement mortar or concrete of same strength to the parent concrete and making good.
- (q) Erecting, maintaining and removing formwork or falsework as required.
- (r) Additional volume of concrete for filling over-break or working space.
- (s) Recording and submitting records for ready-mixed concrete.
- (t) Submitting details of mix design.
- (u) Control of alkali-aggregate reaction in concrete.
- (v) Use of recycled aggregate and/or recycled water in concrete, when required.
- (w) Erecting, maintaining and removing formwork or falsework as required.
- (x) Additional volume of concrete for filling over-break or working space.

#### **11.4 Concrete Repair Works (Concrete Spalling Repair Works)**

- 11.4.1 The Contractor shall mark out the areas of repair.
- 11.4.1.1 Apart from the areas marked out or approved by the CIC, no other areas shall be repaired/breakout without the written consent of the CIC.
- 11.4.2 Breaking out and preparation of concrete substrate
- 11.4.2.1 Where directed by the CIC, the perimeter of the patch area shall be cut back by saw cutting. No saw cutting shall be allowed without the approval of the CIC. Damage to existing reinforcement (especially where embedded in existing concrete) and to adjacent elements of the building shall be minimized. The exposed concrete surfaces against which repair mortar on concrete is to be placed shall be roughened to expose the aggregate and to remove all loose materials. Adequate shoring and propping shall be provided by the contractor when required by the CIC.
- 11.4.3 Preparation of reinforcement
- 11.4.3.1 Replacement reinforcement shall be clean to the same standard as specified for the remaining reinforcement unless otherwise directed by the CIC All weld slag shall be removed by hammer and chisel. After breaking out and preparation of reinforcement, the reinforcement and concrete substrate shall be brushed with a dry brush to remove all loose dust and dirt.
- 11.4.4 Request for inspection of works
- 11.4.4.1 Immediately after completion of breaking out, preparation of concrete substrate and reinforcement, the Contractor shall submit notice in good time to the CIC for approval of workmanship. The submitted notice shall also serve as Record of Repairs.
- 11.4.4.2 Upon receipt of the notice, the CIC shall inspect the workmanship of all the patches concerned and give instructions for further improvement of workmanship, if any, or give approval to proceed with the application of primer, bond coat, repair mortar and curing agent, if any.
- 11.4.5 Prime coat for reinforcement



- 11.4.5.1 The reinforcement shall be primed as soon as possible for cleaning. The reinforcement shall be free from moisture, rust, oil and other contamination before priming. If the reinforcement does not so conform then cleaning should be repeated at the contractor's own expense.
- 11.4.5.2 Primer shall be applied in strict accordance with the manufacturer's instructions.
- .
- 11.4.6 Bond coat for concrete substrate
- 10.4.6.1 Bond coats shall be applied to the concrete substrate and the primed reinforcement as soon as possible after the reinforcement primer has cured sufficiently as specified in the manufacturer's instructions. 100% coverage shall be achieved but care shall be taken to avoid covering too large an area at any one time to ensure the repair material is applied during the open time of the bond coat.
- 11.4.6.2 The concrete surfaces to which the bond coat are to be applied shall be thoroughly wetted down for about 20 minutes to achieve saturation, except for epoxy based bond coat.
- 11.4.6.3 The bond coat shall be applied in strict accordance with the manufacturer's instructions.
- 11.4.7 Batching and mixing of repair mortar
- 11.4.7.1 Dry mixing ingredients for repair mortar shall be weight batched, unless exceptional approval for volume batching is given by the CIC. Liquid ingredients shall be volume batched or separately weight batched.
- 11.4.7.2 Mixing shall be carried out in an approved mechanical pan mixer with means to provide folding and tumbling of the constituents materials in accordance with the manufacturer's instructions so that all constituent materials are uniformly dispersed throughout the mixture.
- 11.4.8 Application of repair mortar
- 11.4.8.1 Repair mortar shall be placed so as to produce a dense homogeneous mass and to avoid sags. Where voids are found in repair mortar, none of them shall have:
  - (a) for void immediately adjacent to the reinforcement:-
    - (i) any linear dimension greater than 3mm measured away from the reinforcement;

- (ii) any linear dimension greater than 6mm measured along or around the reinforcement provided that primer has been properly applied; and
  - (iii) the product of all 3 linear dimensions greater than 27 mm<sup>3</sup>.
- (b) for void at any other location:-
  - (i) any linear dimension greater than 20mm;
  - (ii) the product of any 2 linear dimension greater than 200 mm<sup>2</sup>; and
  - (iii) the product of all 3 linear dimensions greater than 800 mm<sup>3</sup>
- 11.4.8.2 The repair mortar shall be placed in thickness not less than 10mm unless otherwise recommended by the manufacturer and approved by the CIC. Particular care shall be taken to avoid voids behind the reinforcements.
- 11.4.8.3 Where more than one coat of repair mortar is to be applied, the timing of surface preparation to former coat and application of new coat shall be in accordance with the manufacturer's specifications.
- 11.4.8.4 Where practical, soffits board or side form shall be used. Cover to reinforcement of at least 10mm shall be provided. Displace bars shall be tied back to achieve the specified cover.
- 11.4.9 Curing of repair mortar
- 11.4.9.1 The repair shall be properly cured by the method as recommended by the manufacturer of the approved Repair Mortar System.
- 11.4.10 Chemical injection
- 11.4.10.1 The repair materials shall be of a single or low number of components. The contractor shall submit evidence of previous track records, test reports and manufacturers' recommendations in relation to his proposed repair materials for approval.
- 11.4.10.2 Adequate and proper precaution shall be taken to ensure that carrying out of the entire water seepage repair work is under strict procedural steps as recommended by the manufacturer. Proper protective clothing and device for eyes protection shall be used and the safety procedures as laid down by the Labour Department shall also be followed.
- 11.4.10.3 Repair of water leakage to external wall by chemical injection shall be in the following sequences and manners: -
  - (a) Identify the wet patches and potential infiltration areas;
    - (i) Submit a method statement for the sealing infiltration including surface preparation;

- (ii) touching/painting finishes for approval prior to commencement of work;
  - (iii) Clean the affected areas contaminated by deposits of dirt, dust, lime, salt or other contaminants;
  - (iv) Flush the affected area with water and/or brush with wire brush prior to chemical injection/ grouting;
  - (v) Drill injection nipples at suitable intervals (say every 300mm max.) along the crack, secured and cover the nipples and the crack between the pipes with epoxy putty;
  - (vi) Inject approved materials into nipples by injection pump strictly in accordance with the manufacturer's recommendation; and
  - (vii) Upon completion of grouting/injection, remove the nipples and re-paint the repaired and affected areas to match with existing.
- (b) The approved injection/grouting materials by the CIC shall have the following properties: -
- (i) A polyurethane resin or foam/gel chemical waterproofing grout or equivalent.
  - (ii) Be capable to react with potable water and/or seawater to form a polyurethane foam to fill-up cracks for waterproofing.
  - (iii) Be capable to resist weathering, abrasion and chemicals (i.e. organic solvents, mild acids, alkali and micro-organisms).
  - (iv) The polyurethane resin should be able to penetrate the width of hairline crack/joint of smaller than 0.5mm with high-pressure and width of greater than 0.5mm with low pressure.
  - (v) It should have an approximate pH value in between 3 to 12.
  - (vi) It should be non-flammable.
  - (vii) The resin should be of light colour transparent liquid and can be painted upon.
  - (viii) Having a density of approximate 1 kg/litre.
  - (ix) Insoluble in water.
  - (x) Stable and good for storage in the original resealable container at room temperature for one year.
  - (xi) Not be affected by freezing and thawing.
  - (xii) High Flash Point at approximate 166oC.

(xiii)Non-Toxic.

## **11.5**      **Wall Tiling**

11.5.1      Internal wall tiling shall comply with BS 5385:Pt.1:2009, external 5385:Pt. 2:2006.

11.5.1.1      Ceramic wall tiles

- (a) All tiles and tile fitting shall comply with the following BS EN 14411:2006:-
- (b) All tiles shall be true and even on face and of even thickness throughout. Unless otherwise specified, the thickness for the floor tiles shall be 7mm min.
- (c) All tiles shall have cushion edges and the ability of being cut and mitred.
- (d) The backs of the tiles shall be formed with a bond undercut key sufficient to ensure a good grip of the fixing medium. The projection of key shall be 0.6mm min.
- (e) Permissible maximum deviations for the tiles shall be as follows:-
  - (i) Tile facial size: the range of deviations in the size I individual consignment shall not exceed 0.5%.
  - (ii) Thickness: variation of individual size from the average value for the batch shall not exceed 0.3mm.
  - (iii) Tile fitting: the range of deviations in the sizes.

11.5.1.2      Mosaic Tiles

- (a) Glass mosaic tiles shall be fully vitrified glass tiles free from cracks or sharp edges and shall be uniform in colour and texture. The tiles shall be 20 mm x 20 mm x 4 mm thick and shall be regular in shape.
- (b) Glazed ceramic mosaic tiles shall be free from cracks or sharp edges and shall be uniform in colour and texture. The tiles shall be 18 mm x 18 mm x 5 mm thick or 25 mm x 25 mm x 5 mm thick and shall be regular in shape with square edges.
- (c) Unglazed vitreous mosaic tiles shall have a water absorption not exceeding 3% and shall be 20 mm x 20 mm or 50 mm x 50 mm and shall be respectively 4 mm or 5 mm thick with matching coved tiles.

11.5.1.3      Homogenous coved tile skirting

- (a) Homogenous coved tile skirting shall comply with BS EN ISO 10545-2:1997, BS EN ISO 10545-3:1997, BS EN ISO 10545-6:1997, BS EN ISO 10545-8:1996, BS EN ISO 10545-13:1997.

11.5.1.4 Homogenous wall tiles

- (a) Homogenous wall tiles shall comply with BS EN ISO 10545-2:1997, BS EN ISO 10545-3:1997, BS EN ISO 10545-4:1997, BS EN ISO 10545-6:1997, BS EN ISO 10545-8:1996 and BS EN ISO 10545-13:1997.

11.5.2 Existing background / bases

- 11.5.2.1 Efflorescence, laitance, dirt and other loose materials shall be thoroughly removed by dry brushing.
- 11.5.2.2 Substances incompatible with the bedding shall be removed by using suitable emulsion cleaner then washed with clean water.
- 11.5.2.3 All loose or defective areas shall be removed and repaired with materials compatible with the background/base and bedding.
- 11.5.2.4 Plaster primer shall be applied if recommended by the adhesive manufacturer and it shall be allowed to dry before tiling.

11.5.3 Fixing

- 11.5.3.1 Unintended colour/shade variations shall be avoided within the tiles for use in each area/room. Variegated tiles shall be thoroughly mixed.
- 11.5.3.2 Adhesive shall be checked for compatibility with the background/base. Cut tiles neatly and accurately.
- 11.5.3.3 Unless specified otherwise, tiles shall be fixed so that there is adhesion over the whole of the background/base and tile backs.
- 11.5.3.4 Before bedding material sets, necessary adjustments shall be made to give true, regular appearance to tiles and joints.
- 11.5.3.5 Variations in gap under a 2 m straightedge (with feet) placed anywhere on the surface shall not be more than 3 mm.
- 11.5.3.6 Surplus bedding material from joints and face of tiles shall be cleaned.

11.5.4 Setting out

- 11.5.4.1 Joints shall be true to line, continuous and without steps.
- 11.5.4.2 Joints on walls shall be truly horizontal, vertical and in alignment round corners.

11.5.4.3 Cut tiles shall be kept to the minimum, as large as possible and in unobtrusive locations.

11.5.5 Fixing wall tiles

11.5.5.1 Tiles shall be fixed to wall render as follows:

(a) Thick bed method:

- (i) Sort and remove tiles with uneven colour or dimensions. Soak tiles in clean water for 30 minutes (minimum). Stack to drain and fix as soon as the surface water has drained off.
- (ii) Damp the wall render with clean water sufficiently to prevent it absorbing water from the bedding mortar.
- (iii) Butter the back of each tile with cement slurry and tap firmly into position so that the bed is solid throughout. Thickness of finished bed shall be 5 to 15 mm.
- (iv) Joints shall be 2 mm (minimum) wide, and maximum 3.5 mm wide unless specified otherwise.
- (v) Make any adjustment to tiles within 10 minutes of fixing.
- (vi) Clean tiles and joints before bedding hardens.
- (vii) Grout up joints 24 hours (minimum) after fixing tiles. Clean off surplus grout as work proceeds.
- (viii) Clean tiles at completion.

Thick bed method shall not be used for fixing wall tiles with water absorption value lower than 0.5%.

(b) Thin bed method:

- (i) Apply wall render of cement sand (1:3) to the concrete or substrate surface. Build up the render to the required thickness of 15 mm in layers. Thickness of each layer shall not exceed 10 mm. Allow the wall render to dry off thoroughly.
- (ii) Fix wall tiles, mixed from six boxes, to the wall render using an approved proprietary adhesive to BS EN 12004:2007 in accordance with the manufacturer's recommendations.
- (iii) Grout up joints using an approved grout or a proprietary grout to BS EN 13888:2009.

11.5.6 Fixing external wall tiles

11.5.6.1 External wall tiles shall be fixed by thin bed method as follows:

- (a) Apply wall render of cement: sand (1:3) to the substrate surface. Build up the render to the required thickness of 15 mm in layers. Thickness of each layer shall not exceed 10 mm. Allow the wall render to dry off thoroughly.
- (b) Fix wall tiles, mixed from six boxes, to the wall render using an approved proprietary adhesive to BS EN 12004:2007 in accordance with the manufacturer's recommendations. Width of joints shall be as specified.
- (c) Grout up joints using an approved grout or a proprietary grout to BS EN 13888:2007.

11.5.6.2 Upon completion of the tiling works for external wall area over 10m<sup>2</sup>, appropriate test methods, such as in-situ pull-out tests by specialist contractor and hammer tapping, shall be carried out to ensure that the external facing tiles have been applied properly to achieve the required adhesion to the building structure or substrate surface according to the approved proprietary tile adhesive.

11.5.6.3 Infra-red thermographic scanning shall be carried out by an approved specialist for external wall area over 10m<sup>2</sup> and the report shall be submitted within ONE (1) month upon completion of external tiling. Should the report indicate that any part of the wall tiling has not been affixed properly, the Contractor shall carry out approved remedial measures at his own expense and carry out further infra-red thermographic scanning to the satisfaction of the CIC.

11.5.7 Fixing mosaic tiles

11.5.7.1 Mosaic tiles shall be fixed as follows:

- (a) Thick bed method direct to concrete slab as follows:
  - (i) Lay semi-dry mix cement and sand 1:4 bed thoroughly compacted to the required thickness (20 mm minimum) finished to the required levels and falls.
  - (ii) Pour cement and sand slurry over the bedding and spread and trowel 3 mm thick.
  - (iii) Coat back of sheets of mosaic tiles with cement slurry immediately before fixing. Slurry shall be of the same colour as the final grout.
  - (iv) Fix sheets of mosaic tiles and tamp firmly into the bed, maintaining straight and regular joints, and ensuring that joints between sheets are equal to tile joints.
  - (v) Remove backing paper, complete final straightening and rub surface with grout, coloured as required,
- (b) Thick bed method to wall render as follows:

- (i) Damp the wall render with clean water sufficiently to prevent it absorbing water from the bedding mortar
- (ii) Apply bedding coat of mortar 10 mm (maximum) thick consisting of cement and sand (1:3).
- (iii) Coat surface of wall render and back of sheets of mosaic tiles with slurry immediately before fixing. Slurry shall be of the same colour as the final grout.
- (iv) Fix sheets of mosaic tiles and tamp firmly into position, maintaining straight and regular joint, ensuring that joints between sheets are equal to joints between tiles.
- (v) Remove backing paper, complete final straightening and rub surface with grout from face of tiles as work proceeds.
- (c) Thin bed method:
  - (i) If approved, fix mosaic tiles using a bed of proprietary adhesive in accordance with the manufacturer's recommendations.
  - (ii) Grout up joints using a proprietary grout as specified, which may be coloured in accordance with the CIC's requirements.

11.5.8 Tile bonding

- (a) Thoroughly dampen the render surface with water and allow excess to drain away.
- (b) Apply Tile Set Mortar while the surface is still damp and spread with a notched trowel.
- (c) Limit application to an area that can be covered in tiles within 20-30 minutes.
- (d) Set tiles onto the moist mortar and tap firmly into place.
- (e) Clean excess mortar from the tiles before the Tile Set has hardened.
- (f) Do not apply mortar at temperatures below 0°C and above 35°C.

11.5.9 Ribbed adhesive bedding to walls

11.5.9.1 Adhesive shall be applied in 3 mm floated coat and troweled to a ribbed profile using the recommended notched trowel. Tiles shall be pressed firmly into adhesive with a twisting sliding action.

11.5.10 Solid adhesive bedding to walls



11.5.10.1 Adhesive shall be applied in floated coat and surface shall be combed with the recommended solid bed trowel. Dry tiles shall be applied with thin even coat of adhesive and pressed onto bedding with twisting/sliding action to eliminate voids. Bed thickness shall be within the range recommended by the manufacturer.

11.5.11 Colour grouting of tile joints

(a) Preparations:-

- (i) Ensure that tile adhesive has dried before grouting – 24 hours minimum, depending upon application.
- (ii) Remove all adhesive, oil, dust and other loose materials from within the joints.
- (iii) When grouting out of direct sunlight and in temperatures below 27°C – ensure that joints are dry.
- (iv) When grouting vertical surfaces in temperatures above 32°C and the tiles are warm to the touch – brush splash the tiles and joints prior to commencing grouting, allowing the surface water to evaporate.
- (v) When grouting floor tiles in direct sunlight and in temperatures above 22°C and the tiles are warm to the touch - brush splash the tiles and joints prior to commencing grouting, allowing the surface water to evaporate.

(b) Applications:-

- (i) Apply the grout with a rubber squeegee or trowel. Work it into the joints with a diagonal or circular motion to ensure that the joints are completely filled with grout.
- (ii) Clean excess grout from the surface of the tile as the work proceeds.
- (iii) When the film of grout on the tile is drying, it is time to wipe off with a dampened but not wet rubber sponge. For a perfect job a gloved finger should be run along the joints to ensure a perfectly smooth even joint.

(c) Cleaning up:-

- (i) Clean tools and equipment immediately in water. Polish tiles surface with a soft cloth approximately 6 hours after grouting.
- (ii) Allow 24 hours before putting tiled areas into service.

11.5.12 Movement / expansion joint

- 11.5.12.1 All mortar shall be thoroughly raked from joints so that the joints are entirely open from the surface of the tiles. The joints shall be filled with a form plastic or filler, stripped to a depth of 12mm or the width of the joint below the surface of the tiles, and neatly pointed flush with sealant of approved type and colour. The whole sealant installation work shall be supplied and installed complete at the main contractor's expense by the manufacturer's agent.
- 11.5.13 Pull-out test
- 11.5.13.1 Pull-out test should be carried out and included for every 50 m<sup>2</sup> working surface at contractor's expense.
- 11.5.13.2 The adhesion strength of the re-tiled surface shall be determined by pull-out testing at SEVEN (7) days after tiling as follows and/or referred to approve adhesive manufacturer's recommendations.
- 11.5.13.3 A suitable metal plate shall be glued to the cored surface and this attachment shall be pulled with increasing tensile force using a specially calibrated device until failure occurs. The force needed to cause failure shall be recorded and the equivalent stress at failure calculated and reported. The failure surface shall be examined and the mode of failure reported as either adhesive (at the concrete/rendering interface and rendering/tiles interface) or cohesive (within the parent concrete or rendering). The core shall be immediately colour photographed to show the core and failure surface in close up against a contrasting background all to the approval of the CIC.
- 11.5.13.4 Any rendering/tiled surface where cores indicate delaminating voids or other imperfections or the adhesion strength do not come up to the standard as pre-determined by the adhesive admixture manufacturer, it shall be opened up and rendered/re-tile again or further tested at the discretion of the CIC. The costs of such tests or of the removal of the rejected rendering/re-tiled surfaces and its replacements and associated costs shall be borne by the contractor and no extension of time shall be granted in this respect.

11.5.14 SKK “Granipierre” Coating System

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11.5.14.1 The Contractor should carry out the repair/replace works on the well-prepared surface strictly in accordance with the manufacturer's recommendations:

11.5.14.2 Groove design:

- (a) Prepare the layout plan for the design and pattern of the proprietary coating system and submit comprehensive shop drawings to the CIC for approval; and
- (b) Obtain the CIC’s approval for the size, colour and layout of the proprietary coating prior to manufacture. Obtain the CIC’s approval for the application procedures prior to commencing application.

11.5.14.3 Setting-out and Marking:

- (a) Draw line marking with plumb, transit compass, tape measure, chalk line in accordance with approve shop drawings;
- (b) Ensure dimensions tally with the architectural design and comply with approved shop drawings;
- (c) Check the layout plan and substrate;
- (d) Draw vertical lines with plumb or transit compass; and
- (e) Mark reference lines to fix proprietary sheets and grooves with chalk, tape measure, etc. on the surface.

11.5.14.4 Application of “Granipierre” prefabricated fibrous coating sheet system:

- (a) Apply one coat of ‘Granipierre Sealer’ by roller, details as follow:
-

<u>Materials</u>	<u>Mixing Ratio</u>	<u>Required Quantity (kg/m<sup>2</sup>)</u>	<u>Drying Time (Hours)</u>	<u>Tools</u>	<u>No. of Coats</u>
Granipierre Sealer	10:1	0.10-0.15	2 or above	Brush, wool, roller, airless spray gun	One
Clean water					

## (b) “Granipierre” Undercoat

<u>Materials</u>	<u>Mixing Ratio</u>	<u>Required Quantity</u>	<u>Materials</u>	<u>Mixing Ratio</u>
Granipierre Undercoat	Pre-mixed	1.0-1.5	Granipierre Undercoat	Pre-mixed

## (c) Open Joint Groove line Treatment: (if applicable)

- (i) Attach groove line stickers, pattern, grid lines of maximum 12 mm in width, along lines or patterns to be approved by CIC prior to installation;
- (ii) Attach “Granipierre granite sheets” with a rubber roller;
- (iii) Remove groove line stickers, pattern, grid lines; and
- (iv) Apply ‘Granipierre undercoat’ along the groove lines in slurry form. Do not fill the whole depth of groove lines to avoid future appearance of cracks, details as follow:-

<u>Materials</u>	<u>Mixing Ratio</u>	<u>Drying Time (Hours)</u>	<u>Tools</u>
Granipierre Undercoat	Pre-mixed	Final curing 24 hours or more	Brush

## 11.5.14.5 Corner Area Treatment

- (a) Apply 'Granipierre Patching material' to corner joint areas and mend the irregularities at patched corner joint areas by rubbing with sandpaper after the area has thoroughly dried out, details as follow:-

<u>Materials</u>	<u>Mixing Ratio</u>	<u>Drying Time</u> <u>(Hours)</u>	<u>Tools</u>
Granipierre Patching Materials	Pre-mixed	Final curing 24 hours or more	Brush, thin trowel

- (b) Apply 'SK Silicon Clear W' (silicon resin water-based) to patched corner joint areas and groove lines, details as follow:-

<u>Materials</u>	<u>Mixing Ratio</u>	<u>Required Quantity</u> <u>(kg/m<sup>2</sup>)</u>	<u>Drying Time</u> <u>(Hours)</u>	<u>Tools</u>	<u>No. of Coats</u>
SK Silicon Clear W	10:1	0.30-0.40	Interval curing:2 or above Final curing: 24 hours or more	Brush	Two

## 11.5.15 SKK Spray Texture Paint "Bellart HT" Coating System

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## 11.5.15.1 Surface Preparation

- (a) Hack off spalled concrete and hollow plaster. Remove rust scale of reinforcement and apply anti-rust paint. Fill and level the area with resin mortar.

- (b) Clean and remove all the loosen paint, mosaic tiles, dirt, dust and foreign matter etc. by high pressure water jet. The jet washing details are suggested as follows:
  - (i) The suggested pressure of jet washing is at the degree of 1500~1800 psi.
  - (ii) The angle of nozzle should be in the point-shape.
  - (iii) The distance between the nozzle and the substrate surface should be within 400mm.
  - (iv) The nozzle should be vertically pointed towards the substrate when jet washing.

11.5.15.2 Coating system on the well-repaired, prepared, sound and thoroughly cleaned mosaic tiles surface

- (a) Two-Packed Cationic Latex and Portland Cement Skim Coat
  - (i) Apply one coat of SK EPO FILLER by trowel.
    - Coverage: 1.5-3.0 kg/m<sup>2</sup>
    - Mixing Ratio: SK Epo Filler Powder/ Hardener A / Hardener B / Water
    - 20kg/ 2.5kg/ 0.18 kg/3-4kg by weight for trowel application.
    - Interval Time: 6 hours
  - (ii) Apply one coat of SK TILE FILLER by trowel.
    - Coverage: 1.5-3.0 kg/m<sup>2</sup>
    - Mixing Ratio: SK Tile Filler Powder/ Hardener/ Water 20kg/ 2.5kg/ 3-4kg by weight for trowel application.
    - Recommendable thickness: 2.0-2.5mm per 2 layers after setting. (maximum thickness per layer should be 1.0mm)
    - Final Curing: 24 hours
- (b) Pre-mixed Water-based Primer
  - (i) Apply one coat of MIRAC SEALER ECO W by roller and details as follows:-
    - Consumption : 0.10~0.15 kg/m<sup>2</sup>
    - Coating Interval : minimum 2 hours prior to the coat of Soft Surf SG
    - Mixing Ratio : pre-mixed (15kg/can)
- (c) Spray Textured Coat:
  - (i) Apply two coats of BELL ART HT with flat finish by spray and details as follows:-
    - Consumption : 1.50~2.00 kg/m<sup>2</sup>

- Interval Curing (between coats) : over 2 hours prior to the 2nd coat of Bellart HT
  - Interval Curing (between process): over 24 hours prior to the 1st coat of one Pack SK Fusso Coat Mid-Coat
  - Mixing Ratio: Bell Art HT/ Water (20kg/ 0~5% by weight)
- (d) Protective Top Coat: (Fluorocarbon Resin Water-based Top Coat)
- (i) Apply one coat of ONE PACK SK FUSO COAT MID COAT by roller and apply one coat of ONE PACK SK FUSO COAT 30% GLOSS by roller, details as follows:-
- Consumption : 0.3~0.35 kg/m<sup>2</sup>
  - Coating Interval : minimum 2 hours prior to the SK One Pack Fusso Coat W
  - Final Curing : over 24 hours
  - Mixing Ratio : SK One Pack Fusso Coat W Mid Coat / Clean Water ( 16kg/0~10% by weight); and SK One Pack Fusso Coat W/ Clean Water (15kg/ 0.75kg/0~10% by weight)

11.5.16 SKK Water-based Fluorocarbon Resin “One Pack SK Fusso Coat” Coating System

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11.5.16.1 Surface Preparation

On the existing granolithic or painted surface,

- (a) Hack off spalled concrete and hollow plaster. Remove rust scale of reinforcement and apply anti-rust paint. Fill and level the area with resin mortar. (using SK Tile Filler if needed)
- (b) Clean the surface with Pre-mixed Water-based Mould Remover SKK Kabi Clean #5 by roller, brush or cloth. (Allow 1 hour to stand before primer coat application)

- (c) Clean and remove loosen granolithic/paints, dirt, dust and foreign matter etc. by high pressure water jet. The jet washing details are suggested as follows:
  - (i) The suggested pressure of jet washing is at the degree of 1500~1800 psi.
  - (ii) The angle of nozzle should be in the point-shape.
  - (iii) The distance between the nozzle and the substrate surface should be within 400mm.
  - (iv) The nozzle should be vertically pointed towards the substrate when jet washing.
- (d) Surface Touch up: On the new repaired cement sand rendering
  - (i) Apply 2 coats of SK Tile Filler by trowel to make the surface good.

11.5.16.2 Coating System on the well-repaired, prepared, sound and thoroughly cleaned painted surface,

- (a) Pre-mixed Water-based Epoxy Primer
  - (i) Apply one coat of Mirac sealer Eco W by roller.
    - Consumption : 0.10~0.20kg/m<sup>2</sup>
    - Coating Interval : minimum 2 hours prior to the coat of Soft Surf SG
    - Mixing Ratio : pre-mixed (15kg/can)
- (b) Elastic Textured Coat (只限於企身位)
  - (i) Apply one coat of SOFT SURF SG with M-9 Roller(抽花)
    - Consumption : 1.00~1.20 kg/m<sup>2</sup>
    - Coating Interval : minimum 3 hours
    - Mixing Ratio : Soft Surf SG/Clean Water 16kg/0~10% by weight
- (c) Fluorocarbon Resin Water-based Top Coat
  - (i) Apply one coat of ONE PACK SK FUSO COAT MID COAT by roller.
  - (ii) Apply one coat of ONE PACK SK FUSO COAT 30% GLOSS by roller.
    - Consumption : 0.3~0.4 kg/m<sup>2</sup>
    - Coating Interval : minimum 2 hours prior to the SK One Pack Fusso Coat W
    - Final Curing : over 24 hours



- Mixing Ratio : One Pack SK Fusso Coat W Mid Coat / Clean Water; 16kg/0~10% by weight; One Pack SK Fusso Coat W/ Clean Water; 15kg/ 0.75kg/0~10% by weight

11.5.17 SKK Water-based Fluorocarbon Resin “One Pack SK Fusso Coat” Coating System (For Metal Works)

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11.5.17.1 Surface Preparation

- (a) Sand off all the rust, clean and remove all the loosen paint, dust and dirt, to enhance the adhesive strength.
- (b) Moisture level of substrate shall be 10% or below (measure by photometer) before commencement of the coating system.

11.5.17.2 Coating System on the well-repaired, prepared, grounded and thoroughly cleaned metal surface

- (a) Water-based Epoxy Primer
  - (i) Apply one coat of SK SABI GUARD W UNDERCOAT by roller.
    - Consumption : 0.12~0.15 kg/m<sup>2</sup>
    - Coating Interval : minimum 3 hours prior to the 1st coat of top coat
    - Mixing Ratio : SK Sabi Guard W Undercoat/ Clean Water 16kg/0~10%
- (b) Fluorocarbon Resin Water-based Top Coat
  - (i) Apply one coat of ONE PACK SK FUSO COAT MID COAT by roller.
  - (ii) Apply one coat of ONE PACK SK FUSO COAT 30% GLOSS by roller.
    - Consumption : 0.3~0.35 kg/m<sup>2</sup>

- Coating Interval : minimum 2 hours prior to the One Pack SK Fusso Coat W
- Final Curing : over 24 hours
- Mixing Ratio : One Pack SK Fusso Coat W Mid Coat / Clean Water; 16kg/0~10% by weight; One Pack SK Fusso Coat W/ Clean Water; 15kg/ 0.75kg/0~10% by weight

## **11.6**      **Flooring**

### 11.6.1      Concrete floor tiles

11.6.1.1      Plain concrete or granolithic concrete floor tiles shall be in accordance with BS 1197:Pt. 2, of the required colour and surface finish.

### 11.6.2      Ceramic floor tiles and floor quarries

11.6.2.1      Ceramic floor tiles including corresponding accessories, shall be in accordance with BS 6431.

11.6.2.2      Ceramic floor tiles shall be Group A I or B I: water absorption not exceeding 3%.

11.6.2.3      Floor quarries shall be Group A IIb of BS 6431: water absorption of  $6\% < E \leq 10\%$ .

11.6.2.4      Where ceramic floor tiles or clay floor quarries are described as “including specials”, the full range of BS fittings shall be required. Elsewhere mitred angles of coved skirtings and the like shall be permitted. All tiles and fittings shall be from the same manufacturer and shall match in colour and texture.

11.6.2.5      Where tiles are described as anti-slip, they shall be suitably embossed or treated with carborundum or similar grit to comply with relevant standards, e.g. Germany DIN standard or other recognized international standards to provide an anti-slip surface.

### 11.6.3      Terrazzo floor tiles

11.6.3.1      Terrazzo floor tiles shall be in accordance with BS EN 13748-2:2004, BS EN 13748-1:2004 and of the required colour and surface finish.

### 11.6.4      Stone or marble slabs/tiles shall include the following: -

- (a) Forming rounded, squared or splayed edges as required.
- (b) Pointing in natural or coloured grout.

- (c) Preparing and applying one coat of wax polish to wall slabs or two coats non-slip, matt emulsion polish or other anti-slip coating on floor slabs.
- (d) Providing and fixing copper cramps and “S” hooks or stainless steel fixing as ordered.
- (e) Laying level or to slopes and finishing to falls, or falls and currents.
- (f) Preparing surfaces ready to receive cement and sand bedding or sand bedding to receive stone paving or slabs.
- (g) Flushing up around pipes, floor drains, outlets and the like.
- (h) Anti-stain treatment including providing one coat of approved water repellent or sealer to all exposed surfaces and edges of stone slabs/tiles.
- (i) Submission of design and calculations endorsed by Registered Structural Engineer for fixing of stone or marble slabs to vertical or sloping surfaces.

11.6.5 Canton tiles

11.6.5.1 Canton tiles shall be hard, sound, square, well burnt, and free from twist, cracks or other defects, 30 to 35 mm thick and from 300 to 400 mm square.

11.6.6 Vinyl / rubber finish

11.6.6.1 Unbacked flexible PVC (vinyl) tiles shall be to BS EN 649 Type B, size 225 x 225 or 300 x 300 and 2 mm thick.

11.6.6.2 Unbacked flexible PVC (vinyl) sheet shall be to BS EN 649 Type A, 2.0 mm thick to floors

11.6.7 Carpet tiles

11.6.7.1 Carpet tiles shall be of the same size so that they could be easily Interchanged, relocated or replaced.

11.6.7.2 Special tiles, with proper edging around, cut out to receive floor socket or outlet are required.

11.6.7.3 All carpet surfaces shall be "Scotch-guarded", or other approved protective treatment to be provided. No unraveling of yarn at edge of module is permitted

11.6.7.4 All carpet tiles shall be dimensionally stable (resist shrinkage) in any circumstance.

11.6.8 Timber flooring

- 11.6.8.1 Softwood or hardwood species used for timber flooring shall be obtained from a sustainable source as previously specified.  
Boarded or strip flooring shall be selected and approved by the CIC. Finished thickness shall be 20 mm (minimum).
- 11.6.8.2 Density of hardwood shall be 720 kg/m<sup>3</sup> (minimum) at 15% moisture content.
- 11.6.8.3 Teak, which is only permitted to be specified in special circumstances, shall have a density of 650 kg/m<sup>3</sup> (minimum) at 15% moisture content.
- 11.6.9 Raised accessed flooring
  - 11.6.9.1 The raised floor deck shall be fitted with fully removable load bearing panels, interchangeable, and supported on adjustable pedestals.
  - 11.6.9.2 The floor system shall not contain materials which by direct contact could be detrimental to the safety and comfort of the users or which may emit abnormally toxic combustion materials and gases when burned.
  - 11.6.9.3 The floor system shall be sturdy, rigid and firm. The design of the system shall prevent vibration, rattles, rocking squeaks and other noises. Floor panels that are cut shall be supported by additional pedestals and shall have framing modified accordingly.

## **11.7**      **Carpentry and Joinery**

- 11.7.1 Plasterboard
  - 11.7.1.1 Plasterboard shall be complied with BS EN 520: 2004 + A1, "gypsum lath" or "gypsum baseboard" with square edges.
  - 11.7.1.2 Nails for "lath" or "baseboard" shall be 30 x 2.6 mm plasterboard galvanized steel nails, jagged shank type to BS 1202-1
    - (a) 30 x 2.65 mm for plasterboard not exceeding 12.7 mm thick.
    - (b) 40 x 2.65 mm for plasterboard 19 mm thick.
  - 11.7.1.3 Reinforcement for joints in plasterboard shall be jute scrim cloth not less than 90 mm wide.
- 11.7.2 Laminated plastic decorative sheeting
  - 11.7.2.1 Laminated plastic sheet shall comply with BS EN 438:2005 Class HG (Horizontal-General Purpose) or VG (Vertical-General Purpose) as specified.
- 11.7.3 Recycled plastic lumber

- 11.7.3.1 Recycled plastic lumber shall be resistant to UV, vandal, impact, algae, moss and corrosion; and rot, splinter and crack proof
- 11.7.4 Proprietary solid surfacing material
- 11.7.4.1 Counter top of proprietary solid surfacing material; non-porous surfacing material homogeneously composed of 56% Premium aluminum hydroxide, 40% MMA and 4% Optimizers & Colors (Tensile elongation : ASTM-D-638: 0.45%-0.51%; Tensile strength : ASTM-D-638: 6,000 psi; Flexural strength : ASTM-D-790: 8,000 psi; Hardness (Barcol) : ASTM-D-2583: 63 - 65)
- 11.7.5 Hollow core flush timber door
- 11.7.5.1 Stiles and rails generally shall be 75 mm wide. For doors exceeding 900 mm side or 2000 mm high stiles shall be 100 mm wide.
- 11.7.5.2 Infill for hollow core doors shall be 20 mm horizontal battens at 150 mm centres. Block out shall be provided for lock fixing, door closers, or other ironmongery as specified, or composition board core approved by the CIC.
- 11.7.5.3 Infill for solid core doors shall be 25 mm vertical battens tightly cramped together with the covering fully bonded both sides.
- 11.7.5.4 Both sides of the door shall be covered with the following as specified:
  - (a) 3.2 mm standard hardboard
  - (b) 5 mm Plywood for painting
  - (c) 5 mm selected Hardwood faced plywood for clear finish
  - (d) Class HG laminated plastic bonded to 5 mm plywood
  - (e) Other board finish accepted by the CIC
- 11.7.5.5 12 mm selected hardwood lipping shall be provided, pinned and glued to all edges. Lipping to meeting edges of folding doors and meeting edges and heels of swinging doors shall be 25 mm thick, rebated or rounded. When specified, the bottom edge of doors shall be fitted with a 12 mm selected hardwood removable carpet strip screwed to the lipping.
- 11.7.6 Fire resisting timber door
- 11.7.6.1 Fire resisting timber doors shall be flush door as described above, including frames, hinges, door closers and any other hardware and shall comply with BS 476: Part 20-23.

- 11.7.6.2 Proprietary fire doors shall be tested in accordance with BS 476 and be subject to the approval of the CIC. Test report shall be provided to indicate that the material, product or construction is capable of resisting the action of fire for the specified period. The test shall be carried out and the test report shall be prepared by a laboratory recognized by the Hong Kong Laboratory Accreditation Scheme.
- 11.7.7 Hoarding
- 11.7.7.1 Temporary fencing, barriers, guard rails, gangways, walkways, fans and the like shall be provided for protecting the public and others during the proper execution of the Works.
- 11.7.7.2 All materials for hoardings, gantries and covers shall be submitted for approval by the CIC.

## **11.8**      **Painting**

- 11.8.1 Emulsion paint
- 11.8.1.1 Emulsion paint shall be acrylic, plastic, vinyl or latex emulsions and shall be approved material
- 11.8.2 Anti-mould emulsion paint
- 11.8.2.1 Anti-mould emulsion paint shall be acrylic based emulsion incorporating an approved fungus resistant chemical.
- 11.8.3 Water-based Metallic paint
- 11.8.3.1 Metallic paint shall compose of acrylic resin solution base mixed with finely divided aluminum to give a bright finish, or finely divided copper or copper alloy to give a bronze finish.
- 11.8.4 Polyurethane paint
- 11.8.4.1 Polyurethane paint shall be of the Two Pack Type and part of an approved system.
- 11.8.5 Epoxy paint for floor
- 11.8.5.1 Cold cured epoxy paint shall be of an approved Two Pack Type.

- 11.8.6 Proprietary Non Slip Epoxy Floor Coating System - SKK “ARKIFLOOR EHG” Non Slip Epoxy Coating System.
- 11.8.6.1 Surface preparation
- (a) Provide labour and machine to grind off to remove the loose flooring unit and clean all grease, laitance and contaminants in floor by dust free vacuum shot blasting or grinding.
  - (b) Provide labor and material to repair defective concrete, hollowed finished and structural cracks when necessary.
  - (c) To fill up the hairline crack and void with PRIMER with Silicate Sand.
  - (d) Remove the joint sealants in the joints before the coating, and apply the joint sealant after floor coating.
- 11.8.6.2 Application of Non Slip Epoxy Coating System
- (a) Carry out the following works on the well-prepared surface strictly in accordance with the manufacturer's recommendations:
- 11.8.6.3 Self-Leveling Epoxy Cement Filler (To prevent moisture from upraising):-
- (a) Apply 1 coat of 1 FILLER PRIMER by roller
    - (i) Consumption: 0.1~0.15 kg/m<sup>2</sup>/coat
    - (ii) Interval Process: around 2-3 hours prior to the 1st coat of Filler
    - (iii) Mixing Ratio: Hardener A of Filler Primer/ Hardener B of Filler Primer
  - (b) Apply 2 coats of FILLER by Trowel.
    - (i) Consumption: 0.68~1.00 kg/m<sup>2</sup>/2coats (Thickness: 2mm)
    - (ii) Interval Process: around 16-24 hours prior to the 1st coat of Primer
    - (iii) Mixing Ratio: Base of Filler / Hardener of Filler
- 11.8.6.4 Solvent- Free Epoxy Primer
- (a) Apply 1 coat of PRIMER by trowel mixed with powder;
    - (i) Consumption: 0.34~0.51 kg/m<sup>2</sup>/coat
    - (ii) Interval Process: around 16-24 hours prior to the 1st coat of Epoxy Paint
    - (iii) Mixing Ratio: Base of Primer / Hardener of Primer
- 11.8.6.5 Apply Silicate Sand No. 5.5 evenly and cover the whole surface. Then, remove the excess silicate sand after the Primer dry.

- (a) Consumption: 1 kg/m<sup>2</sup>
- 11.8.6.6 Solvent-free Epoxy Mid Coat:
  - (a) Apply 2 coats of Epoxy Paint by roller.
    - (i) Consumption: 0.63~0.73 ltr/m<sup>2</sup>/2coats
    - (ii) Interval Process: minimum 10-12 hours prior to the 2nd coat of Epoxy Paint
    - (iii) Mixing Ratio: Base of Epoxy Paint / Hardener of Epoxy paint
- 11.8.6.7 P.U. U V Resistant Protective Top Coat:
  - (a) Apply 2 coat of P.U. Top Coat by roller.
    - (i) Consumption: 3.0~5.0 kg/m<sup>2</sup>/coat
    - (ii) Interval Process: minimum 18-20 hours prior to the 1st coat of P.U. Top Coat
    - (iii) Mixing Ratio: Base of P.U. Top Coat / Hardener of P.U. Top Coat
- 11.8.6.8 P.U. Top Coat for line marking:
  - (a) Apply 2 coats of P.U. Top Coat by roller.
    - (i) Consumption: 0.40~0.45 kg/m<sup>2</sup>/2coats
    - (ii) Interval Process: minimum 10-12 hours
    - (iii) Final Process: minimum 24 hours



## 11.8.6.9 [Filler – Technical Data]

Test Item	Test Method	Result
Adhesive Strength	JIS K 5400 8.7	27.6kgf/cm <sup>2</sup>
Film Hardness	JIS K 5400 8.4.2	2H
Impact Resistance	JIS K 5400 8.3.2(Dupont Test) -Dropping 500g of steel ball from 50cm height	Passed with no peeling, cracks, etc.
Abrasion Resistance	JIS K 5400 8.9 (1000 rounds)	68mg weight loss
Heat & Cool Test	JIS K 6900 5.9.1 (100 cycles of each cycle= -20°C x3 hrs+50°C x3hrs)	After 100 cycles with no peeling, cracks, etc.
Freezing & Melt Test	In-house test method (100 cycles of each cycle= -20°C x16 hrs+20°C x8hrs)	After 100 cycles with no peeling, cracks, etc.
Tensile Strength & Elongation at Break	JIS K5400 8.8	17.20N/mm <sup>2</sup>
Compressive Strength	In-house test method	56.7N/mm <sup>2</sup>
Flexural Strength	In-house test method	19.6N/mm <sup>2</sup>
Chemical Resistance	JIS A5705 7.12 Approx. 2ml of chemical was dropped to the test piece to be spreaded circularly, and then wiped off. + = Excellent 0 = Good	Soya Bean + Lubricating Oil + 95% Ethanol + 2% Caustic Soda + 5% Acetic Acid 0 5% Hydrochloric Acid +

## 11.8.6.10 [Epoxy Primer – Technical Data]

Test Item	Test Method	Result
Adhesive Strength	JIS K 5400 8.7	25.5kgf/cm <sup>2</sup>
Film Hardness	JIS K 5400 8.4.2	HB
Impact Resistance	JIS K 5400 8.3.2 (Dupont Test) -Dropping 500g of steel ball from 50cm height	Passed with no peeling, cracks, etc.
Abrasion Resistance	JIS K 5400 8.9 (1000 rounds)	30mg weight loss
Heat & Cool Test	JIS K 6900 5.9.1 (100 cycles of each cycle= -20°C x3 hrs+50°C x3hrs)	After 100 cycles with no peeling, cracks, etc.
Freezing & Melt Test	In-house test method (100 cycles of each cycle= -20°C x16 hrs+20°C x8hrs)	After 100 cycles with no peeling, cracks, etc.
Tensile Strength & Elongation at Break	JIS K5400 8.8	16.20N/mm <sup>2</sup>
Compressive Strength	In-house test method	25.1N/mm <sup>2</sup>
Flexural Strength	In-house test method	15.6N/mm <sup>2</sup>
Chemical Resistance	JIS A5705 7.12 Approx. 2ml of chemical was dropped to the test piece to be spreaded circularly, and then wiped off. + = Excellent 0 = Good	Soya Bean + Lubricating Oil + 95% Ethanol + 2% Caustic Soda + 5% Acetic Acid 0 5% Hydrochloric Acid +

## 11.8.6.11 [Epoxy Top Coat – Technical Data]

Test Item	Test Method	Result
Adhesive Strength	JIS K 5400 8.7	25.6kgf/cm <sup>2</sup>
Film Hardness	JIS K 5400 8.4.2	2H
Impact Resistance	JIS K 5400 8.3.2(Dupont Test) -Dropping 500g of steel ball from height	Passed with no peeling, cracks, etc.
Abrasion Resistance	JIS K 5400 8.9 (1000 rounds)	30mg weight loss
Heat & Cool Test	JIS K 6900 5.9.1 (100 cycles of each cycle= -20°C x3 hrs+50°C x3hrs)	After 100 cycles with no peeling, cracks, etc.
Freezing & Melt Test	In-house test method (100 cycles of each cycle= -20°C x16 hrs+20°C x8hrs)	After 100 cycles with no peeling, cracks, etc.
Tensile Strength & Elongation at Break	JIS K5400 8.8	14.07N/mm <sup>2</sup>
Compressive Strength	In-house test method	41.1N/mm <sup>2</sup>
Flexural Strength	In-house test method	19.6N/mm <sup>2</sup>
Chemical Resistance	JIS A5705 7.12  Approx. 2ml of chemical was dropped to the test piece to be spreaded circularly, and then wiped off.  + = Excellent 0 = Good	Soya Bean + Lubricating Oil + 95% Ethanol + 2% Caustic Soda + 5% Acetic Acid 0 5% Hydrochloric Acid
Skid Resistance	DIN 51130:2003-08  Range from R9-R13	R11

- 11.8.7 Fire retardant paint
- 11.8.7.1 Fire retardant paint shall be paints which, when used alone or in conjunction with other paints applied to combustible substrates in accordance with a manufacturer's tested system, achieve Class 1 spread of flame rating to BS 476:Pt. 7:1997.
- 11.8.8 Polyurethane paint on wood work
- 11.8.8.1 Polyurethane paint shall be of the Two Pack Type and part of an approved system.
- 11.8.9 Marking
- 11.8.9.1 Road marking materials shall be hot applied thermoplastic materials with either plasticized synthetic hydrocarbon resin or alkyd resin as the binder as specified.
- (a) Type 'A' - Standard hot applied thermoplastic material
- (i) The material shall comply with BS 3262-3, BS EN 1824 and BS EN 1871 except for the following modifications to the material properties:  
Softening point measured in accordance with Annex F to BS EN 1871 shall be not less than 85°C, and
- (ii) The luminance factor when tested in accordance with Annex E of BS EN 1871 shall be Class LF4 for white material and Class LF2 for yellow material.
- (b) Type 'B' - Alkyd resin hot applied thermoplastic material
- (i) The material shall comply with BS EN 1824 and BS EN 1871 except for the following modifications to the material properties:
- (ii) Softening point measured in accordance with Annex F to BS EN 1871 shall be not less than 85°C, and
- (iii) The binder for alkyd resin thermoplastic road marking materials to consist of maleic-modified glycerol ester of wood resin. The binder shall not contain petroleum based hydrocarbon resins, tall oil resins, blends of tall oil and wood resin or similar derivatives.
- (iv) The luminance factor when tested in accordance with Annex E of BS EN 1871 shall be Class LF4 for white material and Class LF2 for yellow material.
- 11.8.9.1.1 Hot Applied Thermoplastic Road Marking Materials, Type 'A' and 'B'

- (a) Thermoplastic road marking materials shall be supplied and delivered in accordance with the manufacturer's recommendations.
- (b) Thermoplastic road marking materials shall be prepared on site, and laid in accordance with Clauses 4 and 5 of BS 3262-3.
- (c) Thermoplastic road marking shall not be laid when the road surfaces wet or when the air temperature is below 10°C.

11.8.9.1.2 For types 'A' and 'B' road marking materials, surface retro-reflectivity shall be accomplished as follows:

- (a) Solid glass beads shall be incorporated in the road marking materials prior to application on site. Solid glass beads to comply with Glass Bead Medium Grading requirements of BS 1423.
- (b) The retro-reflectivity of all road markings shall be enhanced by the application of solid glass beads at the rate of 400 to 500 g/m<sup>2</sup>. The beads shall be applied concurrently with the line. The solid glass beads shall comply with Class B requirements of BS 1423.
- (c) Solid glass beads shall be applied on site by mechanical means to the CIC's satisfaction. Where solid glass beads cannot be satisfactorily applied by mechanical means they may, with prior approval, be applied by manual methods.

11.8.9.1.3 The thermoplastic material to fall within the following tolerances:

<u>Item</u>	<u>Type</u>	<u>Thickness</u>
(i)	Screed markings	4.0 +/- 1.0 mm
(ii)	Sprayed marking other than yellow edge lines	not less than 1.5 mm
(iii)	Sprayed yellow lines	not less than 0.8 mm
(iv)	Width and length	+10% / -5%

11.8.9.1.4 The thickness specified is exclusive of surface applied solid glass beads. The method of thickness measurement shall be in accordance with Appendices B & C of BS 3262-3.

11.8.9.1.5 The apparatus for laying the thermoplastic material shall be capable of producing a marking to a uniform thickness and width with clean edges and free from streaks, lumps and blisters.

- 11.8.9.2 Marking paint shall be an approved purpose made synthetic non-skid marking paint to BS EN 1871:2000, BS EN 1436:1998, with a drying time not exceeding 30 minutes.

**11.9**      **Roofing and Waterproofing**

- 11.9.1 Unless otherwise specified, the whole re-roofing works shall be executed in accordance with the relevant clauses of the General Specifications.

- 11.9.2 The re-roofing works consist of removal of all existing roof tiles, screeding, waterproofing layer, surface channel rendering, wire mesh or debris, etc. and construction of all components on the roof. Roof finishes shall include paving the screed to provide fall, roofing membrane, roof insulation and associated bedding screed, paving slabs inclusive of stools, all necessary joints with roof fittings and expansion joints as appropriate.

- 11.9.3 Roofing works shall be laid on all roof slabs, and shall include interfaces with roof openings.

11.9.4      **Environmental Conditions**

- 11.9.4.1 The design / proposed components and the overall system must be suitable to operate continuously to specification throughout its normal life span in the Hong Kong climate. The following parameters will normally apply:

- (a) Climate description: Tropical;
- (b) Temperature range: 5°C to 45°C;
- (c) Relative humidity: 30% to 90%;
- (d) Salt Corrosion: Salty atmosphere as found in tropical coastal regions;
- (e) Chemical Corrosion: Atmospheric vapours of Sulphur combustion product and Hydrogen Sulphide;
- (f) Sealing: Equipment shall be vermin proof. Outdoor items shall be weather and splash proof to prevent ingress of rain. Items that are not fully sealed shall have adequate provision for ventilation;
- (g) Solar Radiation: Equipment sited outdoors in direct sunlight shall be capable of withstanding the effects of solar radiation above the ambient
- (h) Mould Growth: Materials which promote mould growth shall not be used;

- (i) Shock: Equipment must be capable of withstanding knocks and jolts likely to occur.

11.9.5 Surface Preparation

- 11.9.5.1 The waterproofing system shall be applied onto concrete surface with a broom or off-form finish. Concrete skin shall be removed. All concrete to be waterproofed and must have an open capillary system.
- 11.9.5.2 Serious cracks and honeycombs in the concrete should be chased out to sound clean concrete, treated with waterproofing system and filled with 1:3 stiff sand / cement mortar. All surfaces should be cleared from loose particles, dirt foil and laitance.
- 11.9.5.3 Brickwall / blockwall should be covered with steel trowelled smooth reinforced cement sand rendering.

11.9.6 **Waterproofing System (WP-01) - Cementitious Concrete Capillary and Slurry Waterproofing System**

- 11.9.6.1 Surface applied, approved for potable water contact waterproofing system. Based on Portland cement, treated quartz sand and active chemicals. Concrete Capillary and Slurry Waterproofing System.
- 11.9.6.2 The Cementitious Concrete Capillary and Slurry Waterproofing Material shall have the following properties by test reports:-
  - (a) Water pressure resistance of at least 210 PSI or 483 ft. of water head on both the positive (Water) side and negative side tested according to US Corps of Engineers Standard CRD C-48-77.
  - (b) Shall not have any harmful effect on the compressive strength and bending tensile strength of concrete.
  - (c) Shall be non-toxic and meet the requirement of Thames Water, UK.
  - (d) Shall be able to protect concrete by reducing the chloride ion penetration rate into concrete as test by Accelerated Corrosion Testing Cell and Chloride Diffusion. Test Cell carried out over a period of 84 days at a cell temperature of  $25 \pm 2^{\circ}\text{C}$ . The effective diffusivity of chloride ion shall not be higher than  $1.29 \times 10^{-10} \text{ cm}^2\text{sec}^{-1}$ .
  - (e) Shall be resistance to sulphate attack.
  - (f) Shall not affect the bonding of existing concrete and newly casted concrete tested according to ASTM C-321-64.

11.9.6.3 The waterproofing system should be in accordance with HKHA Standard: WAT 6M010.4, Chinese Standard: JC/T 894-2001: Class JS 1, American Standard: ASTM D412 and German Standard: DIN 1048. The material shall fulfil the standards and physical performance listed below:

- (a) E.MIX WP High performance Slurry or approved equivalent
  - (i) Chinese Standard: JS/T 894-2001: Class JS1
  - (ii) German Standard: DIN 1048
  - (iii) American Standard: ASTM D412
  - (iv) HKHA Standard: WAT 6M010.4
- (b) E.MIX EVA Admix or approved equivalent
  - (i) British Standard: BS 6319
- (c) HHA Standard: MTS (2002/2004 Spec. Part D, C1 2.1.1, 2.1.2 & 2.1.15)
  - (i) Ethylene vinyl acetate liquid admixture based. SBR Polymer is strongly prohibited. Should not contain aromatic group, which prevent the heat break down.
- (d) E.MIX WP Screed or approved equivalent
  - (i) British Standard: BS 6319; Part 3: 1983 & BS 4551: Part 1: 1980
  - (ii) HKHA Standard: MTS (2002/2004 Spec.)
  - (iii) American Standard: ASTM C109-1990
- (e) E.MIX Floor Fix or approved equivalent
  - (i) British Standard: BS 5980: 1980 Type 1 Class AA
  - (ii) European Norm: EN 12004: 2001 Class C2TE(S1)
- (f) Tile Grout Fine
  - (i) British Standard: BS 5980: 1980 Part 7.9
  - (ii) European Norm: EN 13888: 2002 Class CG2
  - (iii) Chinese Standard: JC/T 547: 1994
  - (iv) American Standard: ANSI A118.6: 1992

11.9.6.4 Roofing Insulation



- 11.9.6.4.1 Roofing insulation shall be 50mm thick Foamless Readyboard insulation board or approved equivalent, with low facing consists of a bitumen (asphalt) adhered white fiberglass fleece and top face is made up of a layer of bitumen capped by a thin protective layer of polypropylene; compliance with ASTM C552, the fixing details in accordance with manufacturer's recommendations. The Foamglas Readyboard insulation board shall be laid on the waterproofing membrane. A slip layer of polyethylene sheet shall be laid over the Foamglas Readyboard insulation board. Cement sand screed or load bearing concrete slab shall then be installed over it.
- 11.9.6.5 Workmanship
- 11.9.6.5.1 Application and installation should be complied with manufacturer's recommendation. Method, statement, literatures and collaterals must be submitted.
- 11.9.6.5.2 Waterproofing upturn at skirting or curb shall be 300mm minimum above finished floor level.
- 11.9.6.5.3 All pipes going through roof or floor slabs shall be packed with non-shrinkage waterproof cement grouting and dressed around with 1.5 mm thick waterproofing membrane extending 150mm around the pipe and with an upstand of 150mm above finished floor level before executing the membrane works.
- 11.9.6.5.4 Proprietary waterproofing Membrane Roofing Works shall include for:
- (a) Hacking concrete surfaces to form key
  - (b) Executing work at any height
  - (c) All temporary rules
  - (d) All narrow widths
  - (e) All upstand, fair and rounded edges and turn-ins
  - (f) All angles, intersections and stops to internal angle fillets, skirtings, fascias, gutters, curbs channels and the like
  - (g) All laps, cuttings, notching and bending of underlays and any reinforcement.
  - (h) Rubbing surfaces of roofing with a wood float with clean and if required.

- (i) Dressing waterproofing membrane to outlet pipes, dishing to gullies, forming collars around pipes, sleeves, railing standards and the like including cleaning and priming the surfaces of those items with waterproofing solution and bonding agent before executing the waterproofing membrane works.

11.9.6.6 Testing

11.9.6.6.1 Before application of the screeding to the abovementioned location, the floor shall be flooded with 50mm high water for a period of at least 24 hours.

11.9.6.6.2 Non-destructive infra-red scanning tests shall be carried out to all areas applied with waterproofing. The infra-red scanning report should be done by independent contractor and submit to the CIC directly. The non-destructive test specialist should be selected & approved by the CIC before the test to be commenced.

11.9.6.6.3 Any leakage or defects shall be repaired / rectified before commencement of the subsequent works.

11.9.6.7 Guarantee of Waterproofing System

11.9.6.7.1 The Contractor / material supplier / manufacturer shall provide a joint written guarantee for the materials and workmanship to the CIC that the waterproofing system will be watertight for a period of **TEN (10)** years after the date of practical completion of works as certified by the CIC.

11.9.6.7.2 Contents and format of the joint guarantee shall be submitted to the CIC for approval before commencement of works. Delay due in submission and approval of the joint guarantee would not be entertained. Release of retention money upon making good of defect is also subject to the presentation of approved guarantee.

11.9.6.8 Accessories

11.9.6.8.1 Capping, closure pieces, flashings, trims, sills, gutters, fillers, spacers sealants and fixings were not described in either drawing or specification but necessary for a complete watertight system shall be provided by the Contractor which should be recommended and submitted before used.

11.9.6.9 Contact Information of Supplier

Product: Foamglas Ready Board T4+ insulation board

Company: CSYT EnvironCon Company Limited 長城環建有限公司

Contact Person: Mr. Kwan

Tel.: 2891 2213

Fax: 2834 7997

Email: [csytco@netvigator.com](mailto:csytco@netvigator.com)

11.9.7 **Waterproofing System (WP-02) - Proprietary Bitumen Felt Built-Up Roofing**

11.9.7.1 Bitumen felt shall be in accordance with **BS EN 13707 + A2**, and shall be as follows:-

- (a) Underlayer to consist of one or more layers, as specified, of approved fine granule surface felt (nominal weight 1.8 or 2.5 kg/m<sup>2</sup>).
- (b) Top layer shall be one of the following:
  - (i) Approved mineral surfaced felt, (nominal weight 2.8 kg/m<sup>2</sup>)
  - (ii) Approved fine granular surfaced felt (nominal weight 2.5 kg/m<sup>2</sup>) with surface dressing.
- (c) Rolls shall be delivered to Site bearing the trade mark and certification as to BS type.
  - (i) Bitumen primer shall be selected to suit the type of bonding compound
  - (ii) Bonding compound shall be bitumen based
  - (iii) Bitumen dressing compound shall be cut-back bitumen to **BS EN 12591, BS EN13924** and **BS EN 15322** class 1.
  - (iv) Stone chippings shall be light coloured, hard and free from brown or partially decomposed stone. Chippings shall be graded from 5 mm to 3 mm
  - (v) Nails for fixing felt to timber decks shall be galvanized steel or non-ferrous metal with 3 mm diameter shank and 11 mm diameter clout head and 20 mm long.

11.9.7.2 Workmanship

11.9.7.2.1 Lay bitumen felt roofing generally in accordance with **BS 8217**.

11.9.7.2.2 Lap felt 75 mm at joints and 100 mm at ends of length. Lay successive layers to break joint.

11.9.7.2.3 Provide thermometers to check the work and do not heat any layers or material to more than 220 °C. Lay evenly at a sufficiently high temperature to obtain a satisfactory bond (normally 180 °C to 200 °C). Bonding compound shall be used in accordance with the manufacturer's recommendations. The Contractor shall ensure that workers are protected against the risk of exposure to substances considered to be hazardous to health. Toxicological information, exposure control, personal protection and first aid measures extracted from the manufacturer's material safety data sheets shall be kept in a register on the Site.

11.9.7.2.4 Ensure that the base is clean and dry, before starting work. Rolls of felt shall be laid in the following directions:-

- (a) Lay the first layer of felt starting at, and parallel to, the lower edge or eaves. Lay subsequent layers in a similar manner to ensure that the laps in the built up roofing do not obstruct the flow of water.

11.9.7.2.5 Lay bitumen felt roofing as follows:-

- (a) Brush on a coat of bitumen primer, and allow to dry. Partially bond the first layer to the base at the perimeter and in spots or strips, with hot bonding compound at the rate of 0.5 kg/m<sup>2</sup>. Roll with a 70 kg (minimum) roller while the bonding compound is still hot. Remove any surplus compound squeezed out at the edge.
- (a) Fully bond subsequent layers with a continuous even coating of hot bonding compound applied to the previous layer at the rate of 1.5 kg/m<sup>2</sup>. Roll and remove any surplus compound as specified above.

11.9.7.2.6 Dress surface with bitumen compound applied at the rate of 3 kg/m<sup>2</sup> dressed immediately with stone chippings, lightly rolled in at the rate of 15 kg/m<sup>2</sup>. Remove any loose chippings.

- 11.9.7.2.7 Provide skirtings as follows:-
- (a) Provide a triangular cementitious internal angle fillet at bottom 75 mm wide on splay. Carry up underlayers of felt to form skirting 150 mm (minimum) high above roof level. Cover with an approved mineral felt flashing with one edge tucked into 25 mm groove in wall, wedged at 600 mm centres and pointed with mastic and seal to face of skirting with bonding compound.
- 11.9.7.2.8 At verges, gutters and the like:
- (a) Provide and fix a non-ferrous trim fixed with compatible screws or nails, bonded between layers of built up roofing to form drip or dressed into gutter.
  - (b) Form a welted drip.
- 11.9.7.2.9 All roof falls shall be aligned to direct water towards outlets.
- 11.9.7.2.10 Dress all layers into proprietary roof outlets and seal with bonding compound.
- 11.9.7.2.11 Provide and fix 1.8 mm lead slate size 450 mm x 450 mm perforated for and with a 150 mm long outlet soldered on to suit the bore of the pipe and dress between layers of built up roofing.
- 11.9.7.2.12 Cut and fit roofing around pipes passing through roof, dress flange or collar between second and third layers, and seal in hot bonding compound, using:
- (a) Lead slate size 450 mm x 450 mm perforated for and with 150 mm high collar soldered on to suit bore of pipe.
  - (b) Proprietary moulded plastic or rubber collar.
- 11.9.7.3 Testing
- (a) Before application of the screeding to the abovementioned location, the floor shall be flooded with 50mm high water for a period of at least 24 hours.
  - (b) Non-destructive infra-red scanning tests shall be carried out to all areas applied with waterproofing. The infra-red scanning report should be done by independent contractor and submit to the CIC directly. The non-destructive test specialist should be selected & approved by the CIC before the test to be commenced.
  - (c) Any leakage or defects shall be repaired / rectified before commencement of the subsequent works.
- 11.9.7.4 Guarantee of Waterproofing System

- (a) The Contractor / material supplier / manufacturer shall provide a joint written guarantee for the materials and workmanship to the CIC that the waterproofing system will be watertight for a period of **TEN (10)** years after the date of practical completion of works as certified by the CIC.
- (b) Contents and format of the joint guarantee shall be submitted to the CIC for approval before commencement of works. Delay due in submission and approval of the joint guarantee would not be entertained. Release of retention money upon making good of defect is also subject to the presentation of approved guarantee.

11.9.7.5 Accessories

- (a) Capping, closure pieces, flashings, trims, sills, gutters, fillers, spacers sealants and fixings were not described in either drawing or specification but necessary for a complete watertight system shall be provided by the Contractor which should be recommended and submitted before used.

11.9.8 **Waterproofing System (WP-03) – Ardex Waterproofing System - Shelterbit Slated Green 4mm**

11.9.8.1 General

- 11.9.8.1.1 Engage Applicator, corresponding to the proposed proprietary waterproofing systems, to install the proprietary waterproofing systems for roofing of the proprietary waterproofing materials, insulation and roofing finishes including priming, sealing, crack filling and other necessary materials, flashings etc, with details all in accordance with manufacturer's specifications and recommendations.

- 11.9.8.1.2 Take particular care to ensure that all junctions, expansion joints, penetration around pipes, rainwater outlets, gutters and the like are properly executed.

- 11.9.8.1.3 Comply with the proprietary roofing systems' requirements according to the manufacturer's instruction.

11.9.8.2 Handling and storage of materials

- 11.9.8.2.1 Handle and store materials strictly in accordance with the manufacturer's recommendations and:-

- (a) Keep sheeting rolls in clean, dry, cool accommodation, clear of the ground; and

- (b) Store solvents, adhesives and any other material having a low flashpoint in secure, well ventilated accommodation which will ensure that there is no danger of accidental or deliberate ignition.

11.9.8.3 Approved fixing sub-contractor

- 11.9.8.3.1 Employ a specialist sub-contractor, for the fixing of waterproofing system, who must license by the membrane manufacturer to fix his material and whose operatives are appropriately trained in all aspects of the work.

11.9.8.4 Free of moisture

- 11.9.8.4.1 Do not carry out any work when there is surface moisture;
  - (a) Take all necessary precautions to ensure the integrity of the proposed system is maintained; and
  - (b) Comply with the proprietary roofing and external tanking systems' requirements as stated in the manufacturer's instruction.

11.9.8.5 Survey

- 10.9.8.5.1 Ensure that the Approved specialist sub-contractor carries out a survey of the roof area prior to the commencement of fixing for the purpose of confirming the surfaces are acceptable and comply with the manufacturers recommendations for the application of the membrane.

11.9.8.6 Fix roofing materials

- 11.9.8.6.1 Strictly in accordance with the manufacturer's recommendations;
- 11.9.8.6.2 In accordance with this Specification except where this Specification is overridden by the manufacturer's recommendations, which must be regarded as paramount;
- 11.9.8.6.3 Ensure all junctions, joint details such as skirtings, coverings to kerbs, edges, expansion joints etc., and the joints around pipes, rainwater outlets and the like are properly executed; and
- 11.9.8.6.4 Before commencing work, demonstrate on site compatibility of all adhesives and materials which must be certified as compatible by the supplier/manufacturer in writing.

- 11.9.8.7 External angles
- 11.9.8.7.1 Maintain the full thickness of asphalt specified at external angles between horizontal and vertical surfaces or between sloping surfaces.
- 11.9.8.8. Workmanship
- 11.9.8.8.1 After removed existing roofing system upon sound concrete.
- 11.9.8.8.2 Patch and repair all uneven area by ARDEX A46.
- 11.9.8.8.3 Apply minimum 20mm thick ARDEX WPM256 / ABACRETE cement/sand screed lay to fall (1:100) (If necessary).
- 11.9.8.8.4 Ensure that all substrates on which membranes are to be directly laid, have a smooth, even surface, free of protrusions, oil and grease and are dry and free of dust.
- 11.9.8.8.5 Remove all nibs of concrete and cement.
- 11.9.8.8.6 Complete all cuts and preformed chases, external angles chamfered and internal angles fillet by ARDEX A46 or cement sand mortar including all fixings that will penetrate the roofing membrane are in place unless otherwise specified in details of shop drawings.
- 11.9.8.8.7 Unless shown otherwise on Drawings, from skirting to a height above the finished roof level of 300 mm, with the top edge weathered and tucked into a groove with minimum dimensions of 25 mm deep × 25 mm.
- 11.9.8.8.8 Insulation must be lightly buttered and any fasteners brought level to the surface.
- 11.9.8.8.9 Apply minimum 25mm thick ARDEX WPM256 / ABACRETE cement/sand screed on top of the insulation and lay to fall (1:100) (If necessary).
- 11.9.8.8.10 Apply ARDEX SHELTERPRIMERAQUA for all area including skirting. Waiting for around 4 –6 hours normally until touch dry.
- 10.9.8.8.11 Torch on the SHELTERBITSLATED FINISH 4mm. Over-lapping 100mm for long-side and 150mm for short-side.
- 10.9.8.8.12 Use SHELTERJOINT PU Sealant to make good all grooves in vertical area.
- 11.9.8.8.13 Flooding Test of the waterproofing system with 24 hrs.



11.9.8.9 Contact Information of Supplier

Product: Shelterbit Slated Green 4mm

Company: Ardex Hong Kong Limited

Contact Person: Victor So

Tel.: 2529 6325

Mobile: 9789 4150

Fax: 2529 8615

Email: victor.so@ardex.com.hk

**11.10**      **Glazing**

11.10.1 Glass generally shall be in accordance to BS 952 and ASTM C 1036.

11.10.2 Tempered and laminated glass

11.10.2.1 Tempered and laminated glass shall conform to the relevant safety class requirements of BS 6262:5000 and shall be determined by testing to BS 6206:1981 although tests in accordance with ANSI Z97.1-1984 are acceptable.

11.10.3 Edge quality

11.10.3.1 Edge quality finish for all glass, irrespective of heat treatment, is important.

11.10.3.2 Heat treated glass may be rejected, and annealed glass will be rejected, if it does not conform to the following criteria:

- (a) Shark teeth shall not penetrate more than half of glass thickness.
- (b) Serration hackle may occur only within 150 mm of corners.
- (c) Flare shall not exceed 1.0 mm as measured perpendicular to glass surface across the edge. Flare shall not occur at setting blocks.
- (d) Bevel shall not exceed 1.6 mm.
- (e) Flake chips may occur only within 200 mm of corners; depth shall not exceed 0.8 mm and length or diameter shall not exceed 6.0 mm.
- (f) Rough chips shall not be permitted. Rough chips shall be those which exceed any of the dimensional limits for flake chips.
- (g) Shells on the face of the glass are not permitted on annealed glass and are only acceptable for heat treated glass if they were present prior to heat treatment and are covered by a glazing bead or glass stop. They are not permitted for glass that will be structurally glazed with silicone.

11.10.4 Insulating glass

11.10.4.1 Insulating glass shall have double edge seals. Primary seal shall be extruded polyisobutylene continuously bonded to glass surfaces and desiccant filled metal spacer, including corners. Minimum width of primary seal shall be 3.0 mm. Secondary seal shall be a 2 part neutral cure structural silicone. Secondary seal shall completely cover spacer with no gaps or voids, and shall be continuously bonded to both plates of glass.

11.10.4.2 Where non-pyrolitic Low-E coatings are used, edge deletion of the coating shall be required unless specifically stated as not being required by the glass manufacturer.

11.10.5 Flatness

11.10.5.1 In addition to conforming to BS 952 and ASTM C 1048, monolithic heat strengthened and tempered glass shall conform to the following flatness tolerances:

- (a) Bow and warp have the same meaning. They are both defined as deviation of a glass surface from a true plane, with the glass freestanding or installed in a frame and positioned in a vertical plane.
- (b) Localized bow refers to any straight line segment with a length of 300 mm on a glass surface.
- (c) Overall bow refers to any straight line segment on a glass surface which extends between opposite edges across the smaller glass dimension and is perpendicular to at least one edge. The length of the line segment is the gage length.
- (d) Localized bow shall not exceed 1.6 mm.
- (e) Overall bow shall not exceed: 1.0 mm per 300 mm for gauge length in the range zero to 1 m; 0.75 mm per 300 mm for gauge length in the range 1 m to 2.40 m; one half of the values listed in ASTM C 1048, Table 2 for gauge lengths exceeding 2.40 m.
- (f) Where heat treating results in essentially parallel ripples or waves, the maximum peak-to valley deviation shall not exceed 0.127 mm. Requirements for localized bow and overall bow shall also be satisfied. Direction of ripples shall be consistent throughout the building and approved by the CIC.
- (g) The specified bow and ripple tolerances are intended as manufacturing quality control limits.

11.10.6 Inclusions in tempered glass

11.10.6.1 Tempered glass shall be subjected to quality control measures (i.e. heat soaking) to minimize inclusions that could result in spontaneous breakage. Such inclusions are defined as a material defect by this specification. Installed tempered glass which experiences spontaneous breakage shall be replaced (material and labour) under the warranty provisions.

11.10.7 Plastic films

11.10.7.1 Plastic films used to opaque glass shall conform to the following requirements:

- (a) Minimum nominal thickness of polyester shall be 0.08mm. Film shall be pigmented and have a black colour unless otherwise stated.
- (b) Minimum nominal thickness of polyester shall be 0.08mm. Film shall be pigmented and have a black colour unless otherwise stated.
- (c) The bonding surface shall be completely coated with a solvent based adhesive.
- (d) Monolithic opaque glass shall have a safety backing for fallout resistance.

11.10.8 Criteria for glass

11.10.8.1 Performance requirements for glass shall be as follows:

- (a) For the purpose of glass selection, design wind pressure shall be assumed to have one minute duration. Minimum roof live load shall be assumed to have one week duration.
- (b) Upon first application of design wind and live load pressures, probability of breakage shall not exceed 8/1000 for vertical glass, and 1/1000 for sloped and horizontal glass.

11.10.9 Glass replacement

11.10.9.1 Glazing details shall permit glass replacement after initial construction, shall permit reuse of original gaskets, shall permit replacement glass of the same nominal size as original glass, and shall not require cutting of framing members or removal of interior finishes. Vision glass in conventional frames shall be replaceable from the interior. Spandrel glass shall be replaceable from the exterior. Silicone supported vision glass shall be replaceable from the exterior and/or interior.

## 11.10.10 Glazing materials

11.10.10.1 The minimum service life of all gaskets, weather stripping and other glazing accessories shall be FIFTEEN (15) years. Gaskets and weather-strips, except at structural silicone glazing shall, as a minimum, conform to BS 6262:2005 except:

- (a) Sponge gaskets shall be extruded black neoprene with a hardness of 40  $\pm 5/-4$  durometer Shore A and conforming to ASTM C 509. Design sponge gaskets to provide 20% to 35% compression. Sponge gaskets are only to be used as gap fillers and must not be used where their performance relies on compression resistance.
- (b) Dense gaskets shall normally be black extrusions with a Shore A hardness of 70  $\pm 5/-4$  for hollow profiles and 60  $\pm 5/-4$  for solid profiles, and conforming to ASTM C 864 or BS 4255:1986. Outdoor and indoor gaskets shall be silicone, EPDM, neoprene or a Thermal Plastic Elastomer (TPE). However TPE gaskets are not permitted to be used where their performance is dependent upon compression resistance. Where the colour of the gasket is other than black, only heat cured silicone rubber is to be used.
- (c) Where compatible with the installation procedures, all corners are to be vulcanized by transfer/injection moulding.
- (d) Interior and exterior gasket profiles shall be designed to produce a glass edge pressure of not less than 0.70 N/mm, nor more than 1.75 N/mm.

## 11.10.11 Thickness &amp; weights of glass

11.10.11.1 Thickness and weights of glass shall be as in the following table:

<u>Nominal thickness</u> (mm)	<u>Approximate weight</u> (kg/m <sup>2</sup> )		<u>Minimum weight</u>		
	Sheet	Float	Cast	Polished wired	Cast or figure rolled
3	7.5	7.5	-	-	6.0

4	10.0	10.0	-	-	7.5
5	12.5	12.5	-	-	9.5
6	15.0	15.0	17	15.9	11.5
10	-	25.0	-	-	21.5
12	-	30.0	-	-	-

11.10.11.2 Glass shall be of accurate size, with clean undamaged edges and surfaces which are not disfigured.

11.10.12 Fire rated glass

11.10.12.1 Wired and other specialist glasses must have been successfully tested in accordance with the relevant clauses of BS 476.

- (a) Wired cast glass and wired polished glass shall have a square mesh wire 13 mm square electrically welded at each intersection that is embedded into the glass to a depth equivalent to half the glass thickness.
- (b) Wired glass is not considered a safety glass and can only be used in a non-fire rated installation with express permission.
- (c) Non-insulating fire rated glass, other than wired soda lime glass should be bora silicate glass.
- (d) Insulating fire graded glass can be of any composition if the relevant fire certificate can be provided.

11.10.13 Fully Tempered glass

- (a) Fully tempered glass shall be glass that has been heat treated to give increased strength, in accordance with the requirements of ASTM C 1046, to approximately four times the strength and impact resistance of untreated float glass.
- (b) To be defined as Fully Tempered glass, the residual surface compression shall be a minimum of 69 MPa, however it is recommended that the glass supplied as fully tempered shall have a minimum of 75 MPa.
- (c) It must also be noted that heat soak testing in accordance with PNAP 106, which is based upon the methodology of EN 14179:2005, must be undertaken for glass supplied as fully tempered. Therefore, it shall be subjected to heat soak testing in accordance with the relevant procedures set out in EN 14179 Part 1:2005, including certification confirming calibration of the heat soak test oven.

- (d) Fully tempered glass shall be considered a safety glass as upon fracture it would break into small fragments.

11.10.14 Mirror

11.10.14.1 Mirror glass shall be selected float suitable for silvering and a minimum Q2 quality in accordance with ASTM C1036 - 11.

11.10.14.2 Mirrors shall have square or beveled edges. Exposed edges are to be ground or polished smooth with an arised edge.

**11.11 Steel and Metal Work**

11.11.1 Metal windows

11.11.1.1 When fixing metal windows:

- (a) Distortion during handling and storage shall be avoided.
- (b) Tightness and clearance between sash and frame of all opening lights which shall be fixed until glazed shall be ensured.
- (c) Having construction access through window openings and/or placing scaffolding, boards etc. directly onto the window frames shall be avoided. If window openings must be used, then window frames at that opening location shall not be fixed until after completion of the related internal works and the through-route is no longer required.
- (d) Composite units including the provision of all necessary bolts screws etc. shall be assembled and joints shall be sealed with an approved one pack gun type polysulphide sealant to BS EN ISO 11600:2003.
- (e) Windows shall be positioned, plumbed, leveled and squared.
- (f) Pockets shall be formed in heads, jambs, cills etc. to receive fixing lugs. Lugs shall be built in and made good and screwed to frames or plugged and screwed frames using packing pieces where necessary. Frames shall not be distorted when tightening fixings.
- (g) Steel frames shall be bedded with water-proof mortar, leaving no gaps. Mortar shall be an approved ready-mix mortar or consist of 1 part of cement to 3 parts of sand together with the minimum amount of water necessary to achieve a consistency suitable for completely filling the gap between the frame and the opening. The mixture shall contain an approved proprietary water-proofing and non-shrink admixture.

- (h) Aluminum frames shall be bedded with water-proof mortar, leaving no gaps. Mortar shall be an approved ready-mix mortar or consist of 1 part of cement to 3 parts of sand together with the minimum amount of water necessary to achieve a consistency suitable for completely filling the gap between the frame and the opening. The mixture shall contain an approved proprietary water-proofing and non-shrink admixture.
- (i) Joints around external edge of steel window frames shall be raked out to the approval of the CIC and pointed with an approved oil based mastic sealant to form a smooth, flat joint. Excess sealant shall be removed from adjoining surfaces and left clean. Adjoining surfaces which would be impossible to clean shall be masked if smeared with sealant.
- (j) Joints around external edge of aluminum window frames shall be raked out to the approval of the Contract Administrator and pointed with an approved one-pack gun type polysulphide sealant to BS EN ISO 11600:2003, sealant to form smooth, flat joint. Excess sealant shall be removed from adjoining surfaces and left clean. Adjoining surfaces which would be impossible to clean shall be masked if smeared with sealant.
- (k) Contact with concrete, mortar, plaster, or similar materials shall be avoided.

11.11.1.2 Window sealant replacement

- (a) The sequence of the removal of the existing sealant shall be started from the bottom, and then the two sides and finally the top portion.
- (b) The Contractor shall pay extra attention to prevent any damage to the existing glass panel during sealant replacement works, and be responsible for any damage caused.
- (c) All window sealant replacement works as described in the contract shall include the following operations:
  - (i) Strip off and cart away all the existing mastic pointing around window frame on the external elevations.
  - (ii) Thoroughly clean the surface with brush or air jetting.
  - (iii) If leakage is detected, hack off existing waterproof cement packing around the window frame. Apply new packing with mosaic tile finish or material match to existing to replace the defective ones.

- (iv) Place masking tape to both sides of joint to ensure a neat edge to the seal and protect substrate from removal of sealant is difficult. It should be applied before priming and be removed immediately after tooling, before the sealant starts to cures.
- (v) To the sound waterproofing cement packing, re-caulk all the sealant to glass panels with approved mastic sealant at a width to depth ratio 2:1 to the joint between window frame and concrete. The contractor shall submit the test certificate and relevant information to the Contract Administrator for approval prior to work commencement.
- (vi) All surfaces should be free from dust, oil, grease or other contamination.
- (vii) Tool the installed sealant with light pressure to spread the material against the back-up material and the joint surface.
- (viii) Remove the masking tape and clean the surfaces.
- (d) The silicone sealant applied shall be approved by the CIC.

11.11.2 Fire resisting windows

11.11.2.1 Fire resisting windows shall include for:

- (a) Supply and installation in accordance with the manufacturer's instructions, and in compliance with the fire resisting properties as specified in the Code of Practice for Fire Safety in Buildings and all related statutory requirements
- (b) Finishing all surfaces as required.
- (c) Providing test certificate, operation and maintenance manuals and supplier's warranty

11.11.3 Aluminum windows

11.11.3.1 Aluminum windows shall be obtained from an approved manufacturer and constructed in accordance with the following: -



- (a) When fixed in position, windows shall be designed to withstand a wind load calculated in accordance with the Code of Practice on Wind Effects in Hong Kong with a minimum pressure of 3 kPa and a permissible maximum deflection of 1/180th of the length of the member under consideration. Where necessary galvanized steel cores, anchors, brackets, etc. shall be used as stiffeners. Calculations shall be submitted for approval.
- (b) Sections shall be extruded aluminum alloy to BS EN 485:2008, BS EN 515:1993, BS EN 573 and BS 1474:2008. British alloy designation 6063 with a minimum wall thickness of 2.0 mm and dovetail grooved for weatherstrip.
- (c) Frames shall be mechanically jointed of mortice and tenon construction to provide rigid and secure connections. Sash members shall be mechanically jointed and mitred to develop the full strength of members using solid block angle pieces and provide a neat weather-tight joint. Adequate drainage shall be provided in bottom members.
- (d) Galvanized steel fixing lug spaces at 300 mm centres (maximum) shall be provided for outer frames of each unit. Where specified, lugs shall be fixed with rag-bolts or approved proprietary stud anchors fixing bolts.
- (e) Water bars of galvanized steel or other approved material shall be provided for the complete width of the windows where the design of the window requires.
- (f) All composite units, including provision of all necessary bolts, screws etc. shall be assembled at Site and all joints shall be sealed with an approved sealant.
- (g) Unless otherwise specified, an approved chloroprene rubber, polyvinyl chloride or nylon pile weatherstrip shall be securely fixed into the dovetailed groove in the window sections to provide a continuous contact between each opening part and its fixed frame.
- (h) Windows shall be suitable for internal glazing unless otherwise specified. An approved glazing system and aluminum beads shall be provided. Beads shall be securely clipped to the frame or beads which shall be an integral part of the frame shall be used.
- (i) Aluminum alloy, stainless steel or nylon shall be used for all exposed fixings including screws, nuts, bolts, washers and rivets and shall match up with finish where possible. Stainless steel, galvanized or cadmium-plated steel shall be used for all concealed fastening devices.

- (j) Window fittings and furniture shall be approved and as follows:
  - (i) Friction pivots and sliding stays - stainless steel. To provide a maximum opening of 100 degree and a minimum clearance of 100 mm between frame and window for cleaning purposes.
  - (ii) Casement fasteners, locking handles, spring catches, casement stays, brackets, slip bolts and the like:
  - (iii) die cast zinc alloy to BS EN 1774:1997 suitably coloured to match the anodized window or door metal.
  - (iv) Moulded stainless steel with satin finish.
  - (v) Locks cadmium plated steel with stainless steel or brass shoots etc.
  - (vi) Pull handles anodized aluminum.
  - (vii) Rollers, guides etc. cadmium plated steel with nylon or brass rollers to suit weight of door or window. To be adjustable after installation.
- (k) Remote control gear shall be hand operated shaft and lever or conduit and cable remote control system with bronze or die cast zinc alloy bevel gear boxes, adjustable arms and keyed shafts.
- (l) Windows and doors shall be hung to open as indicated and fitted with the following fittings and furniture:
  - (i) Side and top hung windows - Friction pivots and sliding stays and casement fastener dual if necessary) or pull handle and locking handle (dual if necessary). Top hung windows in inaccessible locations shall be fitted with remote control gear.
  - (ii) Sliding windows - Rollers, guides etc., pull handle and stops, sliding bolts or locking mechanism. N.B. The window should be designed so that it cannot be lifted off its rollers without the removal of a safety device.
- (m) When flyscreens are specified, they shall be located on the inside. The frames shall be extruded aluminum with plastic covered mosquito gauze of 7 x 7 mesh per 10 mm square. Screens shall be fixed to window frames by turn buckles. The windows shall be fitted with locking handles and an opening and closing mechanism comprising cam handles and rotor operator.
- (n) All steel framework, cores, anchors and brackets shall be primed with zinc chromate primer and painted with two coats of bituminous paint.
- (o) Concealed aluminum or stainless steel surfaces which may come into contact with wet mortar, cement, plaster or similar materials shall be painted with one coat of bituminous paint.

- (p) All exposed aluminum or stainless steel surfaces shall be applied with a strippable coating or masking tape. (NOTE: The anodised surface may be permanently damaged by contact with wet cement and plaster.) All window units and other associated materials shall be wrapped in stout waterproof paper or polythene to protect against damp and scratching and premature delivery to Site shall not be made.
- (q) Windows shall be returned to site on completion of building work, the protective coating shall be removed carefully and be left clean.

11.11.4 Repair to metal window, door and gate (other than aluminum material)

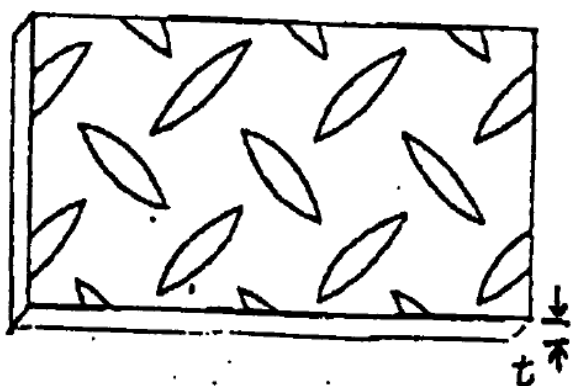
Repair to metal windows and doors shall include for

- (a) Providing ironmongery of matching materials and finishes.
- (b) Cutting at all means.
- (c) Drilling and tapping to existing framing including riveting and welding.
- (d) Providing and fixing screws, rivets, etc. and the like.
- (e) Cutting mortices and grouting in cement mortar and making good disturbed surfaces.
- (f) Making good disturbed surfaces.
- (g) Protecting and cleaning.
- (h) Providing safety chain or wire

11.11.5 Chequer plate

**MASS (WEIGHT) OF STEEL CHEQUER PLATE**

Thickness on plain mm (t)	Projected thickness (inclusive of raised pattern) mm	Approximate weight kg/m <sup>2</sup>
3.0	4.5	28.7
4.5	6.0	40.5
6.0	7.5	52.2
8.0	9.5	67.9
10.0	11.5	83.6
12.5	14.0	103.1



11.11.6 Fire protection enclosure

11.11.6.1 Supplier: Promat (HK) Limited

Contact: 2661 2392 (HK)

11.11.7 Chain link fencing

11.11.7.1 Steel wire for fencing, including chain link and barbed wire shall be to BS 4102:1998

11.11.7.2 Galvanised wire netting shall comply with BS EN 10223-2:1998, or of approved local manufacture.

11.11.8 Proprietary fall arrest system

11.11.8.1 Contractor shall provide a competent person to carry out periodic or ad-hoc examination, load test and certification on Class A1 anchor device of existing proprietary fall arrest system.

11.11.9 Metal Gratings

- 11.11.9.1 All grating works shall include:-
- (a) Multi-handling and placing in position.
  - (b) All necessary cutting and waste.
  - (c) Adjusting to suit channel alignment.

**11.12**      **False Ceiling System**

- 11.12.1 Suspension ceiling system shall include all hangers, fixings, main runners, cross members, primary channels, perimeter trims, splines, noggings, clips, bracing, bridging, etc., which are necessary to complete the installation and achieve the performance in accordance with manufacturer's instructions.
- 11.12.2 The suspension ceiling system shall be an approved proprietary system meeting the requirements of BS EN 13964:2004+A1:2006 and the suspension system shall be manufactured from one of the following materials:
- (a) Galvanized mild steel.
  - (b) Aluminum.
  - (c) A combination of galvanized mild steel and aluminum.
- 11.12.3 Aluminum sections shall be anodized where exposed. The panel grid shall be constructed of exposed tee or concealed 'T', 'Z' or other approved sections. Hangers shall be steel wires not less than 2 mm diameter, or straps, rods or combination of sections designed to facilitate the adjustment of grid levels, support the weight of the ceiling and all fittings and attachments.
- 11.12.4 Fixing to soffits shall be by means of approved sockets, anchors or other fixing devices cast into the slab or approved proprietary plugs or drill-anchors.
- 11.12.5 The system shall be so designed to facilitate the removal of at least 10% of the tiles without disturbing the remainder. Matching edge trim shall be provided to the perimeter of suspended ceilings. Samples of the panel grid complete with acoustic ceiling tiles shall be submitted for approval.

**11.13**      **Fittings and Sundries**

- 11.13.1 Cabinets
- 11.13.1.1 Cabinet shall be cabinet, cupboards, hanging cupboards, wardrobes and the like and include:
- (a) Solid timber doors or sliding doors.

- (b) Where glazed doors or sliding glazed doors are specified, the panels shall be constructed either in laminated glass or polycarbonate sheet complete with glazing beads.
- (c) Where sliding doors are specified, they should be fitted with tracks and rollers.
- (d) Drawer units and shelving units forming part of the cabinets, cupboards, hanging cupboards, wardrobes and the like.
- (e) Hanging rods within wardrobes.
- (f) Fixing to wall and ceiling including anchor bolts and stainless steel support brackets.

11.13.2 Sink cabinet/ countertop

11.13.2.1 The Contractor shall include:

- (a) Under-sink cabinet either with fixed panels, door or sliding door panels.
- (b) Drawer units and shelving units forming part of the sink cabinets.
- (c) Forming or cutting opening to accommodate sink (measured separately).
- (d) Fitting and installing sink (measured separately) and making all necessary adjustment to suit.
- (e) Pointing edges of the sink and tap with waterproof sealant.

11.13.3 Venetian blind

11.13.3.1 The materials used to manufacture slim-line venetian blinds shall comply with BS 3415 and shall be free from visible defects e.g. dents, scratches, etc. Blinds shall be installed in accordance with manufacturer's instructions.

11.13.4 Vertical blind

11.13.4.1 The Contractor shall include:-

- (a) Supplying and fixing of single or multi-coloured blades, base weights, drag and base connector cords, glider rail, open and close control, and stop control at any position and all necessary accessories all in accordance with the manufacturer's instructions.
- (b) Supplying and fixing of enamel coated galvanized steel or anodized aluminum head rail.
- (c) Plugging and fixing to plastered surfaces or screwing to wooden pelmet.
- (d) Preparing and applying flame-proof finish to all surfaces of the fabric covering.
- (e) Making good area disturbed, touching up plasterwork and paintwork where required.

- (f) Submission of technical pamphlets and samples of vertical blinds.
- (g) Moving and replacing in position all movable furniture as necessary at the time of execution of works.

11.13.5 Roller blind

11.13.5.1 The Contractor shall include:-

- (a) Supplying and fixing of single or multi-coloured curtains with or without linings.
- (b) Supplying and installation of switch control, motor and all necessary accessories for electrically operated roller blinds.
- (c) Supplying and installation of rise, fall and stop control mechanism including all necessary accessories.
- (d) Provision of fixing framings or brackets to existing building or structure.
- (e) Preparing and applying flame-proof finish to all surfaces of the fabric covering.
- (f) Making good areas disturbed, touching up plasterwork and paintwork where required.
- (g) Submission of technical pamphlets and samples of roller blinds.
- (h) Moving and replacing in position all movable furniture as necessary at the time of execution of works.

11.13.6 Tactile floor

11.13.6.1 All supply and fixing approach & method shall be in strict accordance with the manufacturer's instructions and statutory compliance.

11.13.7 Flag Poles

11.13.7.1 Standard flag pole at KBC. (for reference only)



11.13.8 Road Hump

11.13.8.1 Existing road hump at KBC (for reference only)



11.13.9 Road Barrier



11.13.9.1 Plastic road barrier (for reference only)



Stainless steel (AISI 304) (for reference only)



11.13.10 Traffic cone

11.13.10.1 PVC traffic cone (for reference only)



11.13.11 Water barrier

11.13.11.1 Plastic water barrier (for reference only)



11.13.12 Signage

11.13.12.1 The Contractor shall include:-

- (a) Setting out, cutting to size, beveling and polishing edges, and anodizing after manufactured as required.
- (b) Drilling, plugging and screwing with brass, chromium plated or stainless steel screws, or fixing with approved adhesive or fixing on a special suspension system (measured separately upon request).
- (c) Providing backing plate with colour coating, powder coating, anodized or polished finish on all exposed surfaces before silkscreen printing or after cut out or cut through signage.

- (d) Temporary protection with mask as required.
- (e) Making good disturbed surfaces.
- (f) Design, submission of shop drawings, samples and the like.
- (g) Compliance with Design Manual: Barrier Free Access, issued by Buildings Department, 2008 Edition as required.
- (h) Preparing substrate surface to receive silkscreen printing or translucent film.
- (i) Cutting through for letters, numbers, Chinese characters, graphics, punctuations and the like as required.
- (j) Plastic sign plate of any colour or finishes.
- (k) Finishing with polished edges as required.

11.13.13 Ironmongery

- 11.13.13.1 All ironmongery shall be approved before orders are placed and shall be obtained from an approved manufacturer for that item and for the use intended.
- 11.13.13.2 Ironmongery shall be fixed carefully using fastenings with matching finish supplied by ironmongery manufacturer to prevent damage to ironmongery and adjacent surfaces.
- 11.13.13.3 Ironmongery shall be fitted and fixed in accordance with the manufacturer's recommendations and instruction, where applicable, manufacturer's fixing templates shall be used.
- 11.13.13.4 Exposed hardware shall have the finish specified and unless otherwise specified all hardware on each item shall have identical or similar finish.
- 11.13.13.5 Screws shall match the finish of the article to be fixed and to be round, flat headed or countersunk as required and in accordance with BS 1494:1:1964.
- 11.13.13.6 One complete set of manufacturer's fixing and maintenance instructions for the ironmongery shall be provided prior to delivery.

11.13.14 Keyboard tray

11.13.14.1 3M Adjustable Under-Desk Keyboard Drawer, KD45 (for reference only)



## **11.14**      **Partitions and Cubicle System**

11.14.1 Dry wall

11.14.1.1 The Contractor shall include:-

- (a) Taking down and re-fixing existing dry wall partitions including framing, panels, covering materials, etc..
- (b) Replacement and provision of new compatible fittings and fixing accessories including additional accessories as necessary.
- (c) Modifying existing framing including provisions of additional framing, as required.
- (d) Modifying existing openings, finishes or covering to suit actual site conditions.
- (e) Multi-handling and delivery between the designated locations and storage area as directed.
- (f) Proper protection to the dry wall, framing, fittings and accessories for storage and re-use.
- (g) Making good surfaces disturbed.

11.14.2 Repair to operable wall

11.14.2.1 Existing operable partition wall at CIC's office (for reference only)



11.14.3 Repair to toilet cubicle system

11.14.3.1 Supplier: Formica Hong Kong

Address: Rooms 1305-9, 13th Floor, Olympia Plaza 255 King's Road, North Point, Hong Kong

Contact: 2598 1000

**11.15 Site Accommodation**

11.15.1 Mechanical lifting platforms

11.15.1.1 The Contractor shall include:-

- (a) Mobilization and demobilization to and from the Site (measurement of both on-site and off-site days exclusive)
- (b) Training and briefing to workers / operators
- (c) Insurances, license fees, patent rights and royalties, where applicable.
- (d) Immediate replacement of the same due to breakdown or unserviceable
- (e) providing and maintaining in good operation condition
- (f) All forms statutory compliance
- (g) Fuel, lubricants, consumable stores, maintenance and repair

11.15.2 Scaffoldings

11.15.2.1 Bamboo Scaffolding

- (a) Design, erection, alteration, modification, maintenance and dismantling of a bamboo scaffolding to the designated location including internal and external areas.

- (b) The Contractor shall undertake the Works in accordance to the Guidelines on Design and Construction of Bamboo Scaffolds issued by Building Department, Guidelines on Planking Arrangement for Providing Working Platforms on Bamboo Scaffolds issued by the CIC and the relevant statutory requirements.
- (c) For matters relating to labour safety, reference shall be made to the latest Code of Practice for Bamboo Scaffoldings Safety issued by Labour Department.
- (d) Upon the CIC's requirements, the Contractor shall provide and erect and maintain in good working order proper single or double scaffolding, catch fans, full height screens/netting, all other mechanical equipment, tools, implements, ladders, tarpaulins etc. together with all other tackle and plant necessary for the proper execution of the Work, and shall carry out any alteration required to same. All of the above shall be removed from the site after completion of the Works.
- (e) The scaffolding is not allowed to anchor or get support with any windows or panels but only on structural members of the building. All supporting locations shall be submitted to CIC's Representative for approval. Any damaged areas shall be reinstated after the removal of scaffolding
- (f) Adequate barriers and covers should be provided around the overhead works with suitable warning signs and notices display to the pedestrians for passageway diversion.
- (g) The bamboo should be delivered downward by floor-to-floor procedure during the dismantling of scaffolding, i.e. free falling is strictly prohibited.
- (h) The Contractor shall maintain the scaffolding in a safe and good condition to facilitate any repair works to the satisfaction to the CIC.

**11.16**      **Provision of Workforce**

- 11.16.1 Skilled workers
  - 11.16.1.1 Supply manpower of registered skilled labour who attained the valid craftsman qualification or relevant registration under statutory requirements and Cap. 583 Construction Workers Registration Ordinance
  - 11.16.1.2 Normal Working Hours: Monday to Saturday from 08:00 to 18:00hrs
  - 11.16.1.3 Outside Normal Working Hours: Sunday, Public Holiday and Statutory Holiday from 08:00 to 18:00hrs
- 11.16.2 Non-skilled workers
  - 11.16.2.1 Supply manpower of registered labour who hold a valid Green Card
  - 11.16.2.2 Normal Working Hours: Monday to Saturday from 08:00 to 18:00
  - 11.16.2.3 Outside Normal Working Hours: Sunday, Public Holiday and Statutory Holiday from 08:00 to 18:00hrs
- 11.16.3 Professionals
  - 11.16.3.1 Possession of RPE and MHKIE of Building Services Division or equivalent
  - 11.16.3.2 Possession of RPE and MHKIE of Structural Division or equivalent
  - 11.16.3.3 Possession of RPS and MHKIS of Building Surveying Division or equivalent
  - 11.16.3.4 Possession of Registered Safety Officer with Labour Department; Minimum 5 years' relevant experience in construction site safety and familiar with safety / environmental rules, regulations and practices  
Technical staff
  - 11.16.3.5 Possession of recognized bachelor's degree in Hong Kong with at least 3 years relevant post experience or higher diploma in Hong Kong with at least 5 years relevant post experience or equivalent

## **12. Technical Specifications (Onsite Technicians)**

### Specification and Frequency

The Contractor shall be responsible for the provision of **Technicians** for routine and project technical supports on Site with details as below:

- 12.1 Responsible for daily repair and maintenance of all facilities, building elements, equipment and furniture at the trade testing centre / offices / other CIC's premises as assigned by the CIC.
- 12.2 To handle and carry out the minor repair works.
- 12.3 To coordinate with and monitor other contractors for repair / maintenance and project works.
- 12.4 To work (after working hours) overnight or to work on Saturday / Sunday / Public Holiday as assigned. Compensated leave will be made for overtime work.
- 12.5 To support for moving of furniture / equipment, etc. upon request by the CIC.
- 12.6 To support for event set up and daily operation upon request by the CIC.
- 12.7 Monitor the functions of multimedia facilities and handle minor trouble shooting on PC, multimedia and AV devices/ facilities and set up the AV upon request by the CIC.
- 12.8 Coordinate with other contractors to support minor multimedia content updating.
- 12.9 Other duties as requested by the representatives of the CIC.



12.10 Deployment details are listed as below:

<b>Manpower</b>	<b>Working Location</b>	<b>Working Day</b>	<b>Working Hours (#1)</b>
<b>1 No. of Technician (Technician #1)</b>	KBC	(a) Monday – Saturday  (b) Sunday and Statutory Holiday	(a) 08:30 - 17:30 (including 1-hour meal break)  (b) Rest day
<b>1 No. of Technician (Technician #2)</b>	KCC	(a) Monday – Friday  (b) Saturday  (c) Sunday and Statutory Holiday	(a) 08:15 - 18:00 (including 1-hour meal break)  (b) 08:15 -12:30  (c) Rest day
<b>1 No. of Technician (Technician #3)</b>	SSC	(a) Monday – Saturday  (b) Sunday and Statutory Holiday	(a) 08:30 - 17:30 (including 1-hour meal break)  (b) Rest day
<b>1 No. of Technician (Technician #4)</b>	TTC	(a) Monday – Saturday  (b) Sunday and Statutory Holiday	(a) 08:30 - 17:30 (including 1-hour meal break)  (b) Rest day

Note:

- Alternative working hours in daytime (9-hour per day including 1-hour meal break) may be assigned by the CIC as necessary.

- 12.11 To present Onsite Technician's actual travelling expenses between different sites, if any, on monthly basis. The travelling expenses will be reimbursed from the CIC.
- 12.12 To present Onsite Technician's payroll record for minimum wage proven, daily work sheet and attendance record to the CIC for checking and monitoring on monthly basis.
- 12.13 To conduct interviews with the CIC's representatives to review the Onsite Technician's performance.
- 12.14 To report the progress of his minor repair work, other contractor's work to the CIC.
- 12.15 To conduct stakeholders engagement forum to solicit and consolidate feedback of stakeholders on the findings and recommendations.
- 12.16 The Contractor shall remain liable for the full remuneration of the deployed Onsite Technicians and be held responsible for all acts and omissions, and their respective employees as if such act or omission were its own.
- 12.17 The Contractor shall ensure the Onsite Technicians under the Contractor's employment should be remunerated at a reasonable market price and complied with the Hong Kong Statutory Requirement.
- 12.18 The CIC's representative will facilitate the CIC in supervising the Onsite Technicians for daily operations.
- 12.19 The rest day of nominated Onsite Technicians are subject to change due to the operational needs of the CIC.
- 12.20 The Onsite Technician shall report duty on Statutory Holidays upon request by the CIC and take rest day in another day under the CIC approval instead of presentation of Reliever. The Reliever is required for the Onsite Technician's takes sick leave, annual leave, if any. The Contractor shall provide a planned leave schedule of Onsite Technicians within ONE (1) month from the time of leave request to the CIC's representative. The Reliever shall possess equivalent professional and technical qualifications and/or experience.

- 12.21 Onsite Technicians are needed to be on duty when Typhoon Signal no. 8 or above or Black Rainstorm Signal is hoisted upon request by the CIC. Time-off will be compensated for the shift in Typhoon Signal no. 8 or above only.
- 12.22 Provision under employment ordinance for employee such as employee compensation insurance, annual leave, medical insurance and MPF shall be included by the Contractor.
- 12.23 The Contractor should submit CVs of the proposed candidates at least TWO (2) weeks before deployment. Separate approval from the CIC should be obtained for any subsequent changes of staff.
- 12.24 The CIC reserves its rights to disapprove the deployment of unqualified candidate(s) and make recommendation to the Contractor. The CIC shall liaise with the awarded Contractor for employment of the existing Onsite Technician(s) whom the CIC considers performing well.
- 12.25 The CIC reserves its right to terminate the deployed Onsite Technicians and Relievers who violates the rules or are unable to meet the satisfactory performance standard of the CIC without any conditions. The Contractor shall arrange a replacement within TWO (2) working days by a competent substitute. The CIC reserves its rights to terminate the contract if the competent substitute is not acceptable.
- 12.26 The Contractor shall provide their company uniform to the nominated Onsite Technicians as identification for the Works.
- 12.27 The Contractor shall provide a smart mobile phone to the nominated Onsite Technicians for the CIC's easy contact and daily operations.
- 12.28 Basic tools will be provided by the CIC.

12.29 The CIC reserves its right to interview/review/evaluate the onsite technicians who are unable to meet the skilled sets, including but not limited to:

I: Technical skills

II: Communication/coordination skills

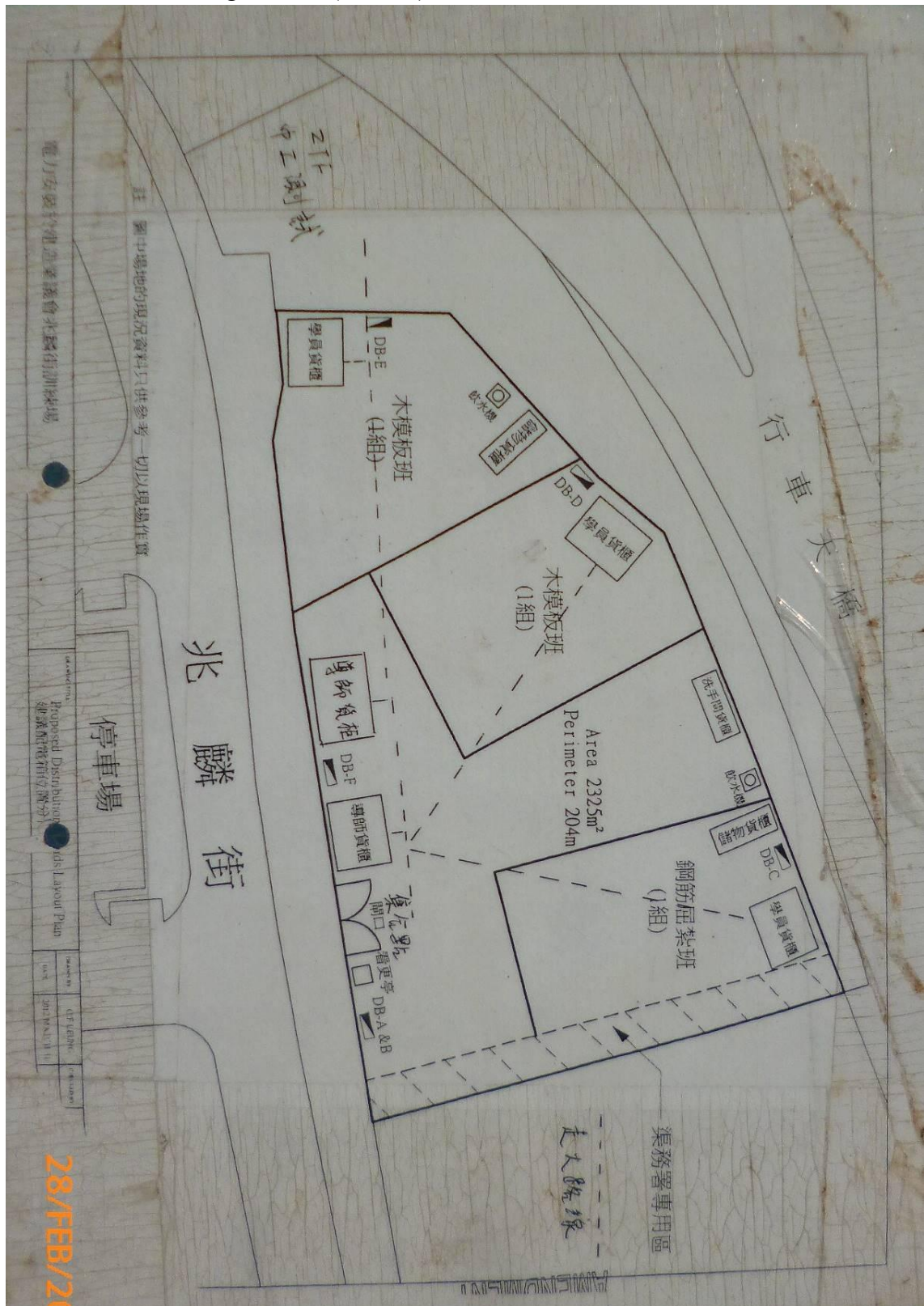
III: Experience by checked records

IV: Qualification verified by certification

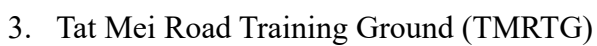
V: Integrity verified by reference check

**Annex 1 – Location Plans of Hong Kong Institute of Construction Training Grounds**

**1. Siu Lun Street Training Ground (SLSTG)**



**2. Tai Po Training Ground (TPTG)**







4. Tin Yuet Road Training Ground (TYRTG)





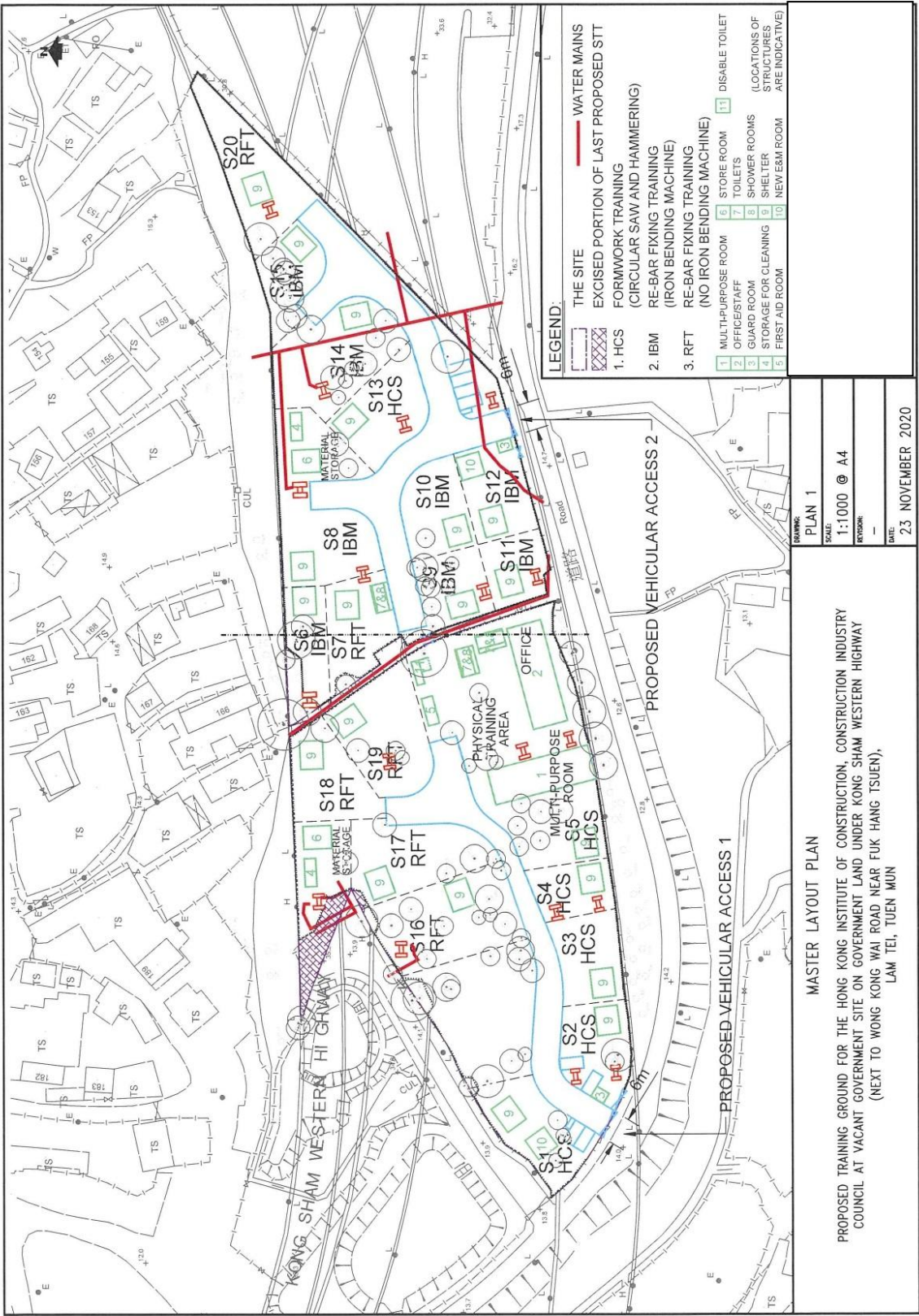
## (413) in P/AE/PUR/TDTC Assignment Brief



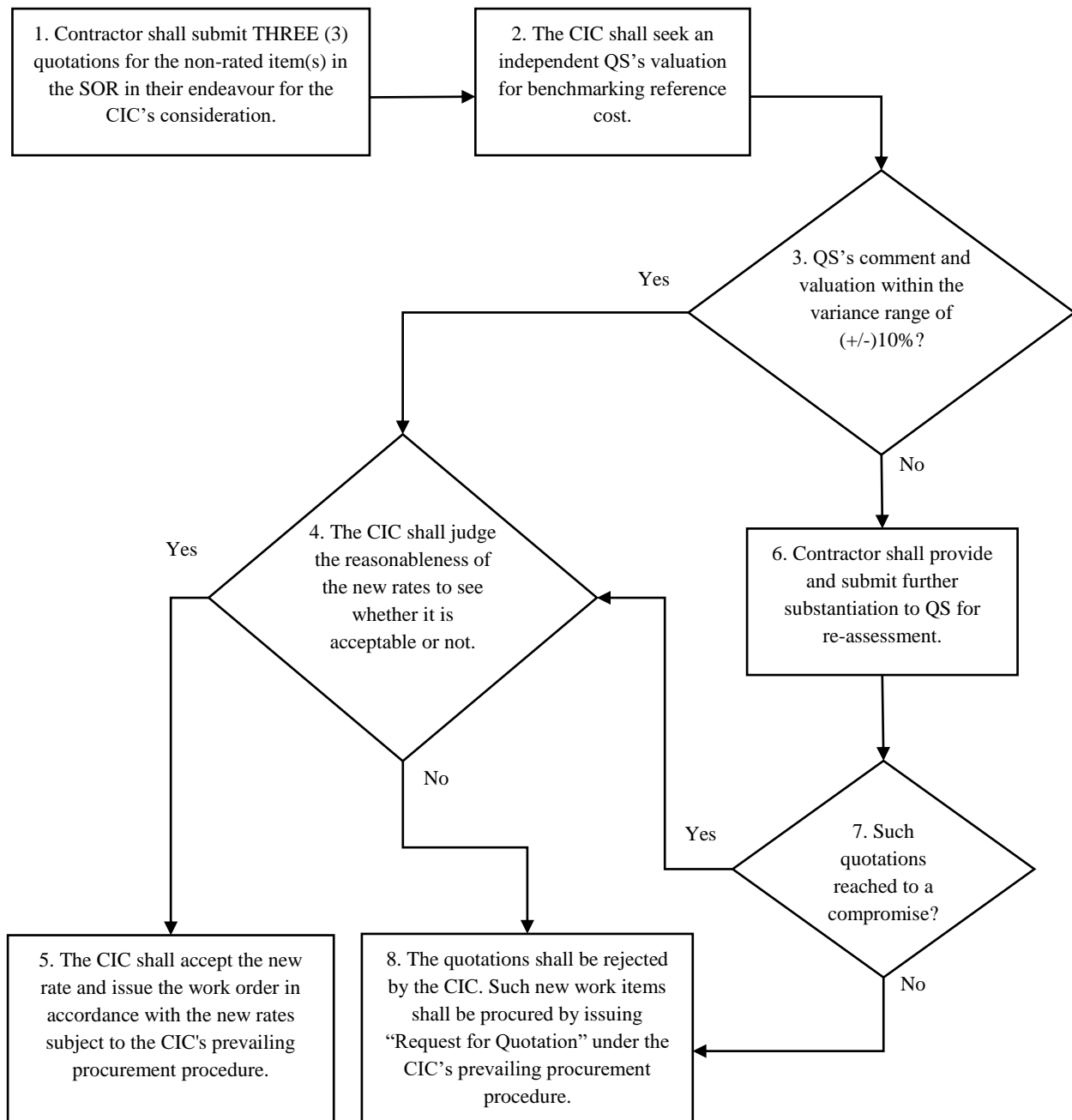
## (413) in P/AE/PUR/TDTC Assignment Brief



7. Lam Tei Training Ground (LTTG)



## Annex 2 – Flowchart for Valuation of New Rate



## **CERTIFICATE OF PRACTICAL COMPLETION**

This certificate serves to confirm that the following delivery order has been practically completed to the satisfaction of the CIC in accordance with the provisions as stipulated in this term contract. The details of the works is summarized as follows:-

Term Contract Reference No. : (413) in P/AE/PUR/TDTC

Term Contract Title : Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council

Delivery Order Reference No. :

Location of the Works :

Commencement Date of the Works :

Completion Date of the Works :

Commencement of Defects Liability Period :

Expiry Date of Defects Liability Period :

Photo Report / Test Report / Documents submitted? : ☐ Yes ☐ No  
(if applicable) \_\_\_\_\_

As-built Drawing / As-fitted Drawing submitted? : ☐ Yes ☐ No  
(if applicable) \_\_\_\_\_

All defects in workmanship and materials reported : ☐ Yes ☐ No  
during the construction period have been rectified? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Amount of Delivery Order : HKD \_\_\_\_\_

Amount of Works Certified Till Now : HKD \_\_\_\_\_

Total amount of the Delivery Order payable : HKD \_\_\_\_\_

\_\_\_\_\_  
Signature with Company Chop

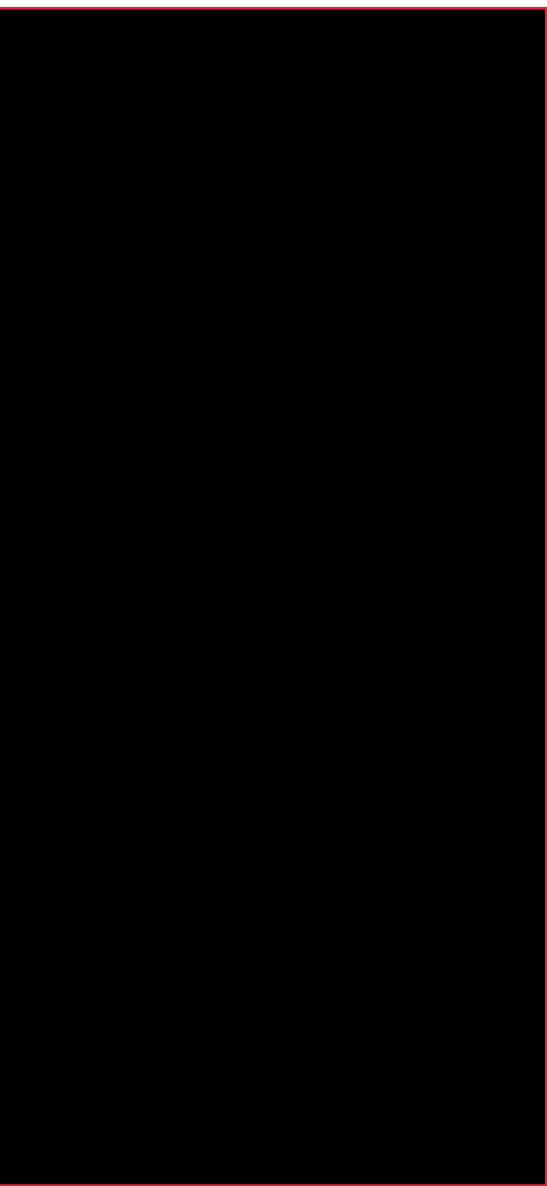
\_\_\_\_\_  
Date:

\_\_\_\_\_  
Name:

For and on behalf of the Construction Industry Council



Check all measurements on site. Do not scale off drawings.  
This drawing is to be read in conjunction with the Specification and any discrepancies are to be immediately reported to the Architect.  
This drawing remains the copyright property of the Architect and is not to be reproduced in whole or in part without permission of the Architect.



Drawing Title  
CCHP SYSTEM SCHEMATIC

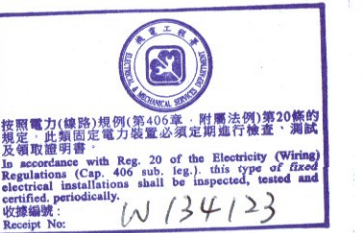
Project No. 216746	Issue Date. 28 SEP 2011
Cad File No. (dwg)	

SCALE.  
NTS

Drawing No.  
KH-D-2011-22-05

Authorized Person's Signature





DATE:  
14-9-2022





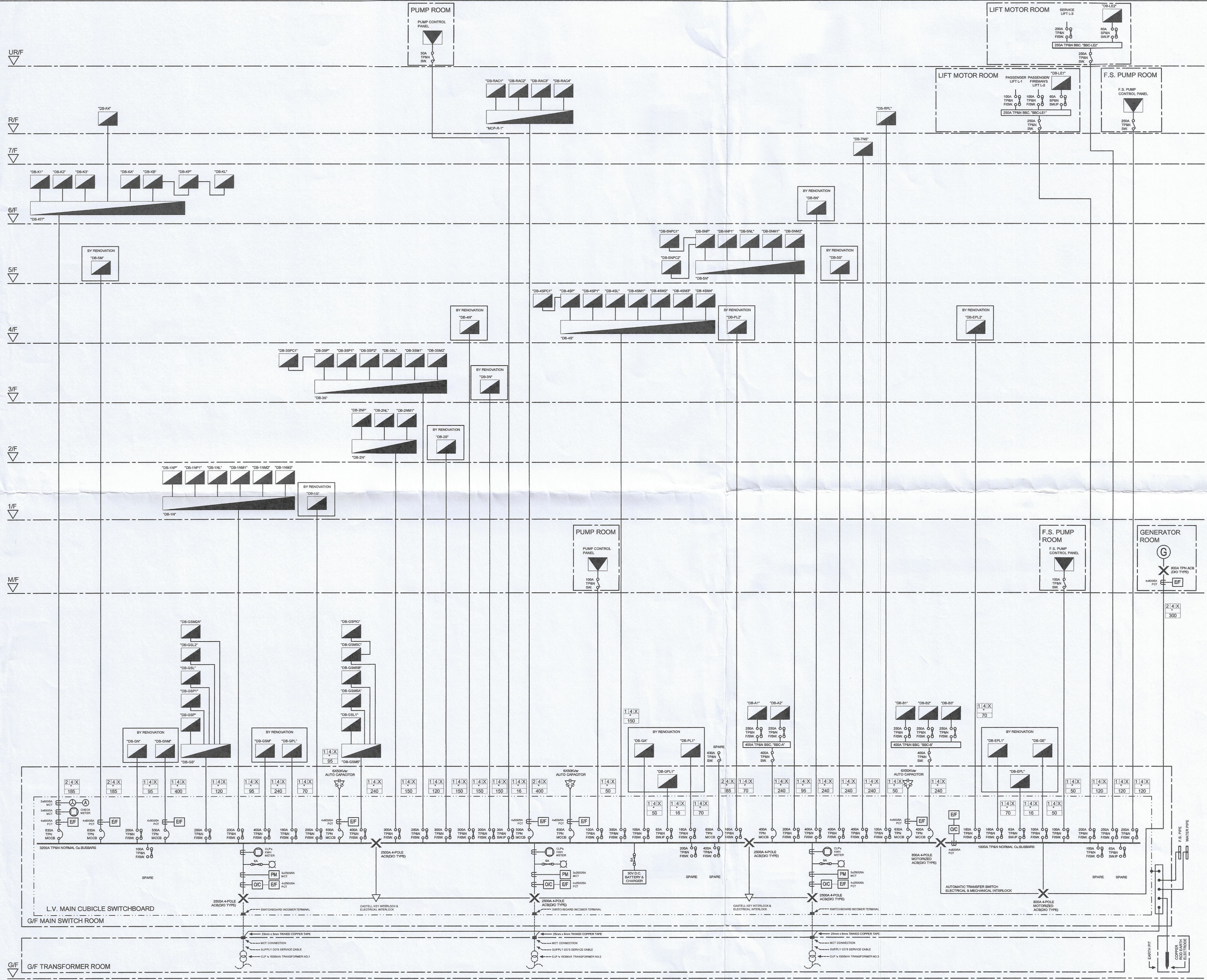
30002339265


  
 新加坡電力(建築)條例第400條, 附屬法例第10條的  
 規定: 此類固定電力裝置必須定期進行檢查、測試  
 及領取證明書。  
 In accordance with Reg. 20 of the Electricity (Wiring)  
 Regulations (Cap. 400 and 10), this type of fixed  
 electrical installations shall be inspected, tested and  
 certified periodically.  
 收據編號: \_\_\_\_\_  
 Receipt No: \_\_\_\_\_

W 1134612

DATE:  
3-10-2022





NOTES (Annex 6)

- 1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
- 2. ALL RCDs / RCCBs / RCBs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

LEGEND

- V VOLTAGE METER
- A AMMETER METER
- SELECTOR
- PM POWER ENERGY METER
- O/C IDMT OVERCURRENT PROTECTION RELAY (EXCLUDED BY W2A)
- E/F IDMT EARTH FAULT RELAY PROTECTION (EXCLUDED BY W2A)

CABLE LEGEND FOR SCHEMATIC DIAGRAM

- A - DENOTES FOR NO. OF CABLE
- B - DENOTES FOR NO. OF CORE FOR CABLE
- C - DENOTES FOR TYPE OF COPPER CABLE AS FOLLOWS
  - P - PVC CABLE
  - X - XLPE/SWAPVC CABLE
  - PP - PVC/SWAPVC CABLE
  - S - XLPE/SWAPVC CABLE
  - Z - PVC/SWAPVC CABLE
- D - DENOTES FOR THE EARTHING CONDUCTOR CROSS SECTION AREA
  - " = COPPER TAPE C = CONDUIT T = TRUNKING A = ARMOUR CABLE
- E - DENOTES FOR THE CONDUCTOR CROSS SECTION AREA



DATE	DESCRIPTION	REVISION

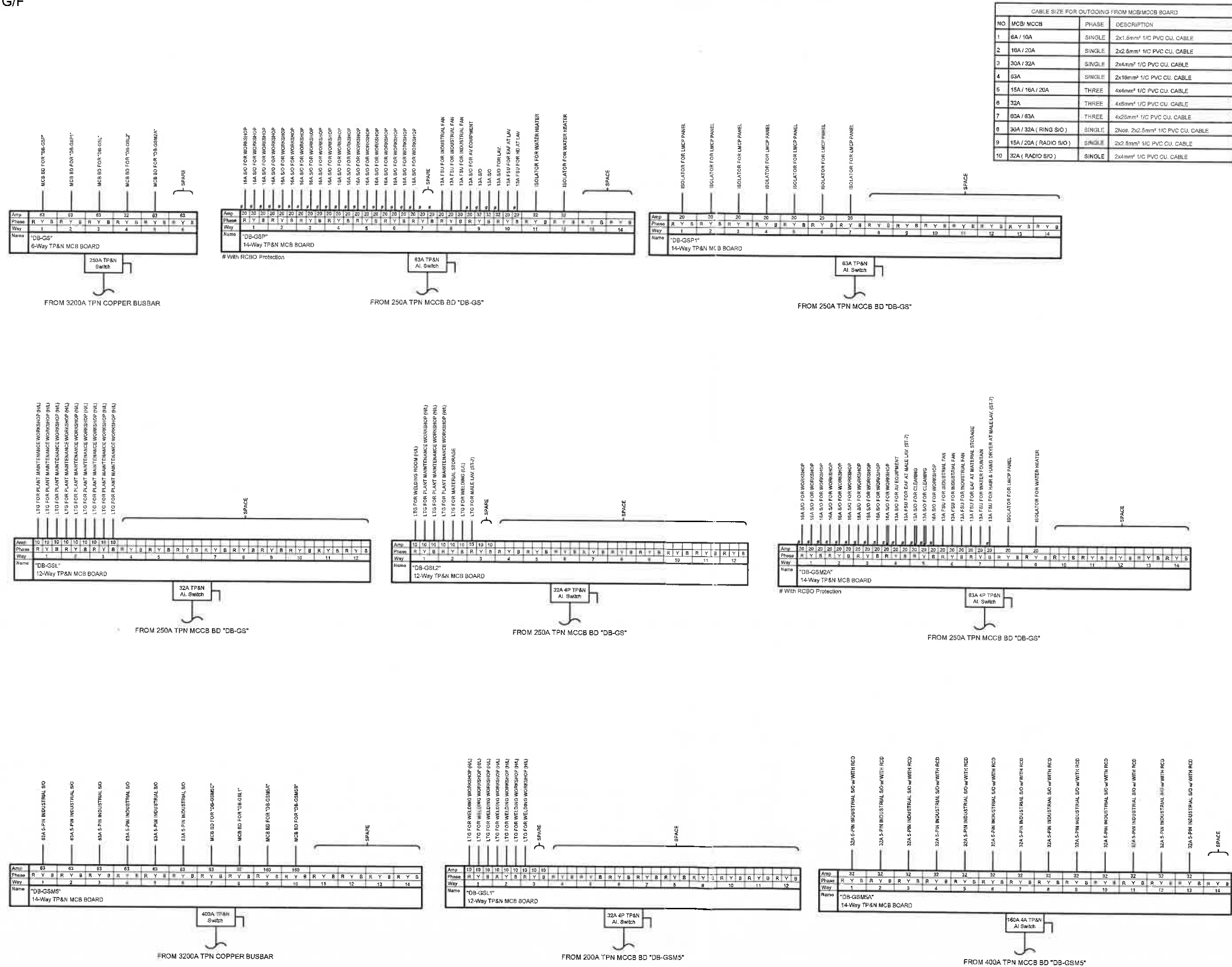
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PERIODIC INSPECTION, TESTING AND CERTIFICATION FOR ELECTRICAL INSTALLATION AT SHEUNG SHUI CAMPUS, NO.1 FUNG NAM ROAD, SHEUNG SHUI, N.T.

DRAWING TITLE  
SCHEMATIC WIRING DIAGRAM

SCALE	NOT TO SCALE (A2)
DESIGNATION	DATE
AUTHORIZED	
CHECKED	P.H. MAK 15 - 09 - 2020
DRAWN	P.H. MAK 15 - 09 - 2020

DRAWING NO.  
PITC/NT/SS/SSC/01





CABLE SIZE FOR OUTGOING FROM MCB/MCCB BOARD			
NO.	MCB/ MCCB	PHASE	DESCRIPTION
1	6A / 10A	SINGLE	2x1.5mm <sup>2</sup> 1/C PVC CU. CABLE
2	16A / 20A	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
3	30A / 32A	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE
4	63A	SINGLE	2x10mm <sup>2</sup> 1/C PVC CU. CABLE
5	15A / 16A / 20A	THREE	4x4mm <sup>2</sup> 1/C PVC CU. CABLE
6	32A	THREE	4x8mm <sup>2</sup> 1/C PVC CU. CABLE
7	60A / 63A	THREE	4x25mm <sup>2</sup> 1/C PVC CU. CABLE
8	30A / 32A ( RING S/O )	SINGLE	2Nos. 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
9	15A / 20A ( RADIO S/O )	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
10	32A ( RADIO S/O )	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE

- NOTES
1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
  2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND CERTIFICATION FOR ELECTRICAL INSTALLATION AT SHEUNG SHUI CAMPUS, NO.1 FUNG NAM ROAD, SHEUNG SHUI, N.T.

DRAWING TITLE  
SCHEMATIC WIRING DIAGRAM

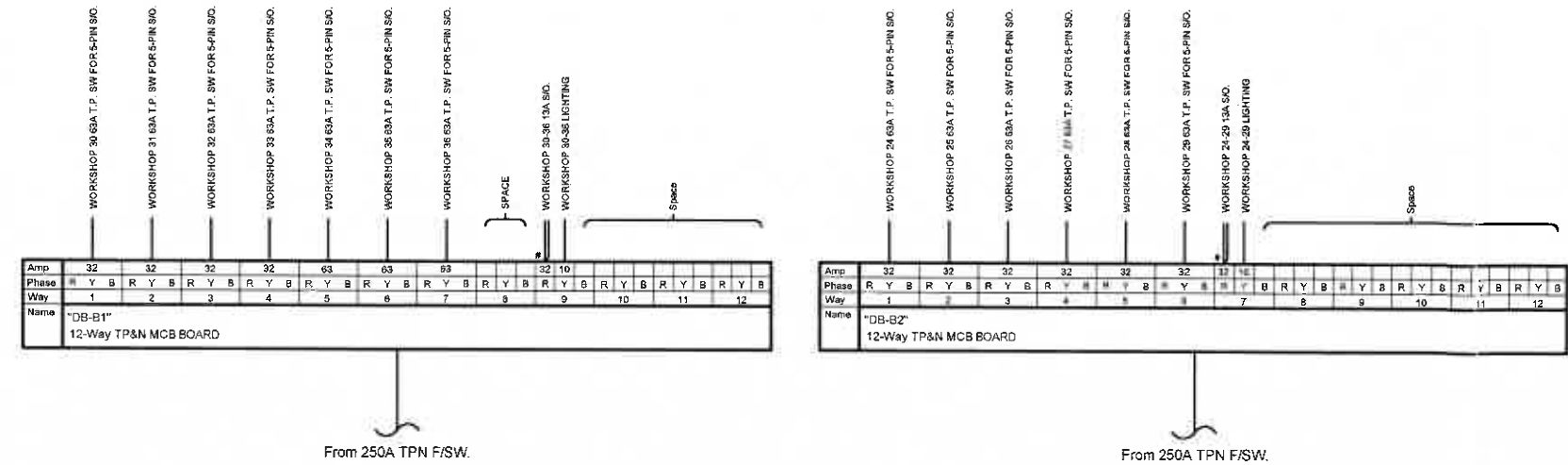
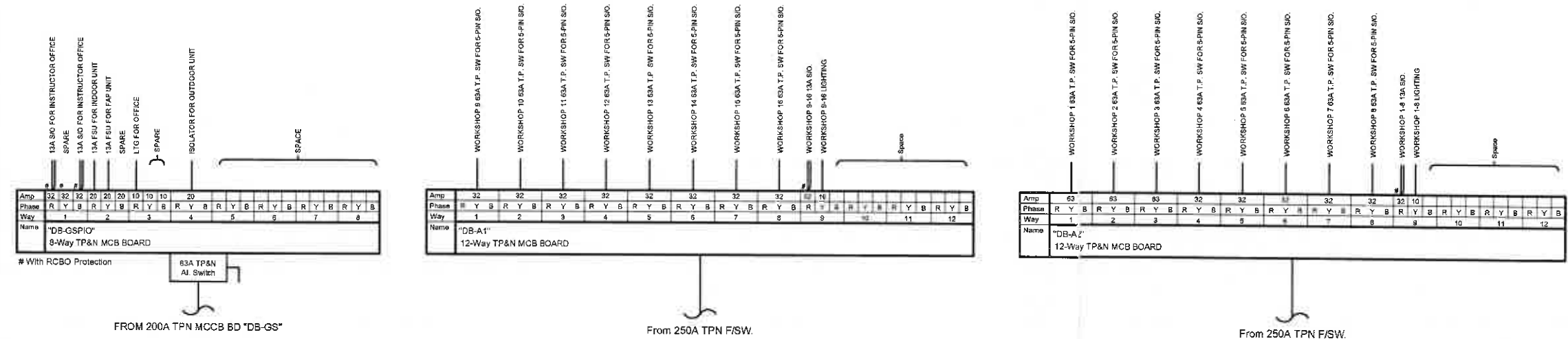
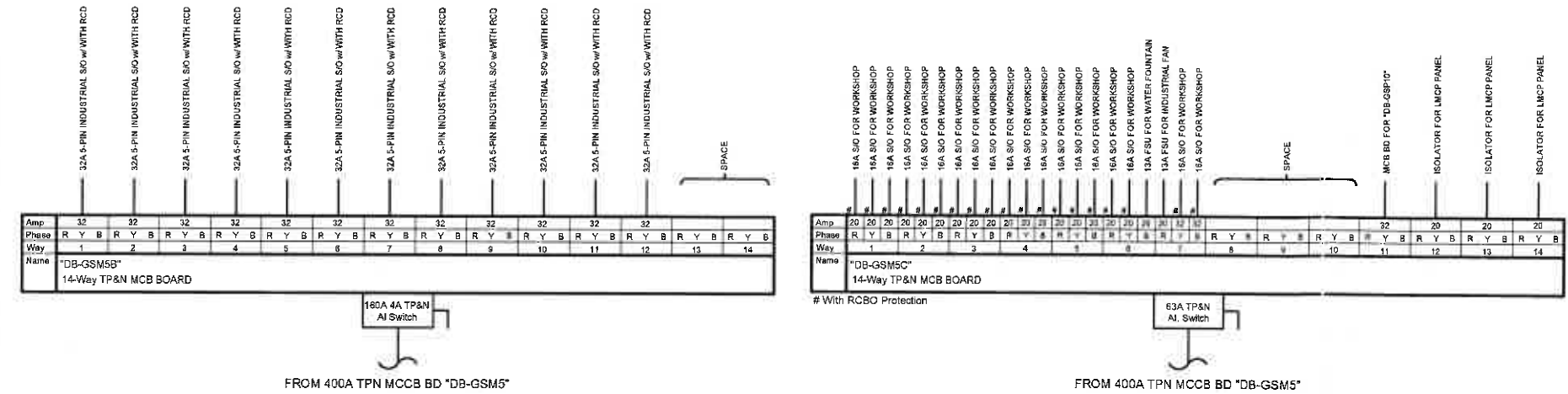
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AUTHORIZED	
CHECKED	P.H. MAK 15 - 09 - 2020
DRAWN	P.H. MAK 15 - 09 - 2020

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3	30A / 32A	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE
4	63A	SINGLE	2x16mm <sup>2</sup> 1/C PVC CU. CABLE
5	15A / 16A / 20A	THREE	4x4mm <sup>2</sup> 1/C PVC CU. CABLE
6	32A	THREE	4x6mm <sup>2</sup> 1/C PVC CU. CABLE
7	60A / 63A	THREE	4x25mm <sup>2</sup> 1/C PVC CU. CABLE
8	30A / 32A ( RING S/O )	SINGLE	2Nos. 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
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DATE	DESCRIPTION	REVISION

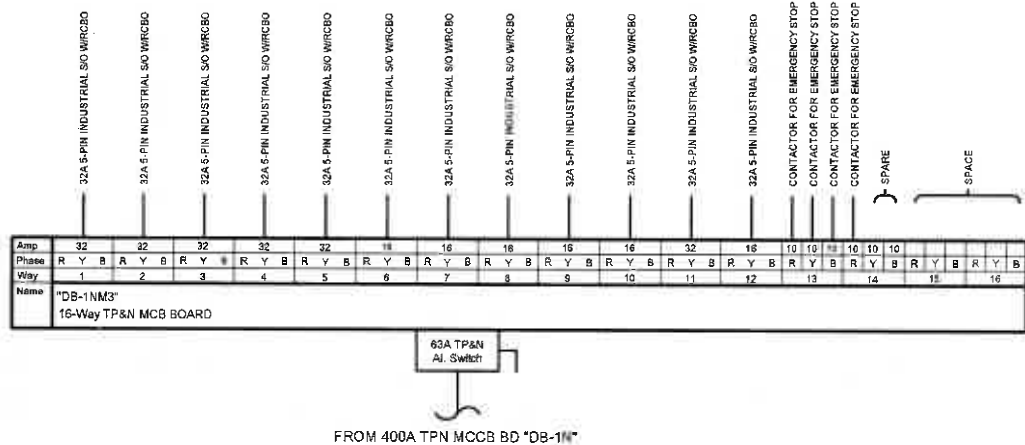
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CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
SHEUNG SHUI CAMPUS,  
NO.1 FUNG NAM ROAD,  
SHEUNG SHUI, N.T.

DRAWING TITLE  
  
SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A2)		
	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P.H. MAK	15 - 09 - 2020
DRAWN	P.H. MAK	15 - 09 - 2020

DRAWING NO.





NO.	MCB/ MCCB	PHASE	DESCRIPTION
1	6A / 10A	SINGLE	2x1.5mm <sup>2</sup> 1/C PVC CU. CABLE
2	16A / 20A	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
3	30A / 32A	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE
4	63A	SINGLE	2x16mm <sup>2</sup> 1/C PVC CU. CABLE
5	15A / 16A / 20A	THREE	4x4mm <sup>2</sup> 1/C PVC CU. CABLE
6	32A	THREE	4x8mm <sup>2</sup> 1/C PVC CU. CABLE
7	60A / 63A	THREE	4x25mm <sup>2</sup> 1/C PVC CU. CABLE
8	30A / 32A ( RING S/C )	SINGLE	2Nos. 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
9	15A / 20A ( RADIO S/C )	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
10	32A ( RADIO S/C )	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE

1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

DATE	DESCRIPTION	REVISION

PROJECT

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
SHEUNG SHUI CAMPUS,  
NO.1 FUNG NAM ROAD,  
SHEUNG SHUI, N.T.

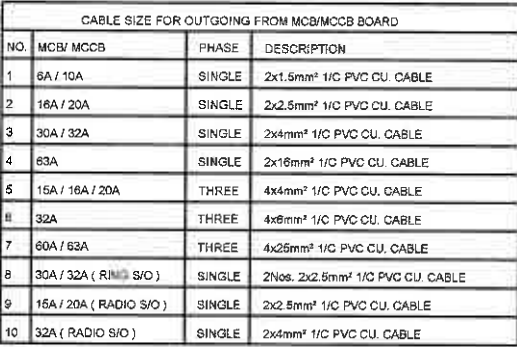
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SCHEMATIC WIRING DIAGRAM

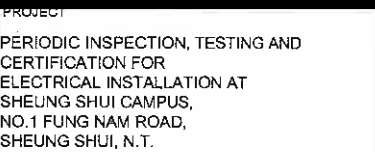
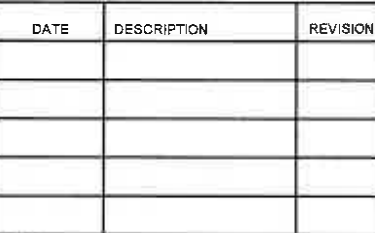
SCALE NOT TO SCALE (A2)

	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P.H. MAK	15 - 09 - 2020
DRAWN	P. H. MAK	15 - 09 - 2020

DRAWING NO



1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.



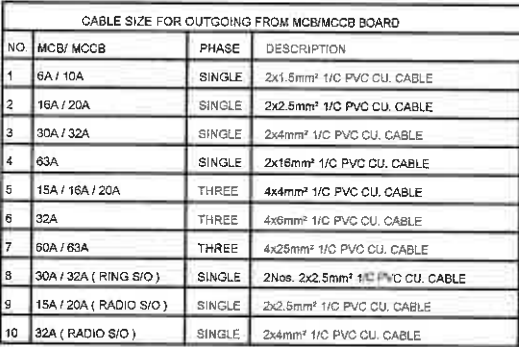
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SCHEMATIC WIRING DIAGRAM

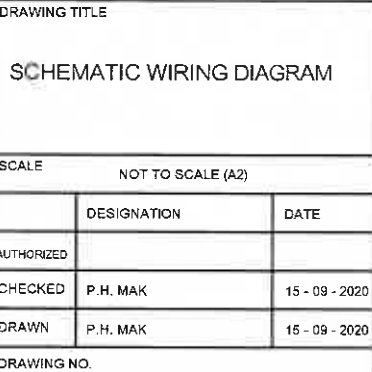
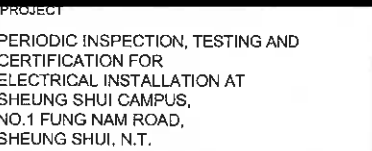
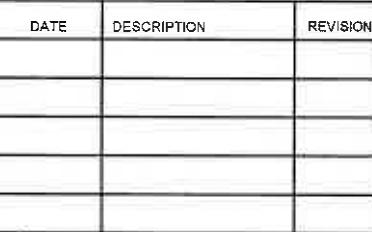
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	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P. H. MAK	15 - 09 - 2020
DRAWN	P. H. MAK	15 - 09 - 2020

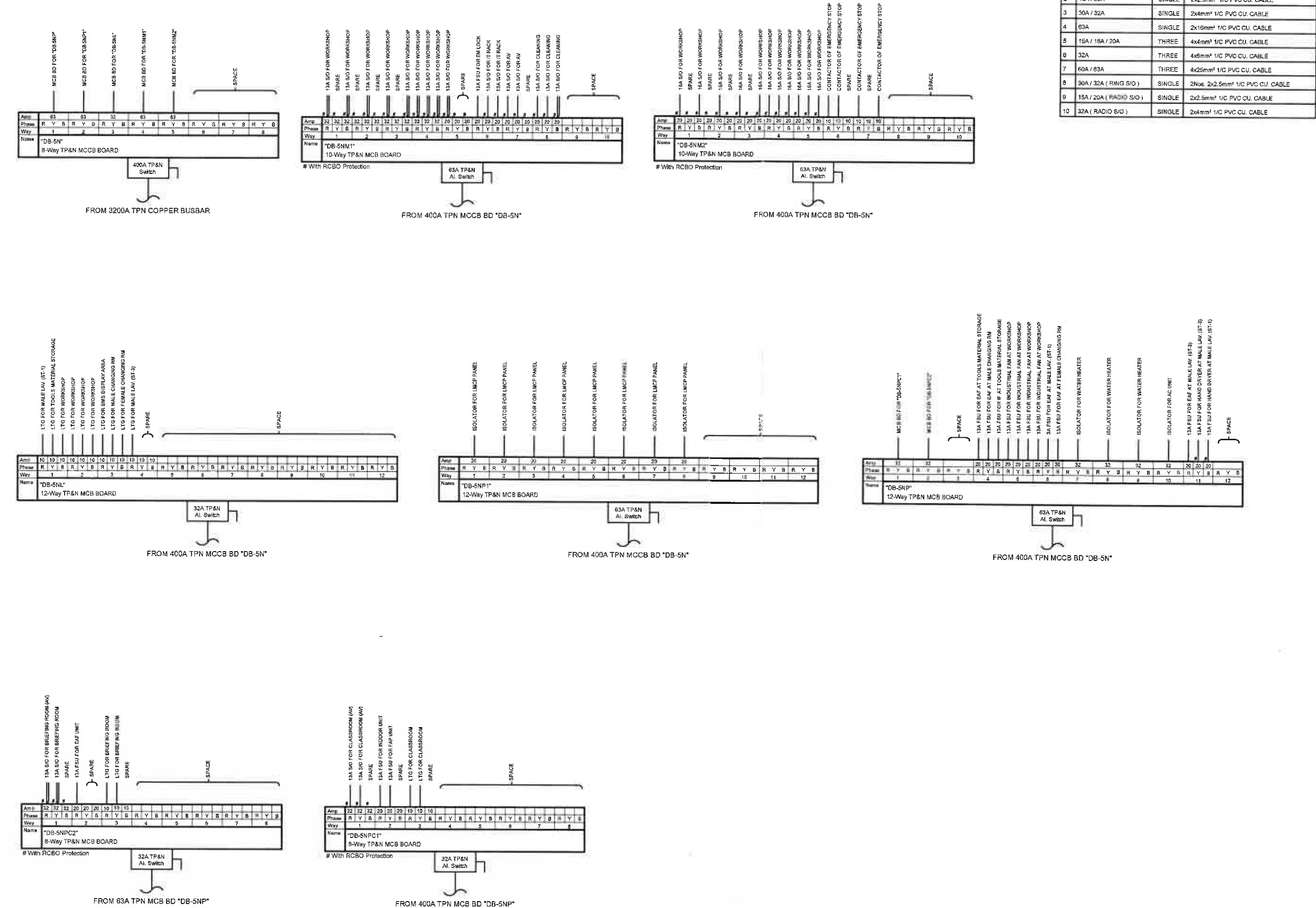
DRAWING NO.



1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.







CABLE SIZE FOR OUTGOING FROM MCCB/MCCB BOARD		
NO.	MCCB / MCCB	PHASE DESCRIPTION
1	6A / 10A	SINGLE 2x1.5mm <sup>2</sup> 1/C PVC CU. CABLE
2	16A / 20A	SINGLE 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
3	30A / 32A	SINGLE 2x4mm <sup>2</sup> 1/C PVC CU. CABLE
4	63A	SINGLE 2x16mm <sup>2</sup> 1/C PVC CU. CABLE
5	16A / 16A / 20A	THREE 4x4mm <sup>2</sup> 1/C PVC CU. CABLE
8	32A	THREE 4x8mm <sup>2</sup> 1/C PVC CU. CABLE
7	60A / 63A	THREE 4x25mm <sup>2</sup> 1/C PVC CU. CABLE
8	30A / 32A ( RING S/O )	SINGLE 2Nos. 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
9	15A / 20A ( RADIO S/O )	SINGLE 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
10	32A ( RADIO S/O )	SINGLE 2x4mm <sup>2</sup> 1/C PVC CU. CABLE

1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / ROBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND CERTIFICATION FOR ELECTRICAL INSTALLATION AT SHEUNG SHUI CAMPUS, NO.1 FUNG NAM ROAD, SHEUNG SHUI, N.T.

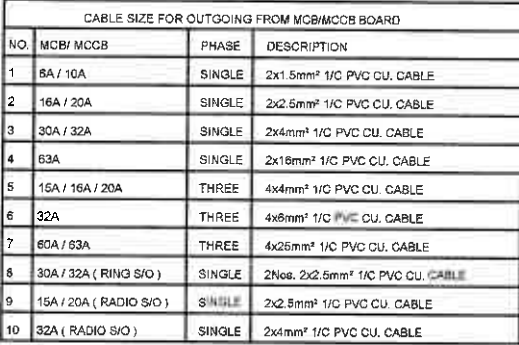
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SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A2)		
	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P.H. MAK	15 - 09 - 2020
DRAWN	P.H. MAK	15 - 09 - 2020

DRAWING NO.  
PITC/NT/SS/1505







1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

DATE	DESCRIPTION	REVISION

PROJECT

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
SHEUNG SHUI CAMPUS,  
NO.1 FUNG NAM ROAD,  
SHEUNG SHUI, N.T.

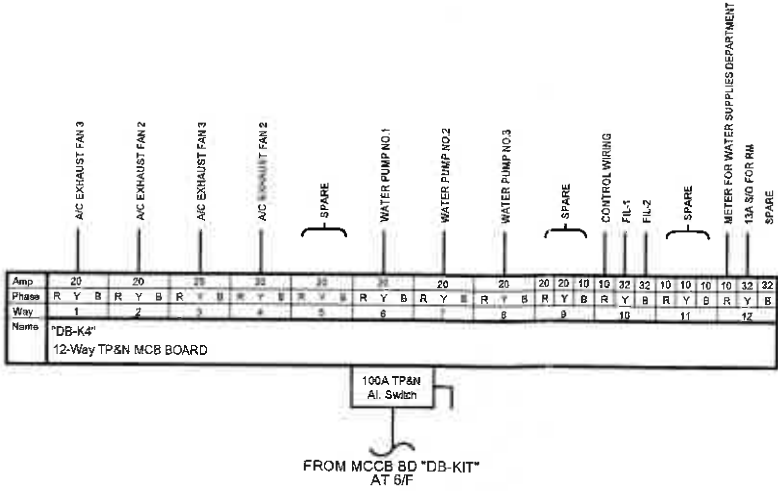
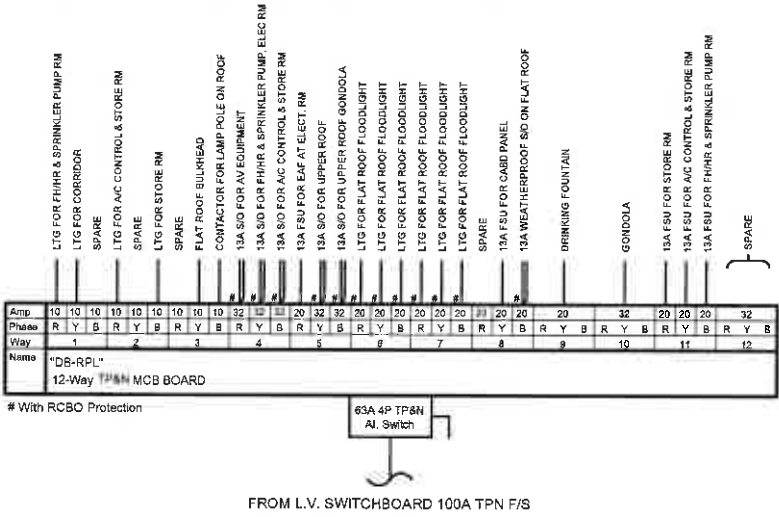
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SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A2)

	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P. H. MAK	15 - 09 - 2020
DRAWN	P. H. MAK	15 - 09 - 2020

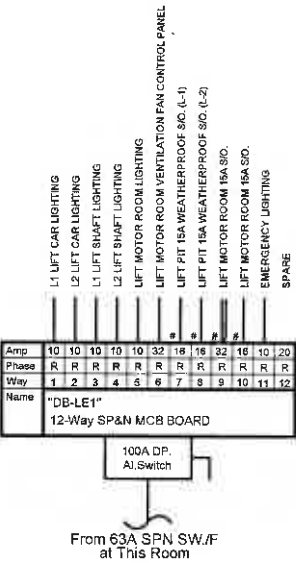
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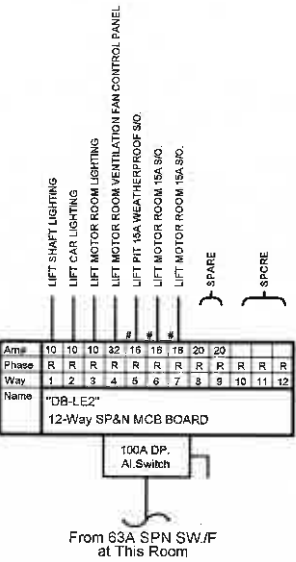
CABLE SIZE FOR OUTGOING FROM MCB/MCCB BOARD			
NO.	MCB/ MCCB	PHASE	DESCRIPTION
1	6A / 10A	SINGLE	2x1.5mm² 1/C PVC CU. CABLE
2	16A / 20A	SINGLE	2x2.5mm² 1/C PVC CU. CABLE
3	30A / 32A	SINGLE	2x4mm² 1/C PVC CU. CABLE
4	63A	SINGLE	2x16mm² 1/C PVC CU. CABLE
5	16A / 16A / 20A	THREE	4x4mm² 1/C PVC CU. CABLE
6	32A	THREE	4x6mm² 1/C PVC CU. CABLE
7	60A / 63A	THREE	4x25mm² 1/C PVC CU. CABLE
8	30A / 32A ( RING S/O )	SINGLE	2Nos. 2x2.5mm² 1/C PVC CU. CABLE
9	15A / 20A ( RADIO S/O )	SINGLE	2x2.5mm² 1/C PVC CU. CABLE
10	32A ( RADIO S/O )	SINGLE	2x4mm² 1/C PVC CU. CABLE

1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

R/F LIFT MOTOR ROOM



UR/F LIFT MOTOR ROOM



DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND CERTIFICATION FOR ELECTRICAL INSTALLATION AT SHEUNG SHUI CAMPUS, NO.1 FUNG NAM ROAD, SHEUNG SHUI, N.T.

DRAWING TITLE  
SCHEMATIC WIRING DIAGRAM

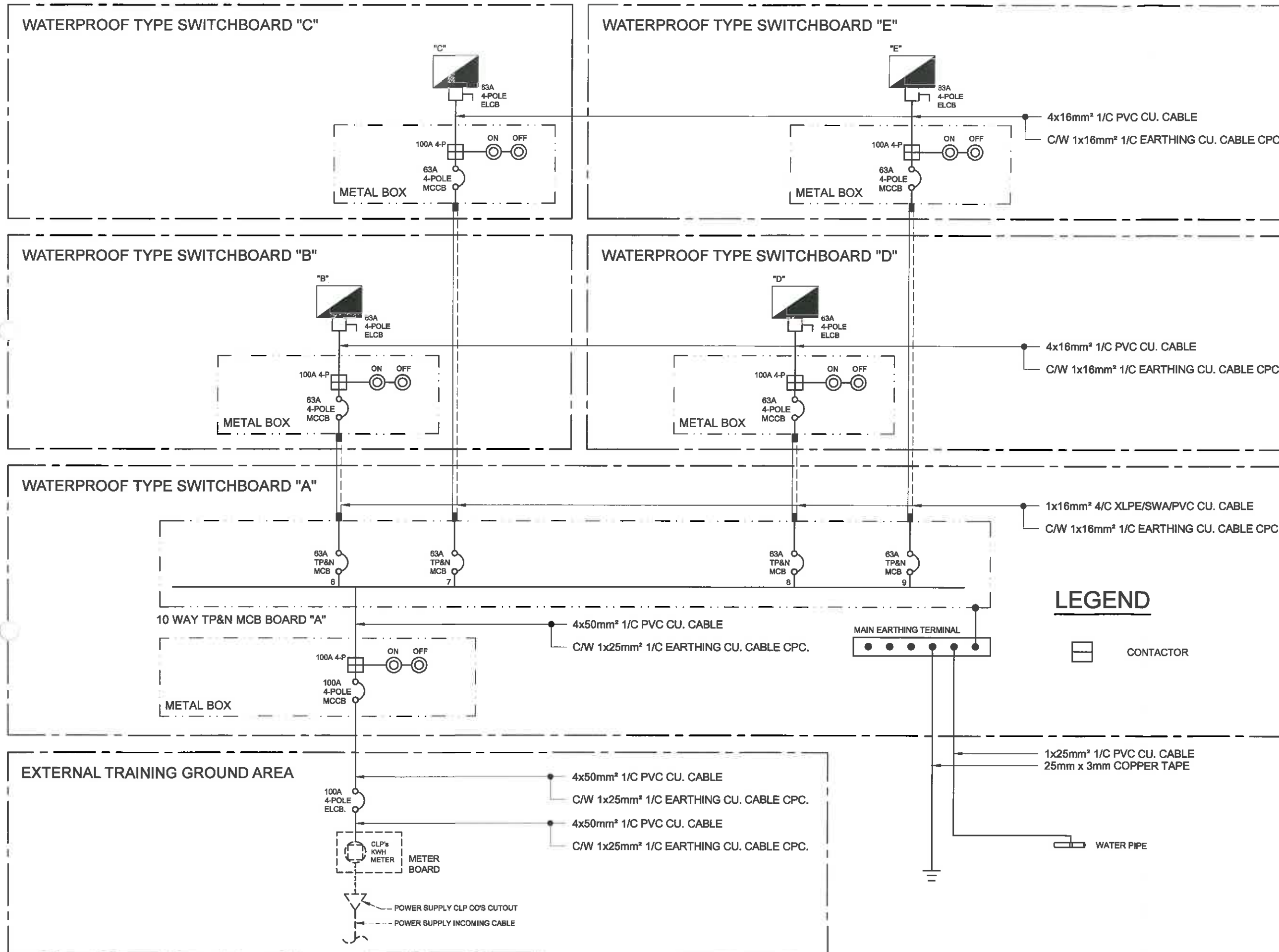
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	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P. H. MAK	15 - 09 - 2020
DRAWN	P. H. MAK	15 - 09 - 2020

DRAWING NO.

PITC/NT/SS/02

1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.



DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY COUNCIL,  
TUNG CHAU STREET TRAINING GROUND,  
SHAM SHUI PO, KOWLOON.

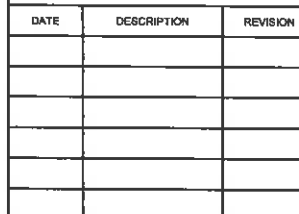
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SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A3)

DATE
13 - 08 - 2018
13 - 08 - 2018

( Annex 6)	NOTES
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1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.



**DRAWING TITLE**

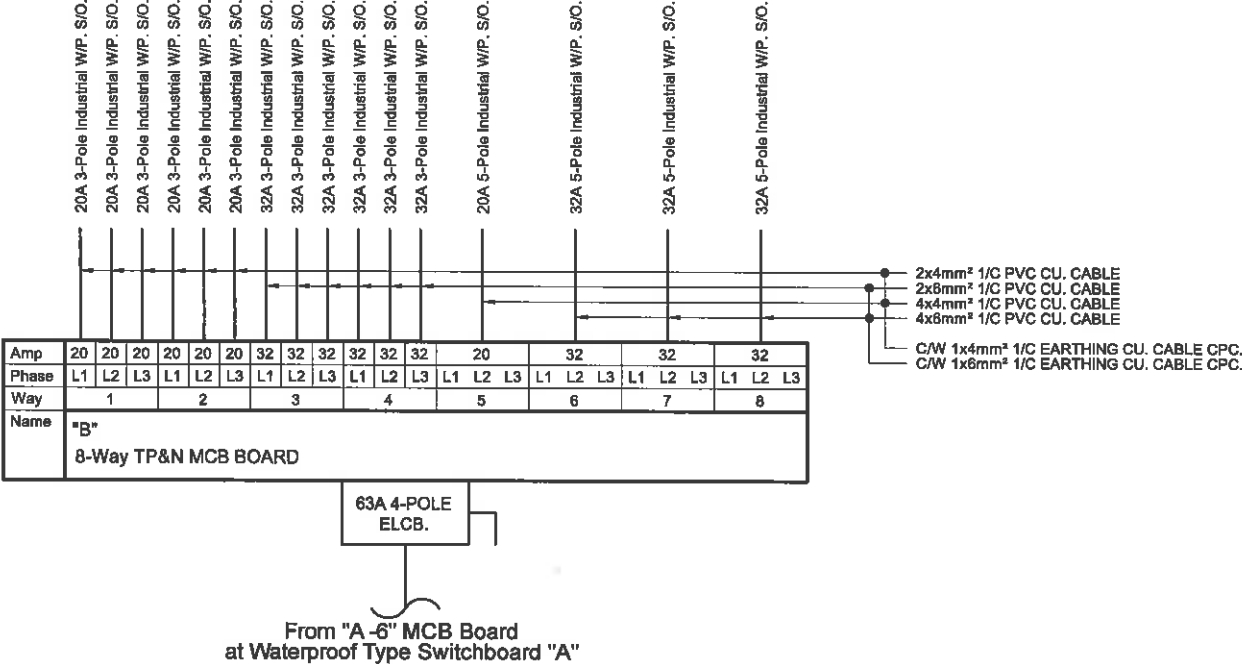
**SCHEMATIC WIRING DIAGRAM**

	DESIGNATION	DATE
		13 - 08 - 2011
		13 - 08 - 2011

WATERPROOF TYPE SWITCHBOARD "B"

( Annex 6 )

1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.



PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY COUNCIL,  
TUNG CHAU STREET TRAINING GROUND,  
SHAM SHUI PO, KOWLOON.

DRAWING TITLE  
SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A3)

DESIGNATION	DATE
	13 - 08 - 2018
	13 - 08 - 2018

## ( Annex 6)

PROJECT

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY COUNCIL,  
TUNG CHAU STREET TRAINING GROUND,  
SHAM SHUI PO, KOWLOON.

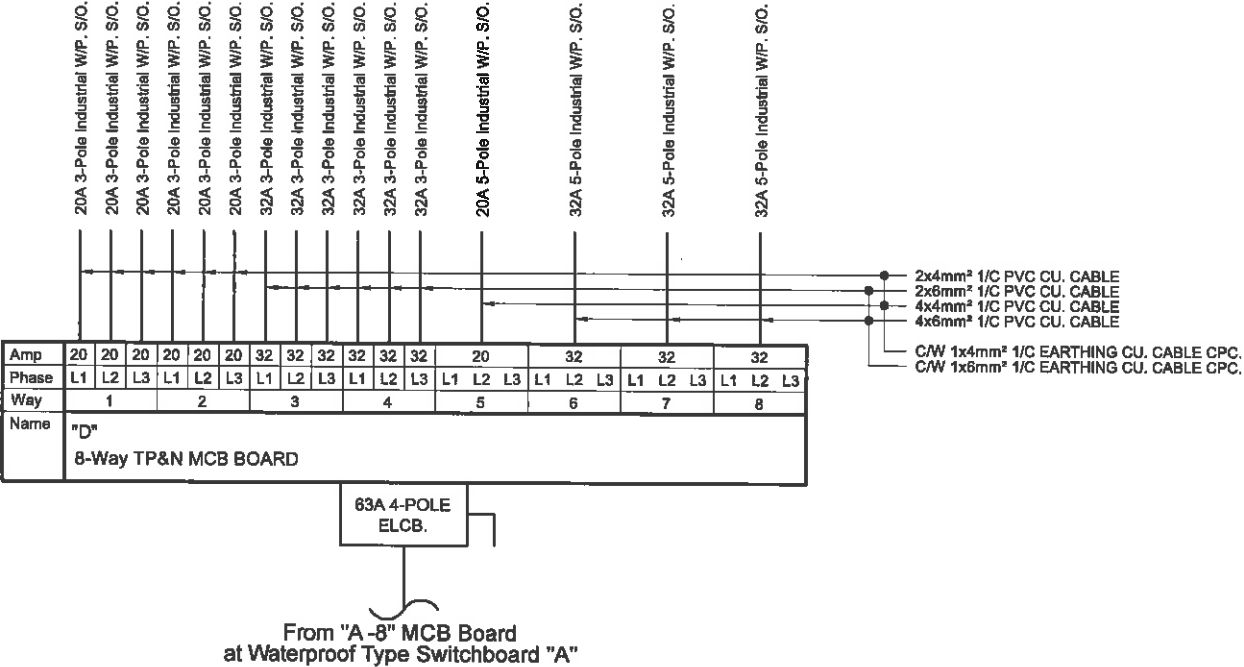


	DESIGNATION	DATE
		13 - 06 - 2018
		13 - 08 - 2018

WATERPROOF TYPE SWITCHBOARD "D"

( Annex 6 )

1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.



PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY COUNCIL,  
TUNG CHAU STREET TRAINING GROUND,  
SHAM SHUI PO, KOWLOON.

DRAWING TITLE  
SCHEMATIC WIRING DIAGRAM

SCALE  
NOT TO SCALE (A3)

DESIGNATION	DATE
	13 - 08 - 2018
	13 - 08 - 2018



## ( Annex 6) NOTES


PROJECT

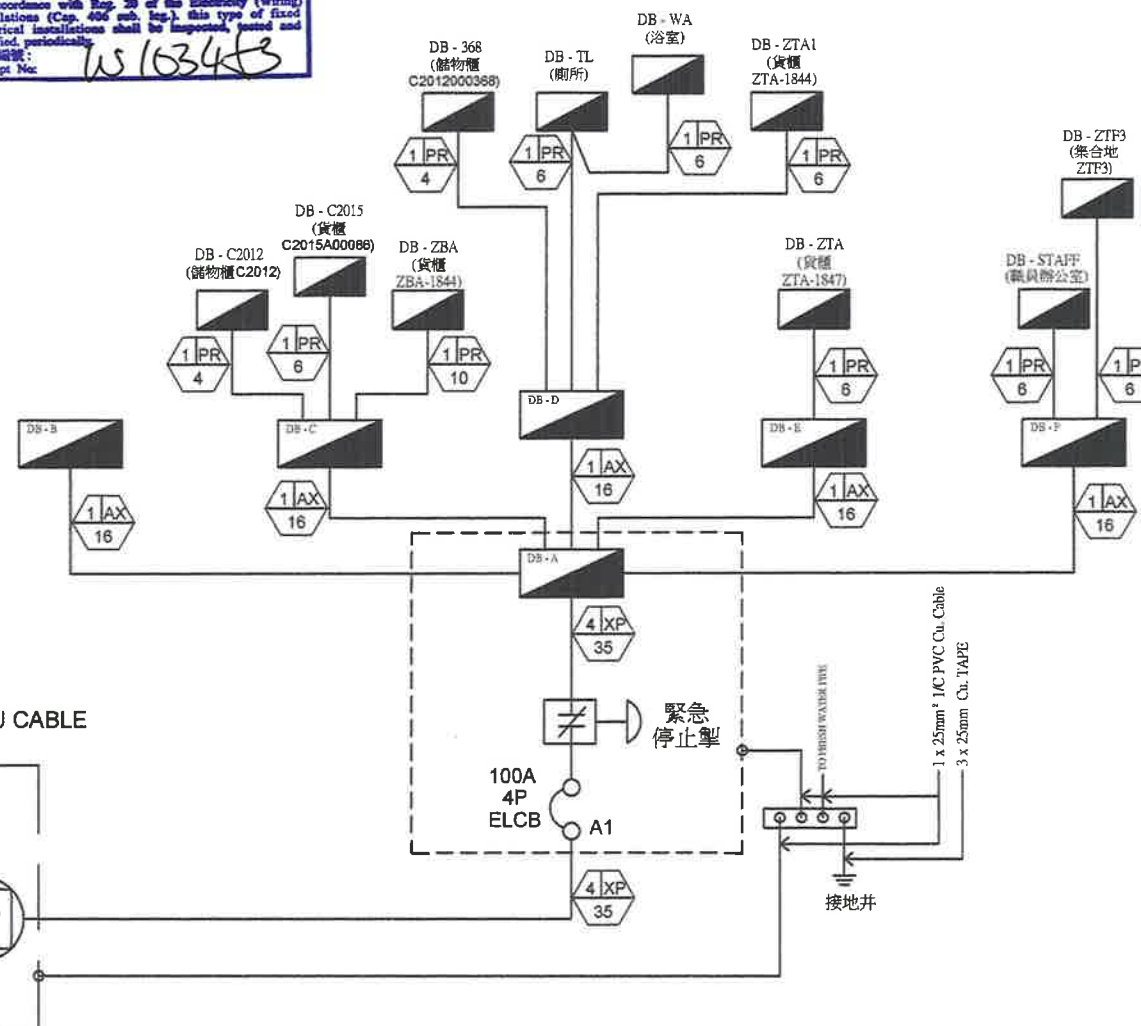
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY COUNCIL,  
TUNG CHAU STREET TRAINING GROUND,  
SHAM SHUI PO, KOWLOON.



	DESIGNATION	DATE
		13 - 08 - 2018
		13 - 08 - 2018

## CABLE SCHEDULE

AX	4/C XLPE/SWA/PVC COPPER CABLE
AP	4/C PVC/SWA/PVC COPPER CABLE
XP	1/C XLPE/PVC COPPER CABLE
PP	1/C PVC/PVC COPPER CABLE
PR	3/C PVC/RUBBER COPPER CABLE
P	1/C PVC COPPER CABLE
e.g. NUMBER OF CABLE  TYPE OF CABLE SIZE OF CABLE	



CONTRACTOR:

PROJECT:

 新界屯門兆麟街16號  
 建造業議會-香港建造學院兆麟街訓練場(SLSTG)

 TITLE: MAIN SCHEMATIC  
 WIRING DIAGRAM

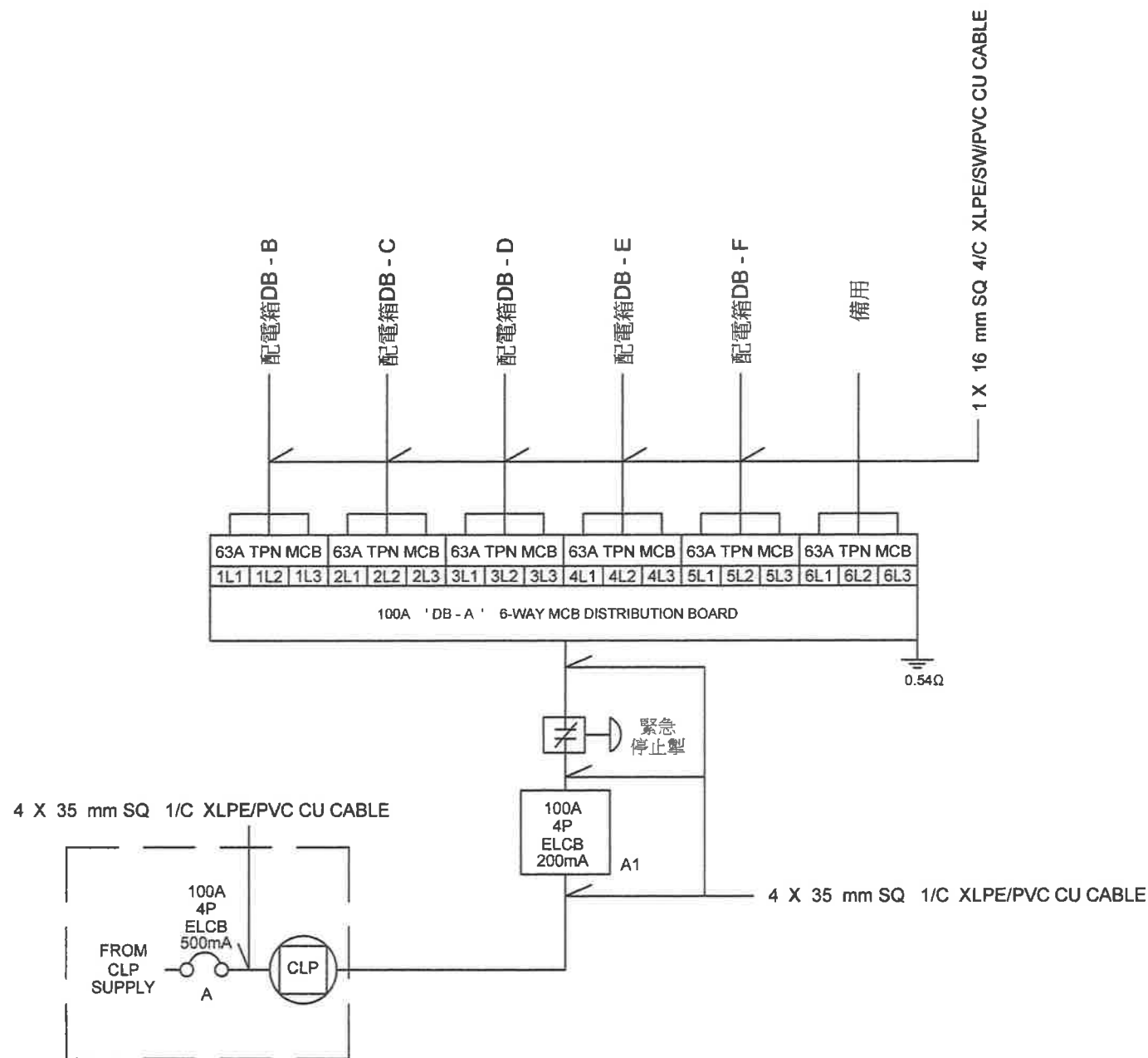
 DRAWN NO.  
 01

 CHECKED BY:  
 C.Y. TSANG

 DRAWN BY:  
 C.H. LAM &  
 Jimmie

DATE:

29-10-2019



CONTRACTOR: XXXXXXXXXX

PROJECT: 新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

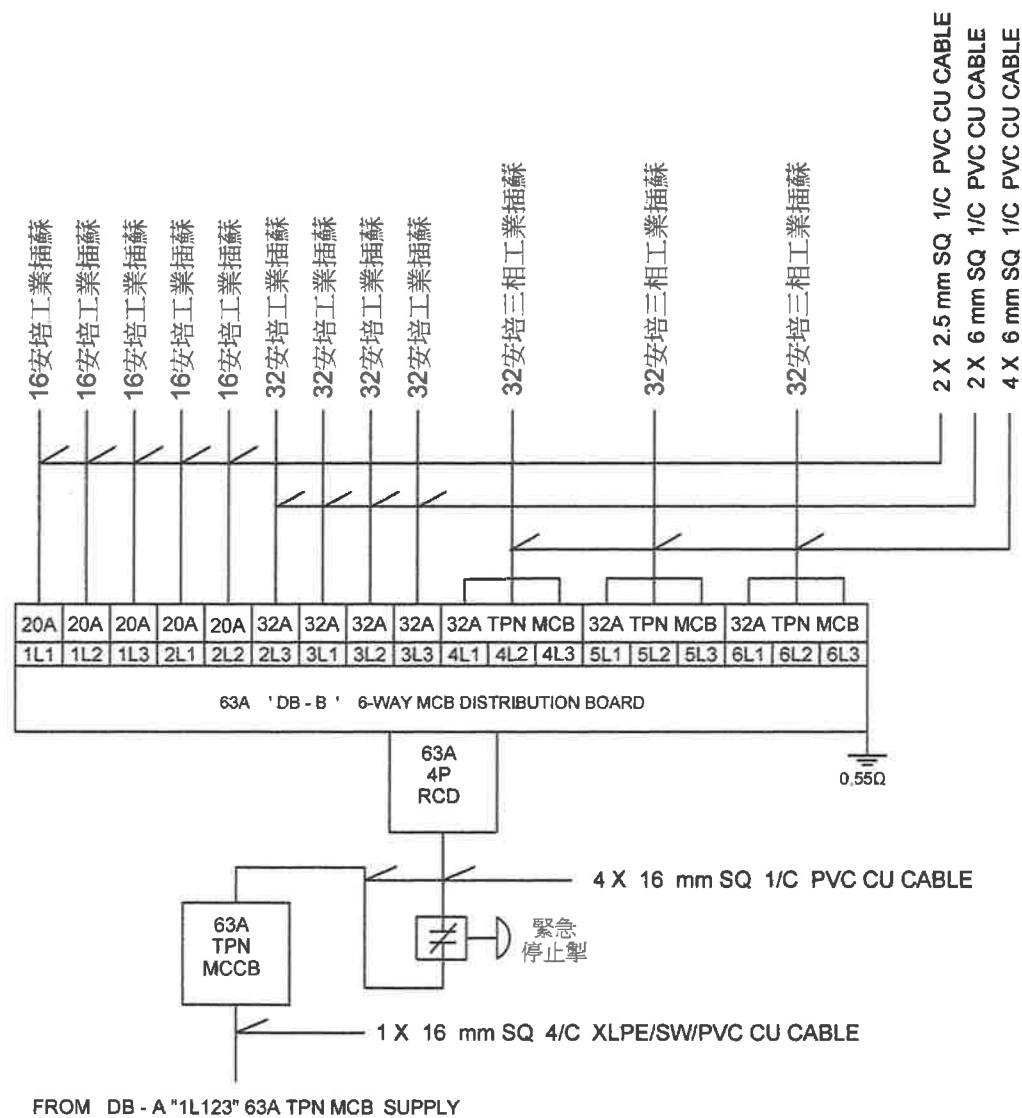
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

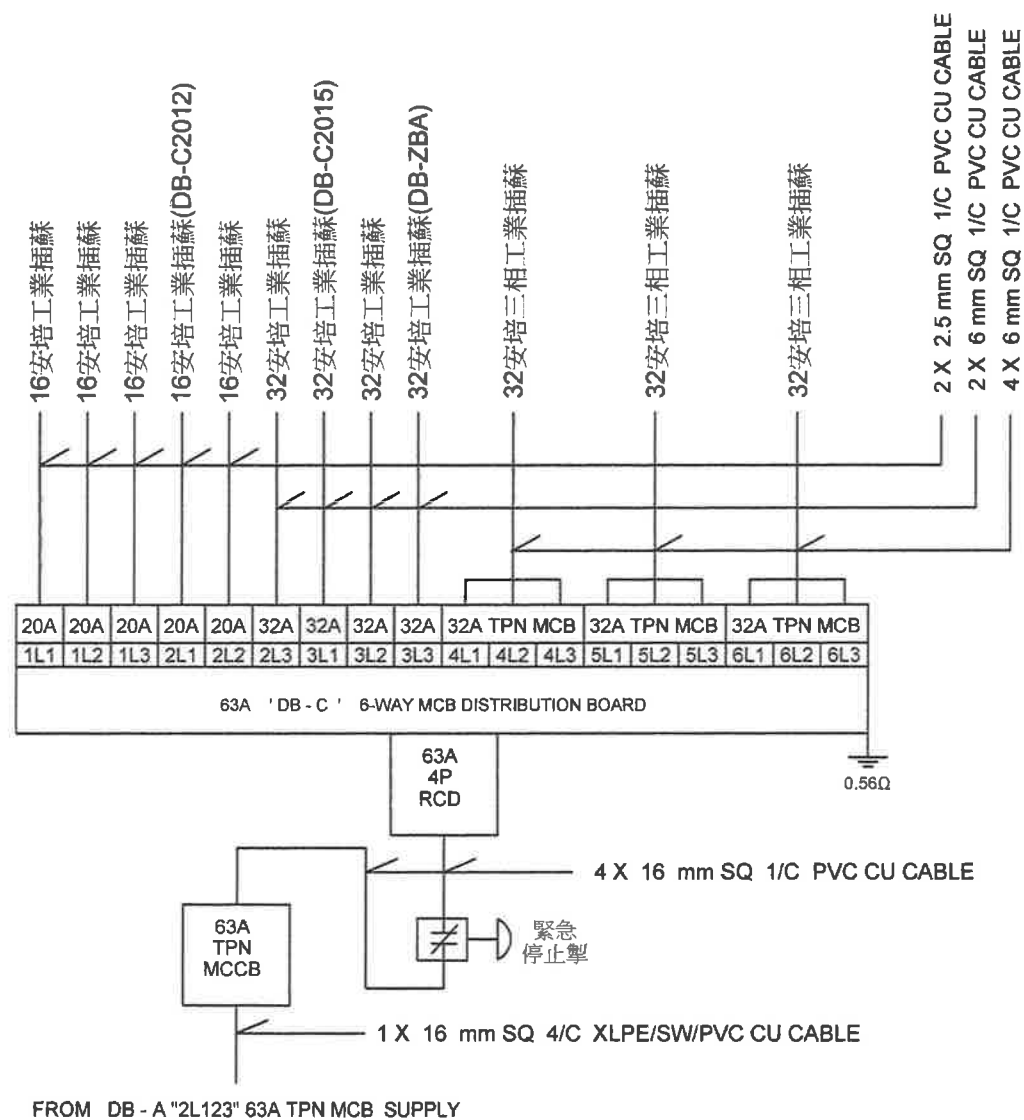
DRAWN NO.  
02

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

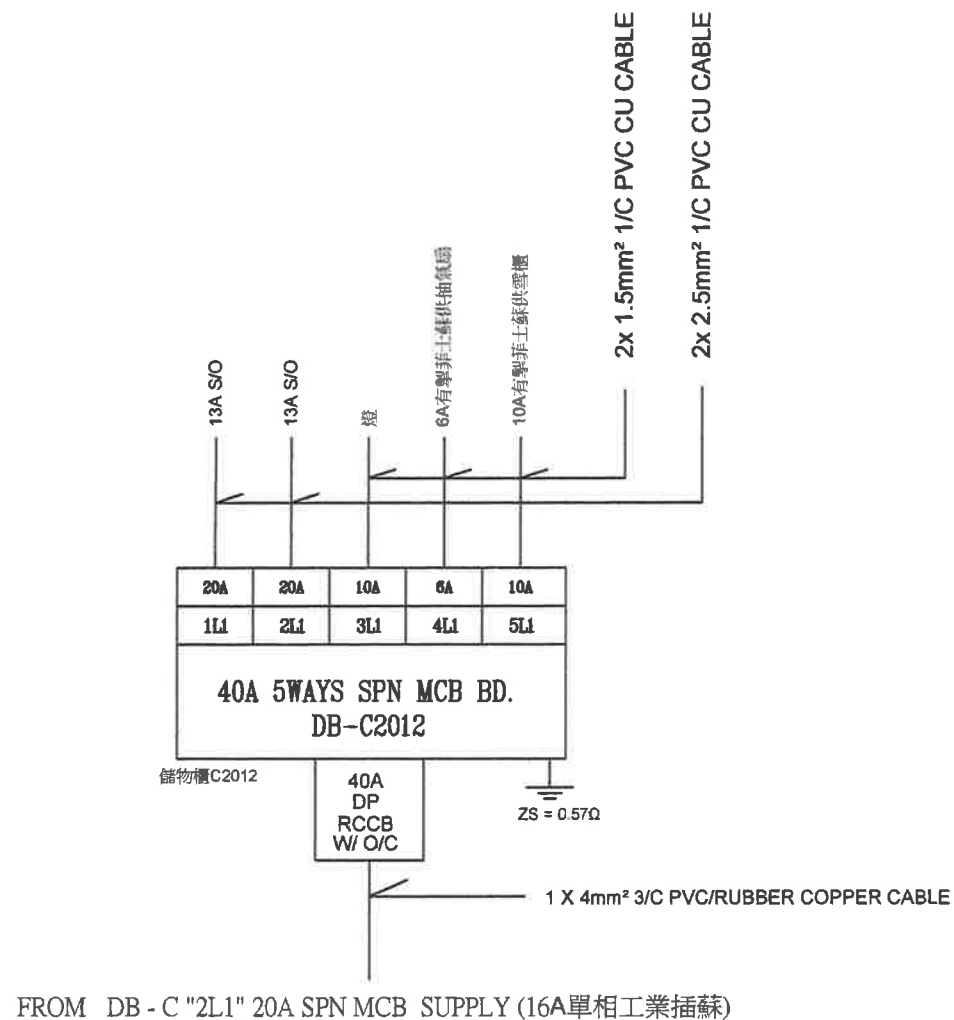
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29-10-2019





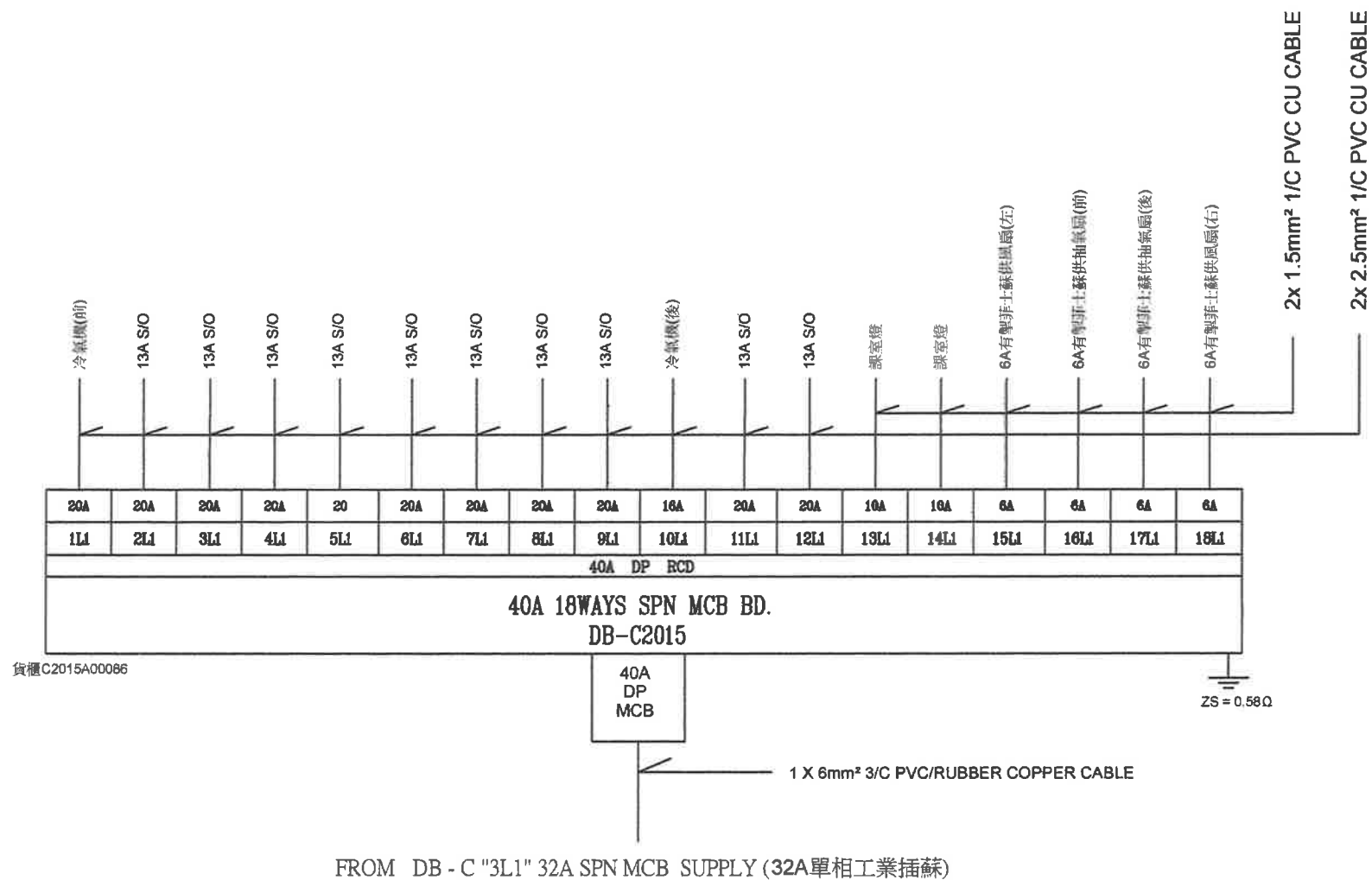
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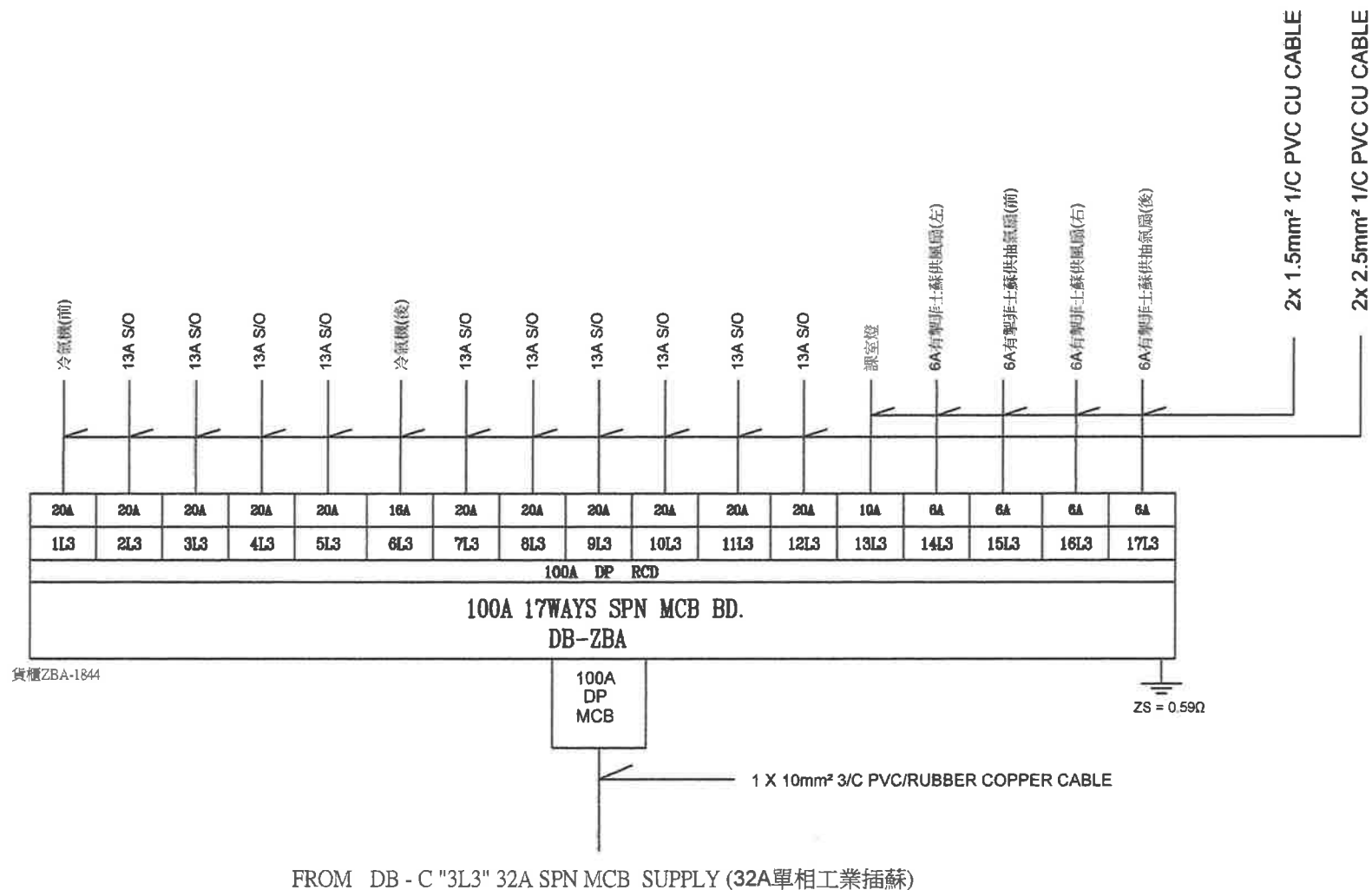
PROJECT: 新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
04CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019



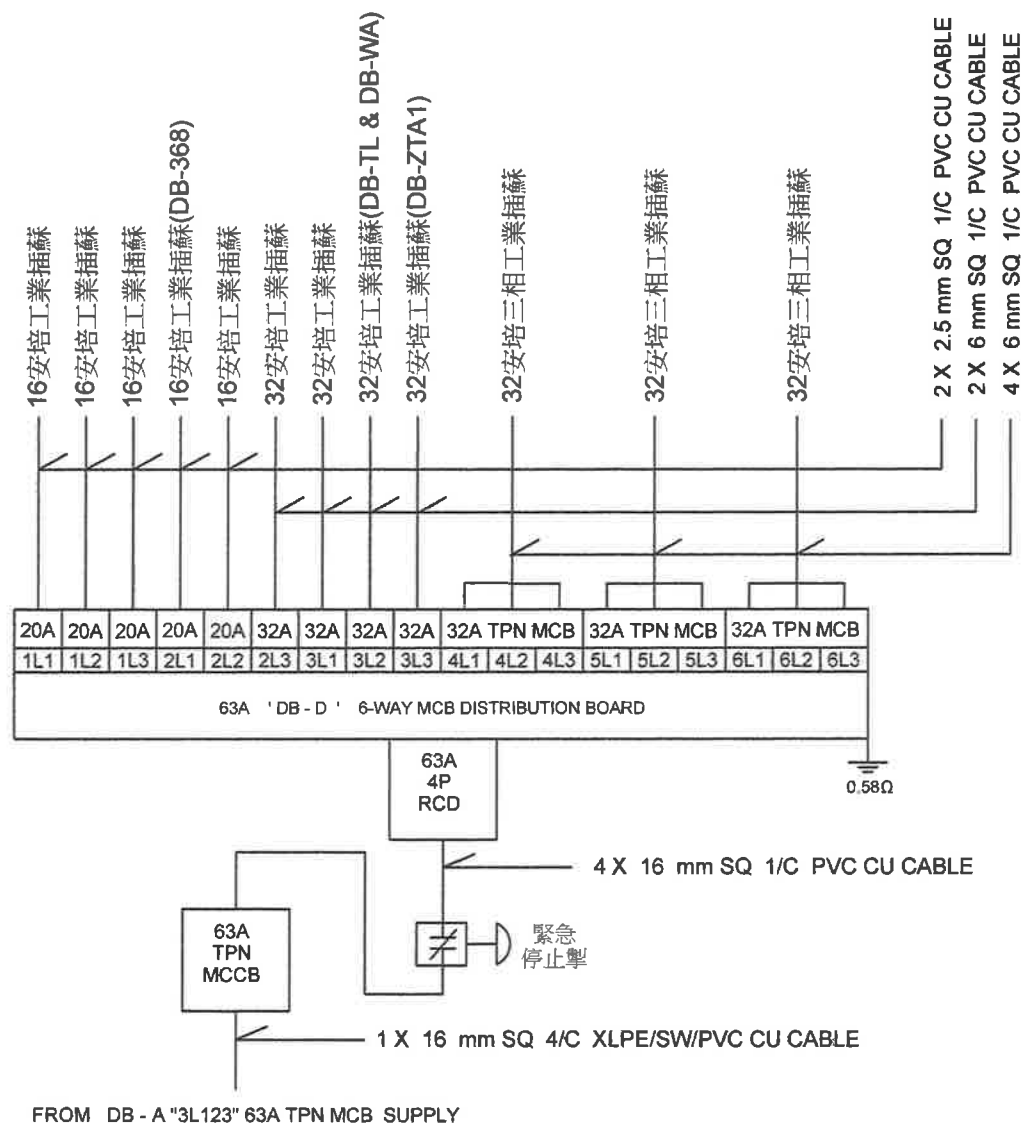
CONTRACTOR: [REDACTED]

PROJECT: 新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
05CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019









CONTRACTOR:

PROJECT:

新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

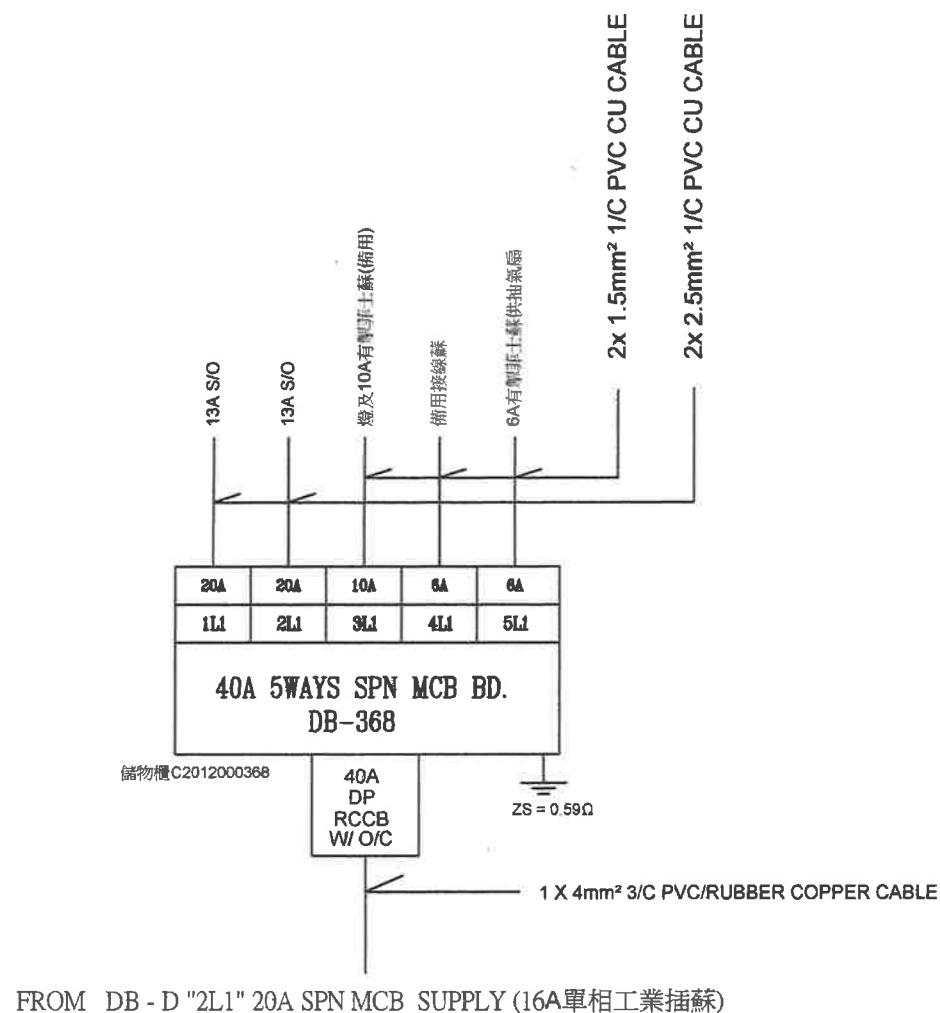
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
08

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

09

CHECKED BY:

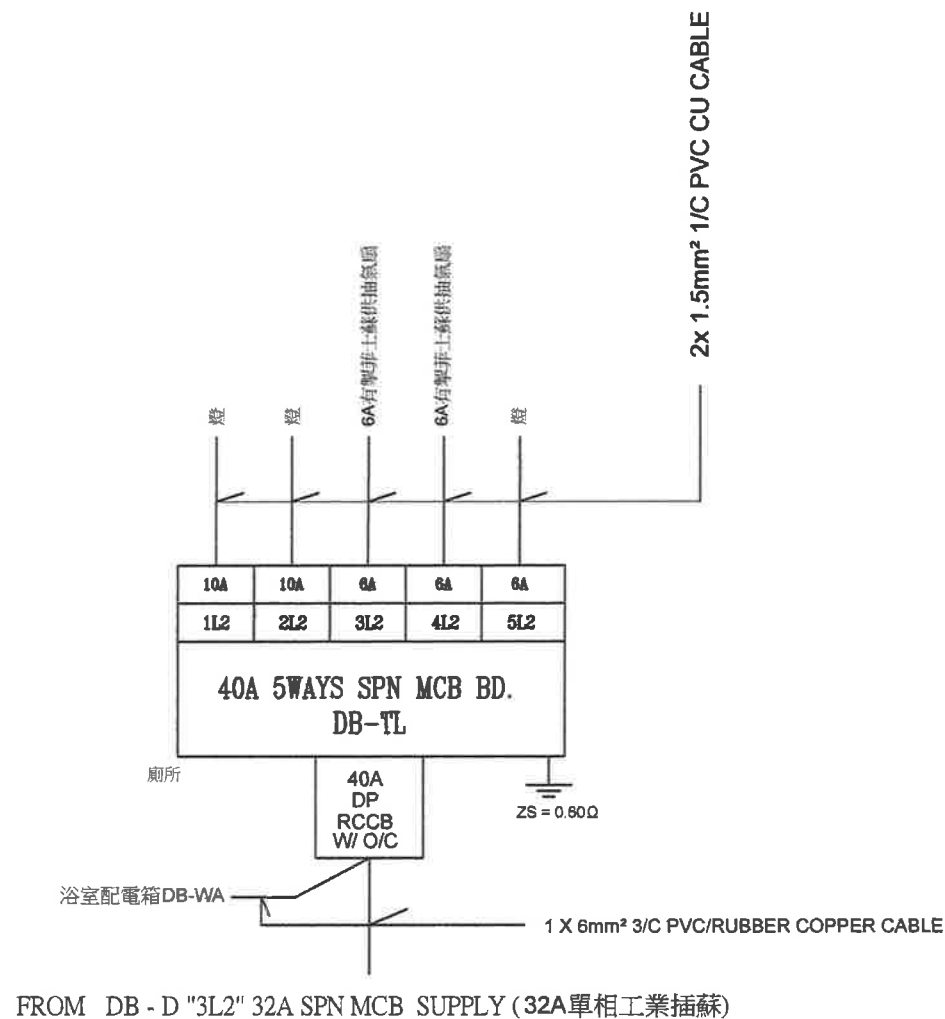
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

29-10-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

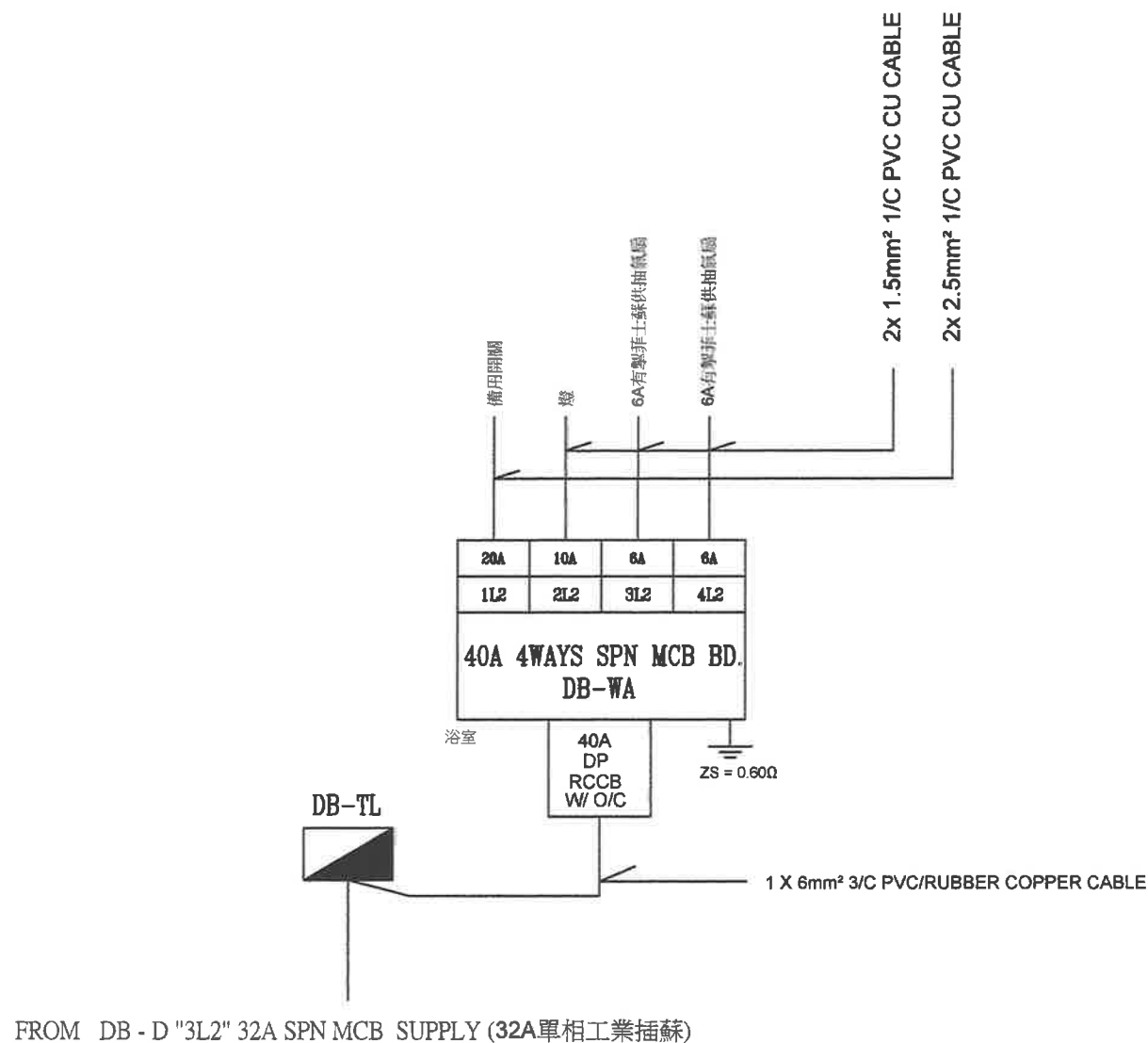
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
10

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

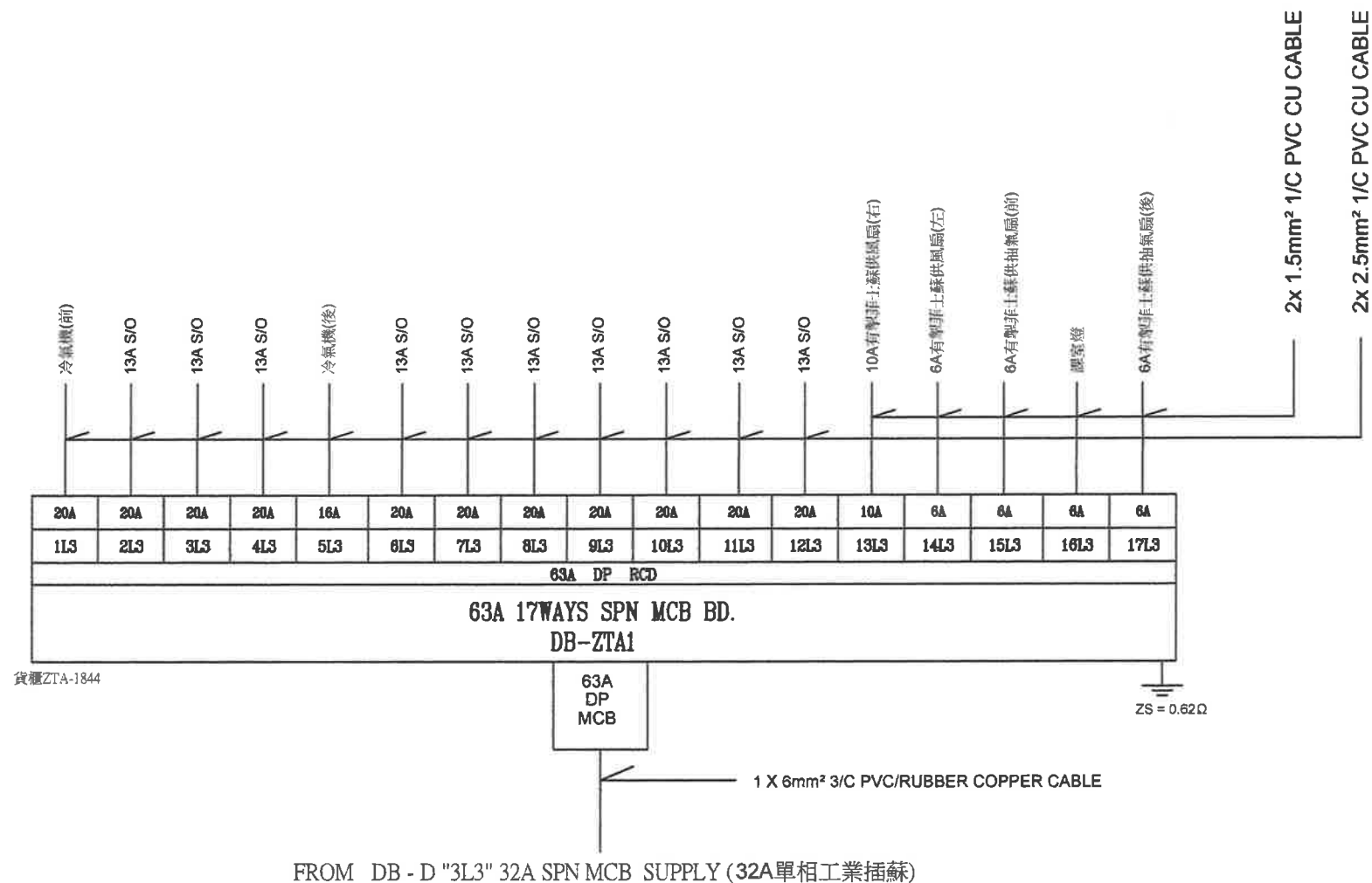
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
11

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

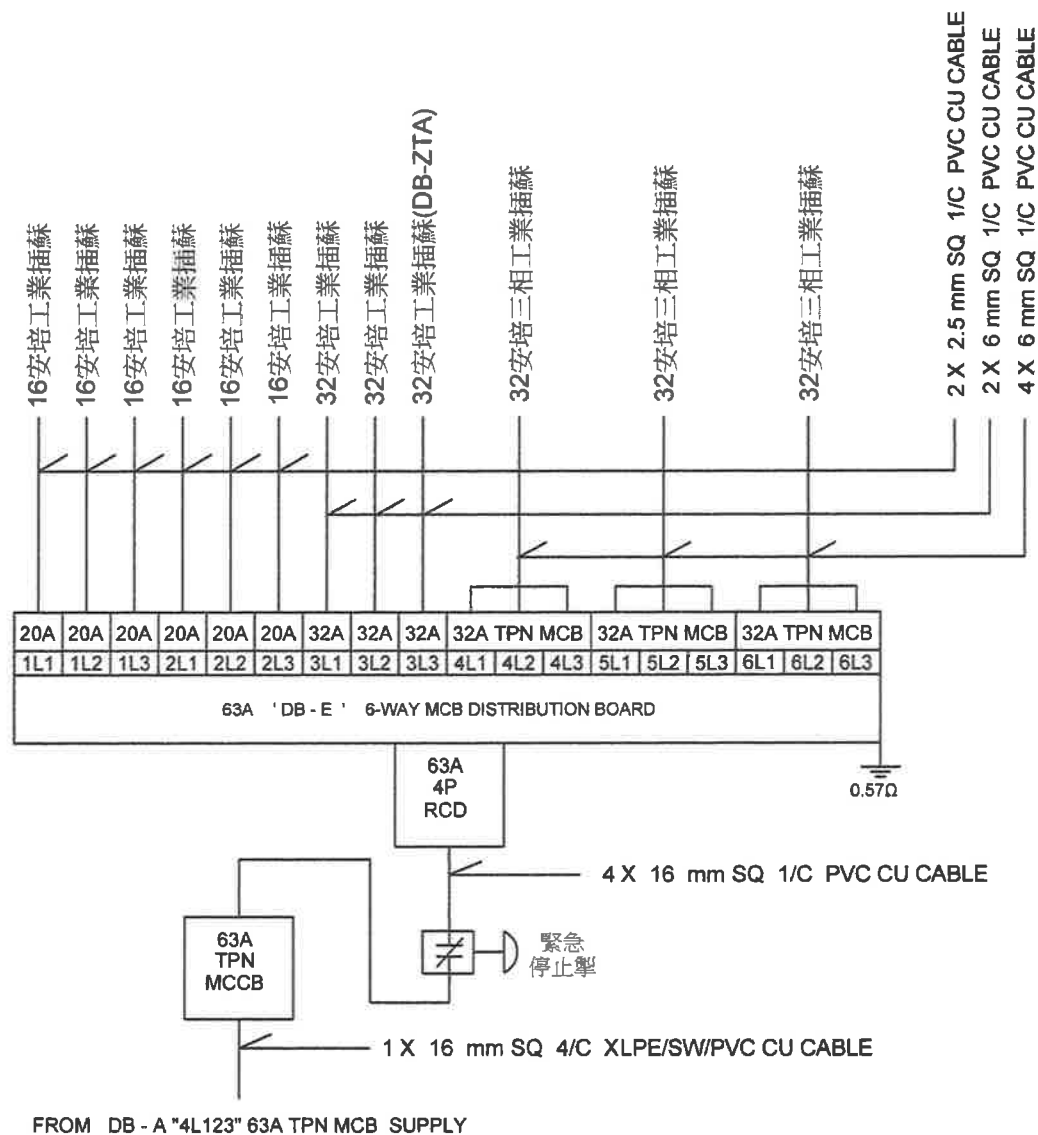
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SCHEMATIC WIRING DIAGRAM

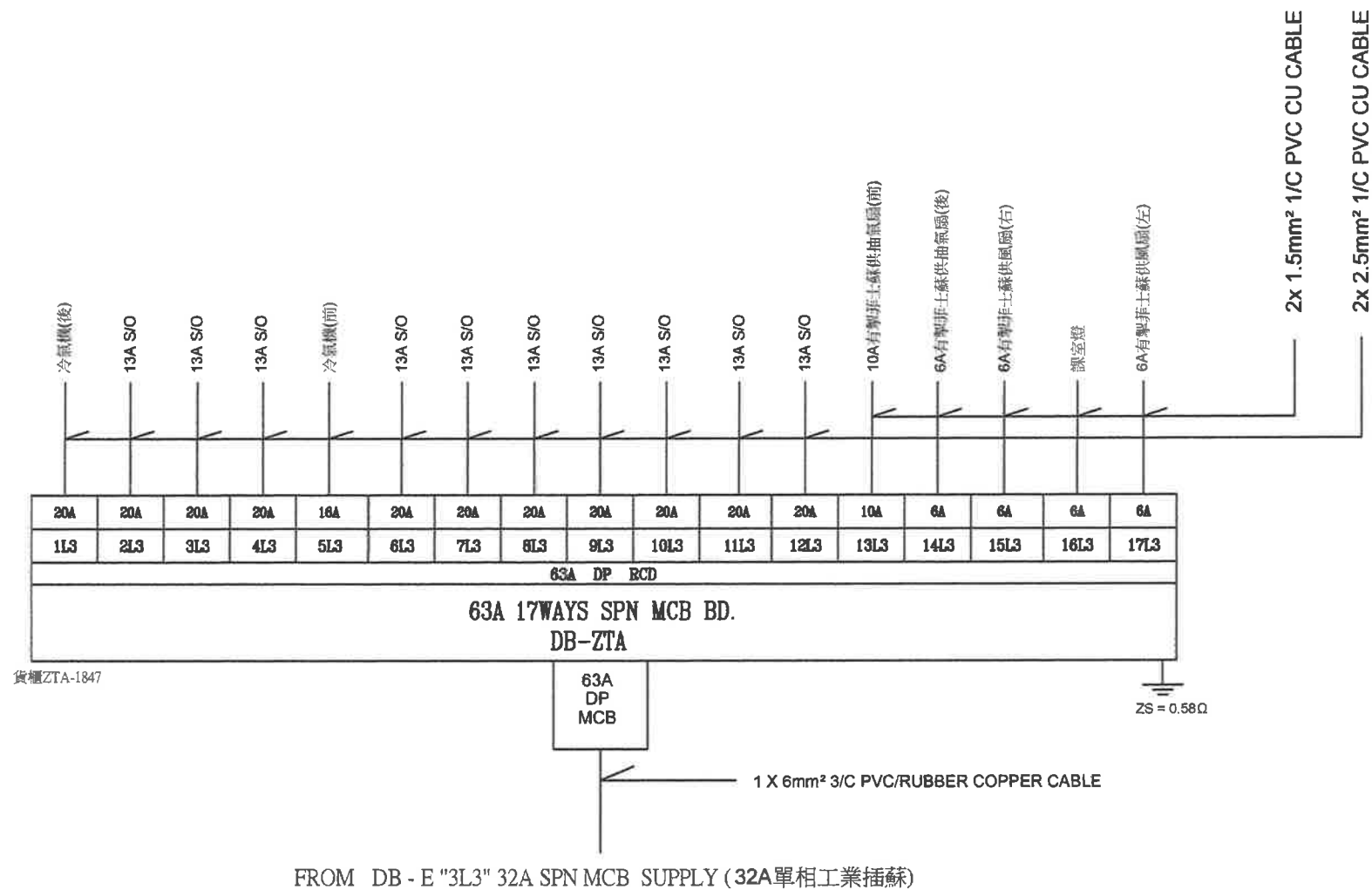
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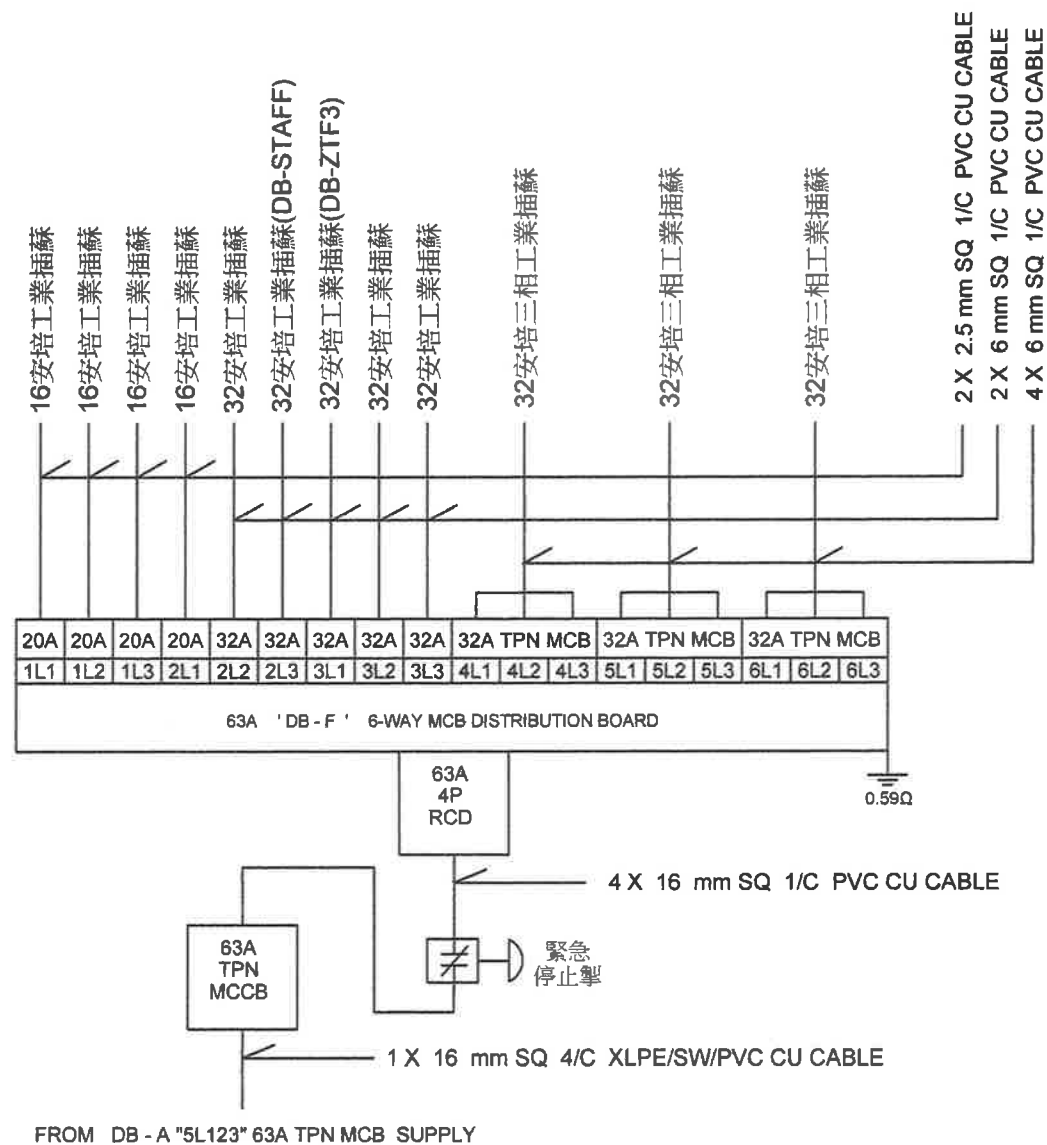
CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019







CONTRACTOR:

光

PROJECT:

新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

15

CHECKED BY:

C.Y. TSANG

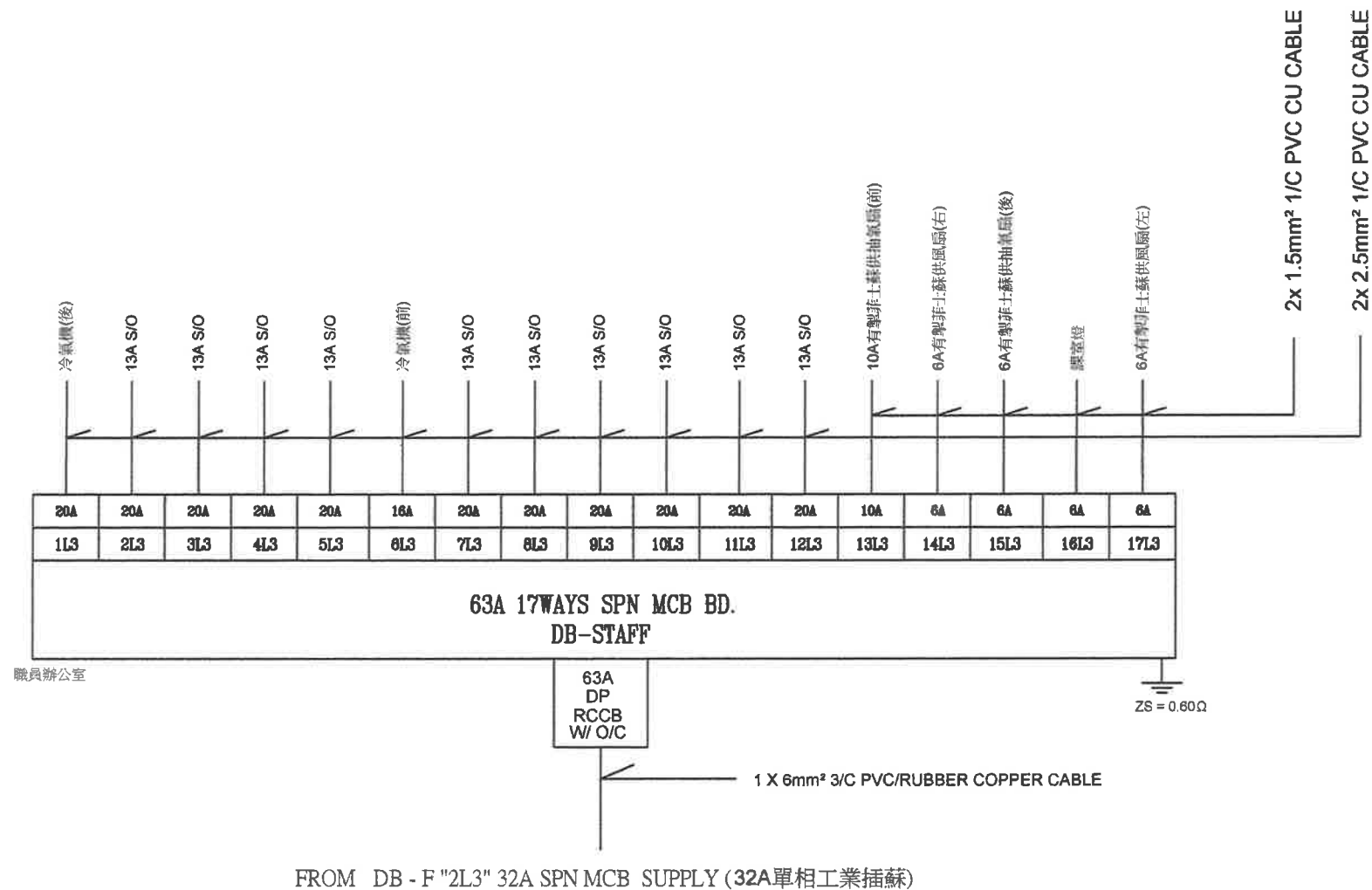
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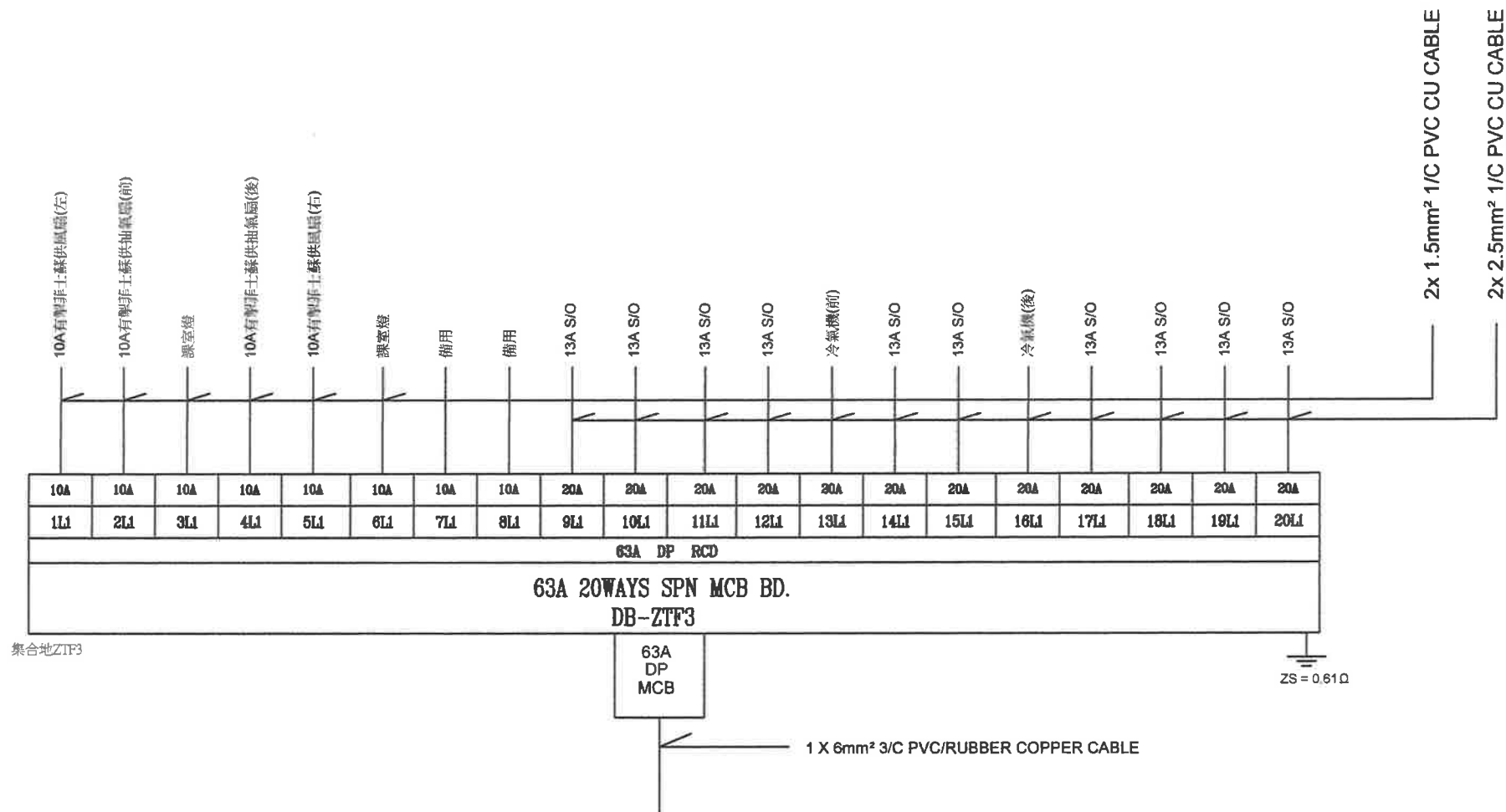
C.H. LAM &  
Jimmy TSANG

DATE:

28-10-2019







FROM DB - F "3L1" 32A SPN MCB SUPPLY (32A單相工業插蘇)

CONTRACTOR:

PROJECT:

新界屯門兆麟街16號  
建造業議會-香港建造學院兆麟街訓練場(SLSTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

17

CHECKED BY:

C.Y. TSANG

DRAWN BY:


C.H. LAM &  
Jimmy Tsang

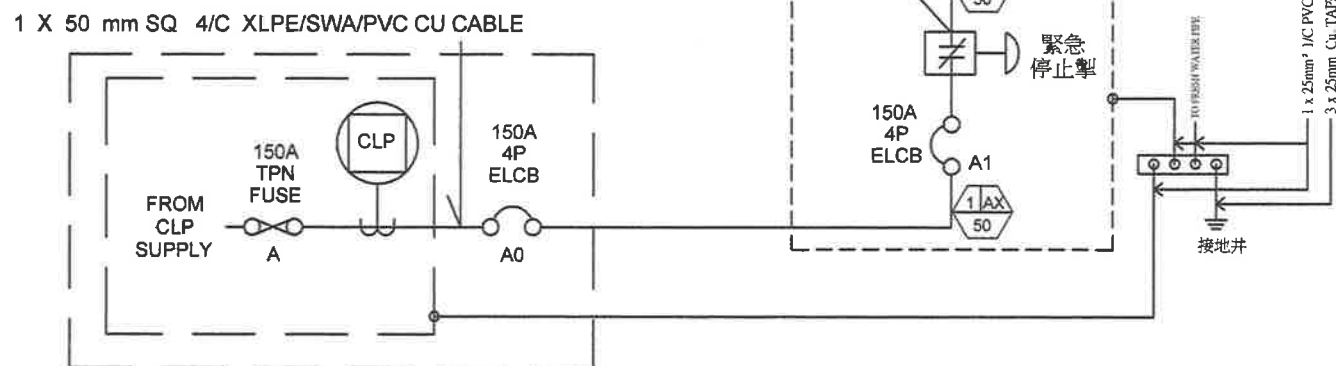
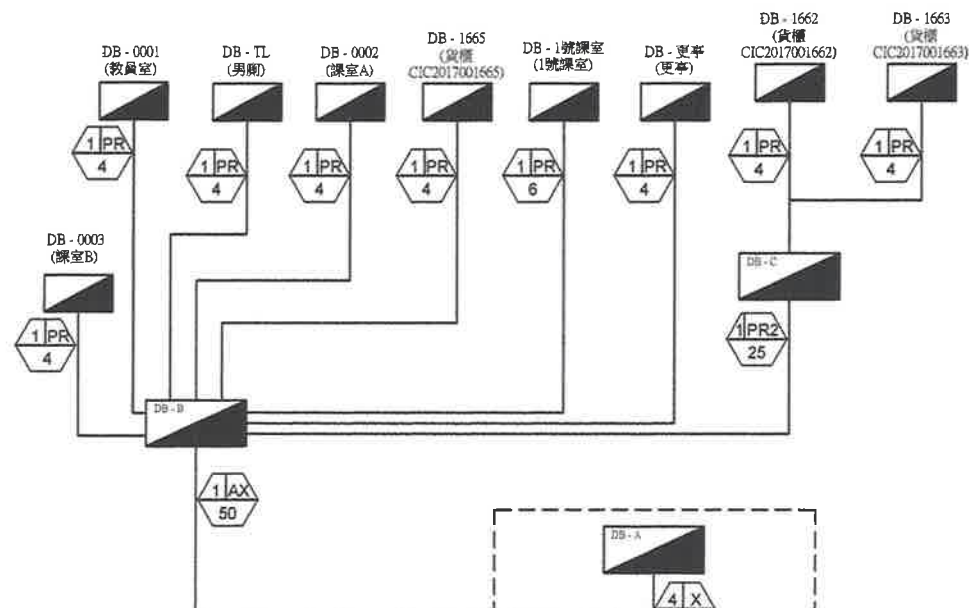
DATE:

29-10-2019

## CABLE SCHEDULE

AX	4/C XLPE/SWA/PVC COPPER CABLE
AP	4/C PVC/SWA/PVC COPPER CABLE
XP	1/C XLPE/PVC COPPER CABLE
PP	1/C PVC/PVC COPPER CABLE
PR	3/C PVC/RUBBER COPPER CABLE
P	1/C PVC COPPER CABLE
X	1/C XLPE COPPER CABLE
PR2	5/C PVC/RUBBER COPPER CABLE

e.g. NUMBER OF CABLE —  TYPE OF CABLE  
SIZE OF CABLE



**CONTRACTOR:**

PROJECT: 新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

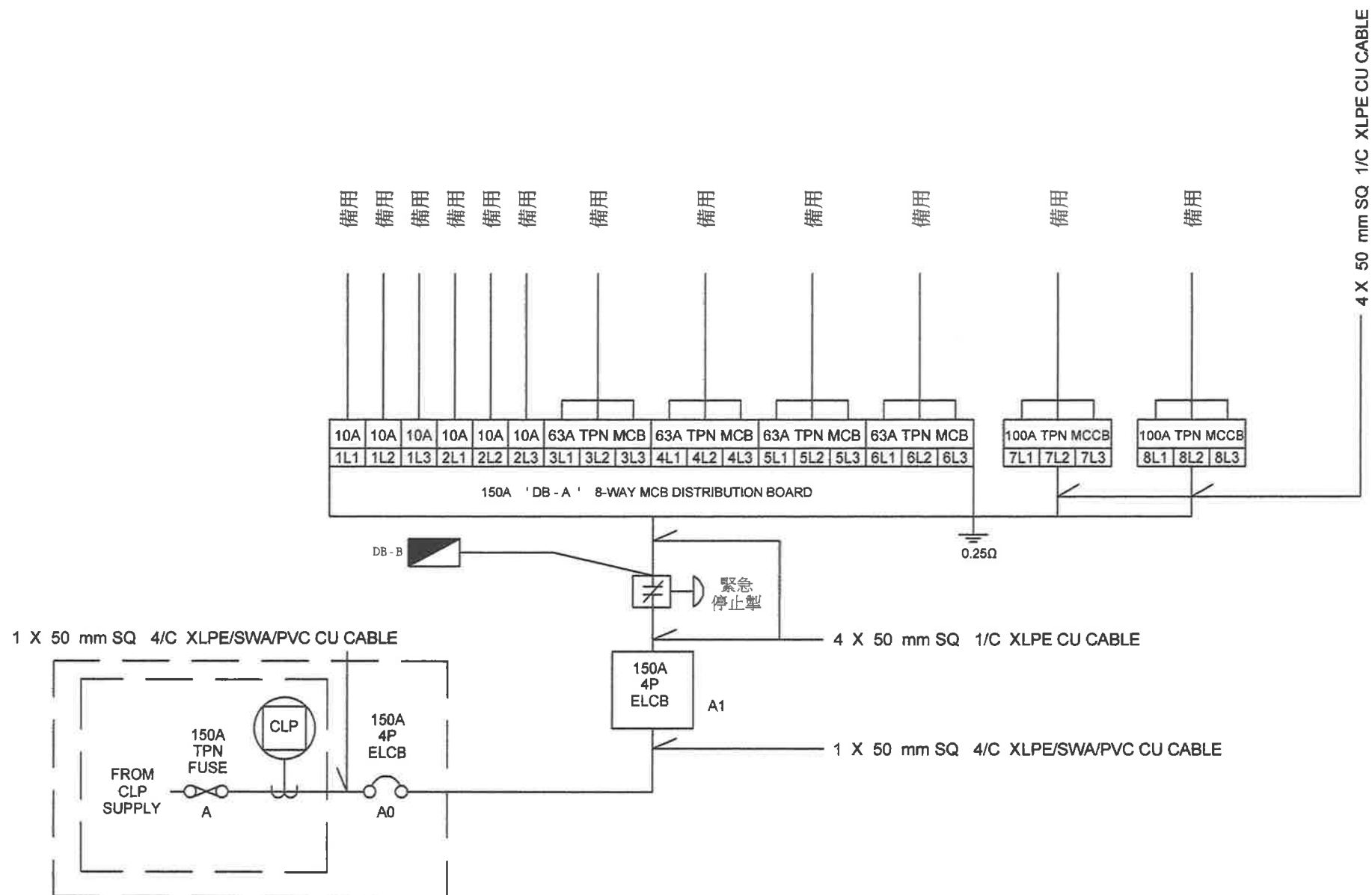
TITLE: MAIN SCHEMATIC  
WIRING DIAGRAM

DRAWN NO.	01
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CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019



CONTRACTOR:

PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

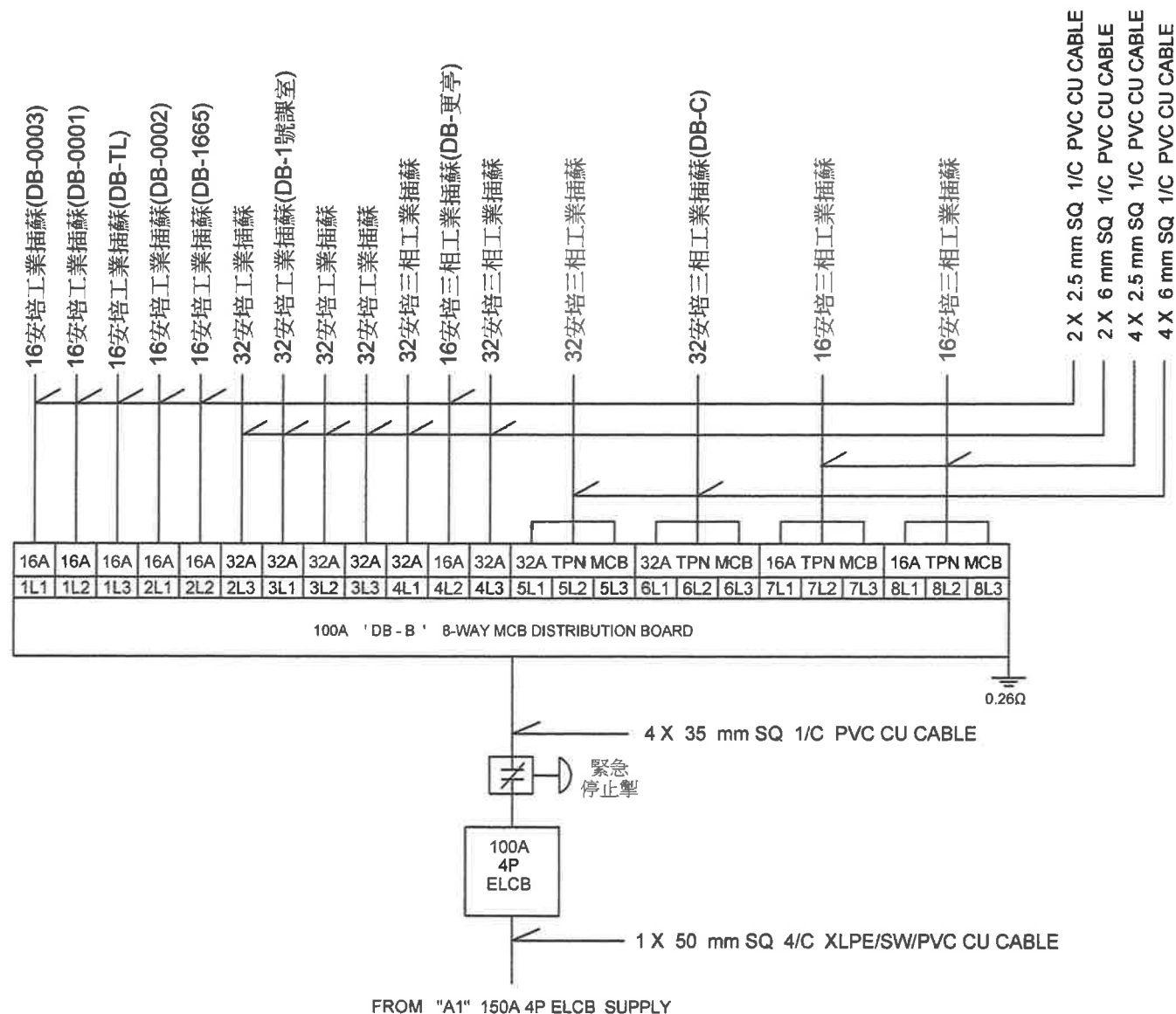
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
02

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019



CONTRACTOR:

PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

03

CHECKED BY:

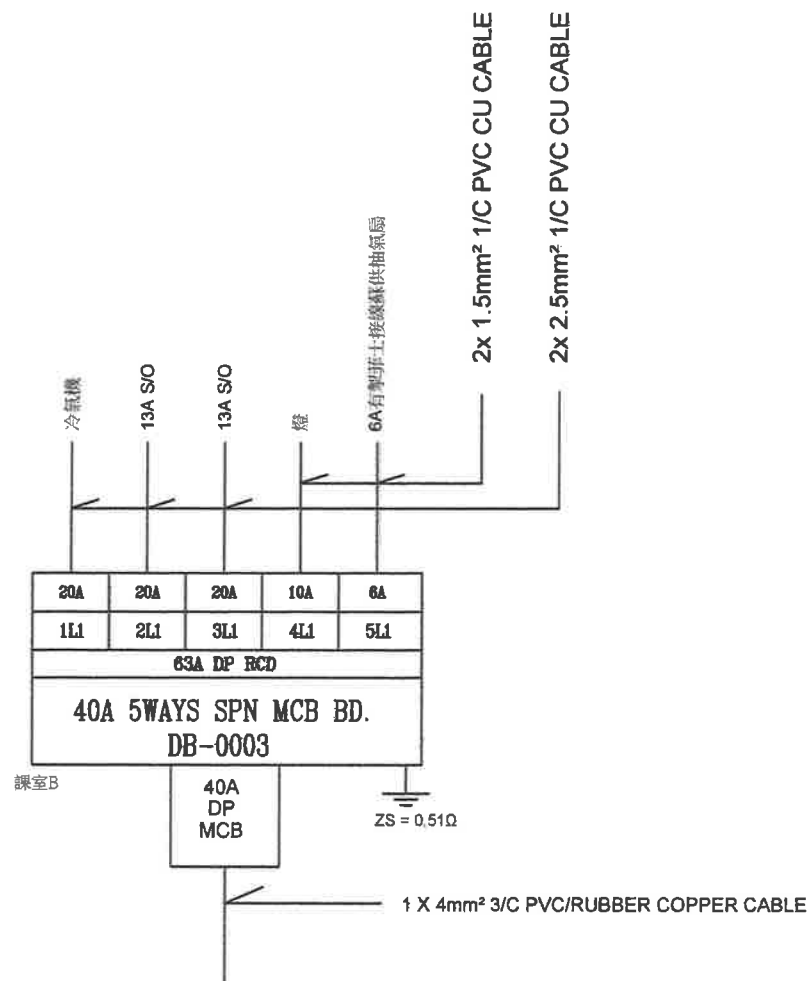
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

04-11-2019



FROM DB - B "1L1" 16A SPN MCB SUPPLY (16A單相工業插蘇)

CONTRACTOR:

PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

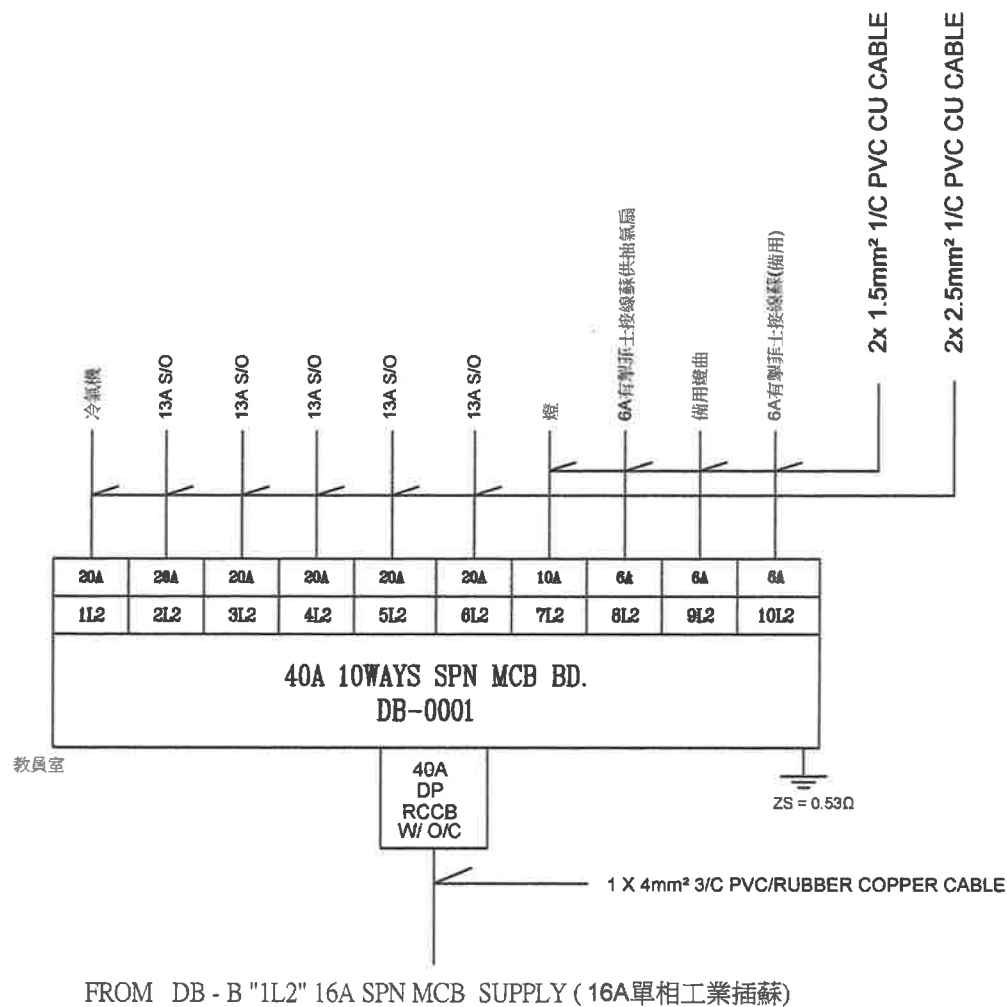
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
04

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019



CONTRACTOR:

PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

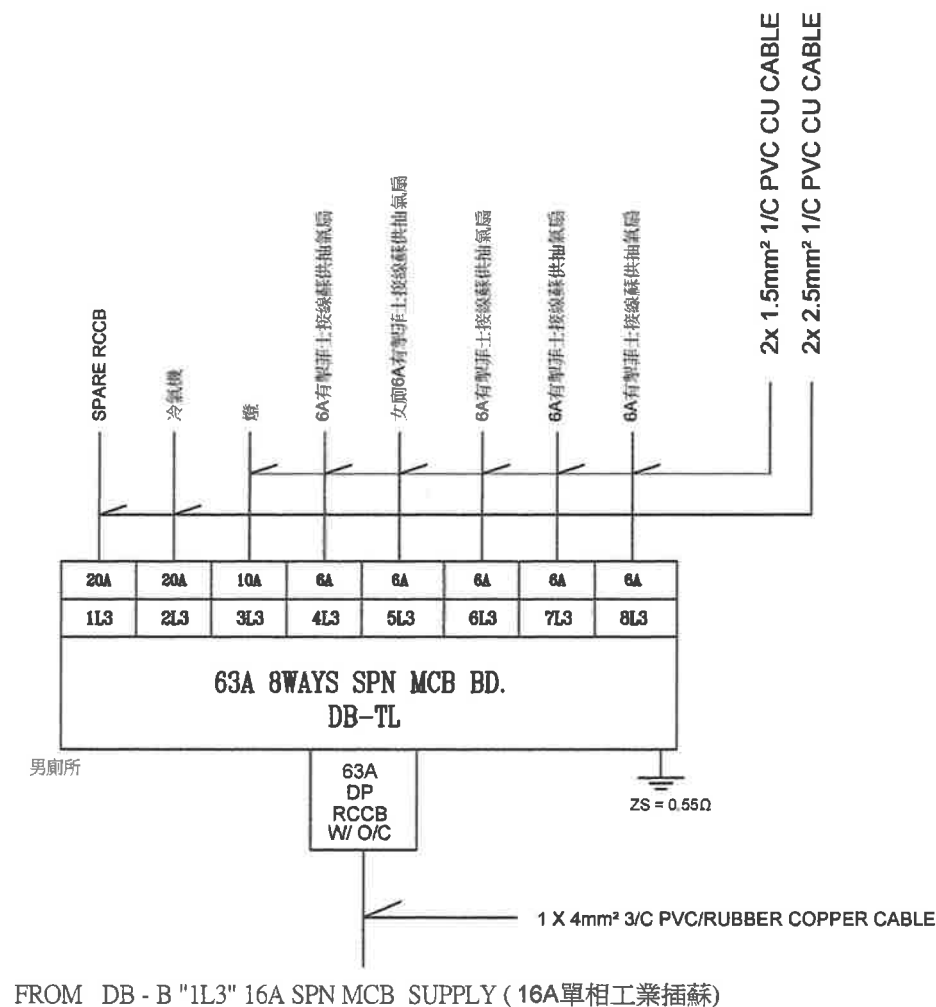
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
05

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019



CONTRACTOR:



PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

06

CHECKED BY:

C.Y. TSANG

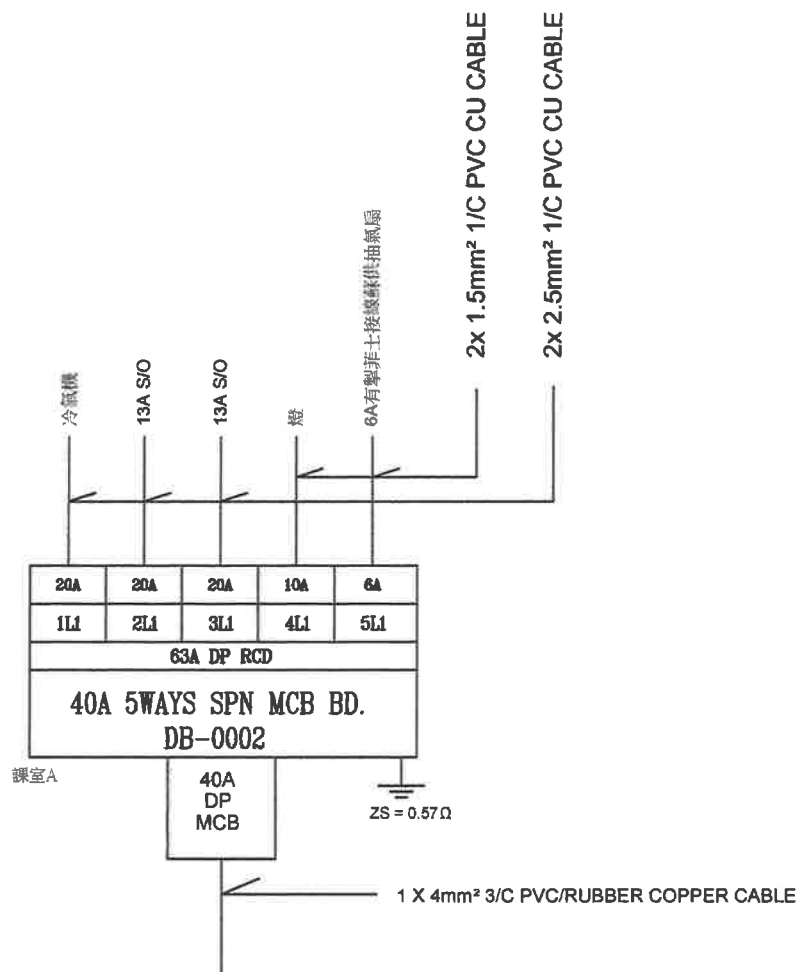
DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

04-11-2019





FROM DB - B "2L1" 16A SPN MCB SUPPLY (16A單相工業插蘇)

CONTRACTOR:



PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

07

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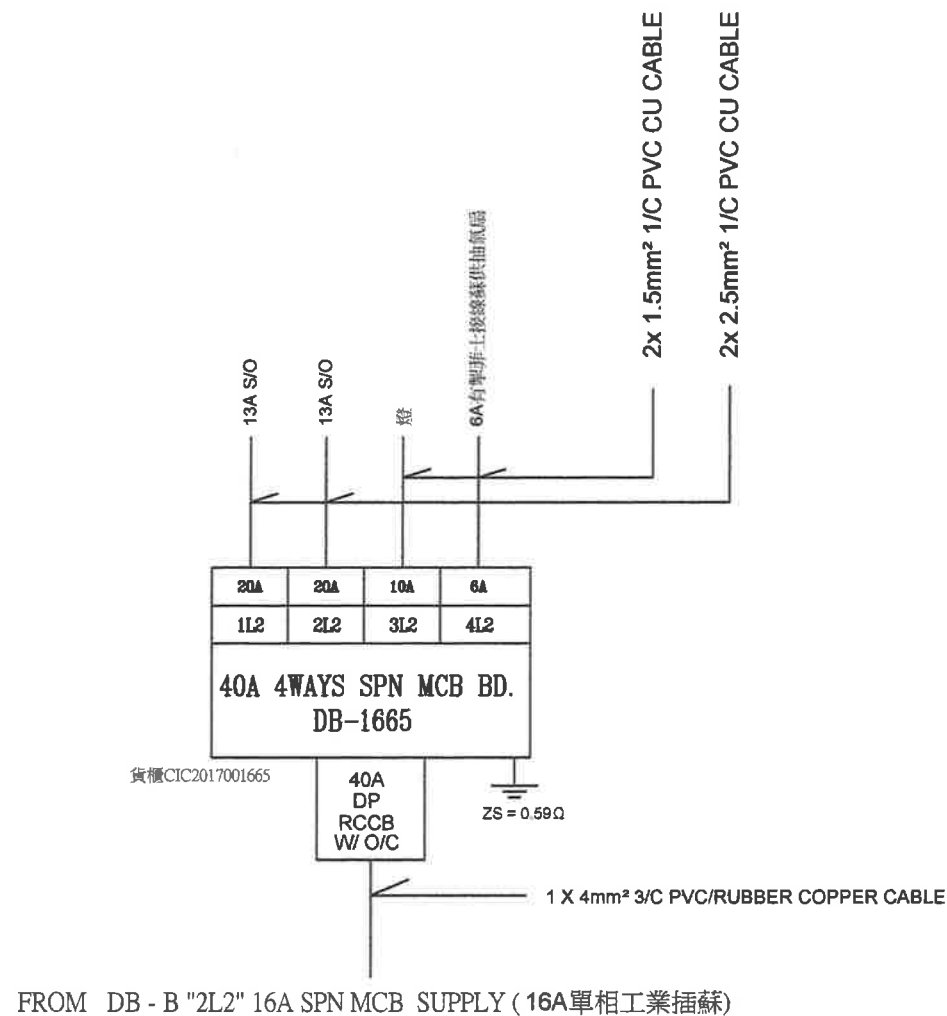
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

04-11-2019



CONTRACTOR:



PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

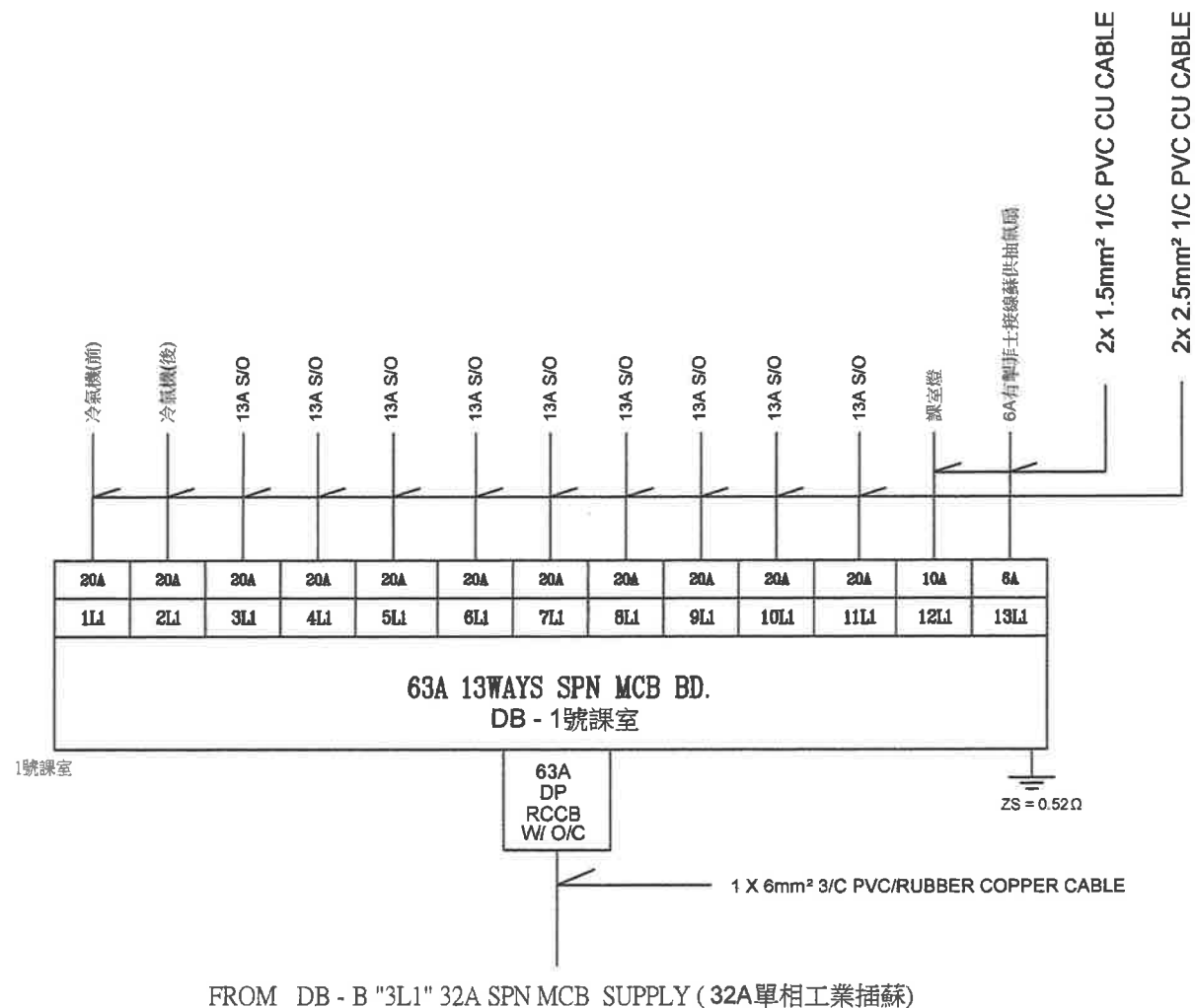
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SCHEMATIC WIRING DIAGRAM

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08

CHECKED BY:  
C.Y. TSANG

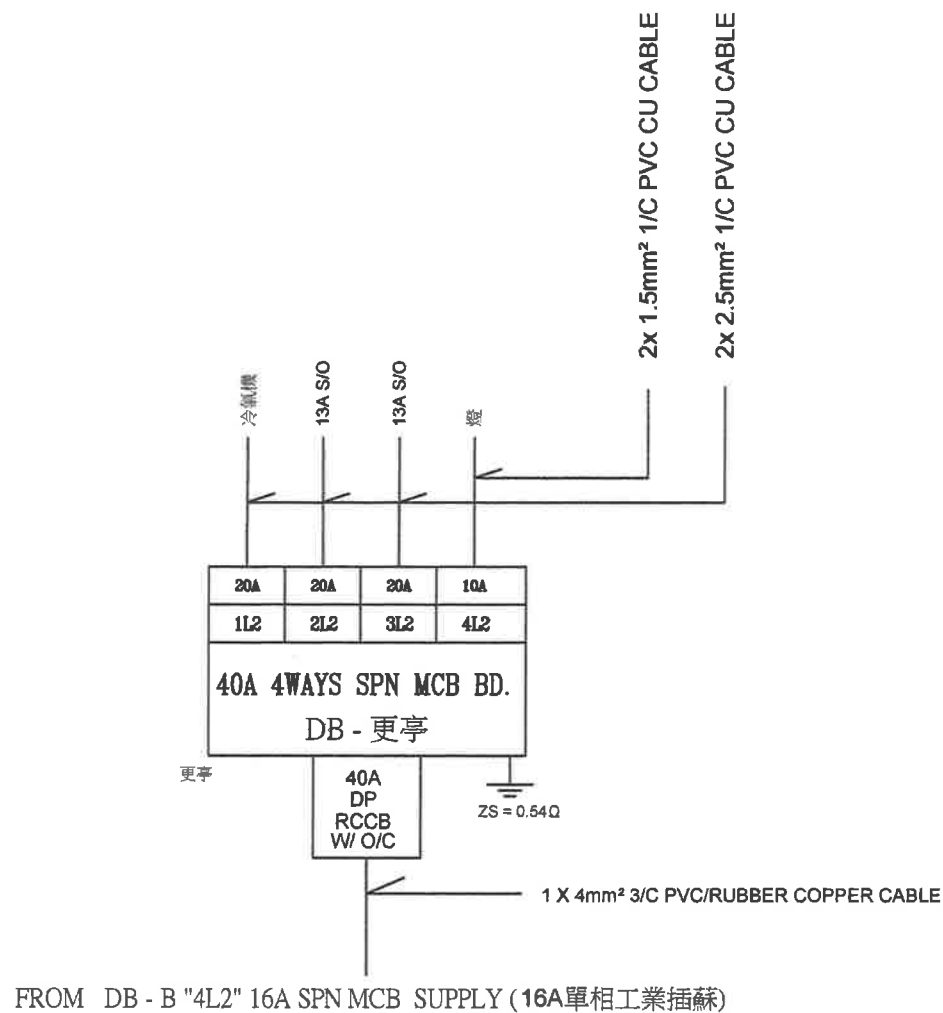
DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
09CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
04-11-2019



CONTRACTOR:



PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

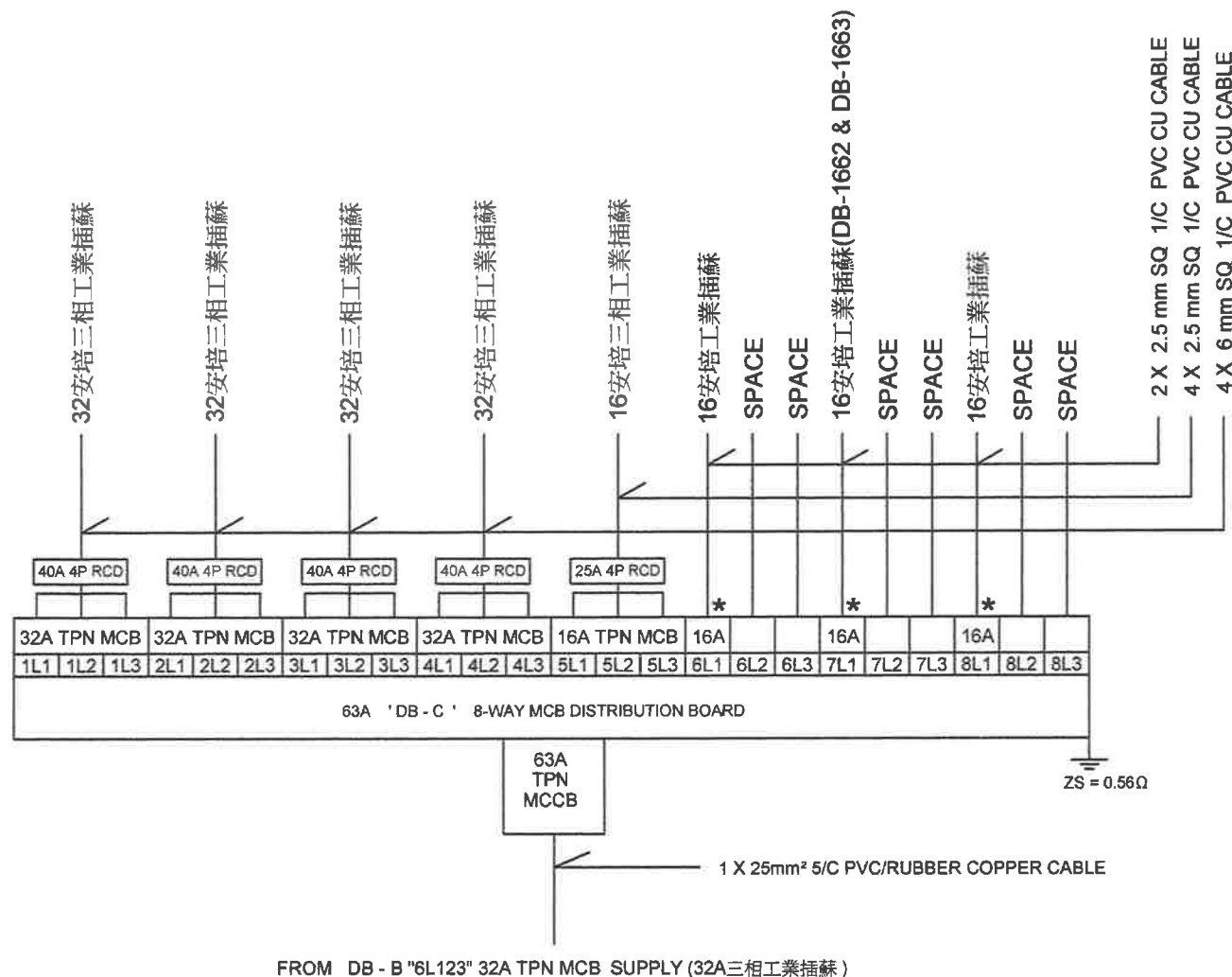
DRAWN NO.  
10

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019

\* = DB ELCB



CONTRACTOR:

PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

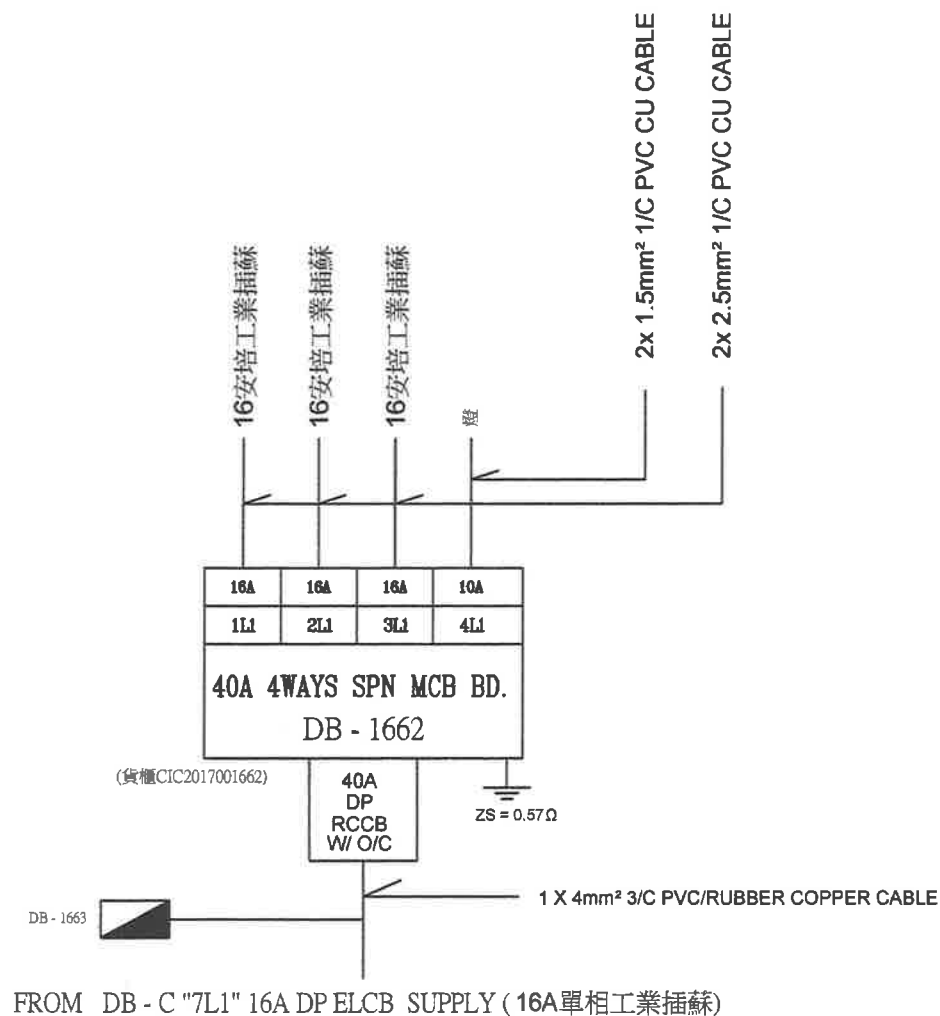
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
11

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
04-11-2019



CONTRACTOR:



PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

12

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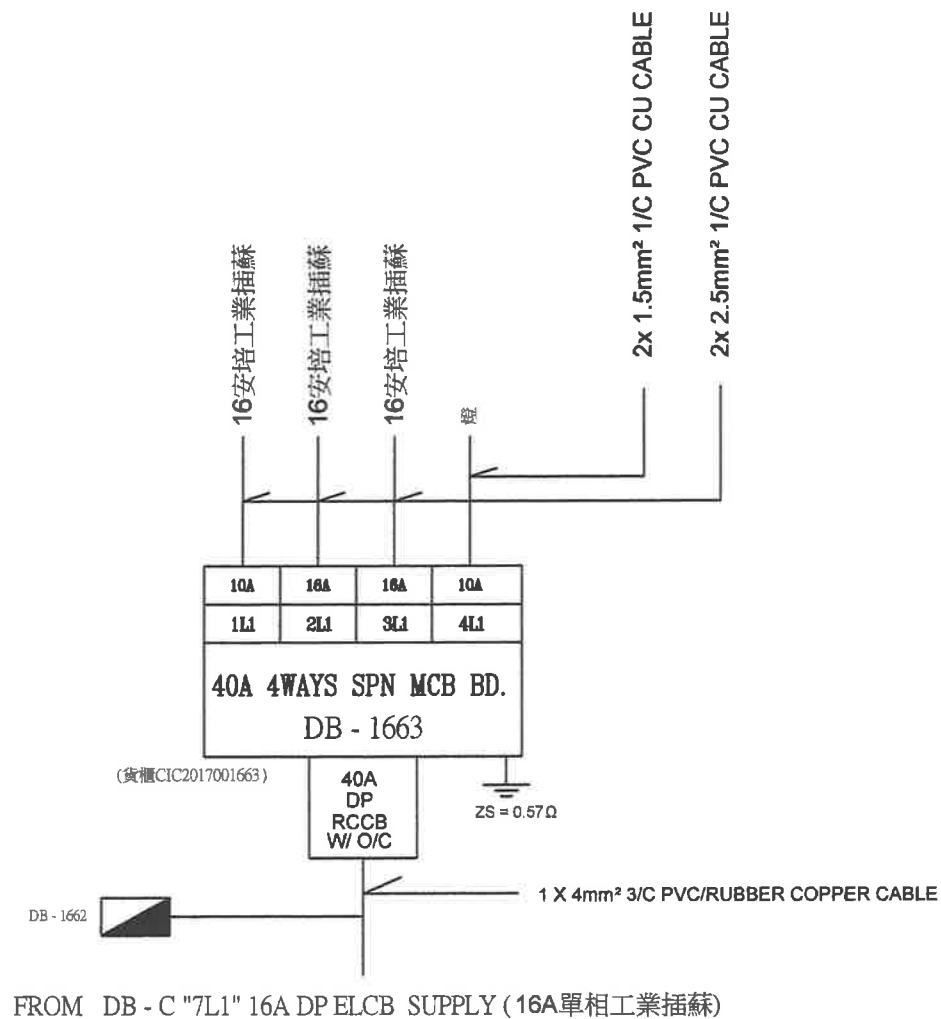
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

04-11-2019



CONTRACTOR:



PROJECT:

新界葵涌達美路  
建造業議會-香港建造學院達美路訓練場(TMRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

13

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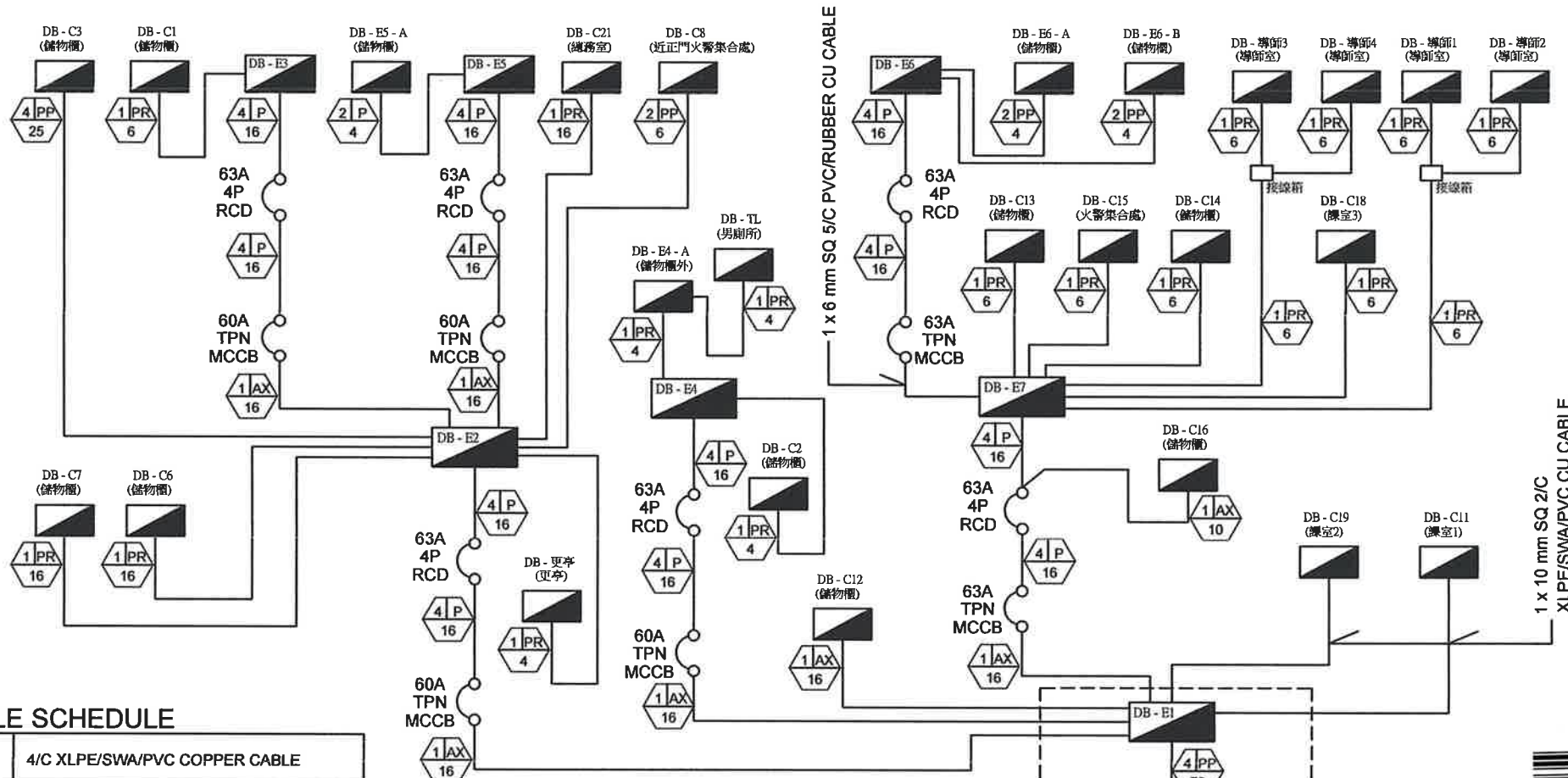
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang


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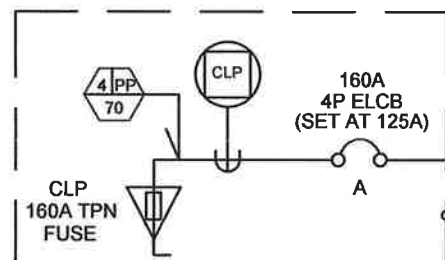
04-11-2019



## CABLE SCHEDULE

AX	4/C XLPE/SWA/PVC COPPER CABLE
AP	4/C PVC/SWA/PVC COPPER CABLE
XP	1/C XLPE/PVC COPPER CABLE
PP	1/C PVC/PVC COPPER CABLE
PR	3/C PVC/RUBBER COPPER CABLE
P	1/C PVC COPPER CABLE

e.g. NUMBER OF CABLE —  TYPE OF CABLE  
 SIZE OF CABLE

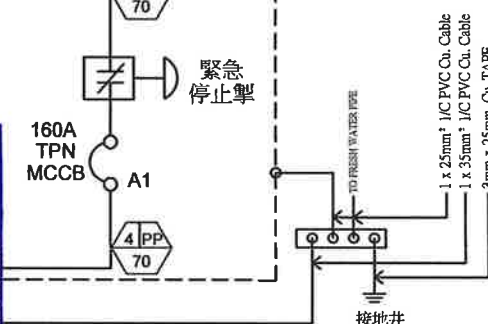


按照電力(線路)規則(第406章、附屬法例)第20條規定，此類固定電力裝置必須定期進行檢查，測試及領取牌照。

In accordance with Reg. 20 of the Electricity (Wiring) Regulations (Cap. 406 sub. leg.), this type of fixed electrical installations shall be inspected, tested and certified periodically.

收據編號: 1512-0099

Receipt No:



095875W

CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE: MAIN SCHEMATIC  
WIRING DIAGRAM

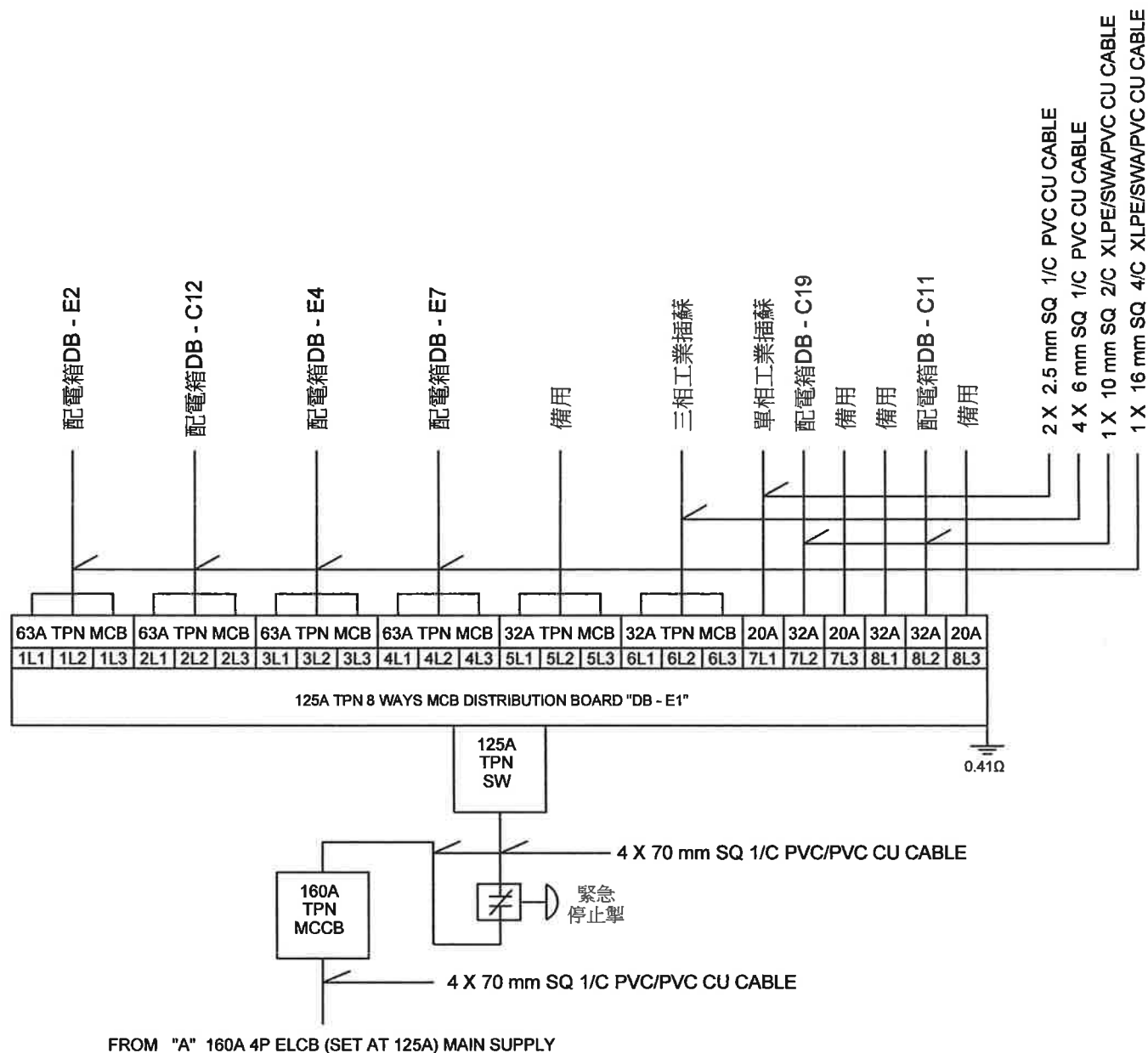
DRAWN NO.  
01

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
8-6-2021





CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

02

CHECKED BY:

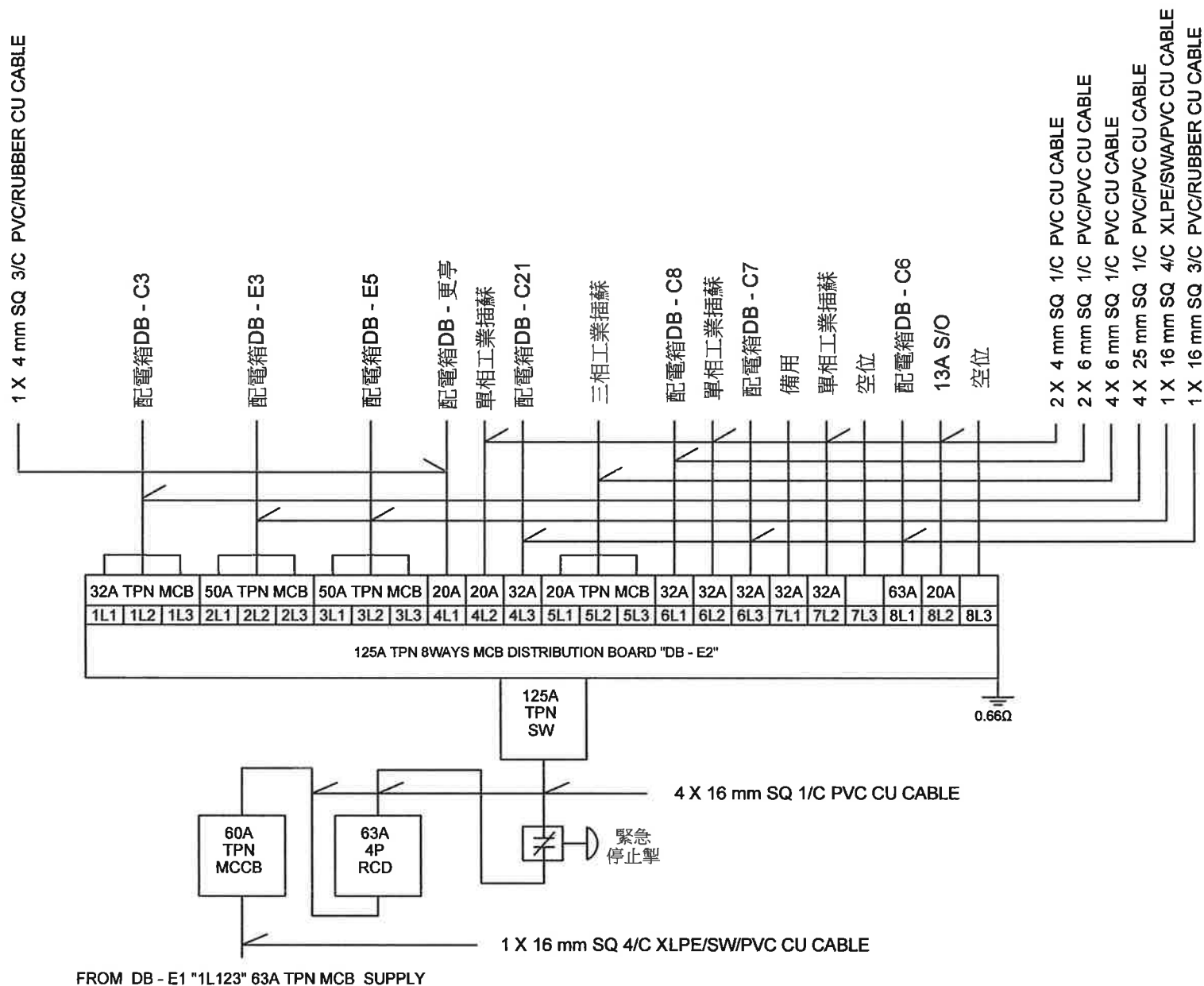
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

03

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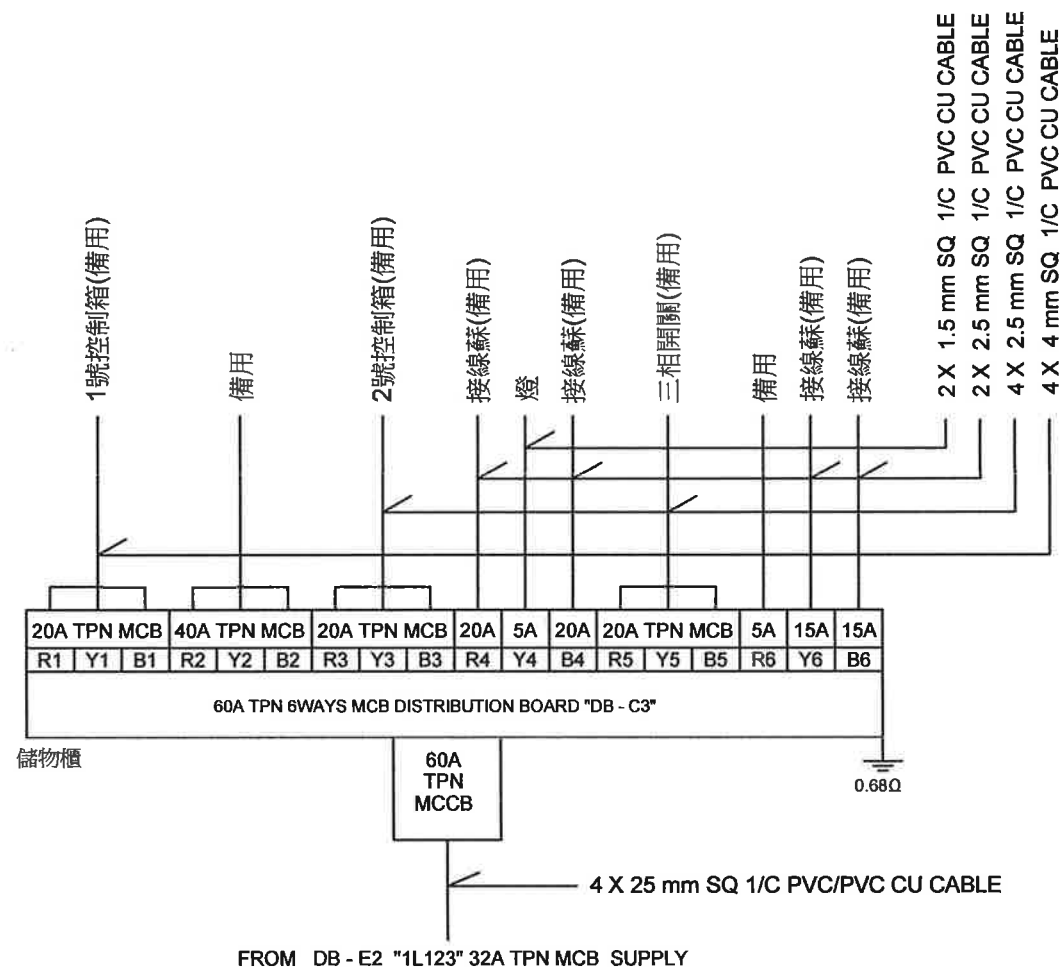
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

04

CHECKED BY:

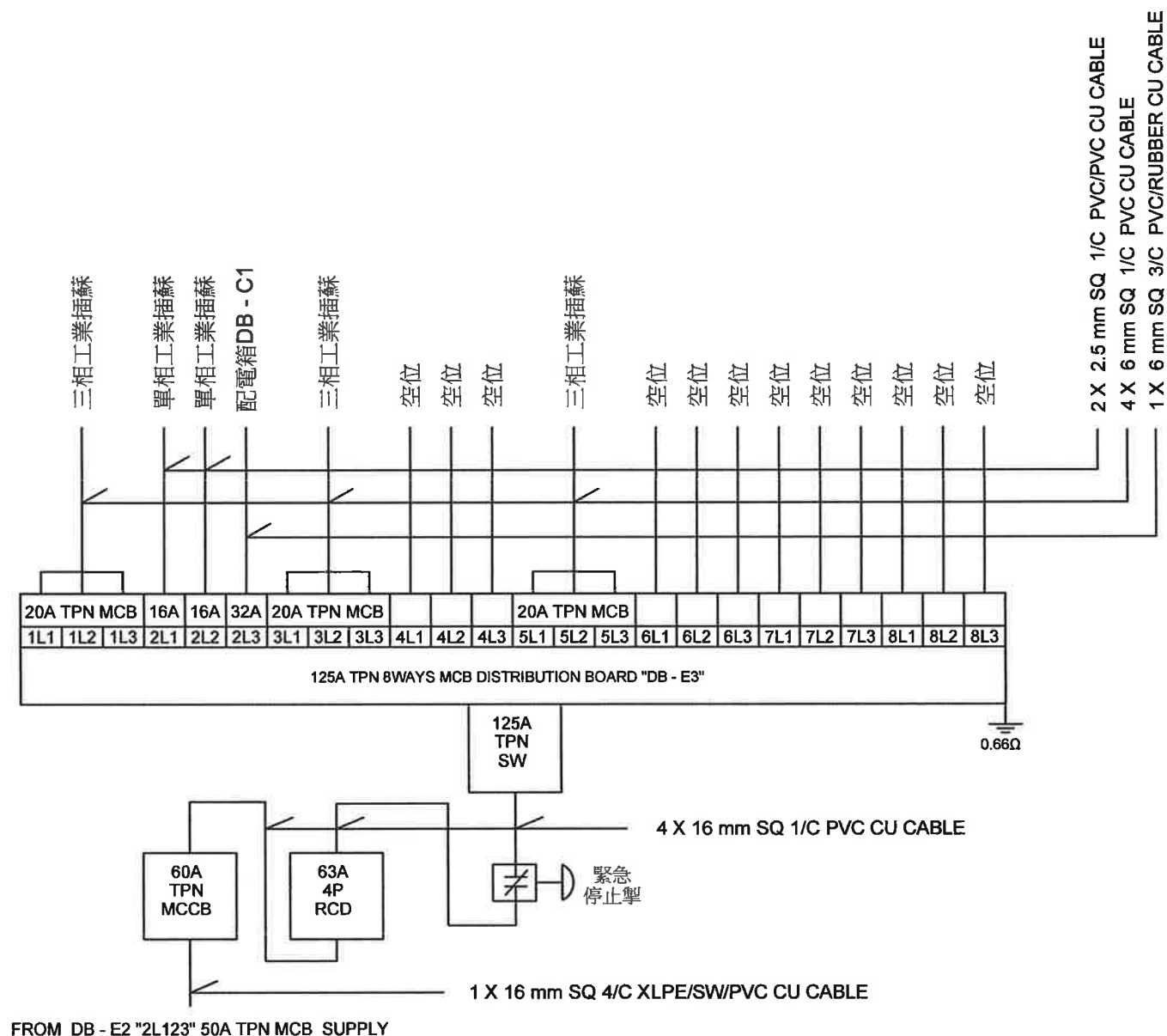
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

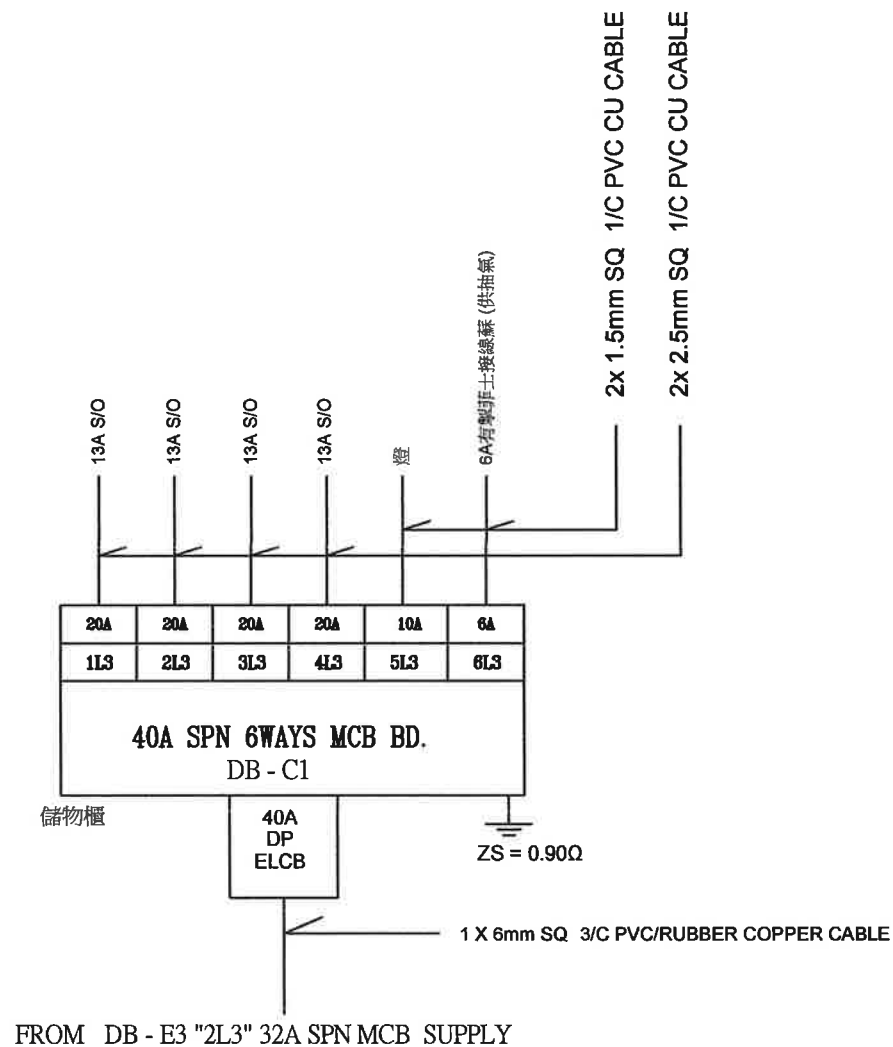
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
05

CHECKED BY:  
C.Y. TSANG

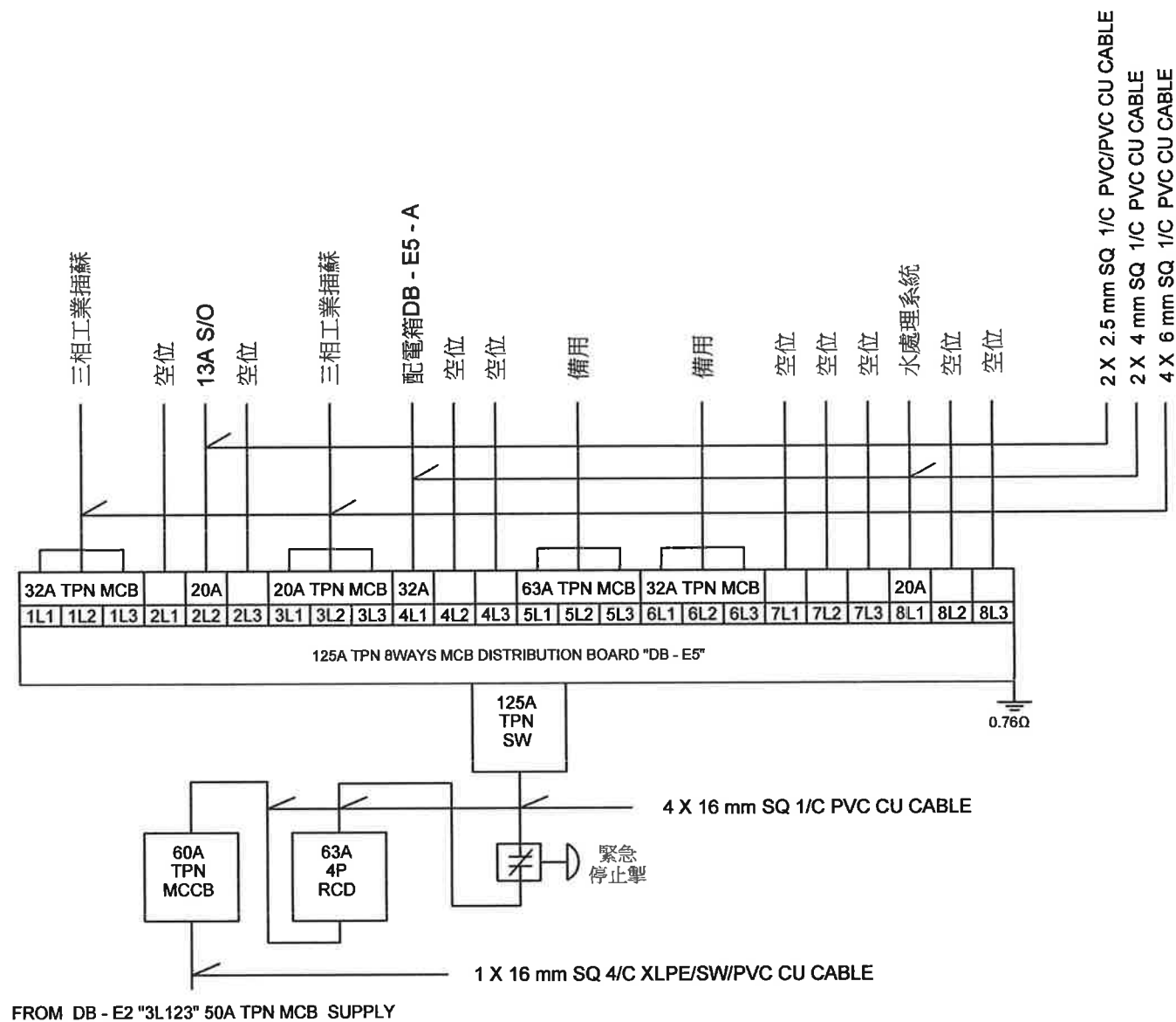
DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

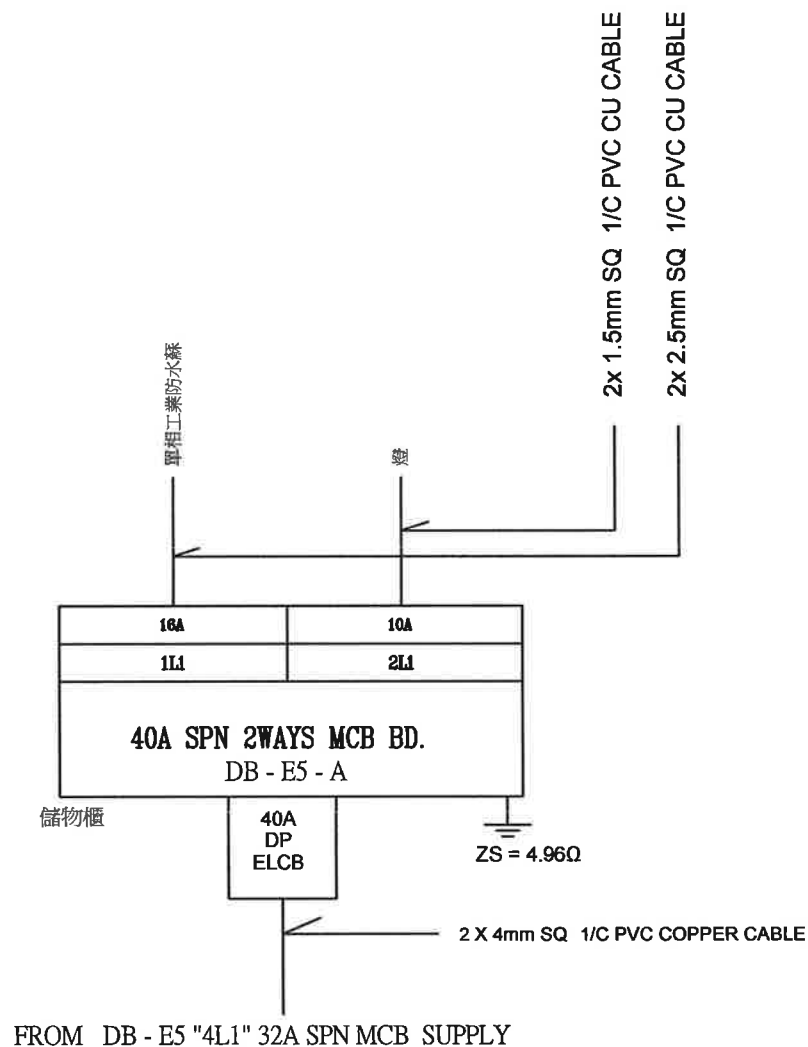
DATE:  
8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
06CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021





CONTRACTOR:



PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

08

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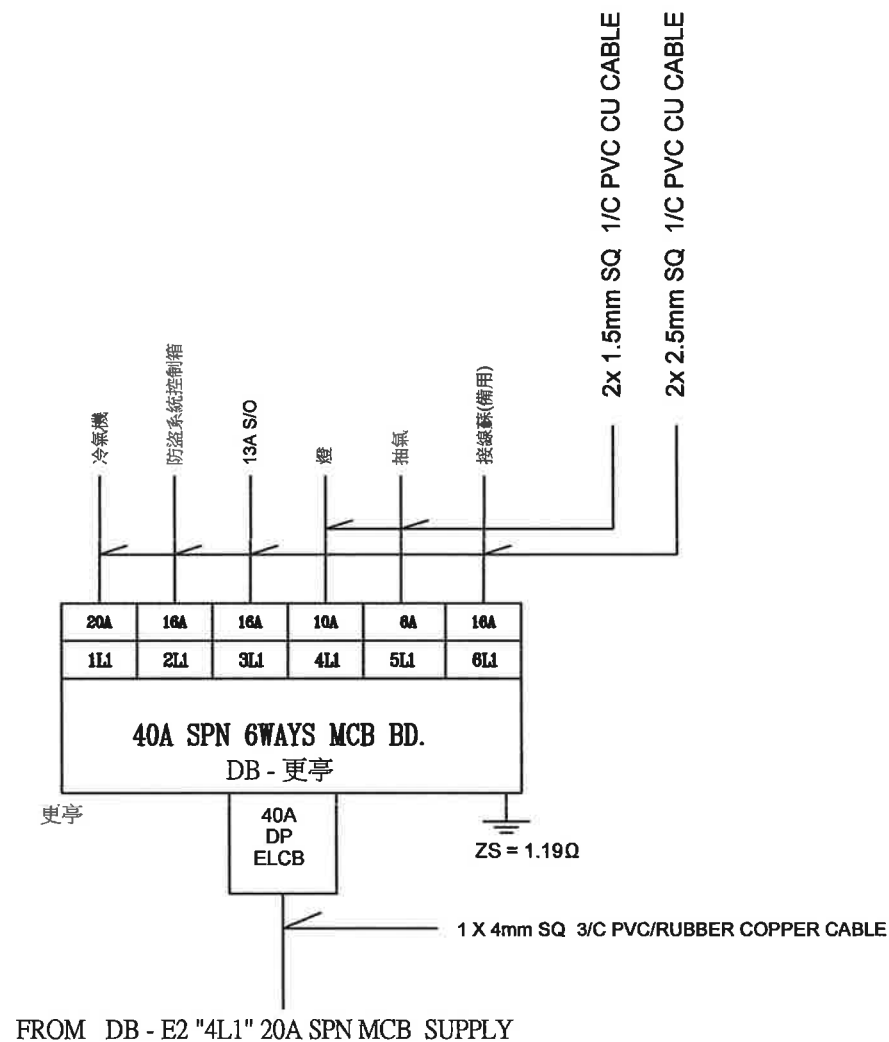
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

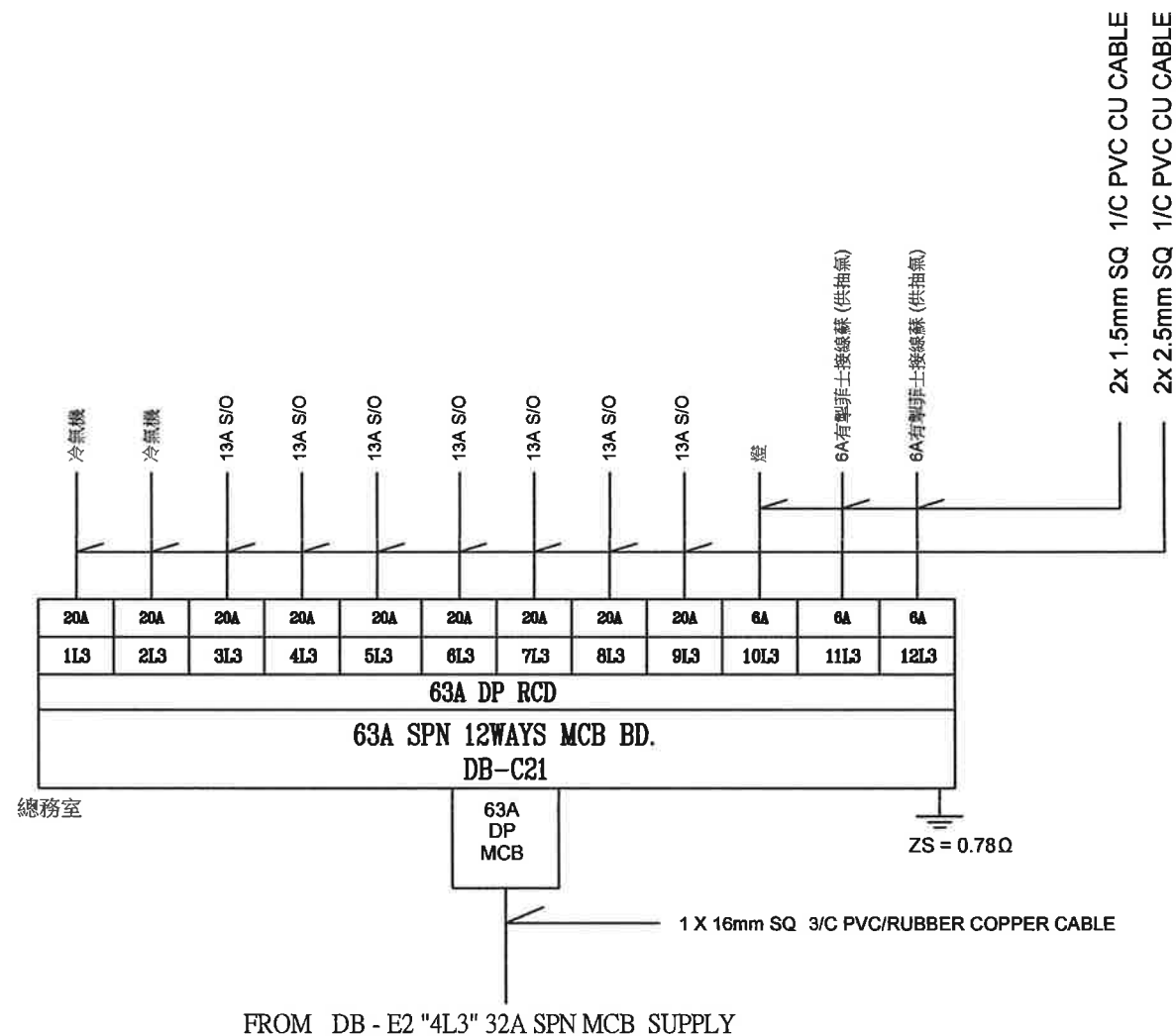
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09

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

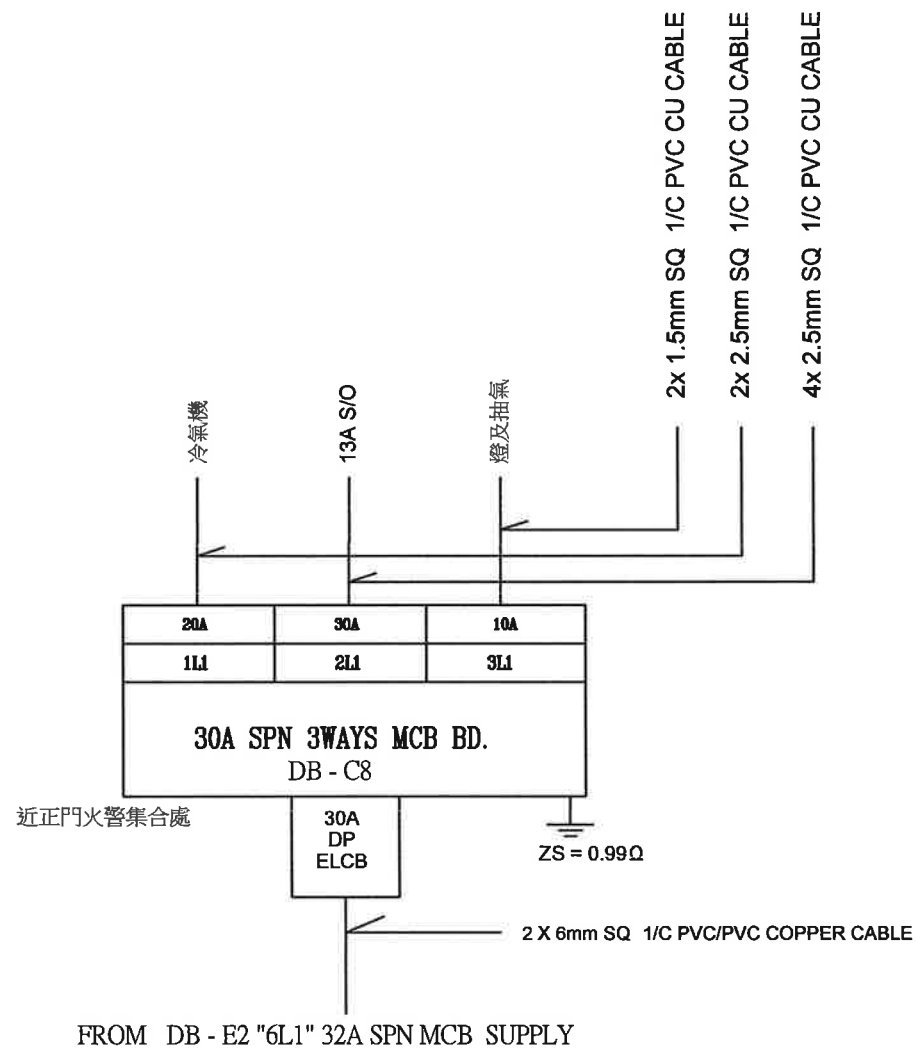
DATE:  
8-6-2021





CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
10CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



CONTRACTOR:



PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

11

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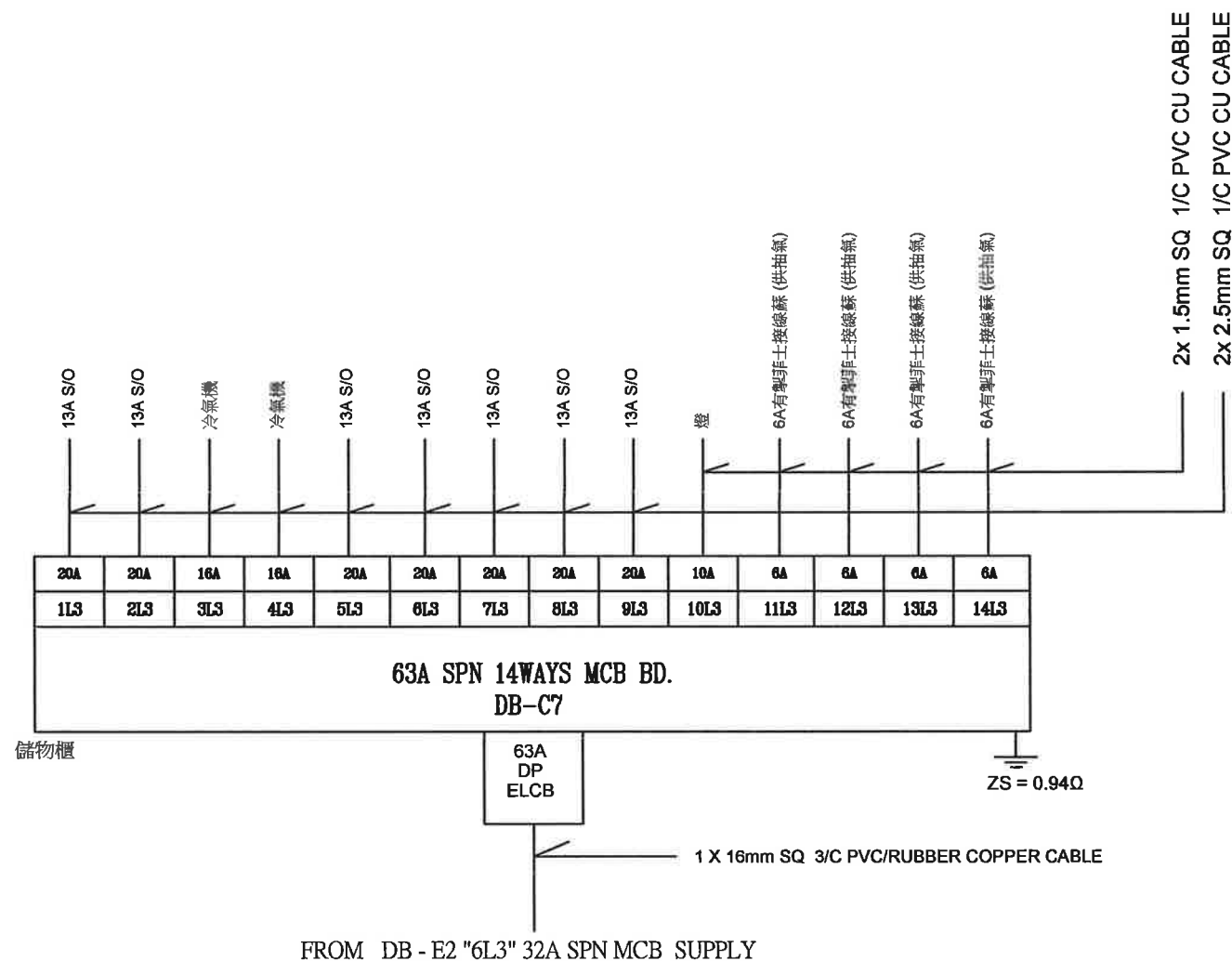
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

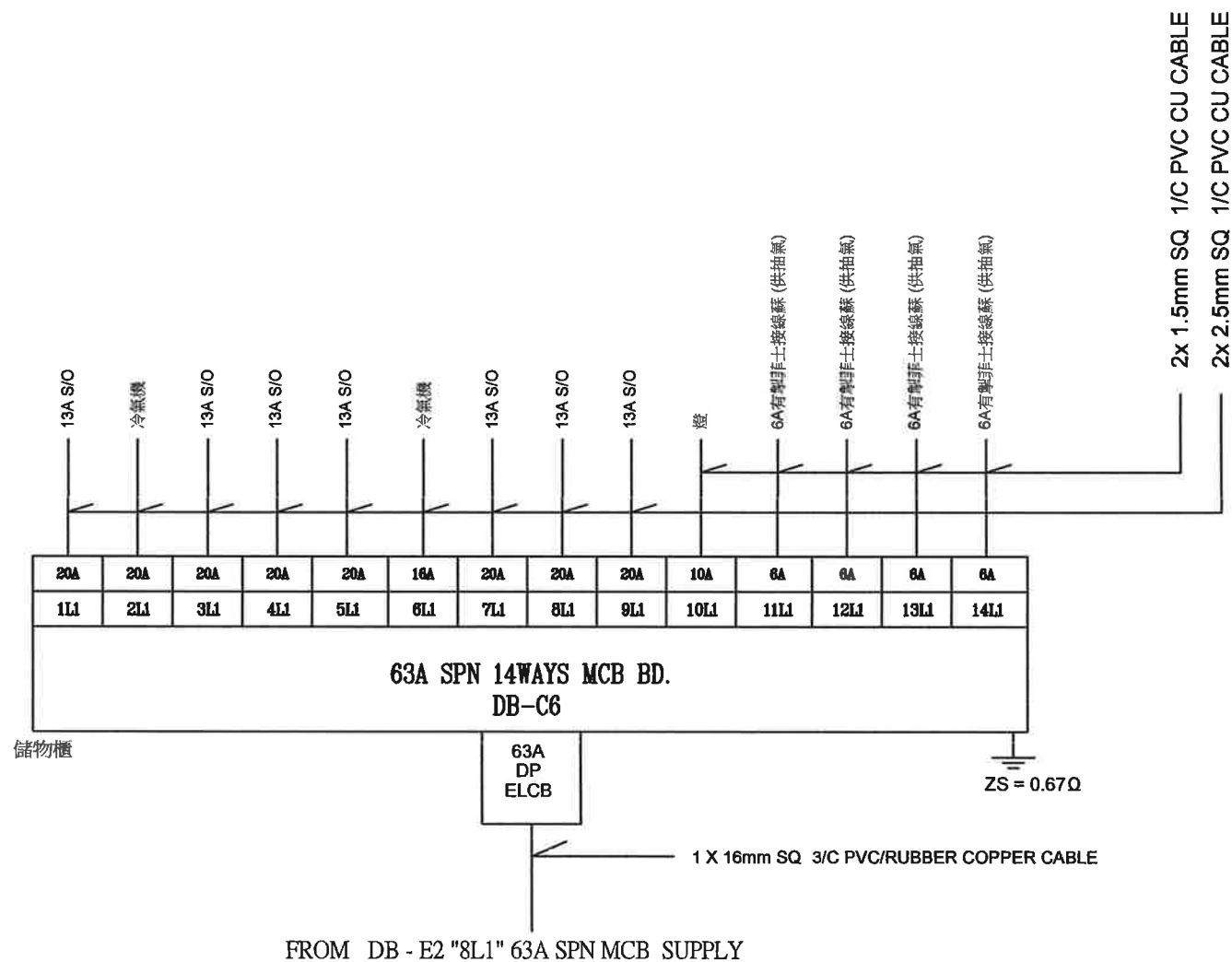
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
12

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C.Y. TSANG

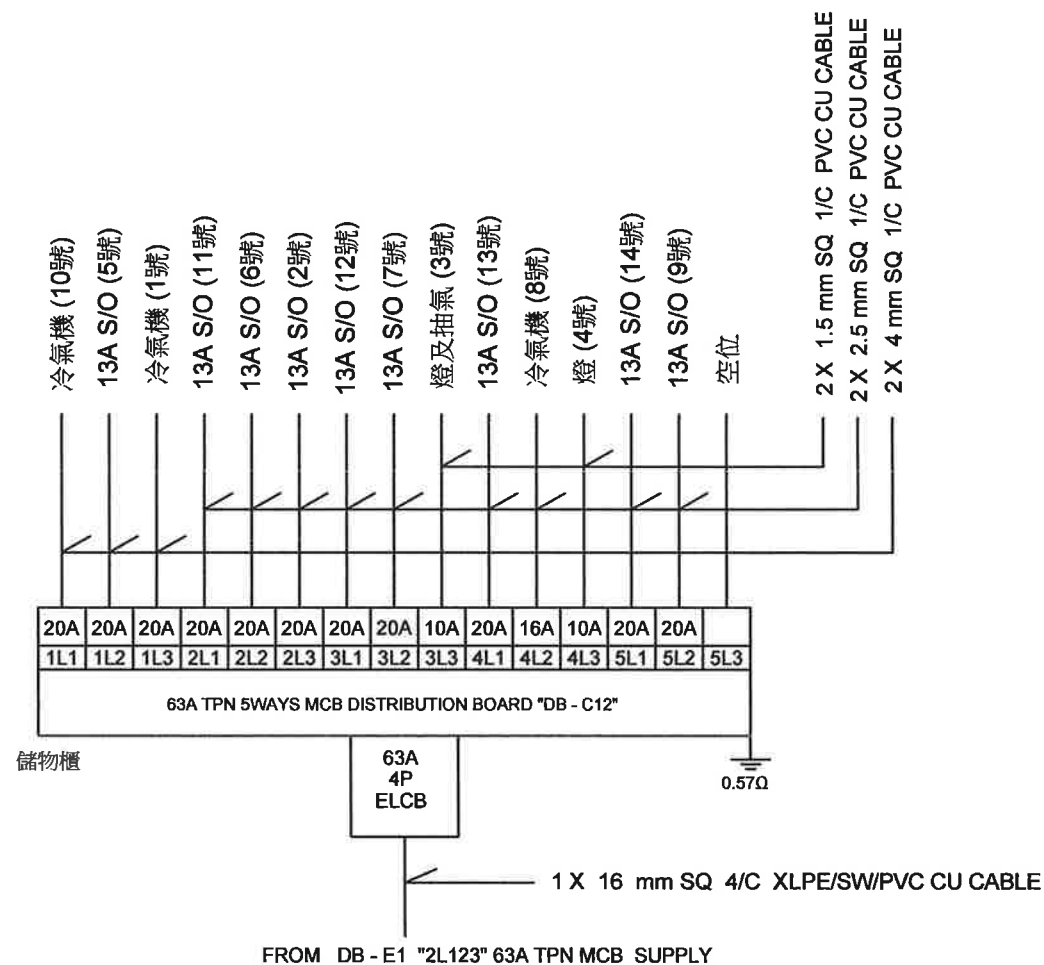
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C.H. LAM &  
Jimmy Tsang

DATE:  
8-6-2021



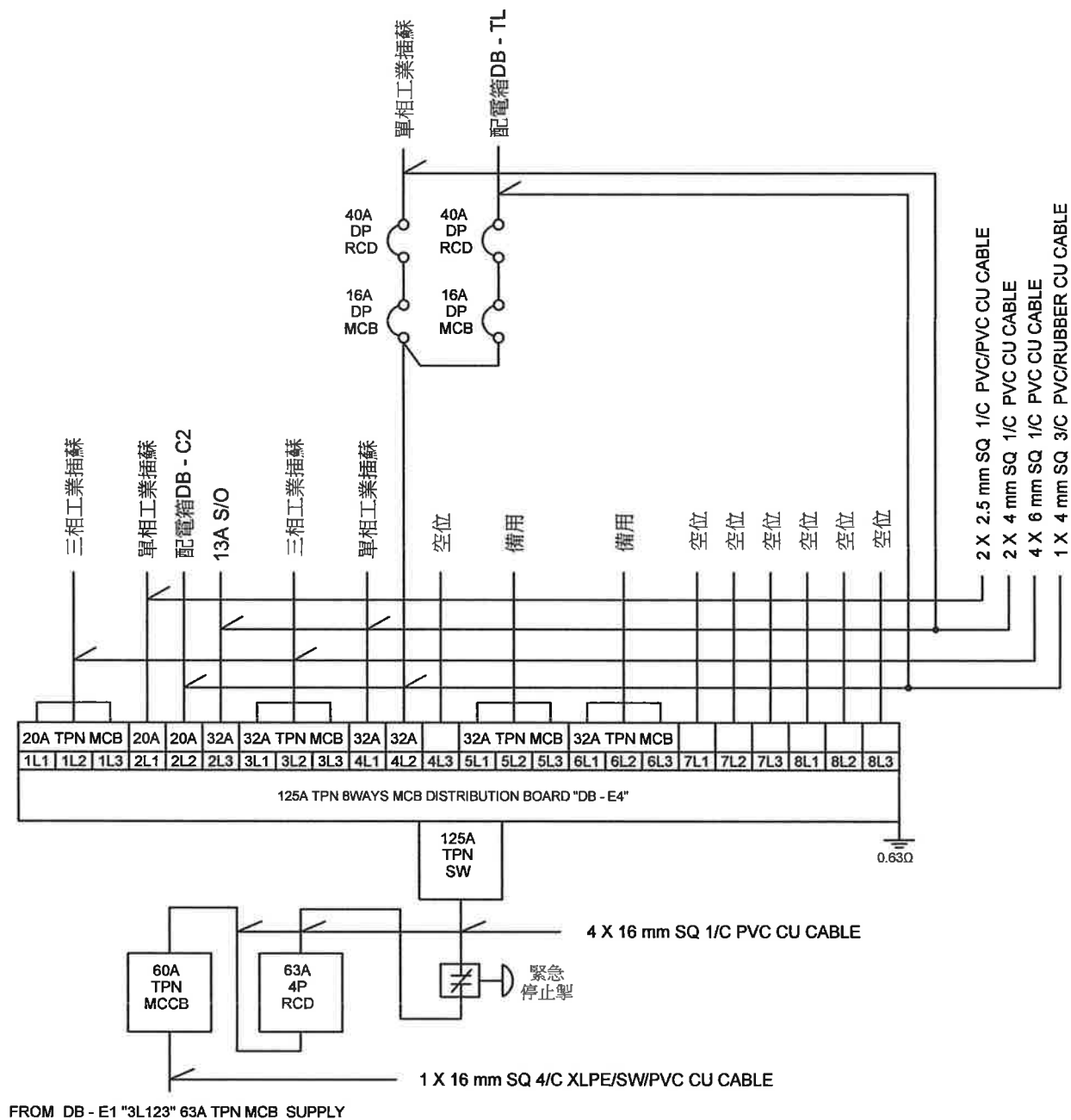
CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
13CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



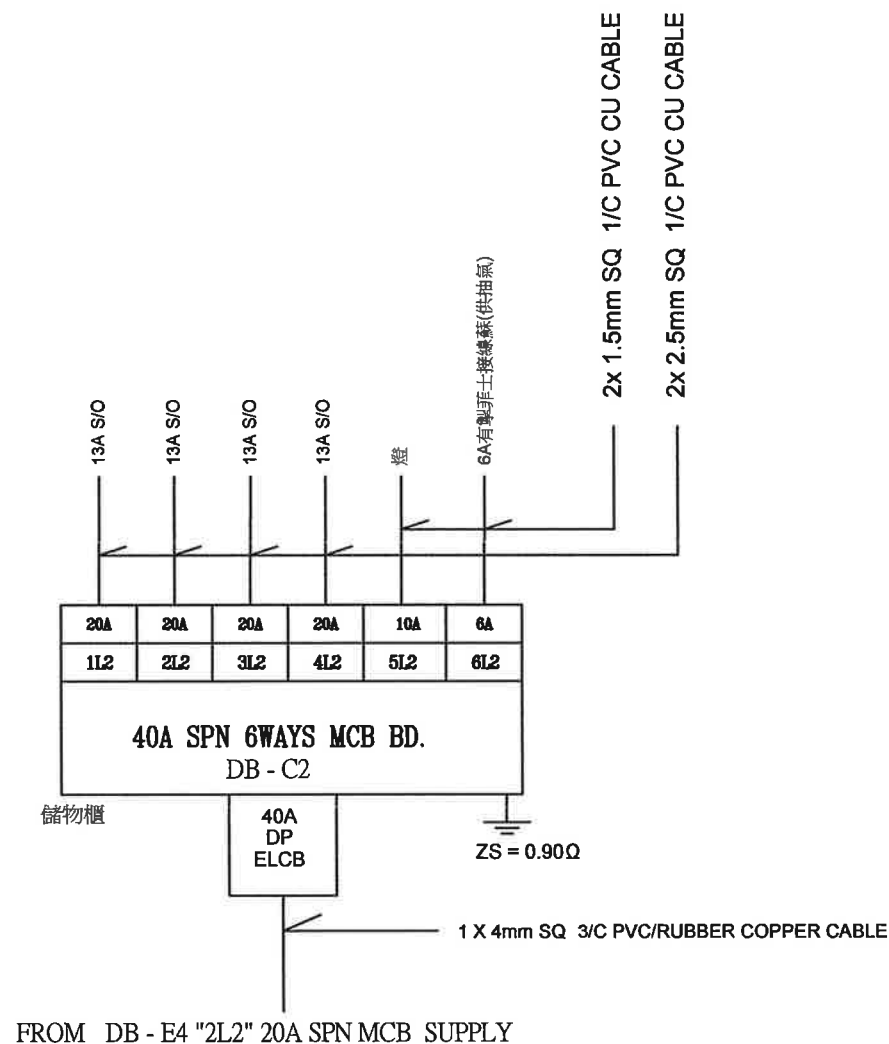
CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
14CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
15CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



CONTRACTOR:



PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

16

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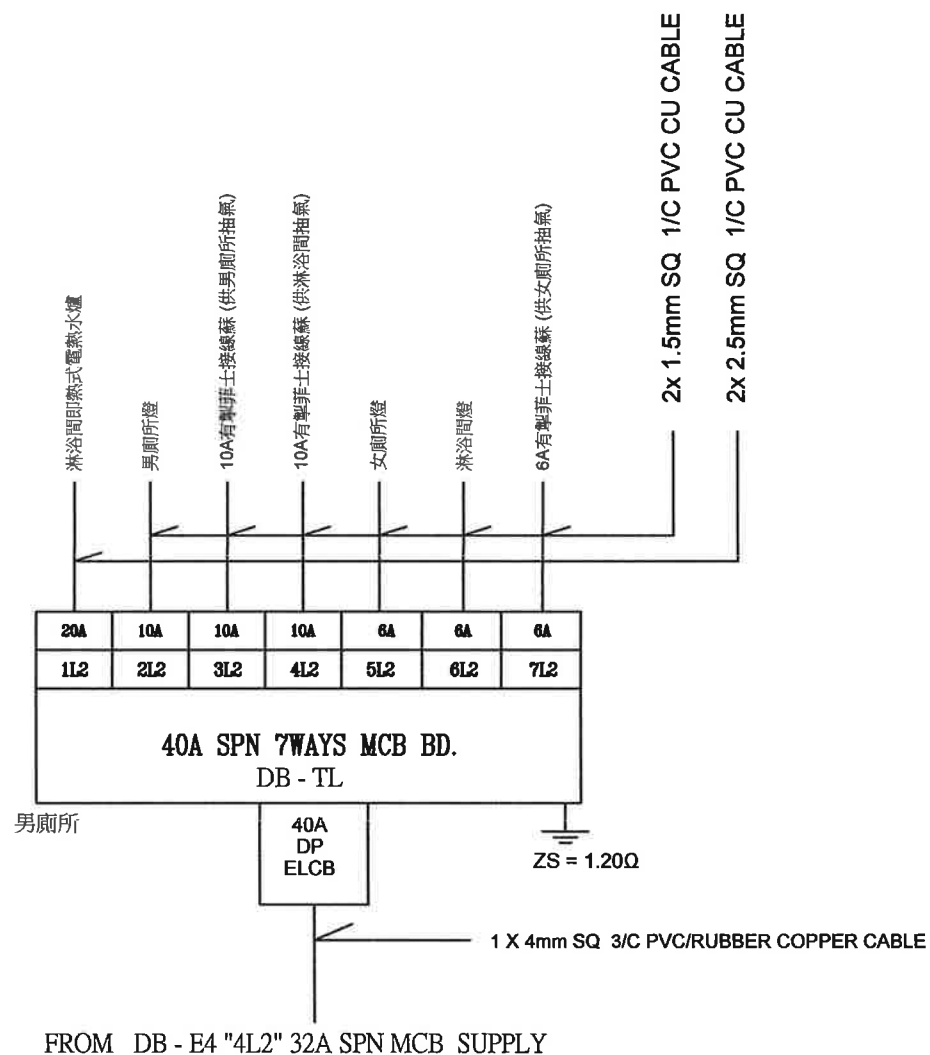
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

17

CHECKED BY:

C.Y. TSANG

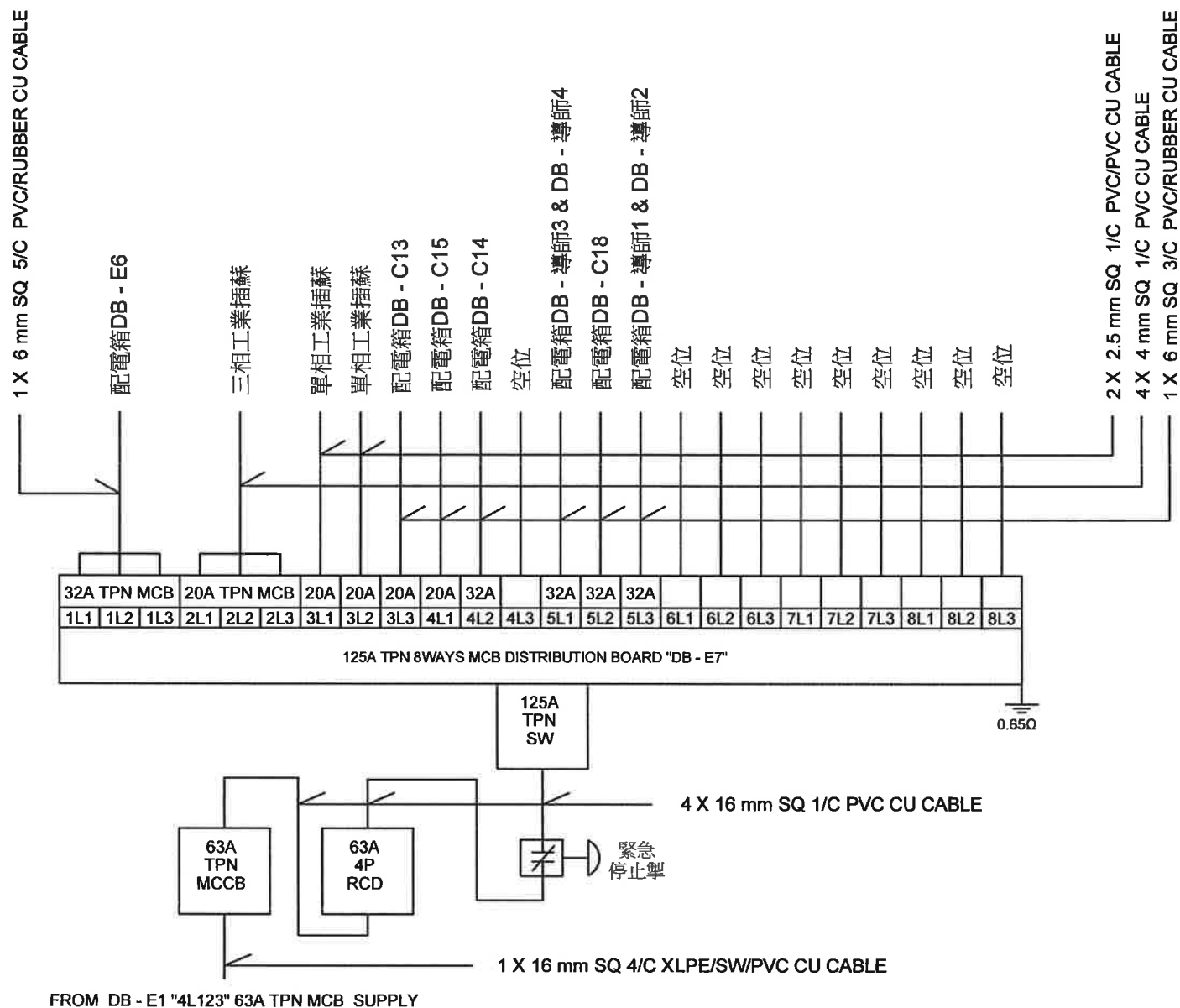
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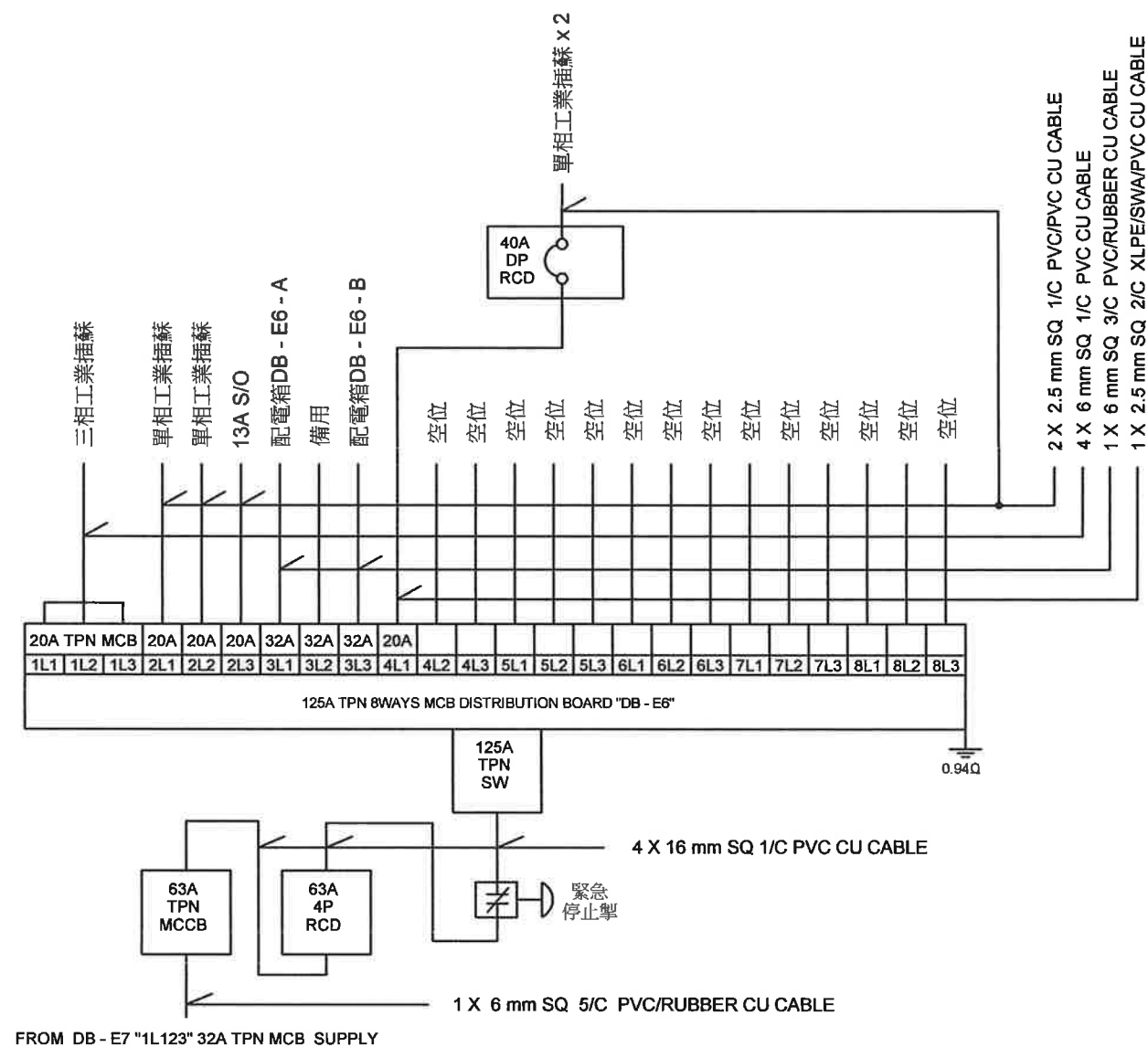
C.H. LAM &  
Jimmy Tsang

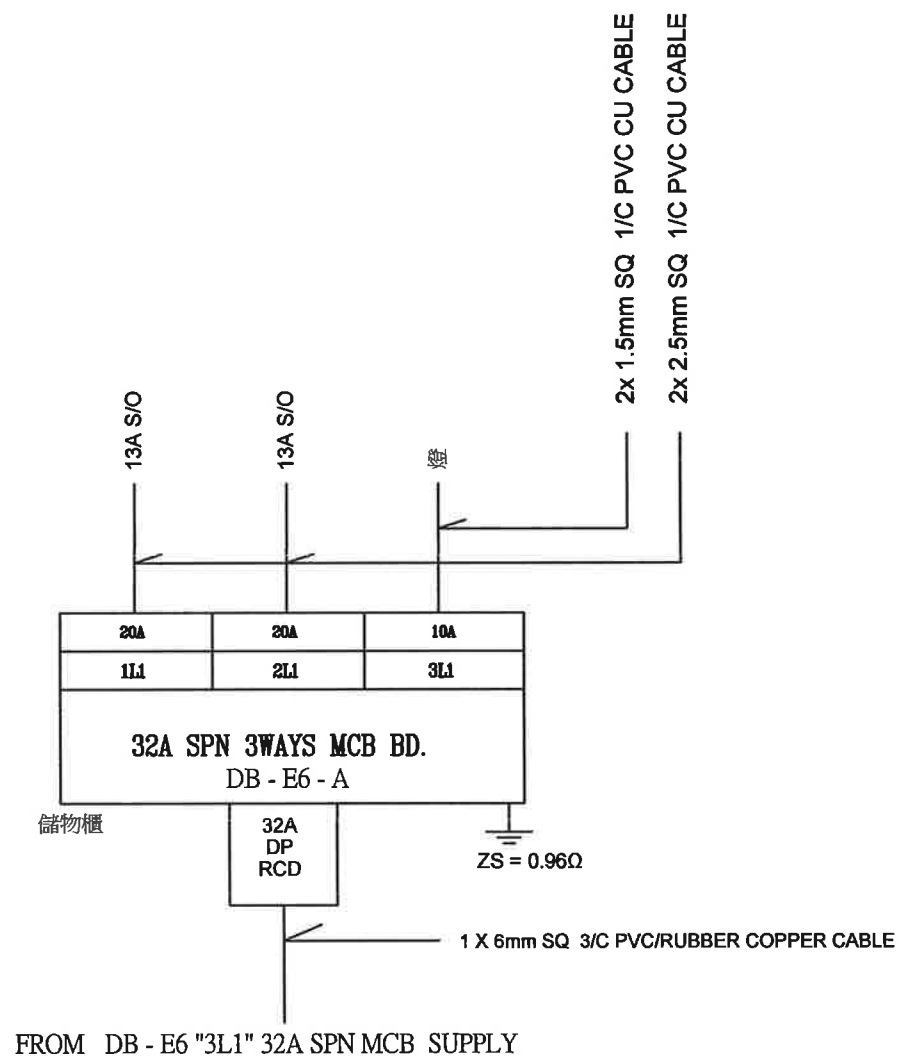
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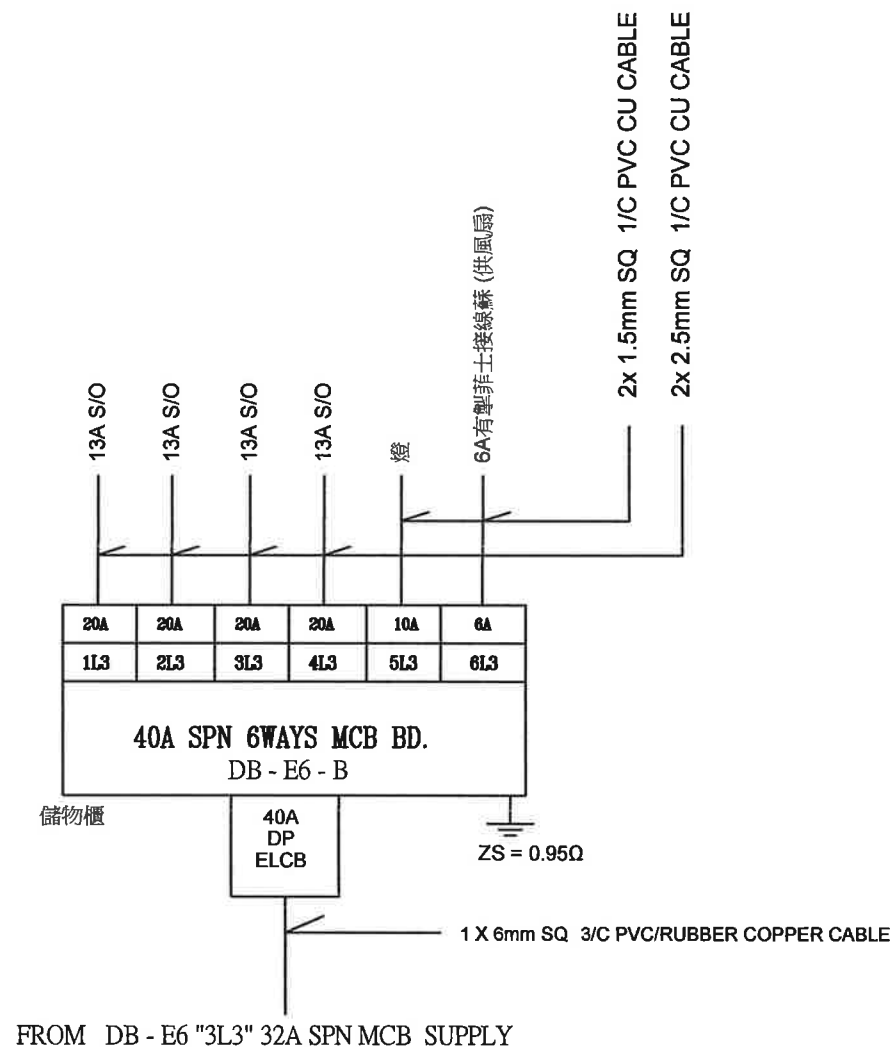


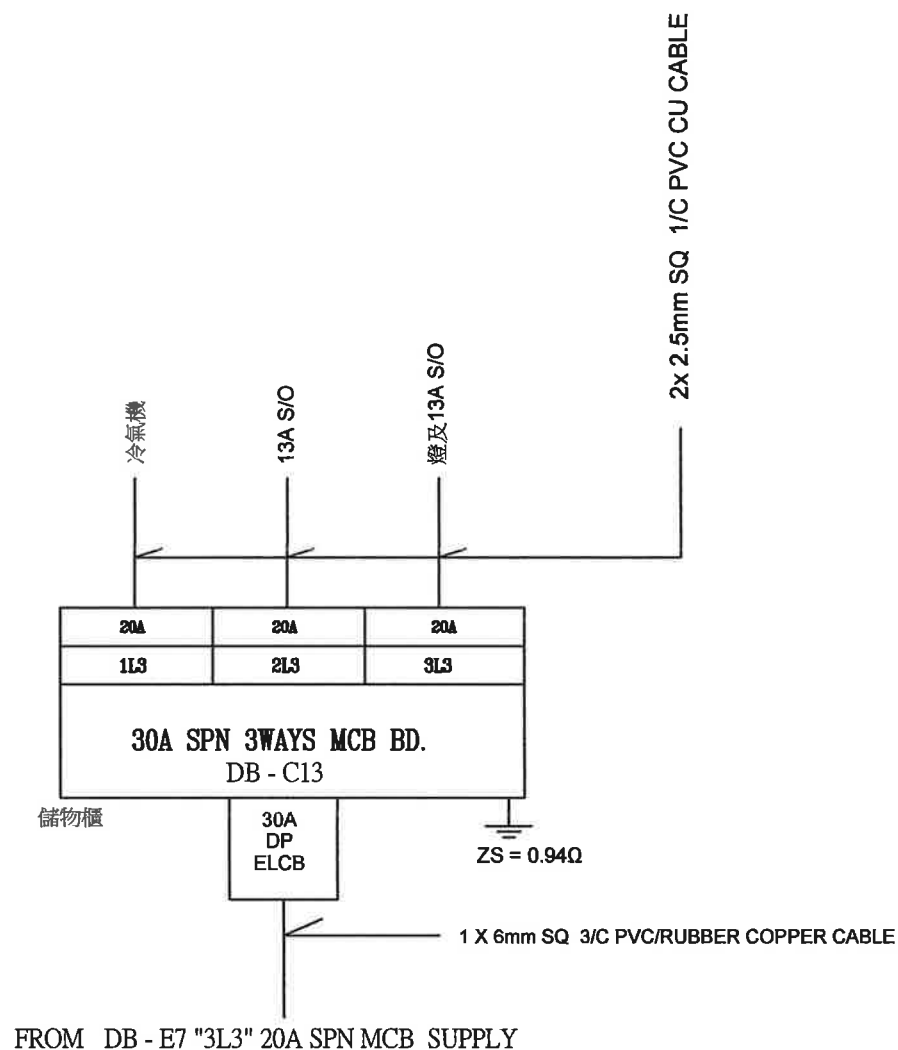




CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
20CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021





CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

22

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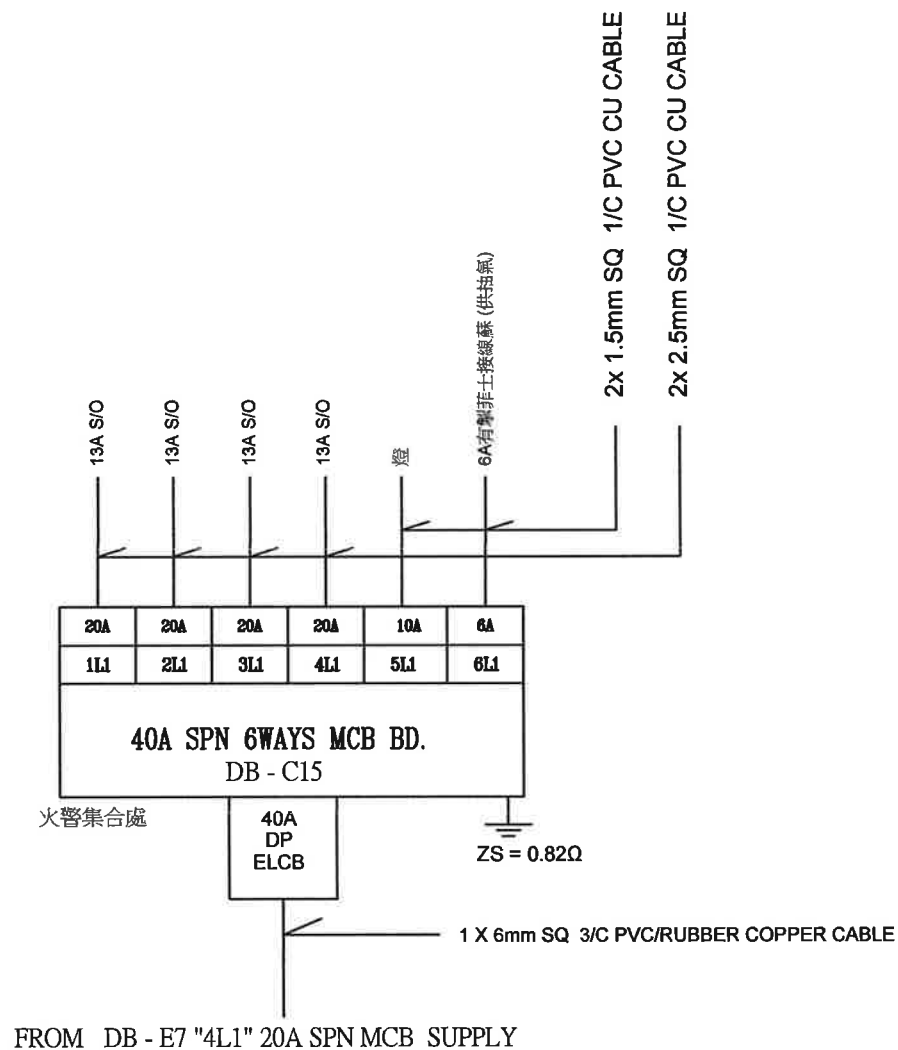
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

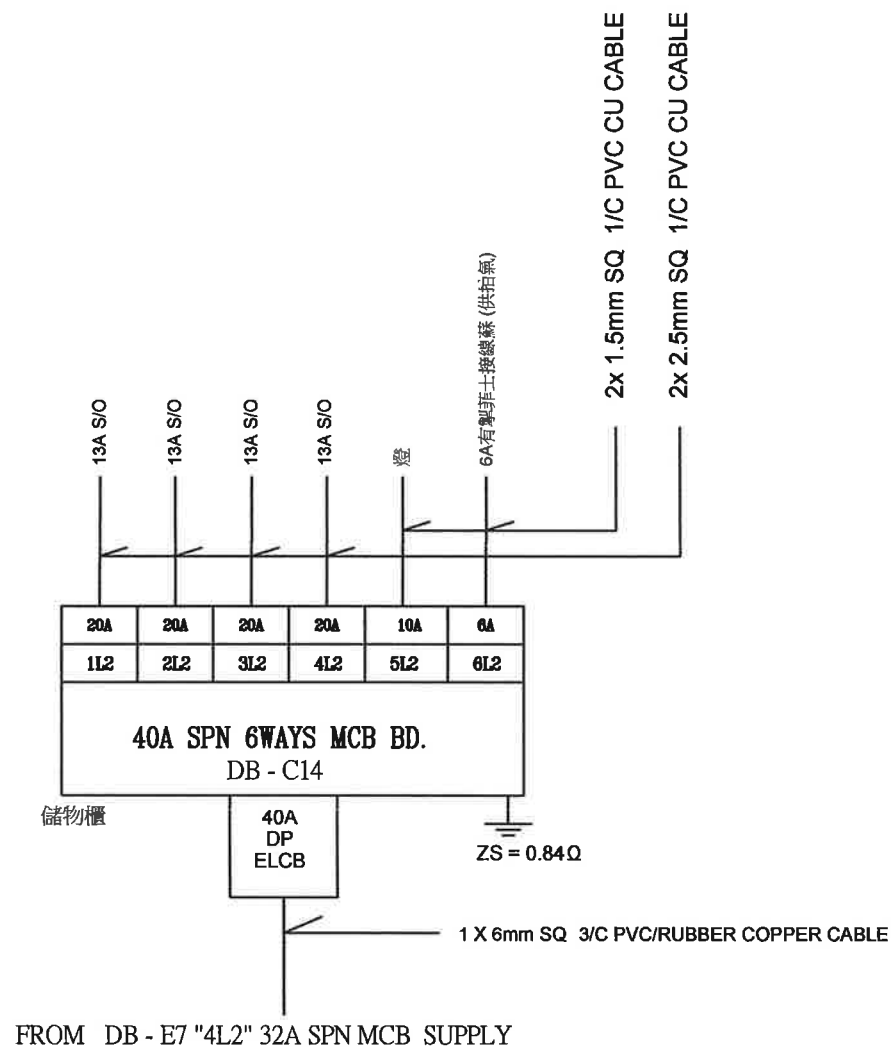
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
23

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
8-6-2021



CONTRACTOR:

PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

24

CHECKED BY:

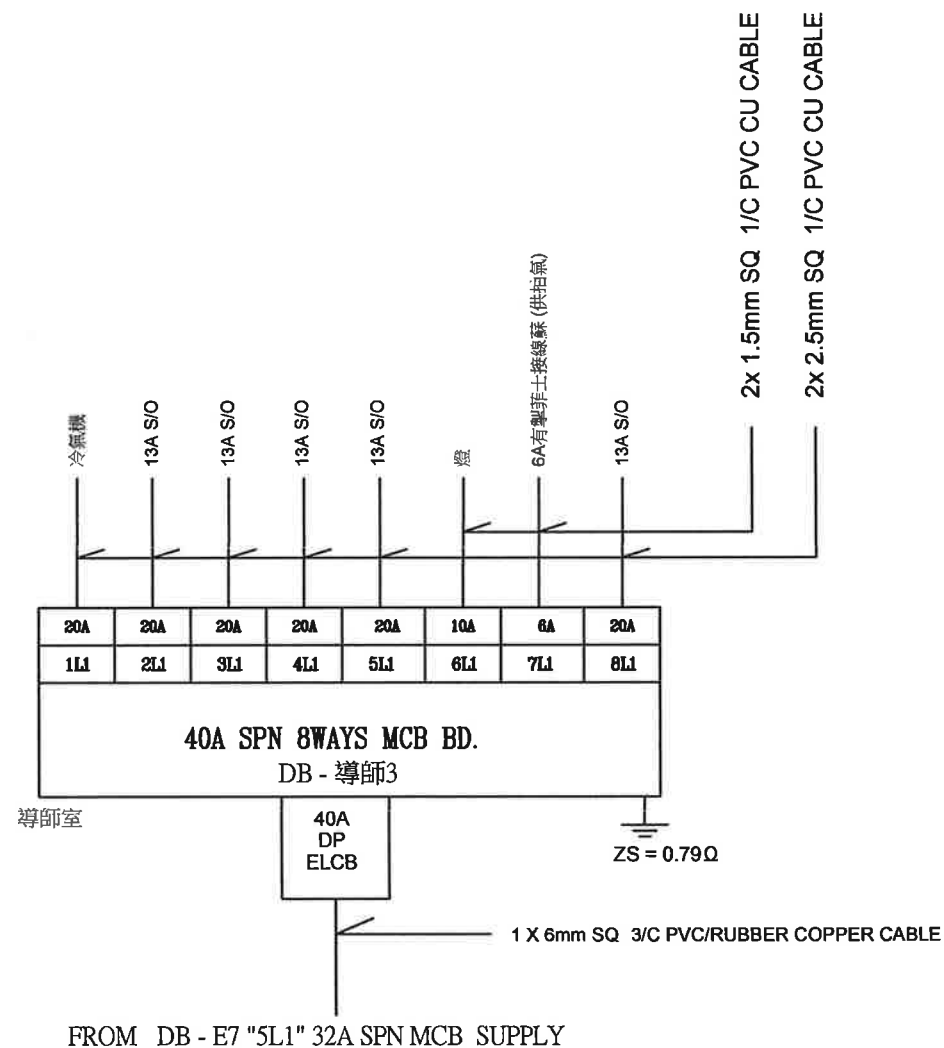
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

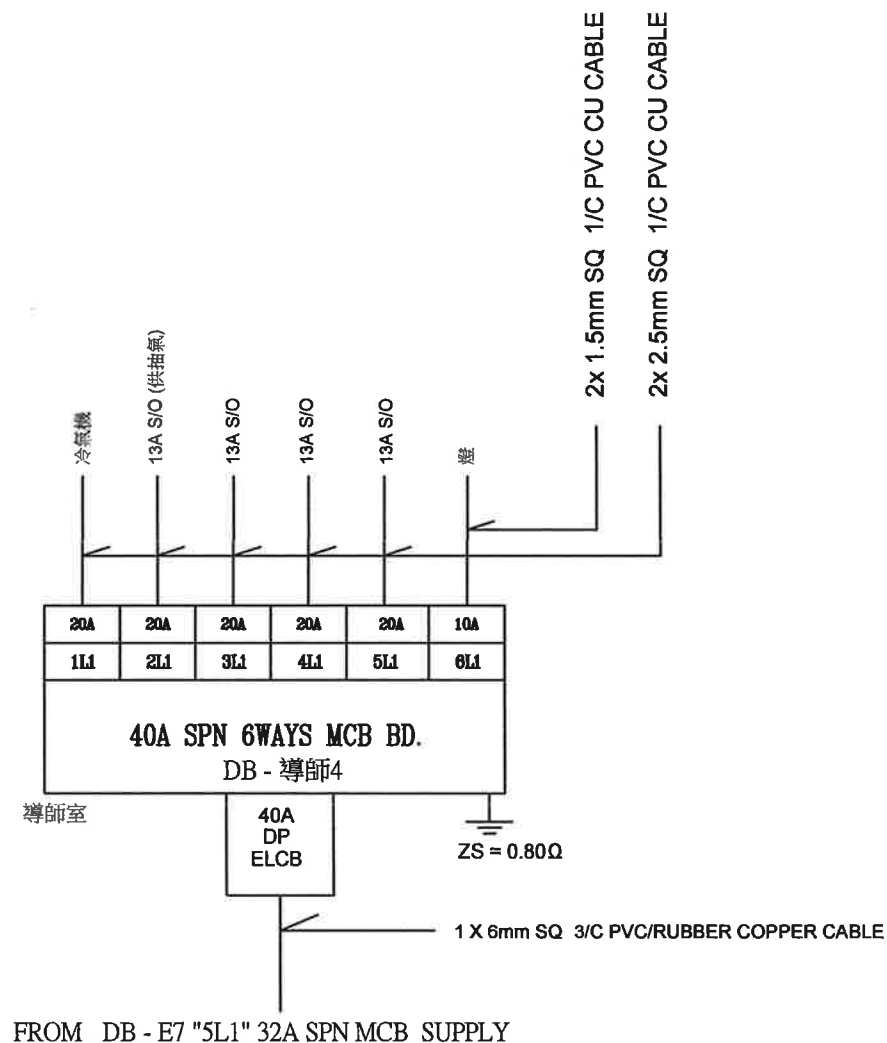
8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
25CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021





CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

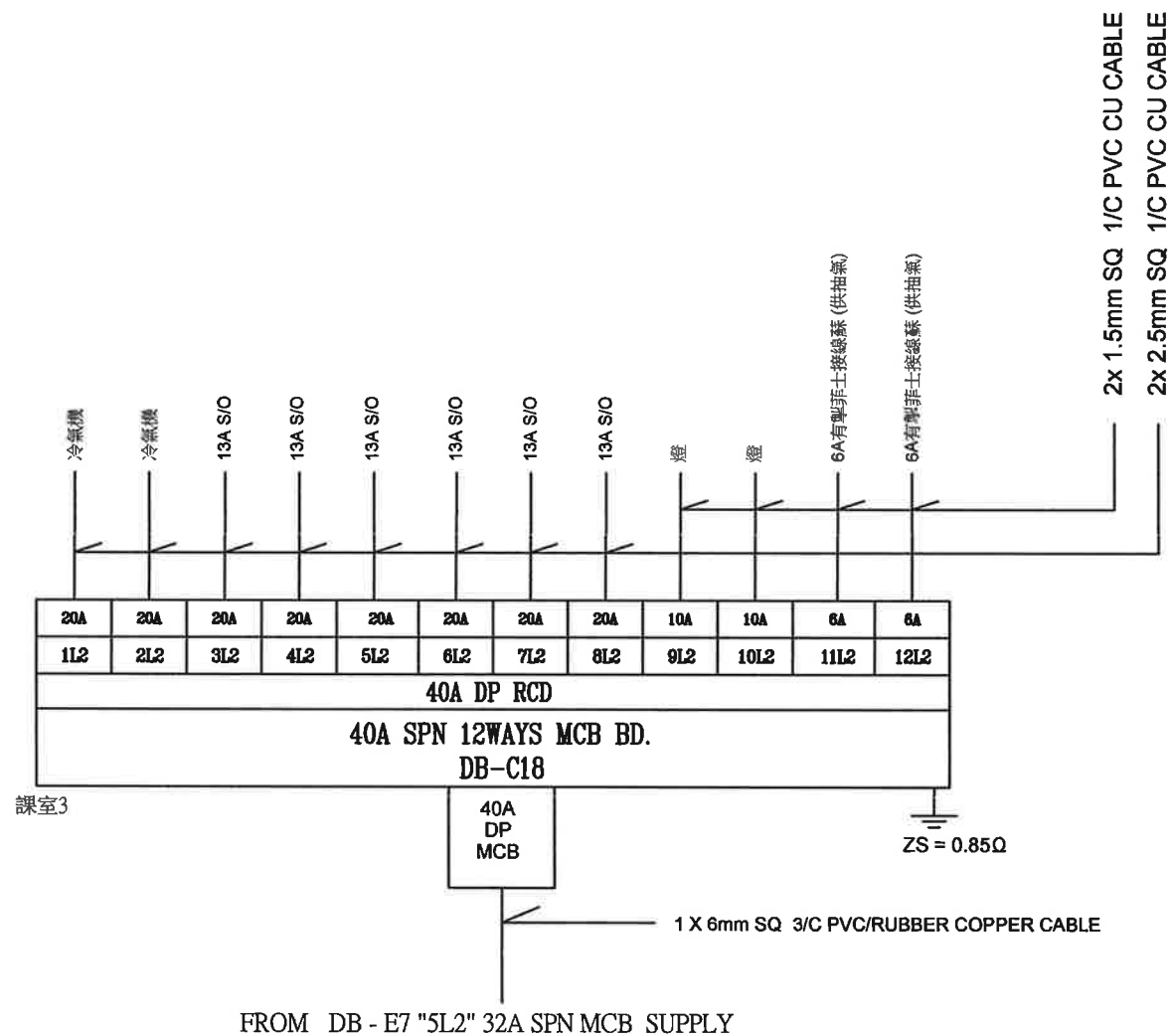
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
26

CHECKED BY:  
C.Y. TSANG

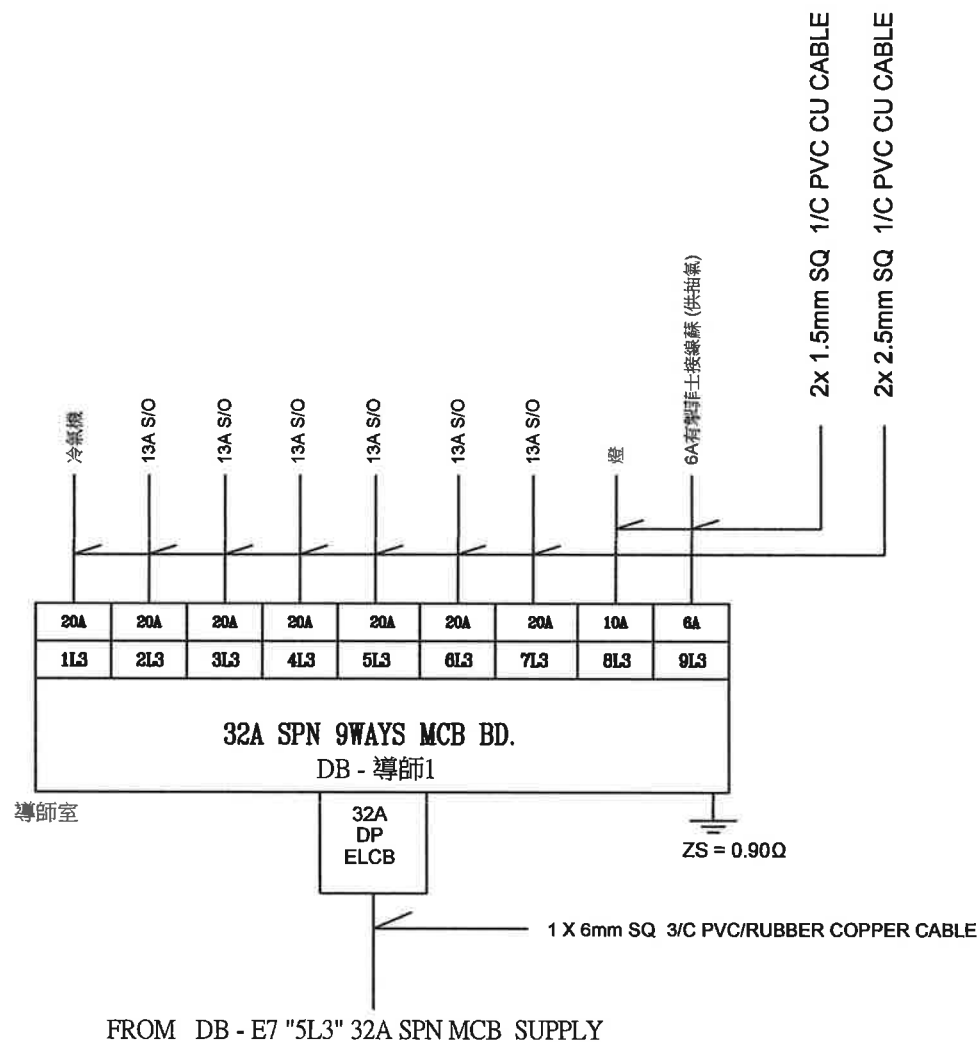
DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
8-6-2021



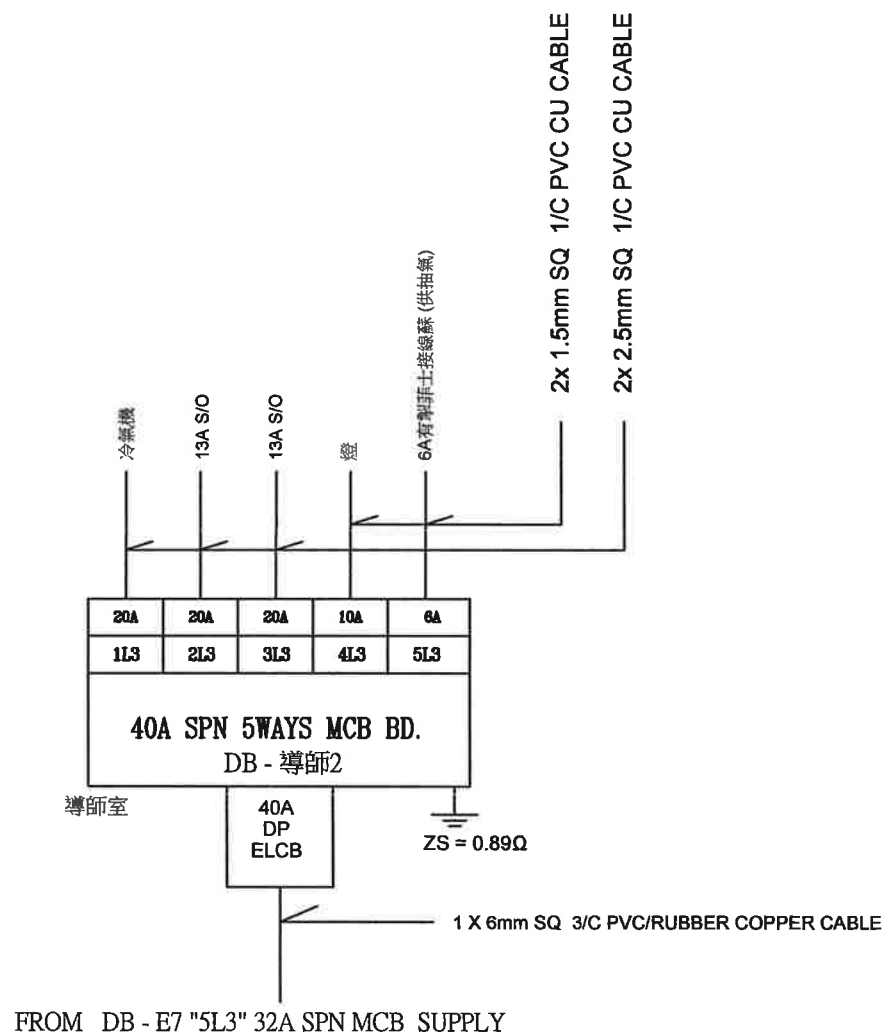
CONTRACTOR:

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
27CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
28CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



CONTRACTOR:



PROJECT:

新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

29

CHECKED BY:

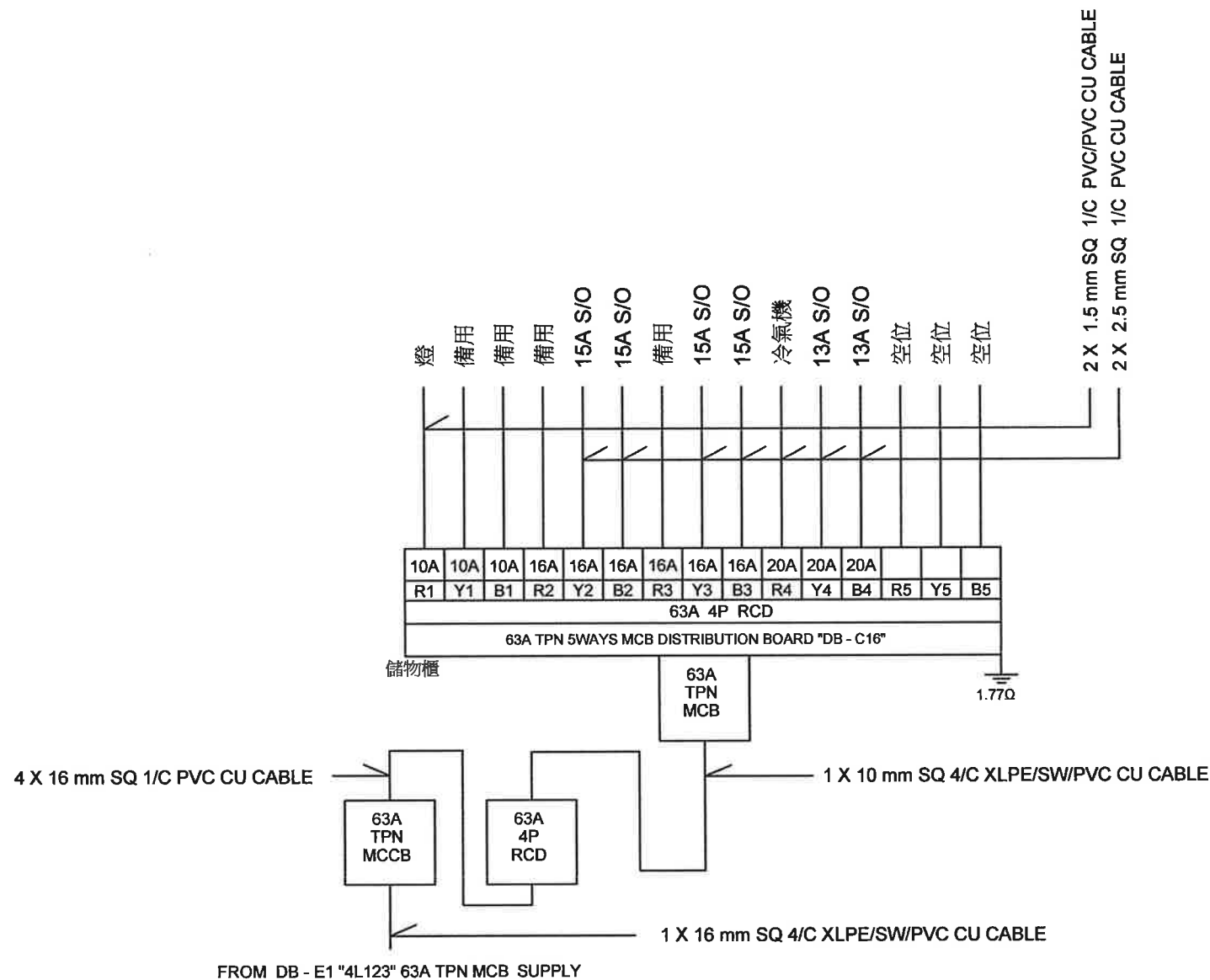
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

8-6-2021



CONTRACTOR:

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)

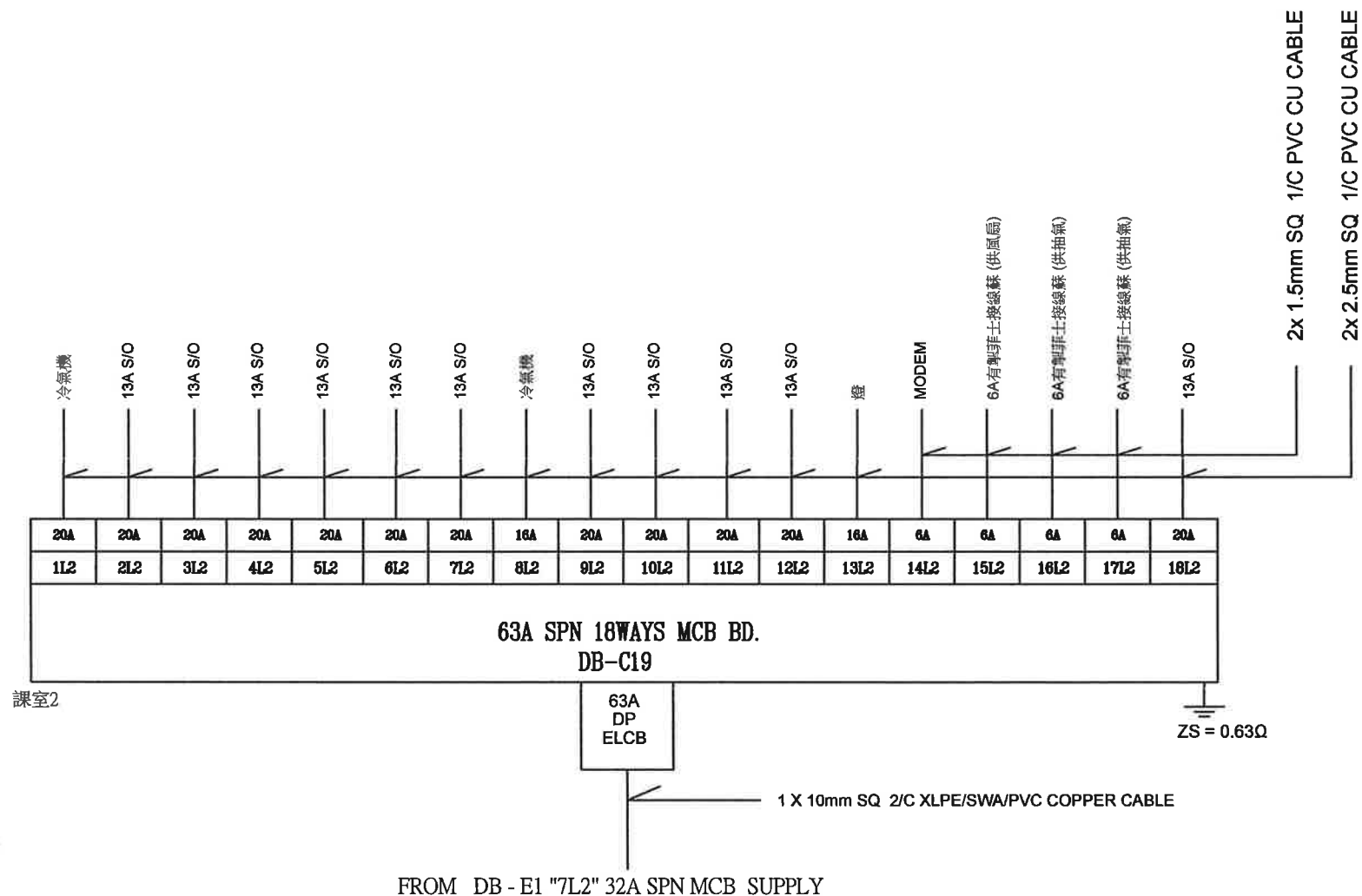
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
30

CHECKED BY:  
C.Y. TSANG

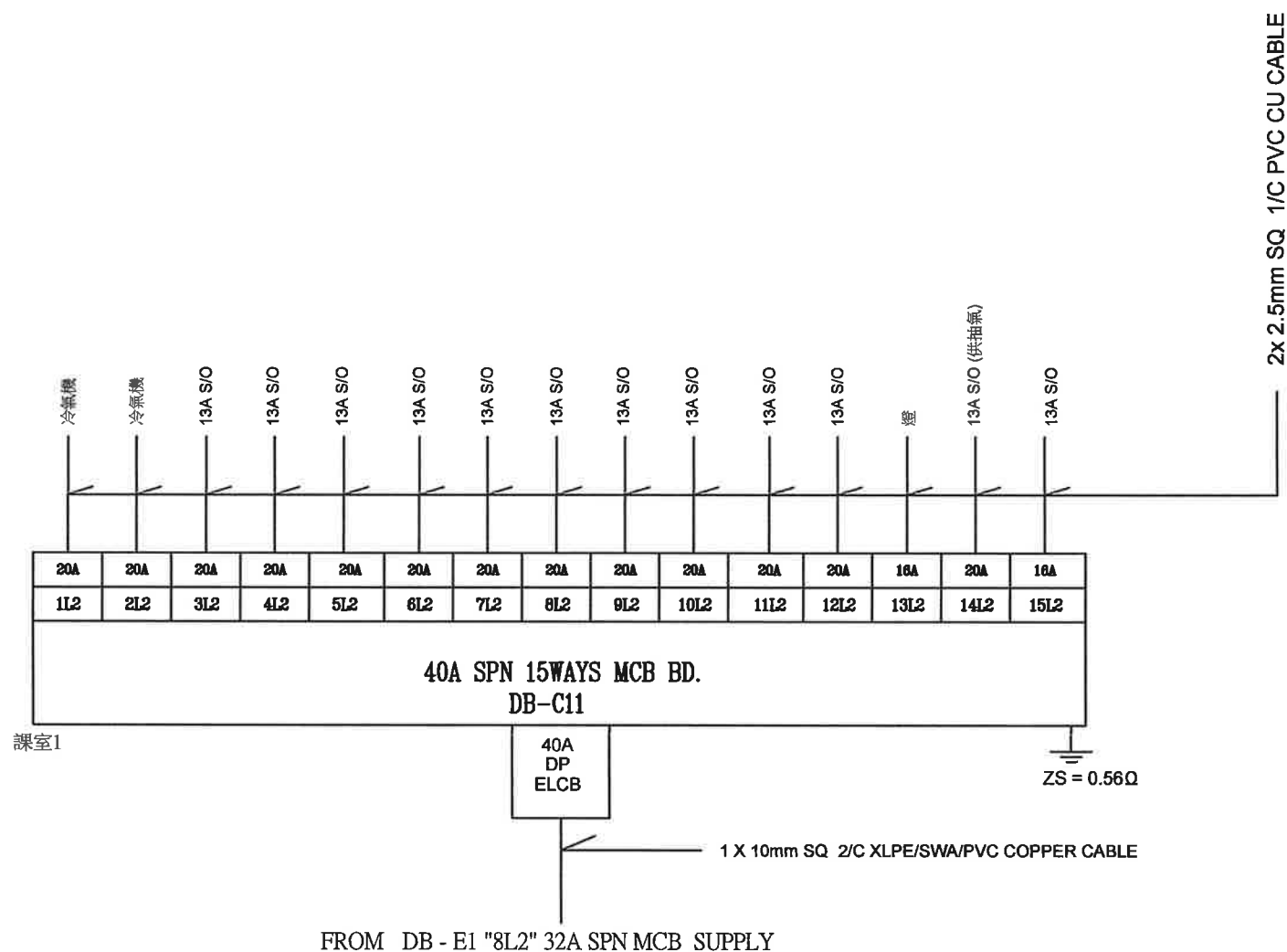
DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
31CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021



CONTRACTOR: [REDACTED]

PROJECT: 新界屯門屯義街16區  
建造業議會-香港建造學院屯義街訓練場(TMTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
32CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
8-6-2021

- 按照電力(檢修)規則(第406章、附屬法例)第20條的規定，此類固定電力裝置必須定期進行檢查、測試及領取證明書。
- In accordance with Reg. 20 of the Electricity (Wiring) Regulations (Cap. 406 sub leg.), this type of fixed electrical installations shall be inspected, tested and certified periodically.
- 收據編號：  
Receipt No: W102843



DRAWING TITLE

SCHEMATIC WIRING DIAGRAM

DRAWING NO.

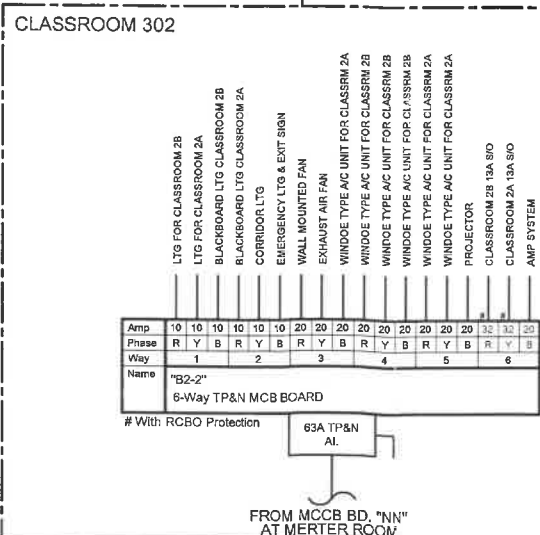
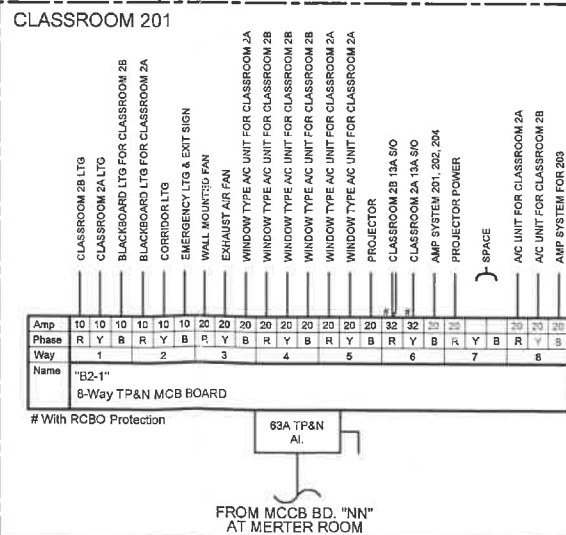
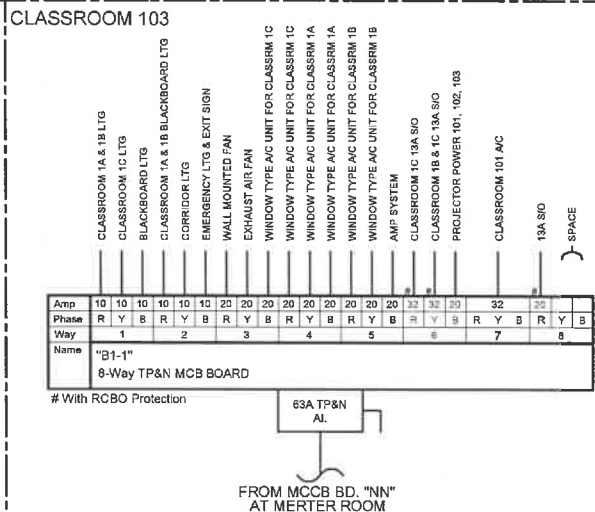
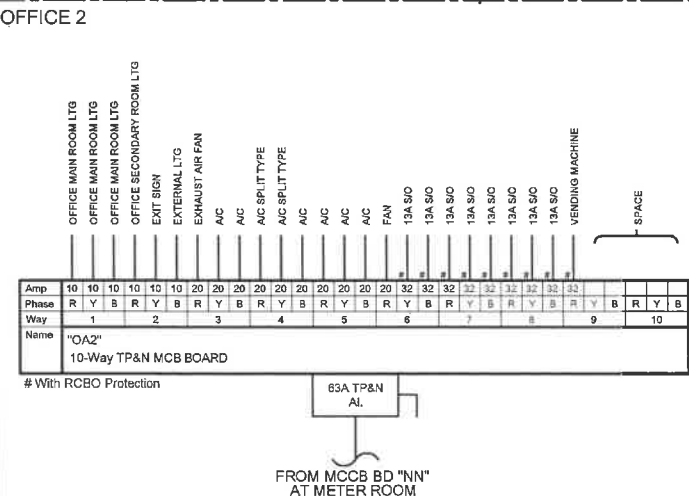
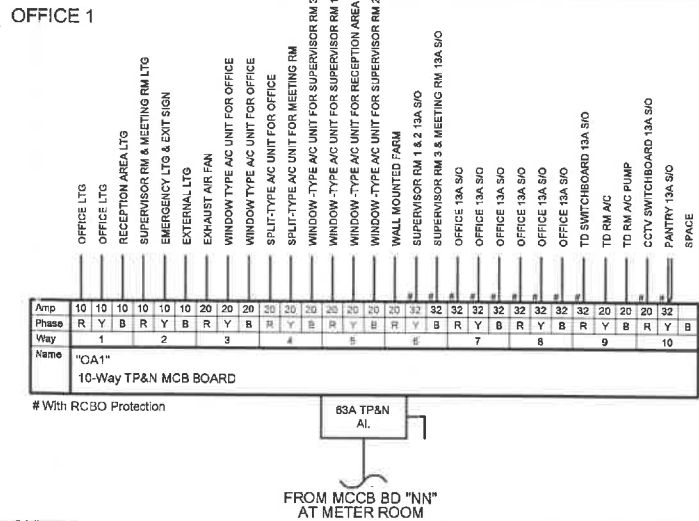
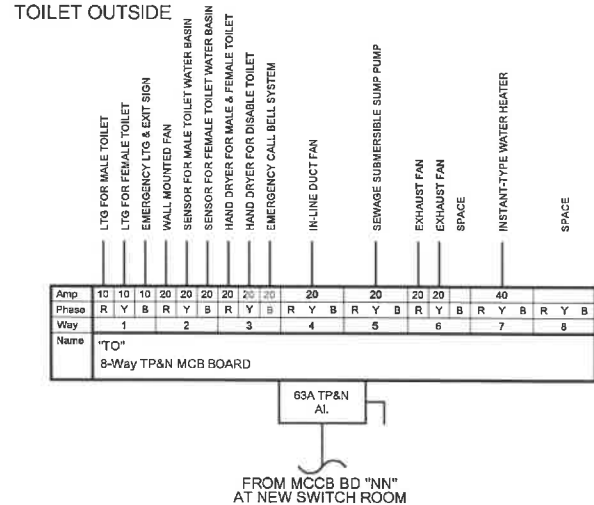
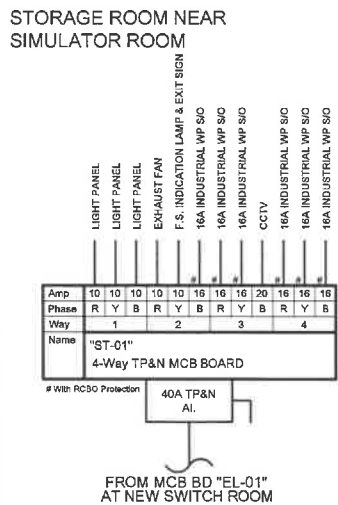
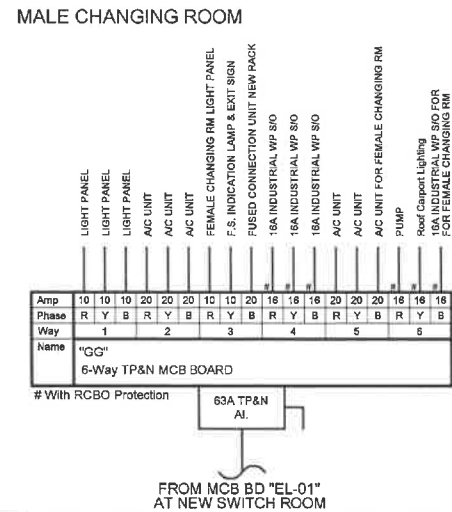
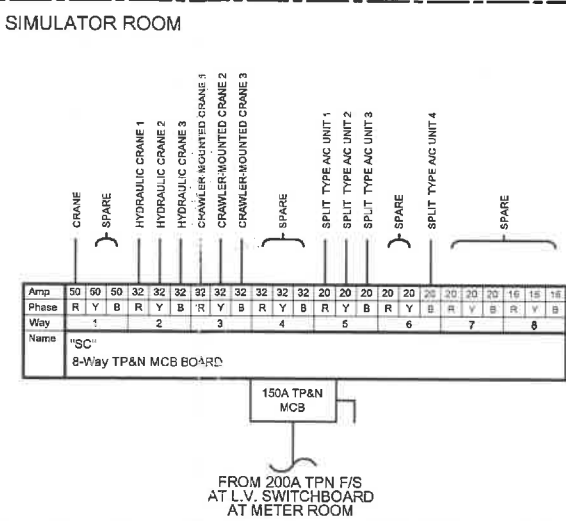
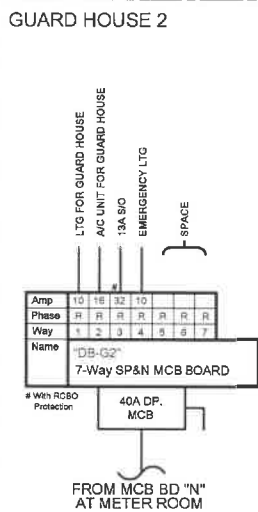
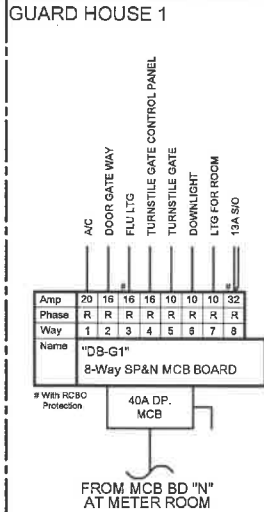
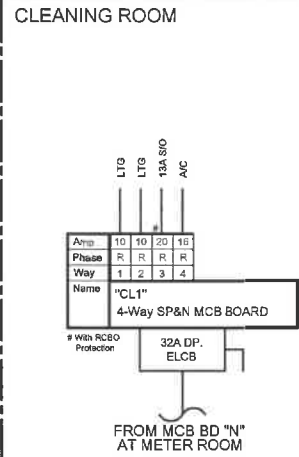
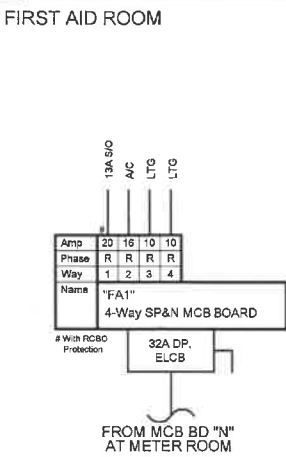
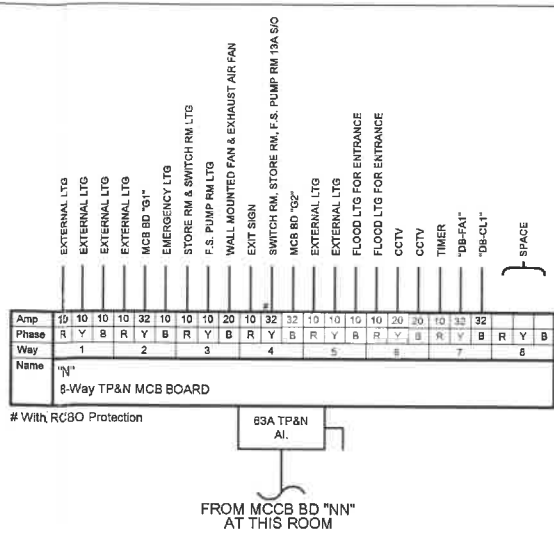
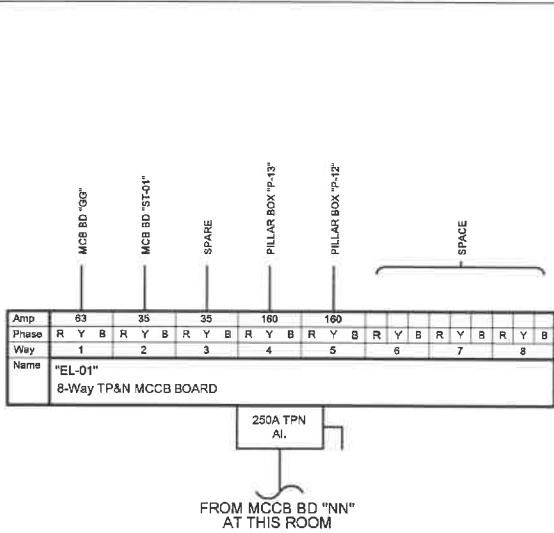
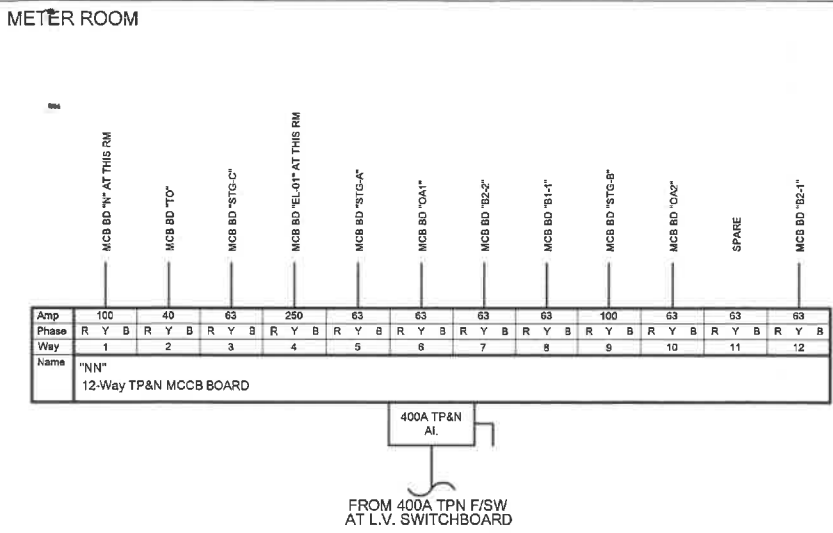
Page 82 of 138



ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.

ALL RCDs / RCCBs / RCBOs SHALL HAVE  
OPERATING CURRENT OF 30mA UNLESS  
OTHERWISE SPECIFIED.

CABLE SIZE FOR OUTGOING FROM MCB/MCCB BOARD			
NO.	MCB/ MCCB	PHASE	DESCRIPTION
1	6A / 10A	SINGLE	2x1.5mm <sup>2</sup> 1/C PVC CU. CABLE
2	16A / 20A	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
3	30A / 32A	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE
4	63A	SINGLE	2x15mm <sup>2</sup> 1/C PVC CU. CABLE
5	15A / 16A / 20A	THREE	4x4mm <sup>2</sup> 1/C PVC CU. CABLE
6	32A	THREE	4x6mm <sup>2</sup> 1/C PVC CU. CABLE
7	60A / 63A	THREE	4x25mm <sup>2</sup> 1/C PVC CU. CABLE
8	30A / 32A ( RING 13A S/O )	SINGLE	2Nos. 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
9	15A / 20A ( RADIO S/O )	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
10	32A ( RADIO S/O )	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE

[illegible]

PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
DAI PO TRAINING GROUND,  
AREA 33, DAI WAH STREET  
DAI PO, NEW TERRITORIES

SCHEMATIC WIRING DIAGRAM

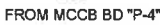
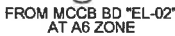
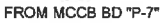
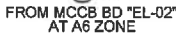
NOT TO SCALE (A4)

	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P.H. MAK	15 - 09 - 2019
DRAWN	K.W. LIU	15 - 09 - 2019

DRAWING NO.  
PITC/TPCIC/EL-02



1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.



PROJECT

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
TAI PO TRAINING GROUND,  
AREA 33, DAI WAH STREET  
TAI PO, NEW TERRITORIES

DRAWING TITLE

### SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A4)

DRAWING NO.

PITC/TPCIC/EL-03

1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

CABLE SIZE FOR OUTGOING FROM MCB/MCCB BOARD			
NO.	MCB/ MCCB	PHASE	DESCRIPTION
1	6A / 10A	SINGLE	2x1.5mm <sup>2</sup> 1/C PVC CU. CABLE
2	18A / 20A	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
3	30A / 32A	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE
4	63A	SINGLE	2x16mm <sup>2</sup> 1/C PVC CU. CABLE
5	15A / 16A / 20A	THREE	4x4mm <sup>2</sup> 1/C PVC CU. CABLE
6	32A	THREE	4x6mm <sup>2</sup> 1/C PVC CU. CABLE
7	60A / 63A	THREE	4x25mm <sup>2</sup> 1/C PVC CU. CABLE
8	30A / 32A ( RING S/O )	SINGLE	2Nos. 2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
9	15A / 20A ( RADIO S/O )	SINGLE	2x2.5mm <sup>2</sup> 1/C PVC CU. CABLE
10	32A ( RADIO S/O )	SINGLE	2x4mm <sup>2</sup> 1/C PVC CU. CABLE

DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
TAI PO TRAINING GROUND,  
AREA 33, DAI WAH STREET  
TAI PO, NEW TERRITORIES

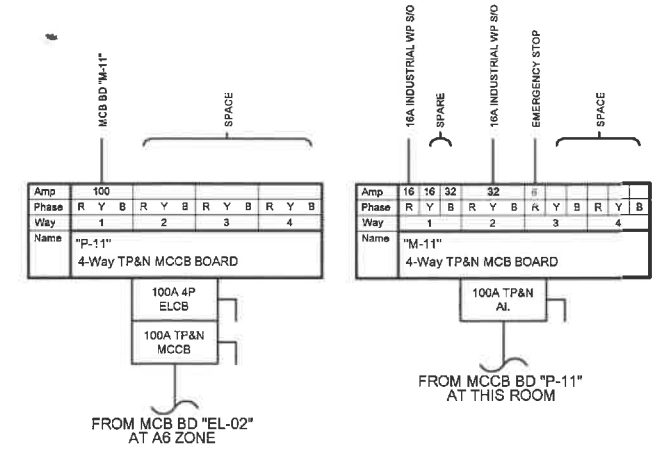
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SCHEMATIC WIRING DIAGRAM

SCALE  
NOT TO SCALE (A4)

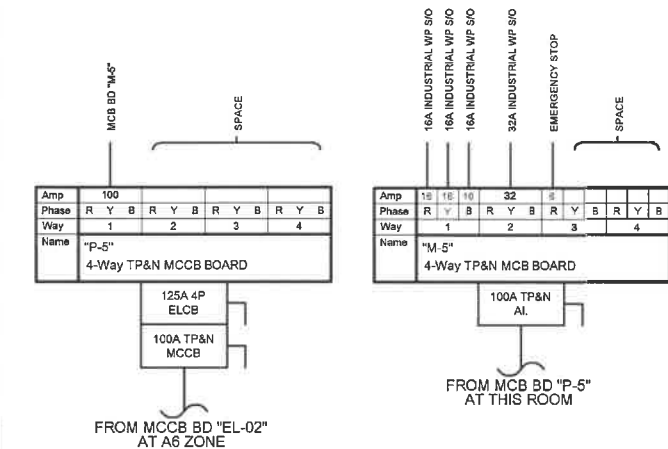
	DESIGNATION	DATE
AUTHORIZED		
CHECKED	P.H. MAK	15 - 09 - 2019
DRAWN	K.W. LIU	15 - 09 - 2019

DRAWING NO.  
  
PITC/TPCIC/EL-04

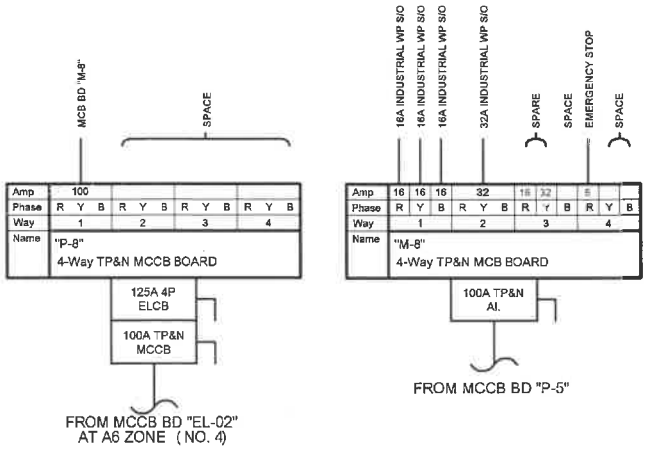
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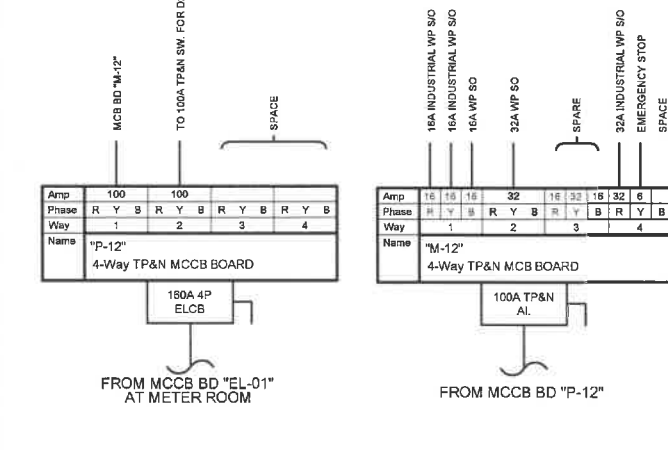
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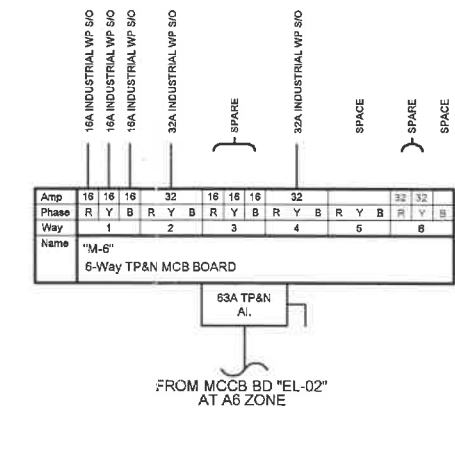
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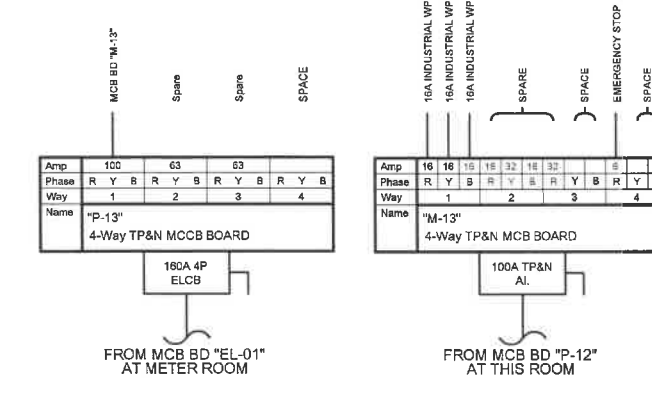
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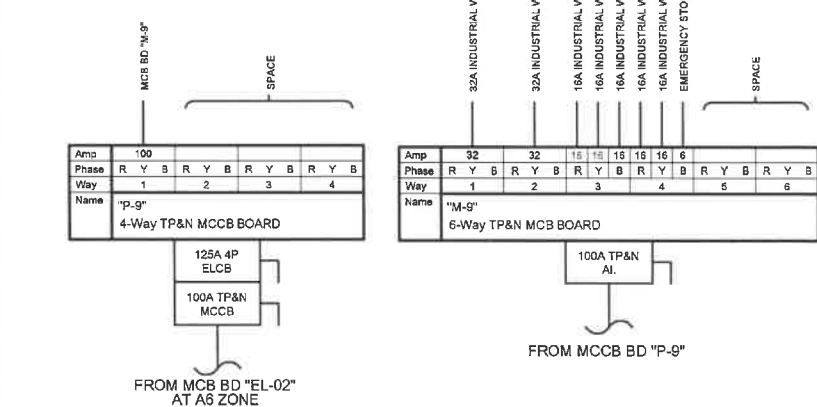
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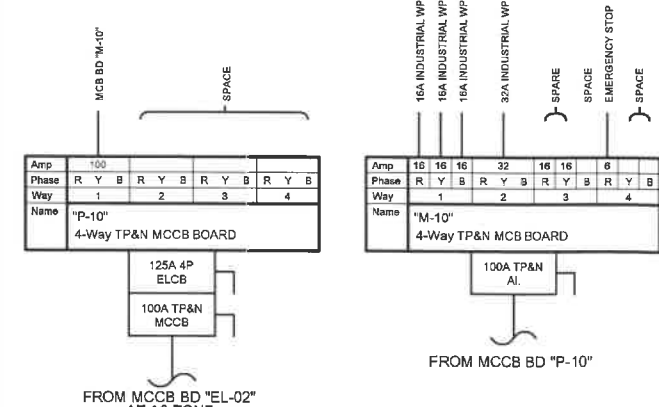
D25 ZONE



D26 ZONE




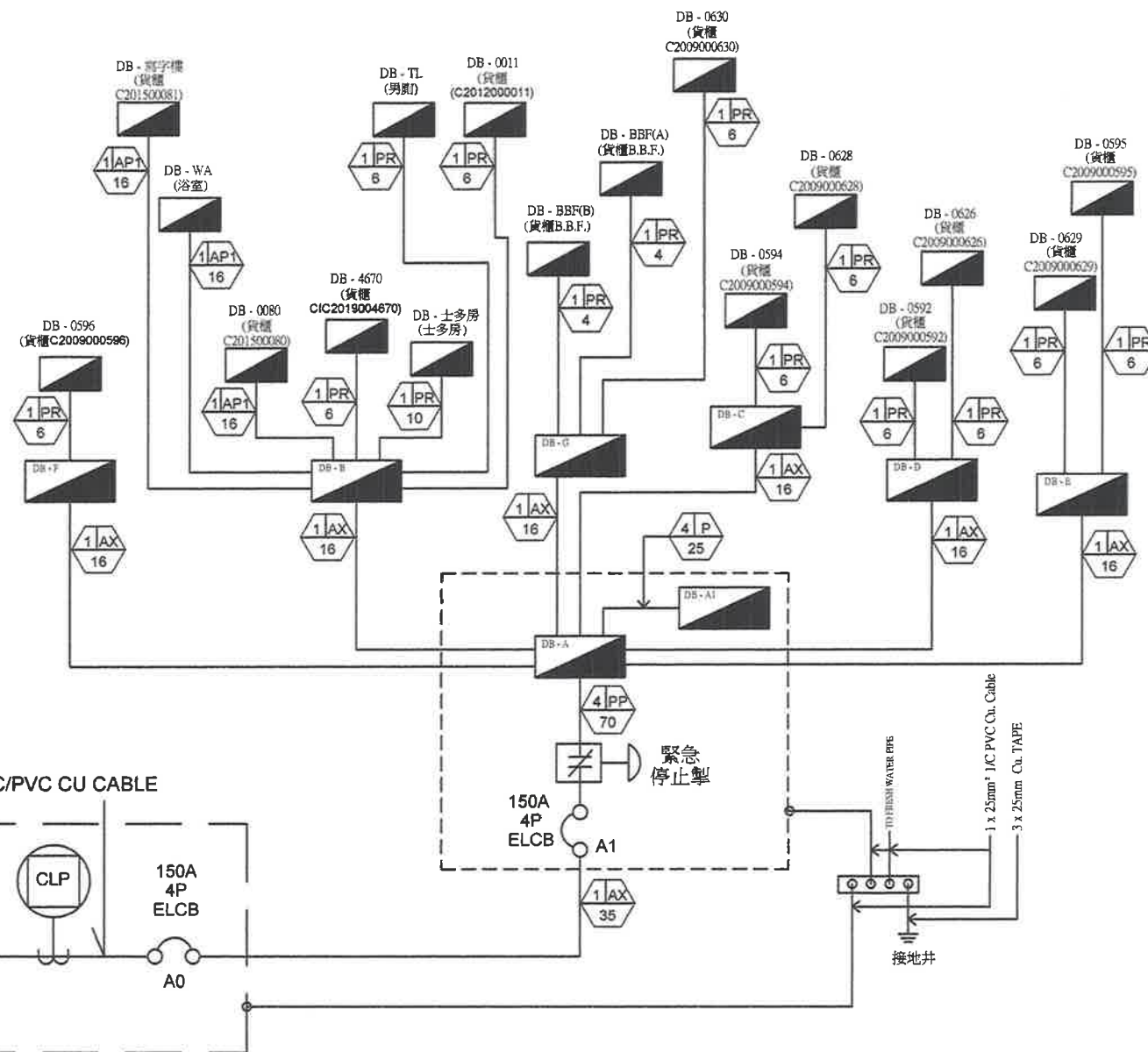
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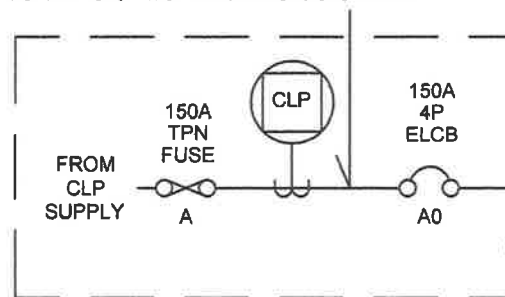
## CABLE SCHEDULE

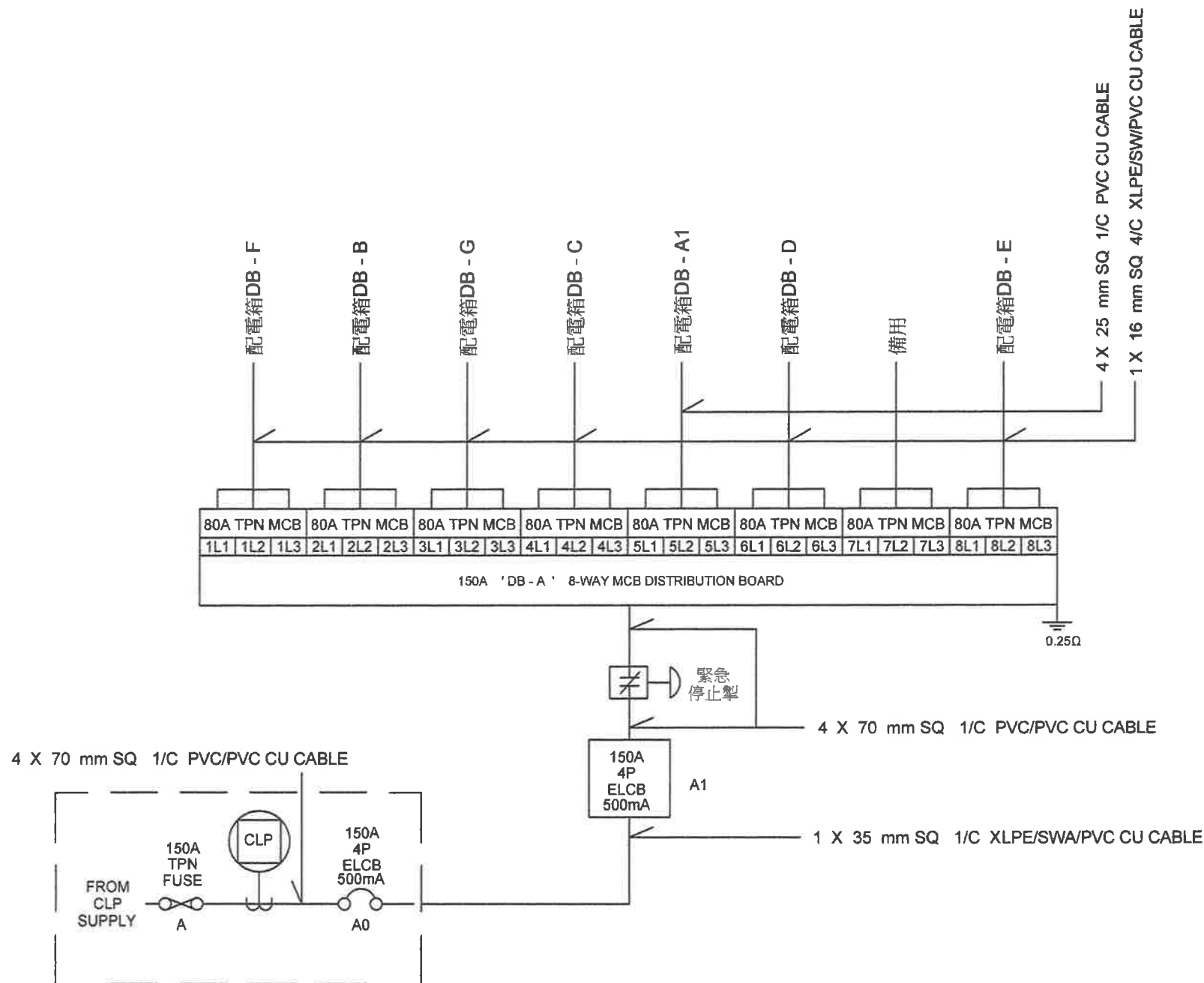
AX	4/C XLPE/SWA/PVC COPPER CABLE
AP	4/C PVC/SWA/PVC COPPER CABLE
XP	1/C XLPE/PVC COPPER CABLE
PP	1/C PVC/PVC COPPER CABLE
PR	3/C PVC/RUBBER COPPER CABLE
P	1/C PVC COPPER CABLE
AP1	2/C PVC/SWA/PVC COPPER CABLE

e.g. NUMBER OF CABLE  TYPE OF CABLE  
SIZE OF CABLE



4 X 70 mm SQ 1/C PVC/PVC CU CABLE





CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

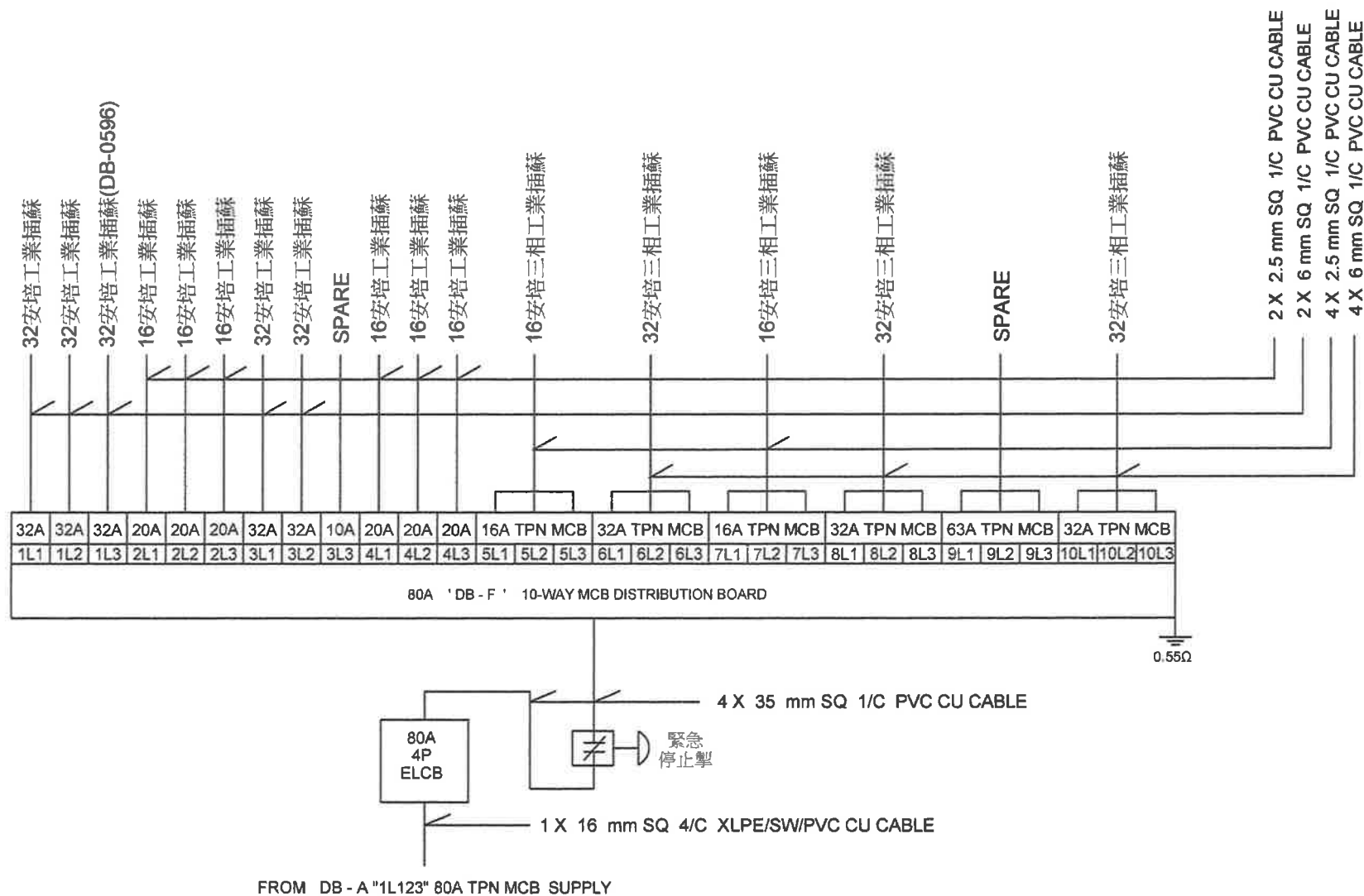
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
02

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

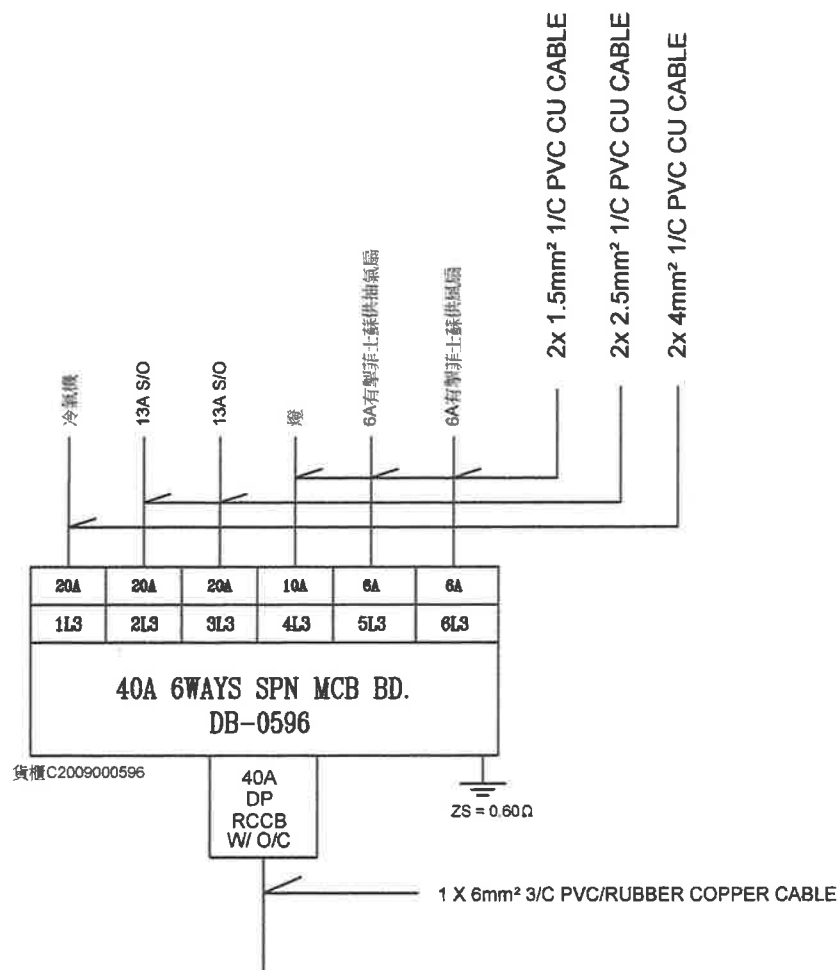
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
03

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



FROM DB - F "1L3" 32A SPN MCB SUPPLY (32A 單相工業插蘇)

CONTRACTOR: [REDACTED]

PROJECT: 新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

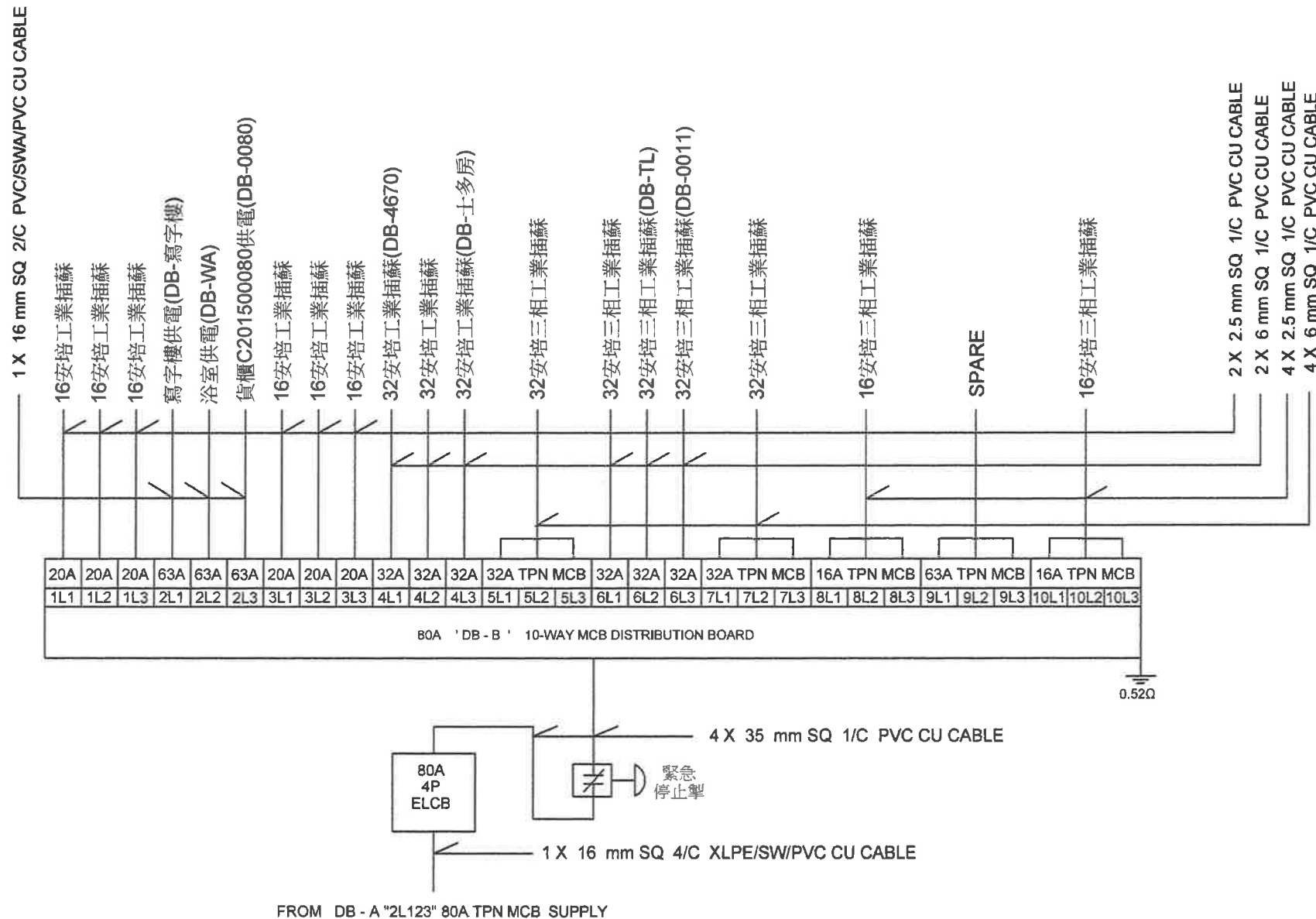
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
04

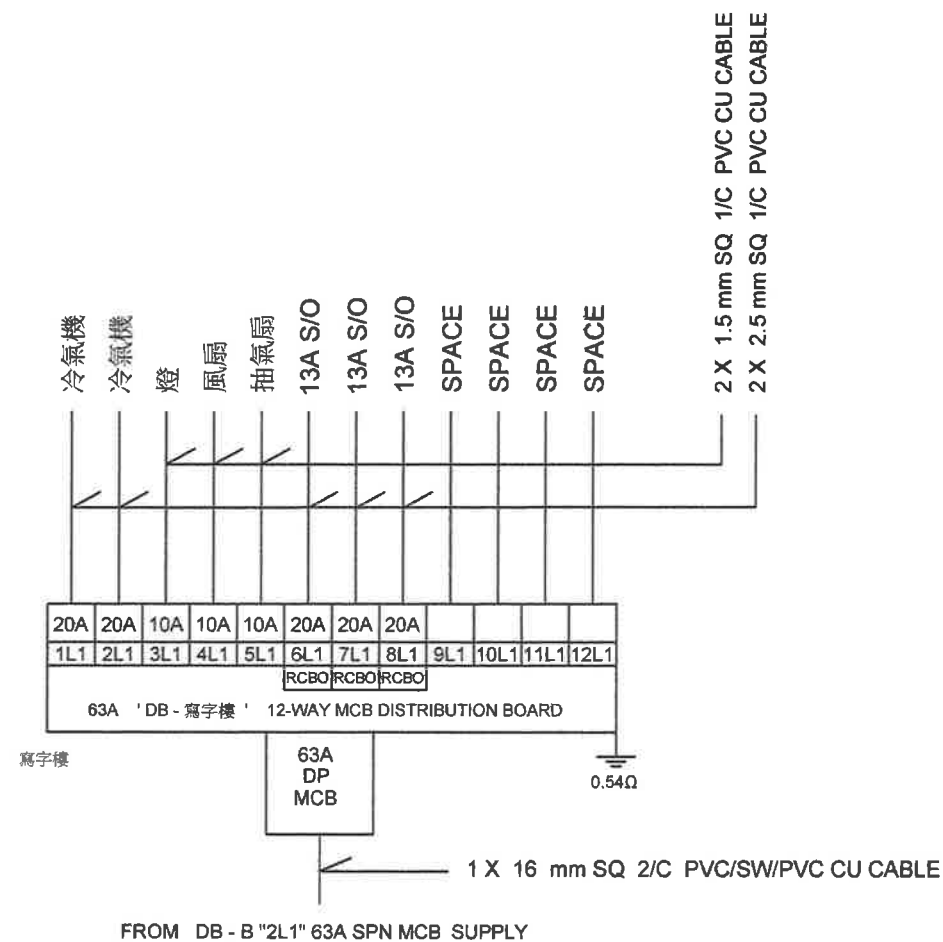
CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019







CONTRACTOR:



PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

06

CHECKED BY:

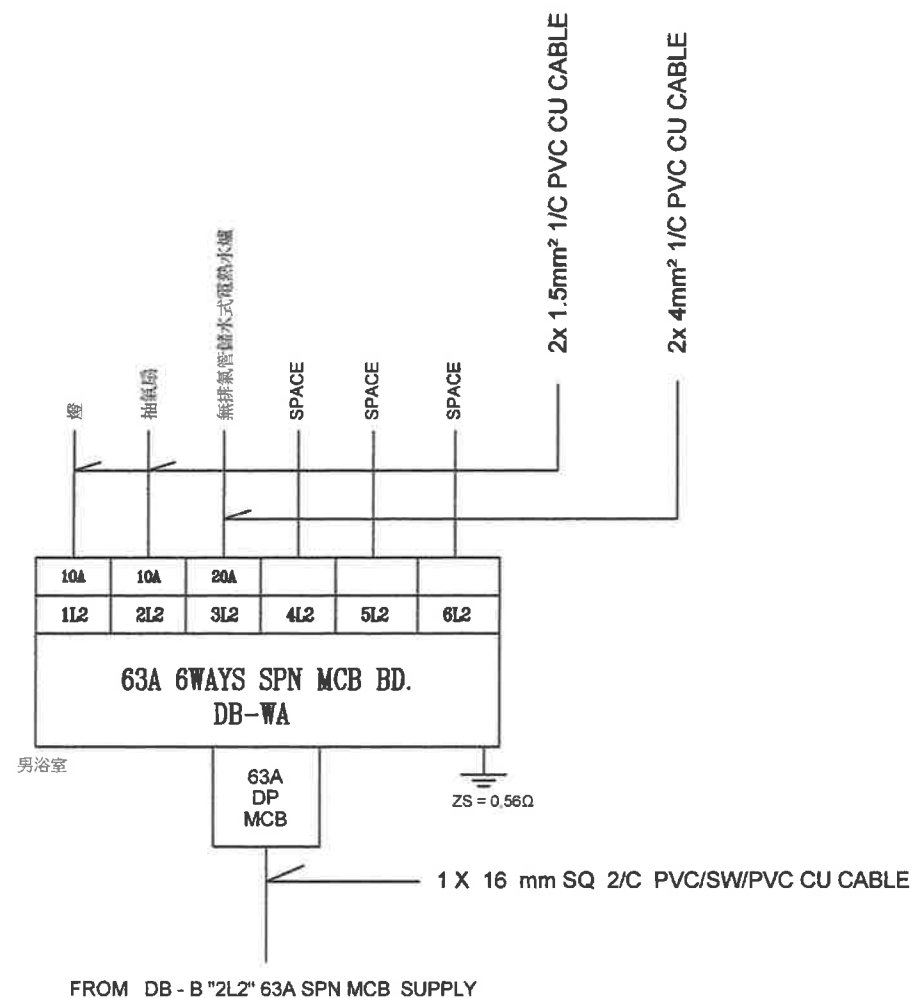
C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

29-10-2019



CONTRACTOR:



PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

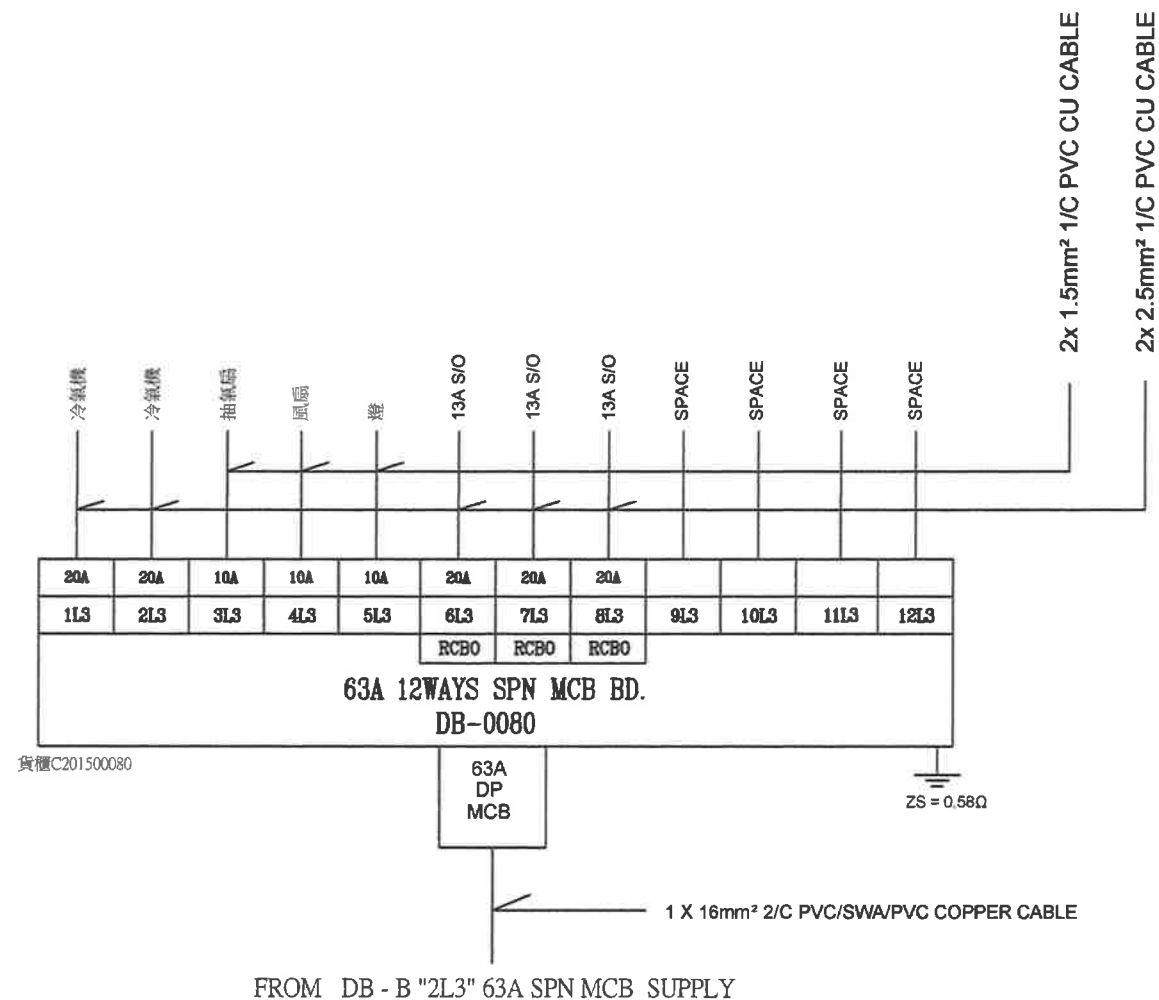
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SCHEMATIC WIRING DIAGRAM

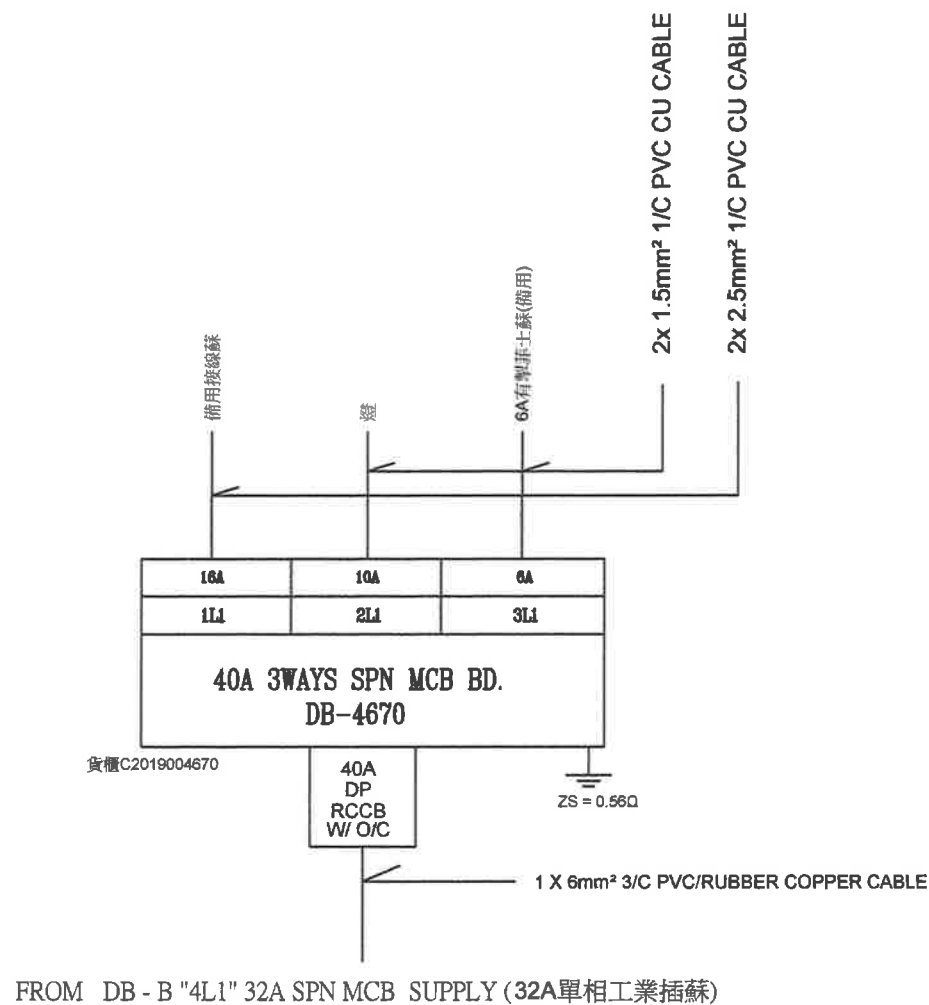
DRAWN NO.  
07

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

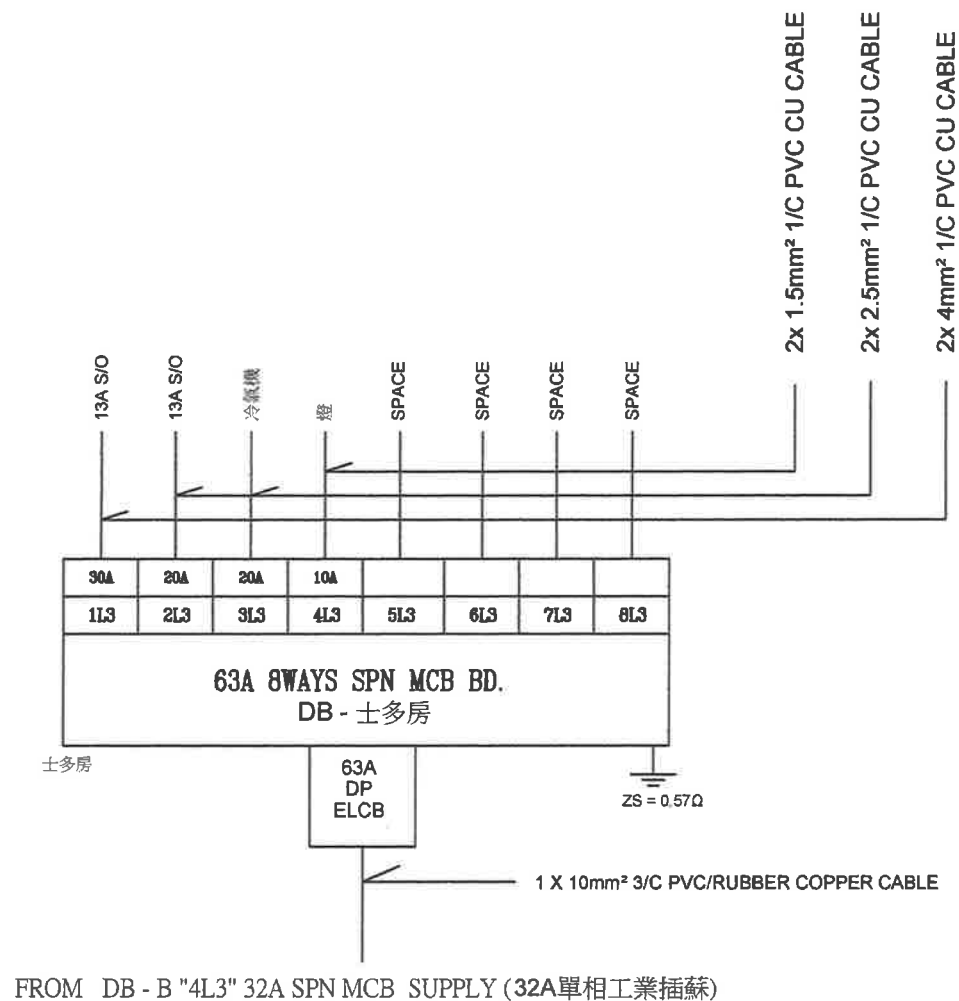
DATE:  
29-10-2019





CONTRACTOR: [REDACTED]

PROJECT: 新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
09CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019



CONTRACTOR:



PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

10

CHECKED BY:

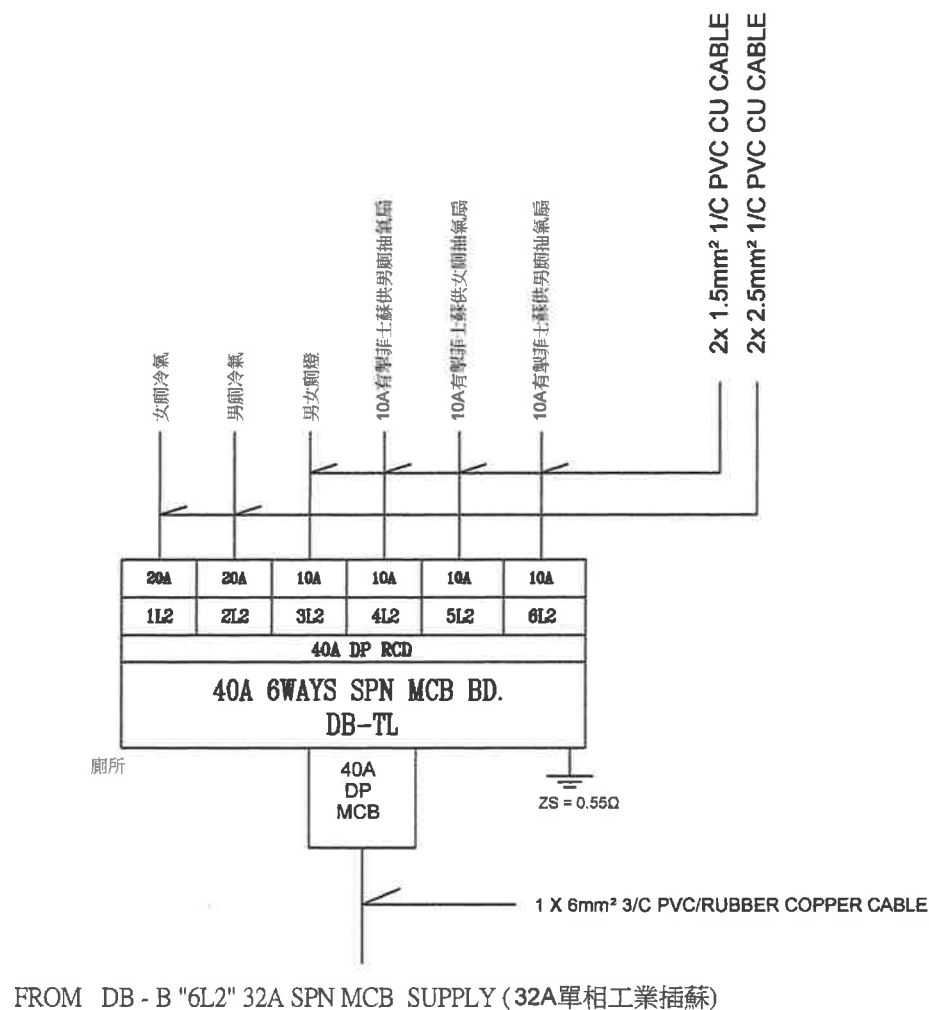
C.Y. TSANG

DRAWN BY:

C.H. LAM &amp; Jimmy Tsang

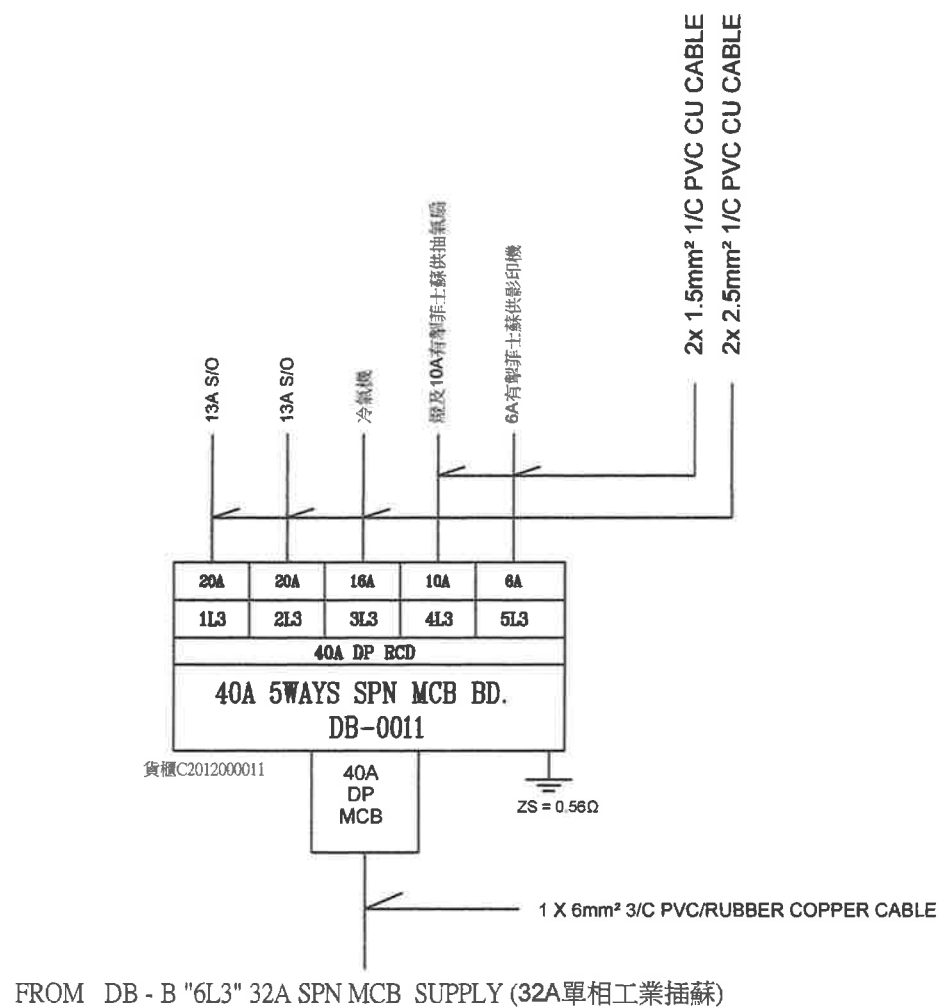
DATE:

29-10-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
11CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

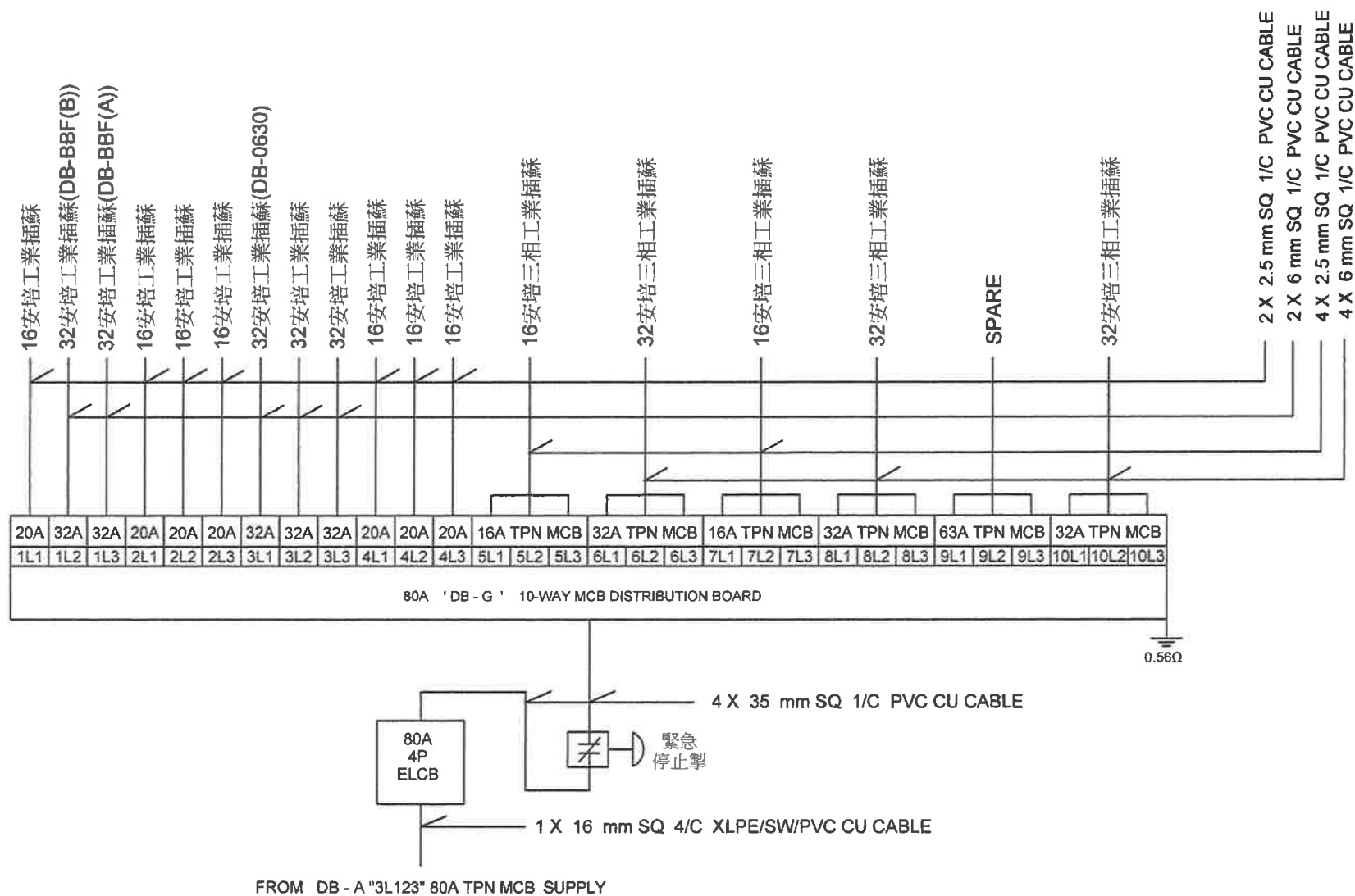
TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
12

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

13

CHECKED BY:

C.Y. TSANG

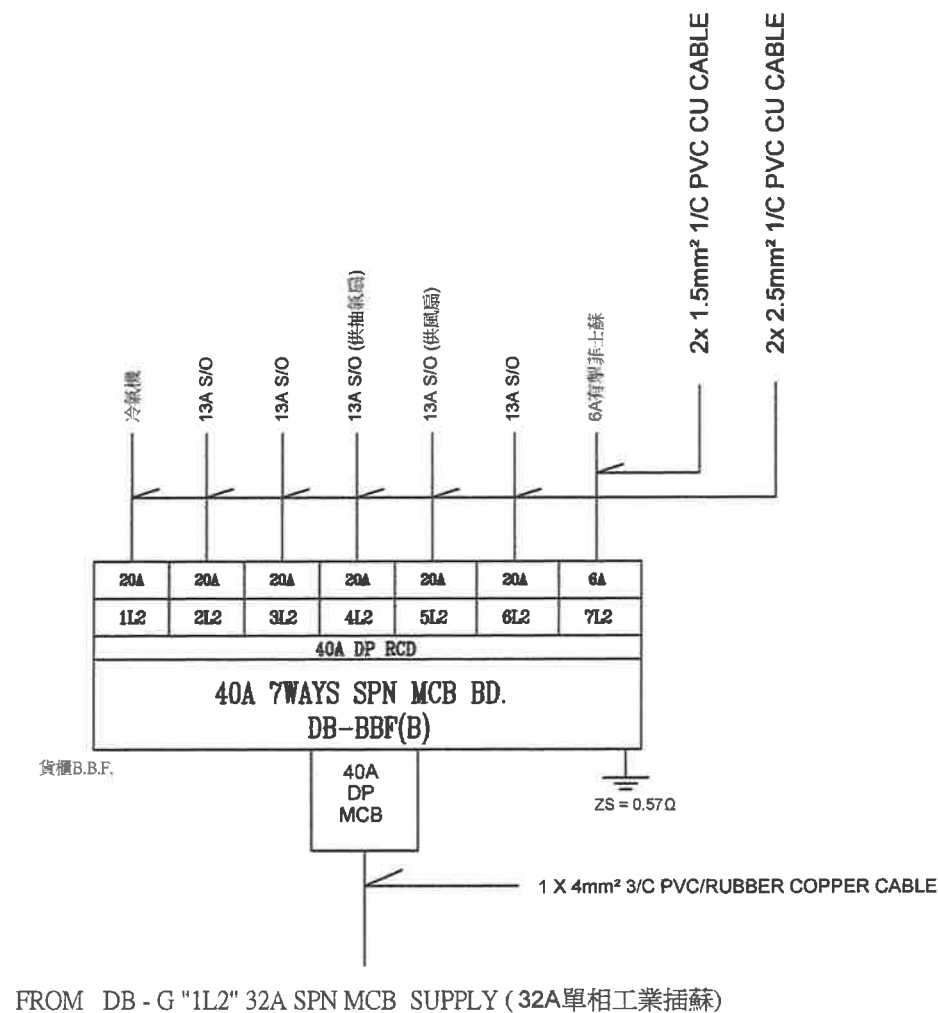
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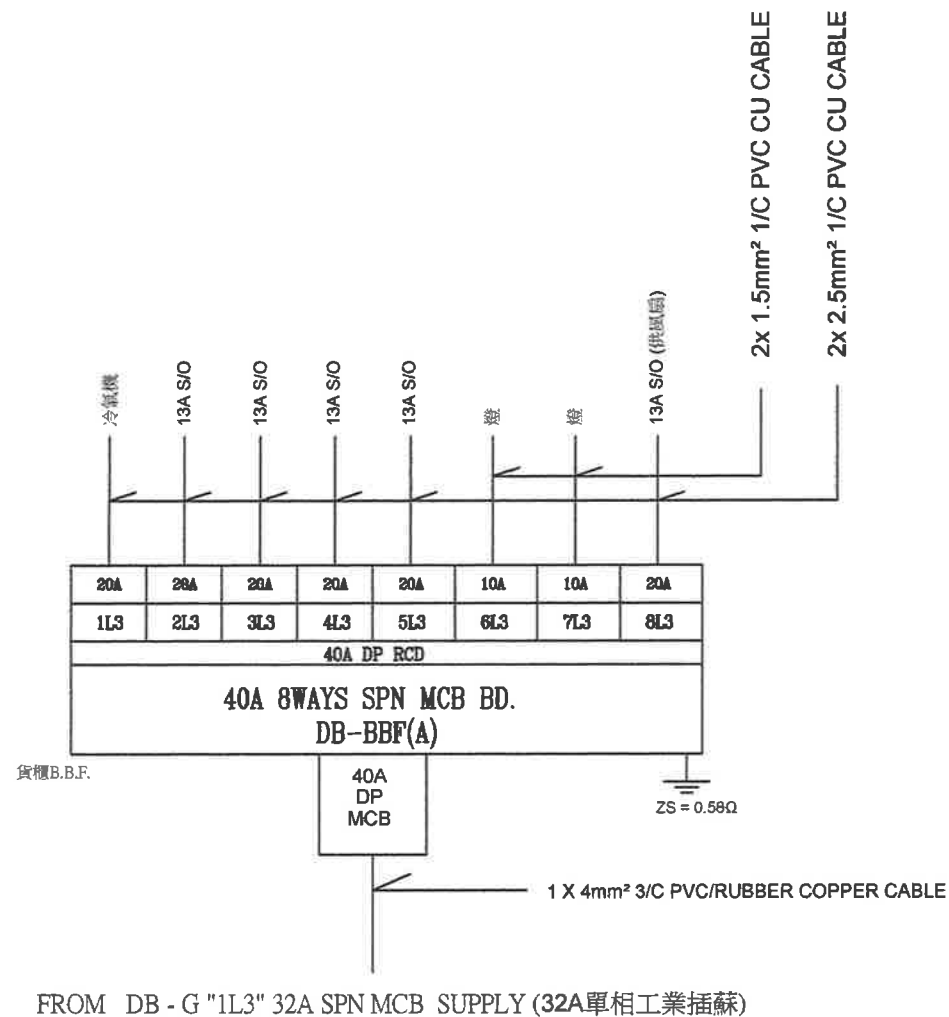
C.H. LAM &amp; Jimmy Tsang

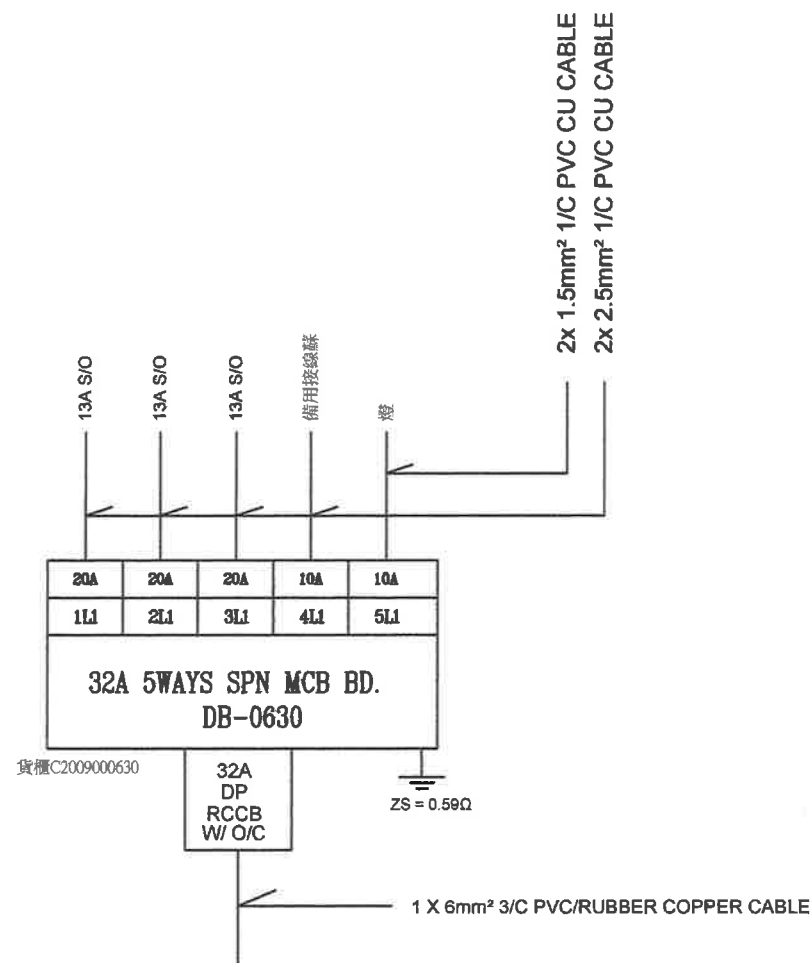
DATE:

29-10-2019









CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

16

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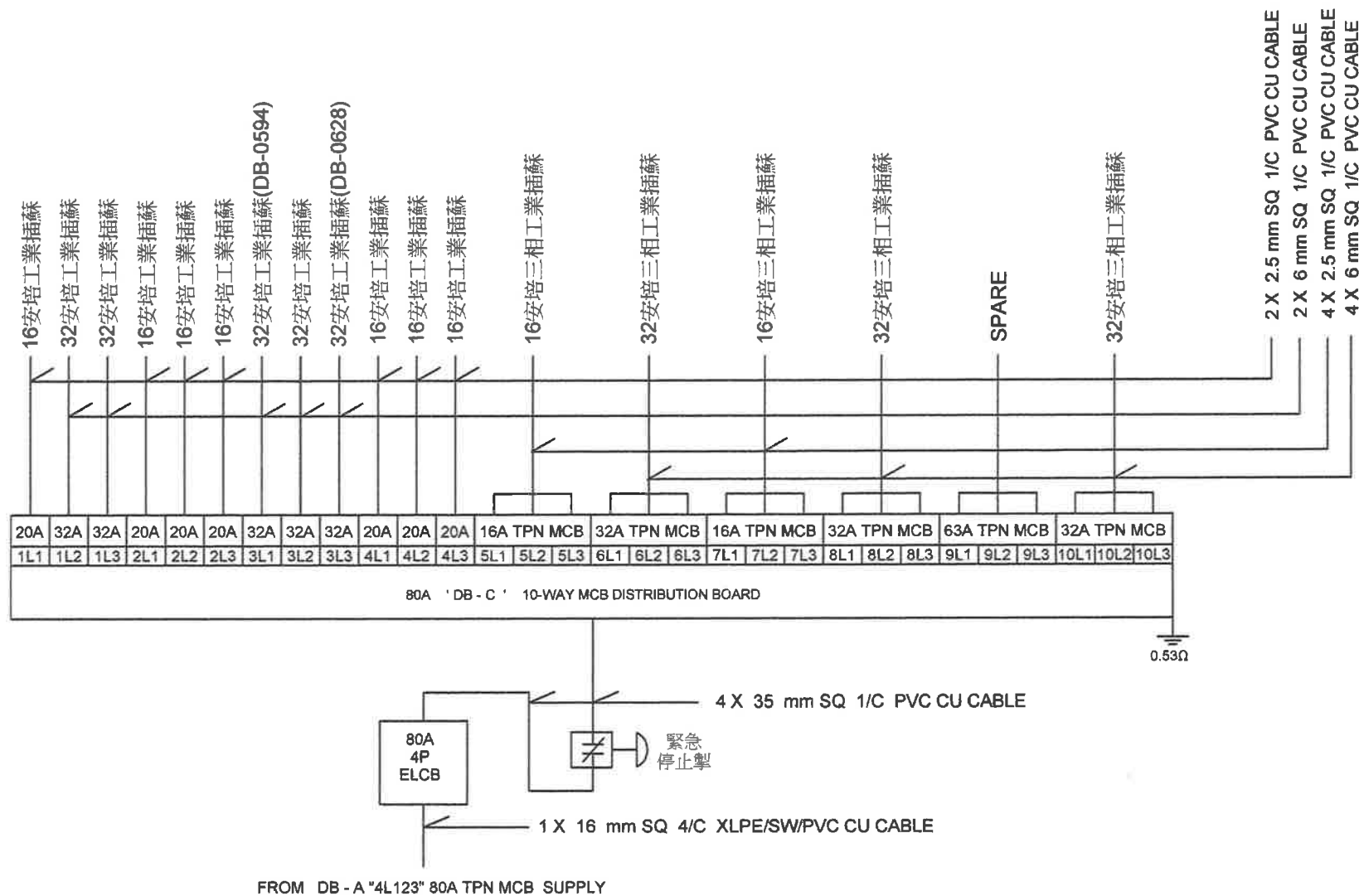
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DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

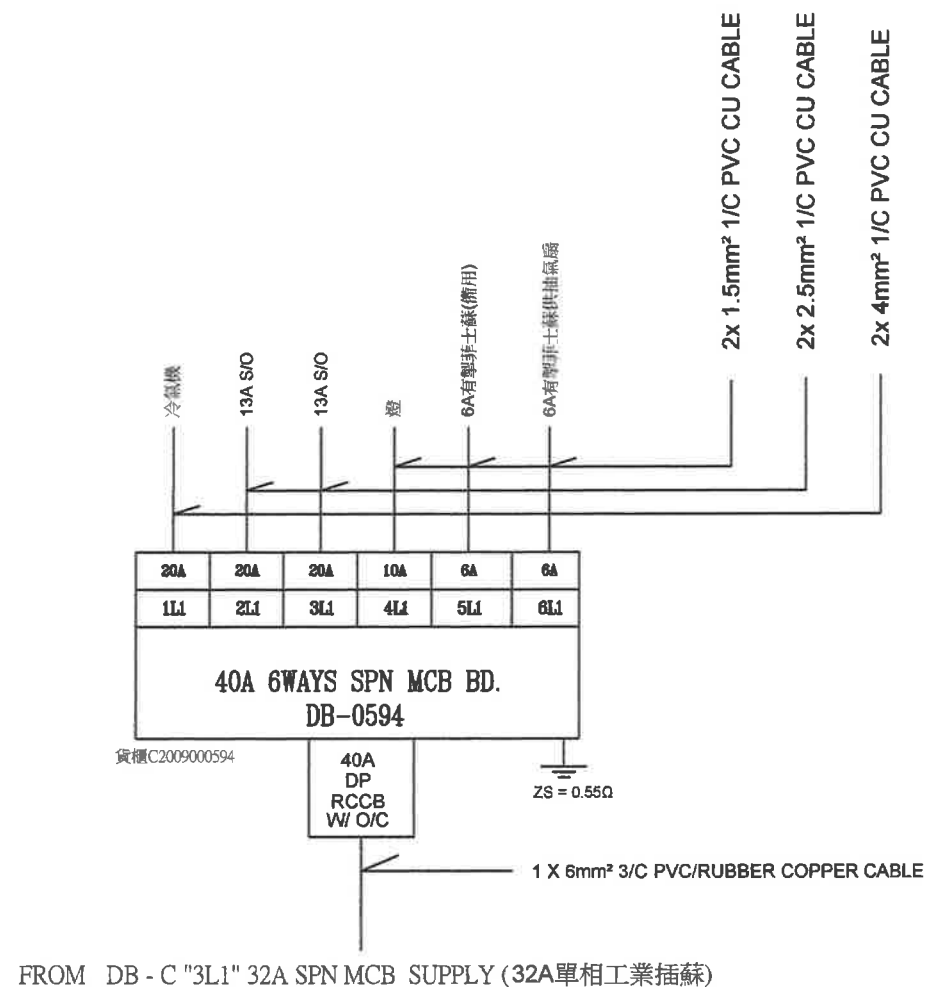
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SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
17

CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

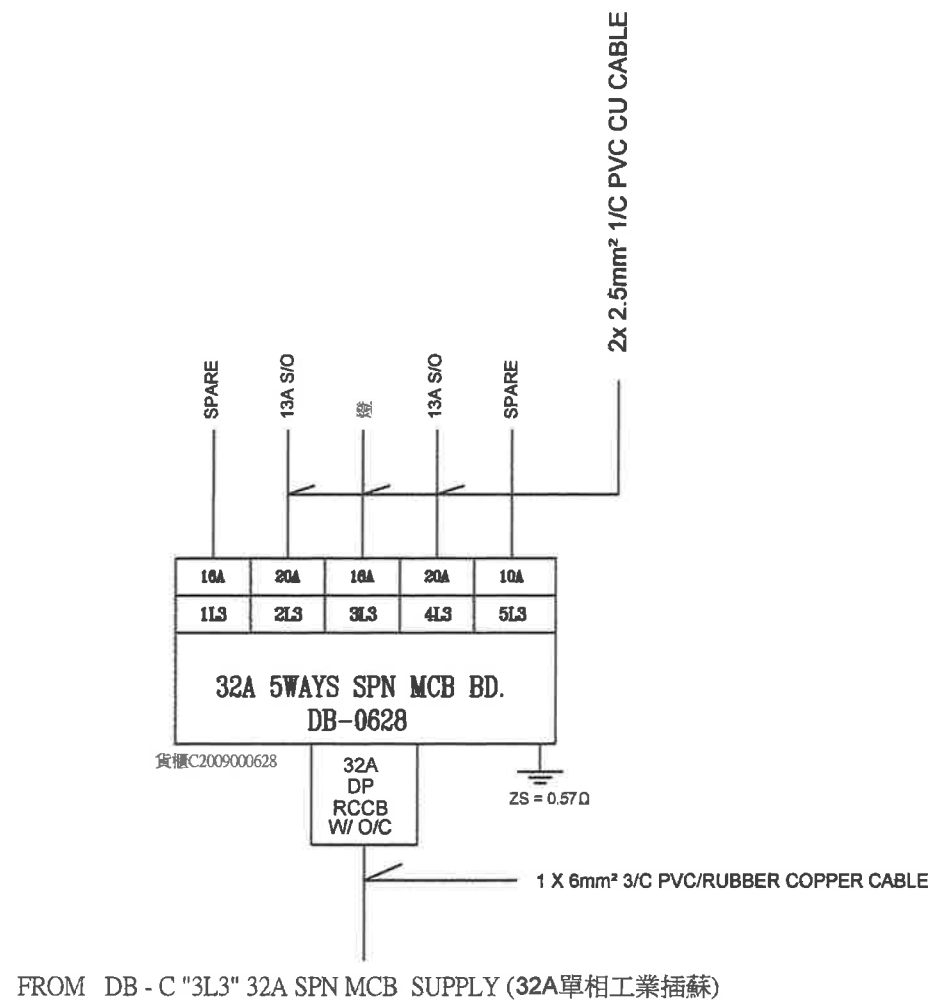
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SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
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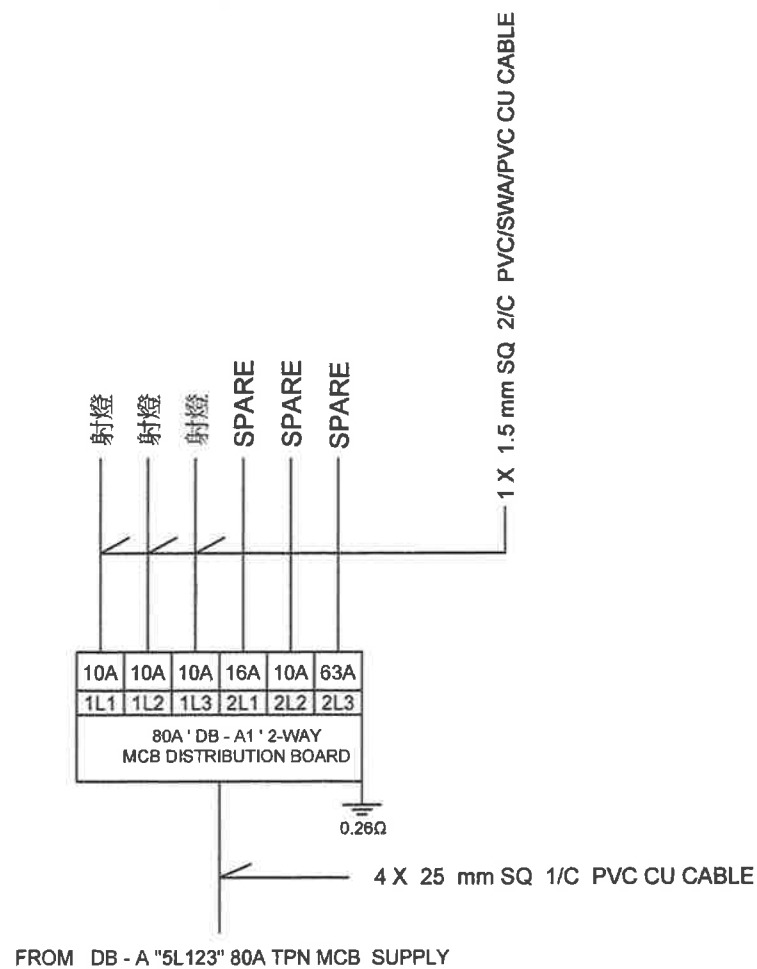
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C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
19CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019



CONTRACTOR:



PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

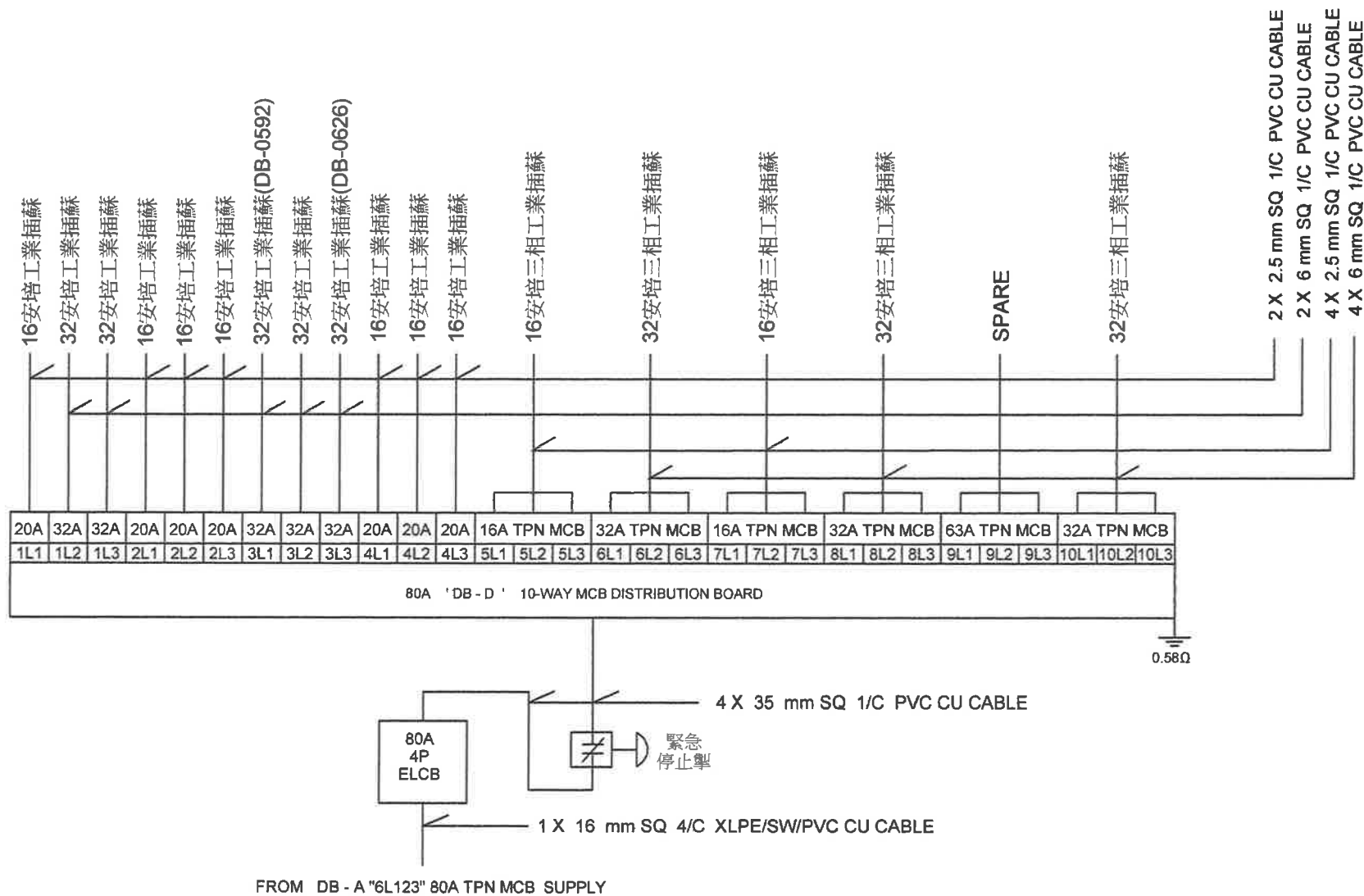
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SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
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CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

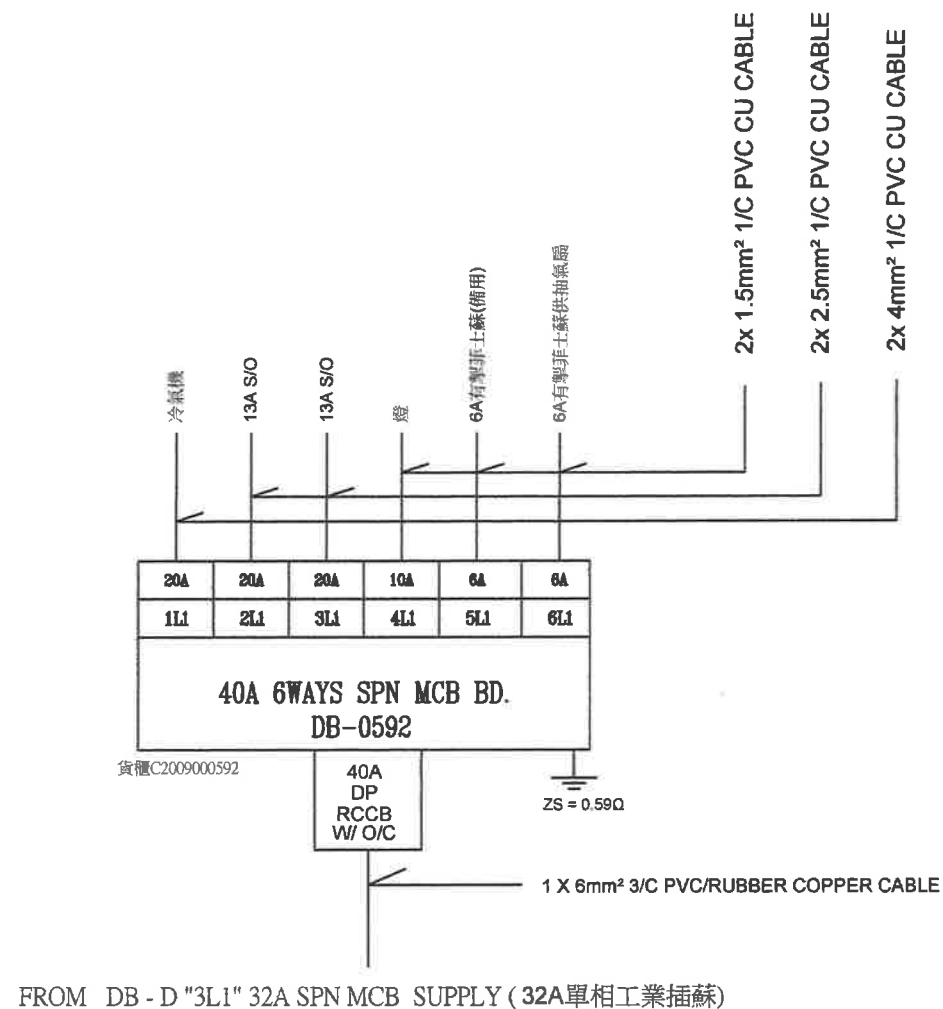
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CHECKED BY:  
C.Y. TSANG

DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019





CONTRACTOR:



PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

22

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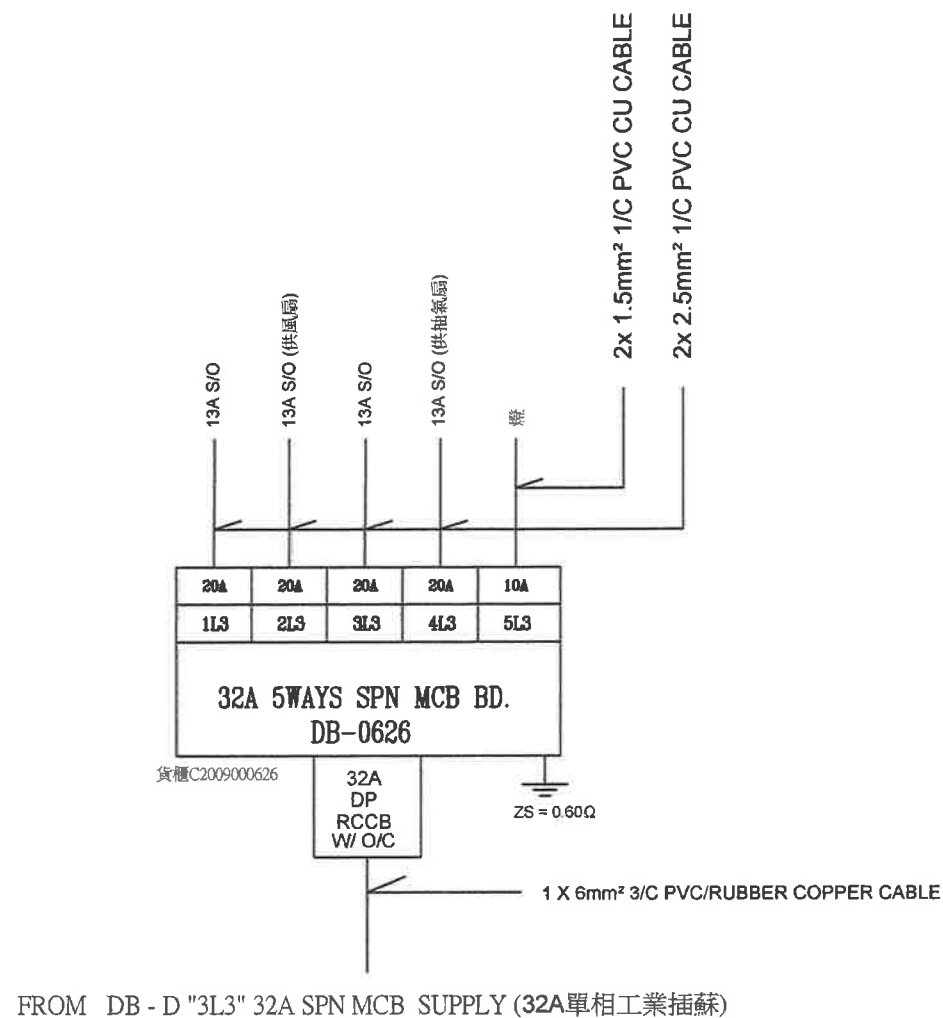
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DRAWN BY:

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Jimmy Tsang

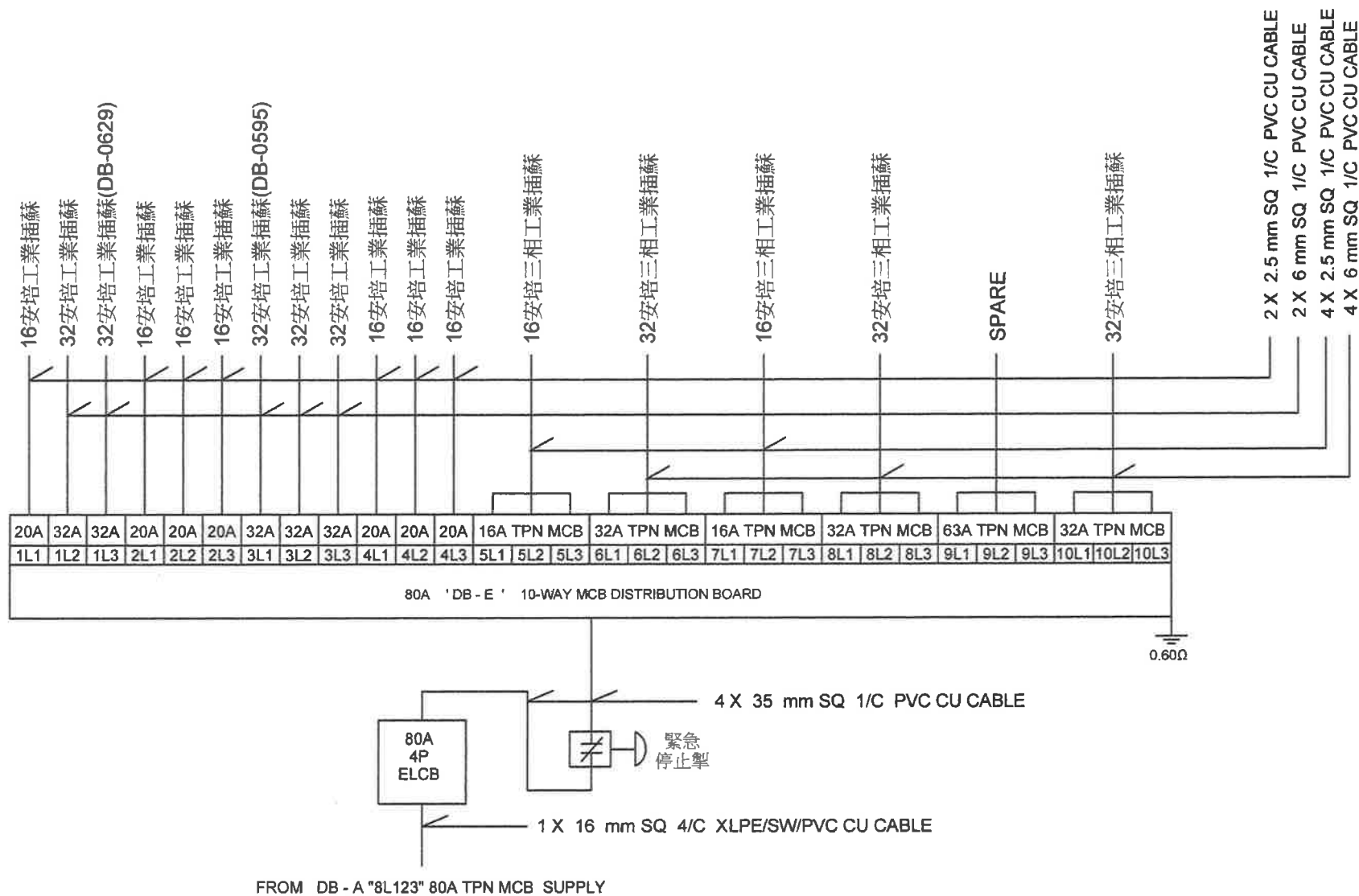
DATE:

29-10-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
23CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

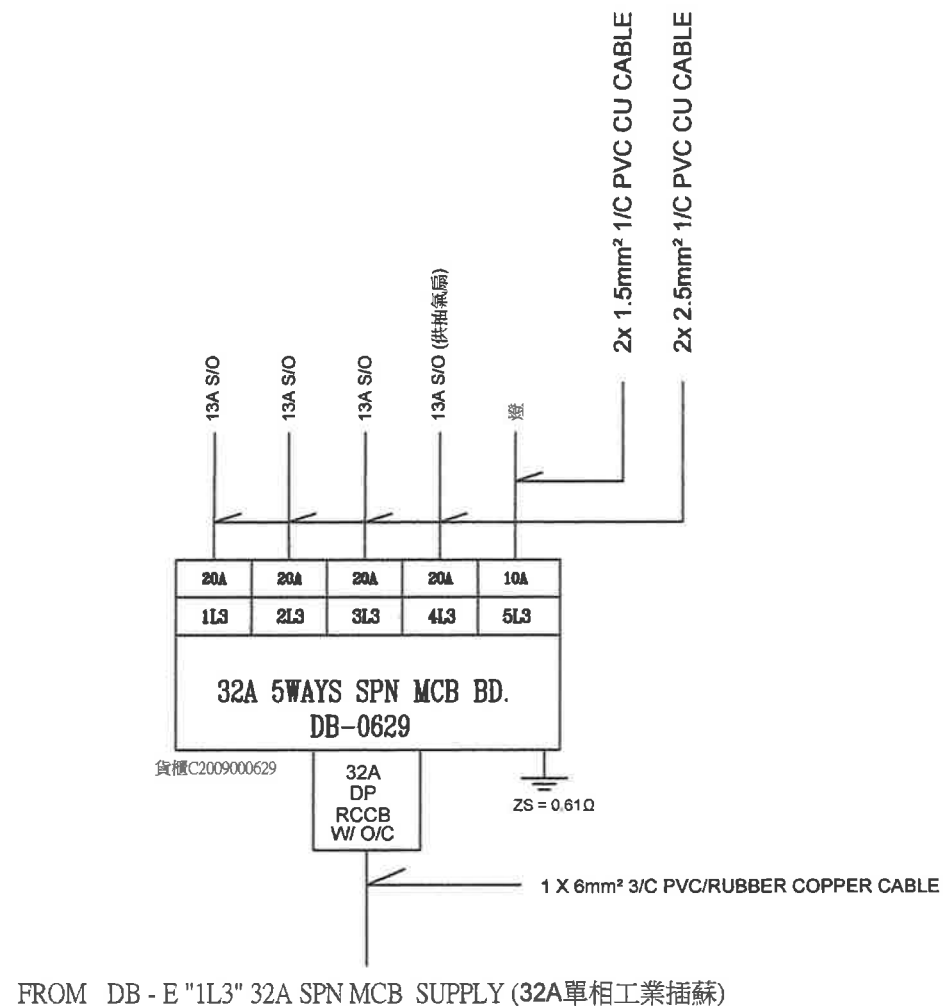
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SCHEMATIC WIRING DIAGRAM

DRAWN NO.  
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CHECKED BY:  
C.Y. TSANG

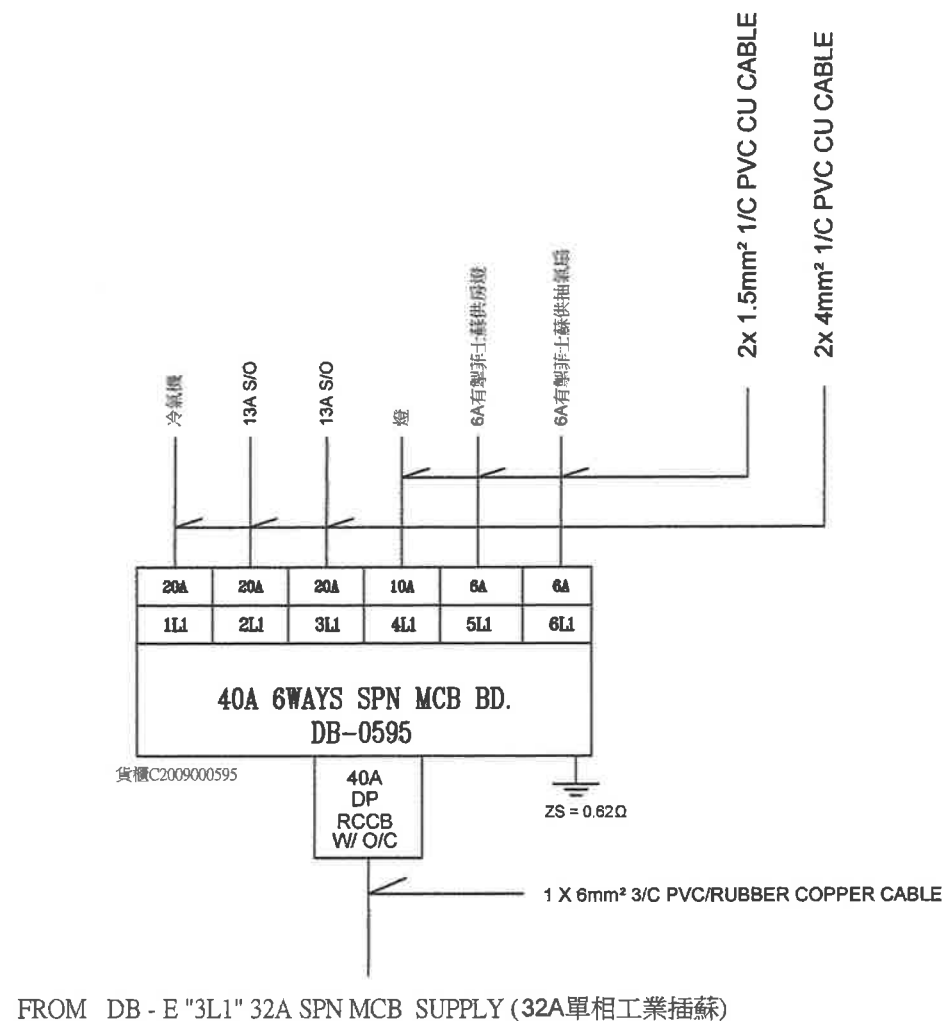
DRAWN BY:  
C.H. LAM &  
Jimmy Tsang

DATE:  
29-10-2019



CONTRACTOR: [REDACTED]

PROJECT: 新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)TITLE: MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAMDRAWN NO.  
25CHECKED BY:  
C.Y. TSANGDRAWN BY:  
C.H. LAM &  
Jimmy TsangDATE:  
29-10-2019



CONTRACTOR:

PROJECT:

新界天水圍天月路  
建造業議會-香港建造學院天月路訓練場(TYRTG)

TITLE:

MCB DISTRIBUTION BOARD  
SCHEMATIC WIRING DIAGRAM

DRAWN NO.

26

CHECKED BY:

C.Y. TSANG

DRAWN BY:

C.H. LAM &  
Jimmy Tsang

DATE:

29-10-2019





1 = CABLE NUMBERS  
2 = CABLE TYPE  
3 = CABLE SIZE  
CABLE TYPE :  
X = XLPE COPPER CABLE  
LP = XLPE/PVC COPPER CABLE  
P = PVC COPPER CABLE  
PP = PVC/PVC COPPER CABLE  
L = LSOH COPPER CABLE  
LX = LSOH/XLPE COPPER CABLE  
MI = MICS COPPER CABLE  
F = FIRE COPPER CABLE  
AL = ALUMINUM CABLE  
P1 = 1/2 PVC/SWA/PVC COPPER CABLE  
P2 = 2/2 PVC/SWA/PVC COPPER CABLE  
PA = 4/2 PVC/SWA/PVC COPPER CABLE  
X1 = 1/2 XLPE/SWA/PVC COPPER CABLE  
X2 = 2/2 XLPE/SWA/PVC COPPER CABLE  
PA1 = 4/2 XLPE/SWA/PVC COPPER CABLE  
L1 = 1/2 LSOH/SWA/PVC COPPER CABLE  
L2 = 2/2 LSOH/SWA/PVC COPPER CABLE  
LA = 4/2 LSOH/SWA/PVC COPPER CABLE

DATE:  
31-10-2022



38/I ZONE MCB & MAIN SWITCH WOODEN CUPBOA/

1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.



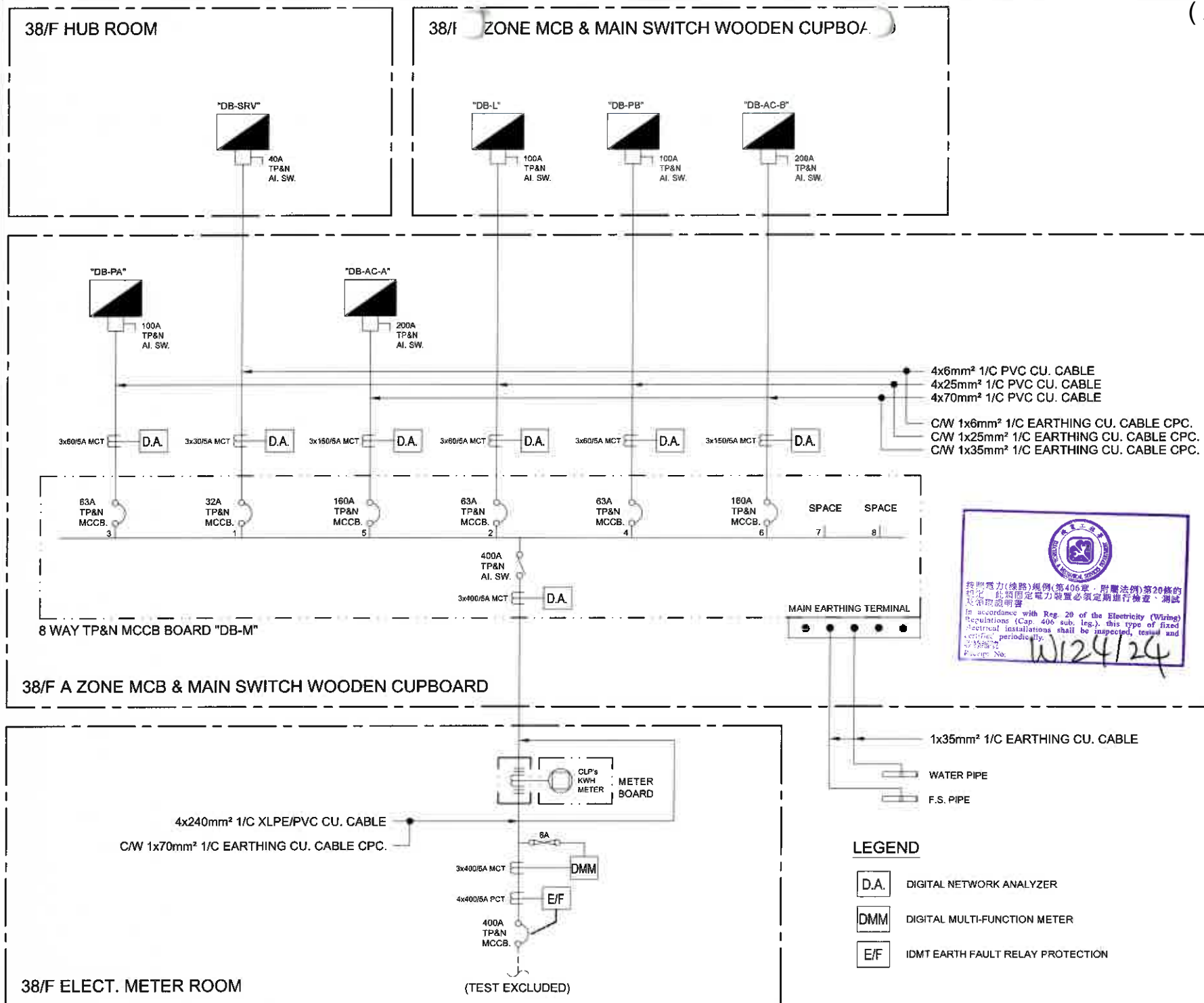
DATE	DESCRIPTION	REVISION

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL.  
38/F, COS CENTRE,  
58 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

### SCHEMATIC WIRING DIAGRAM

	DESIGNATION	DATE
		11 - 09 - 2021
		1 - 09 - 2021

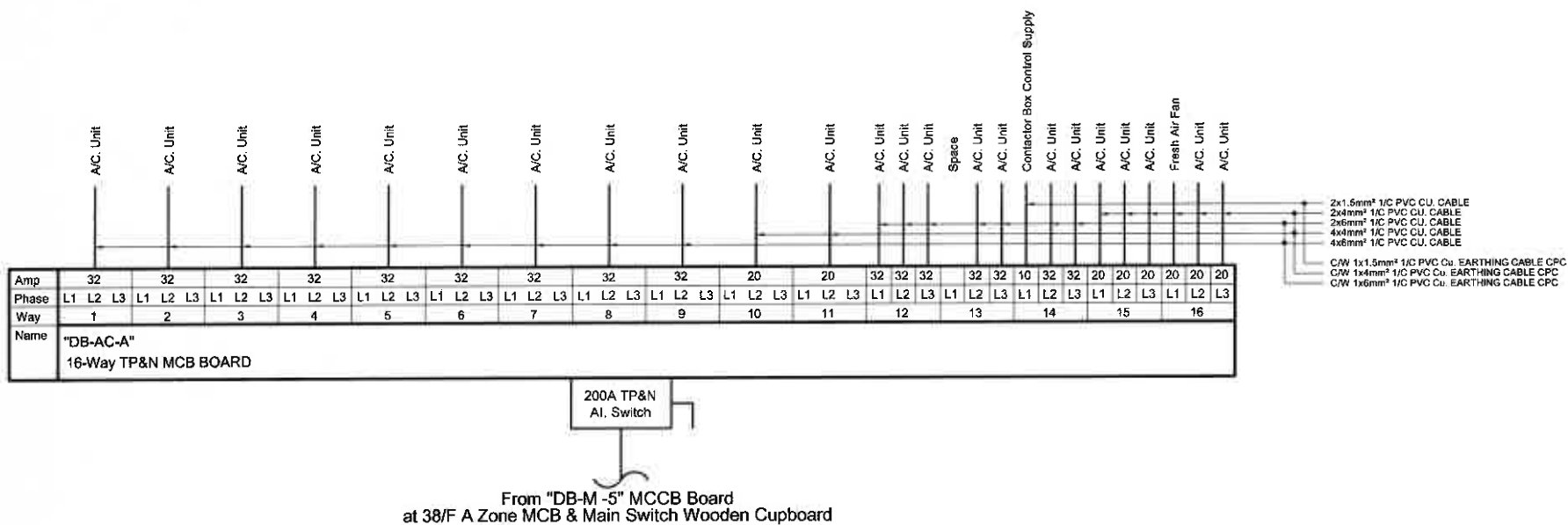
Page 113 of 138



# 38/F A ZONE MCB & MAIN SWITCH WOODEN CUPBOARD

(Annex 6)

- NOTES
1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
  2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.



DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL,  
38/F, COS CENTRE,  
56 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

DRAWING TITLE  
  
SCHEMATIC WIRING DIAGRAM

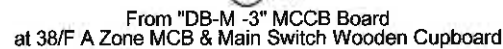
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NOT TO SCALE (A4)

DESIGNATION	DATE



## ( Annex 6 )

- | DATE | DESCRIPTION | REVISION |
|------|-------------|----------|
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**PROJECT**  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL.  
38/F, COS CENTRE,  
58 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

	DESIGNATION	DATE
		11 - 09 - 2021
		1 - 09 - 2021

( Annex 6 )

1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.



100A TP&N  
Al Switch

From "DB-M -4" MCCB Board  
at 38/F A Zone MCB & Main Switch Wooden Cupboard

DATE	DESCRIPTION	REVISION

PROJECT

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL HEADQUARTERS,  
38/F, COS CENTRE,  
56 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

DRAWING TITLE

### SCHEMATIC WIRING DIAGRAM

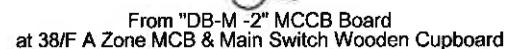
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	DESIGNATION	DATE
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11-09-2021

( Annex 6 )

- | DATE | DESCRIPTION | REVISION |
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DRAWING TITLE

### SCHEMATIC WIRING DIAGRAM

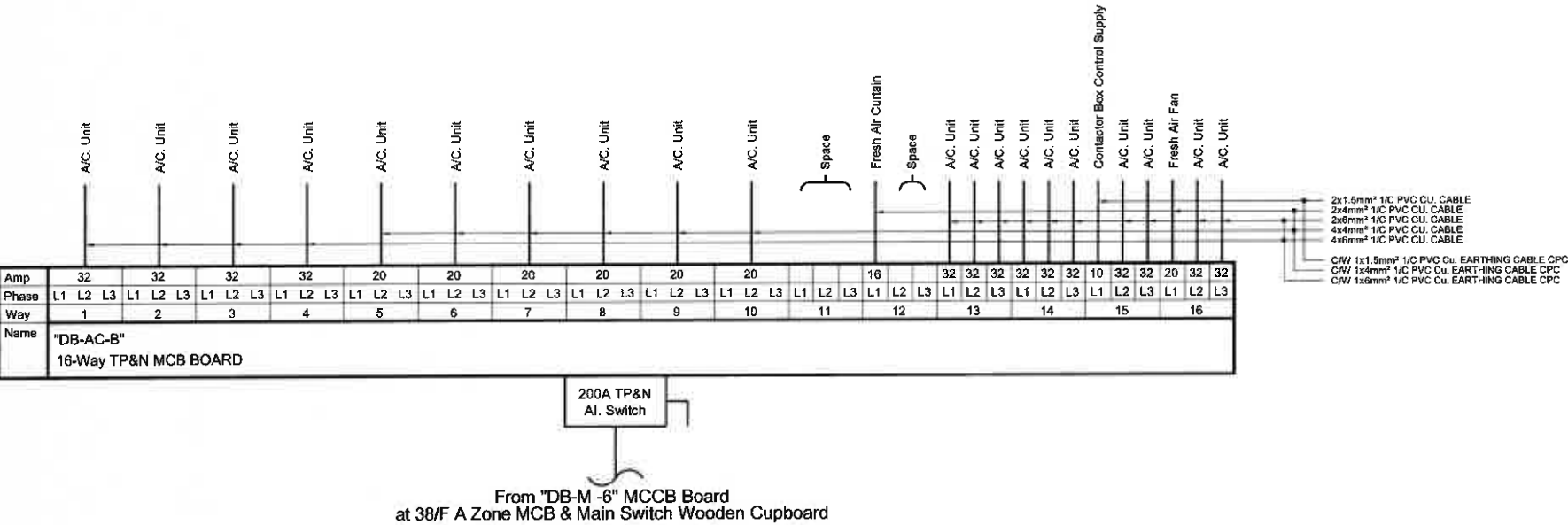
SCALE NOT TO SCALE (A4)

	DESIGNATION	DATE
		11 - 09 - 2022
		11 - 09 - 2022

38/F B ZONE MCB & MAIN SWITCH WOOD I CUPBOARD

( Annex 6)

1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE  
OPERATING CURRENT OF 30mA UNLESS  
OTHERWISE SPECIFIED.



DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL,  
38/F, COS CENTRE,  
56 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

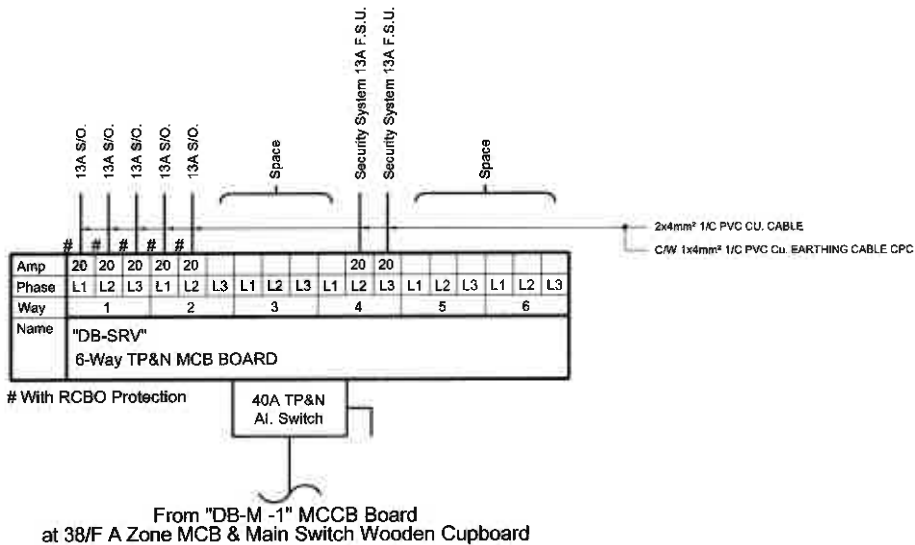
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SCHEMATIC WIRING DIAGRAM

SCALE		NOT TO SCALE (A4)
DESIGNATION	DATE	

1 - 09 - 2021  
11 - 09 - 2021

- NOTES
1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.

2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.



PROJECT

PERIODIC INSPECTION, TESTING AND CERTIFICATION FOR ELECTRICAL INSTALLATION AT CONSTRUCTION INDUSTRY COUNCIL.

38/F, COS CENTRE,  
56 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

DRAWING TITLE

SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A4)

DESIGNATION	DATE
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	11 - 09 - 2021
	11 - 09 - 2021

1. ALL CABLE ARE COPPER CONDUCTOR  
UNLESS OTHERWISE SPECIFIED.



DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL,  
UNIT A-C, 39/F, COS CENTRE,  
56 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

DRAWING TITLE

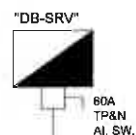
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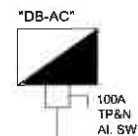
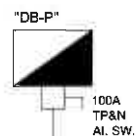
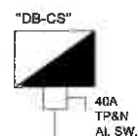
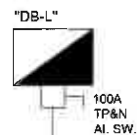
DATE
11 - 09 - 2021
11 - 09 - 2021

DRAWING NO.

## 39/F SERVER ROOM



## 39/F NORTH SIDE WOODEN SWITCH CUPBOARD



3x30/5A MCT

D.A.

3x30/5A MCT

D.A.

3x60/5A MCT

D.A.

3x60/5A MCT

D.A.

3x100/5A MCT

D.A.

4x6mm<sup>2</sup> 1/C PVC CU. CABLE  
4x25mm<sup>2</sup> 1/C PVC CU. CABLE  
4x35mm<sup>2</sup> 1/C PVC CU. CABLE

C/W 1x6mm<sup>2</sup> 1/C EARTHING CU. CABLE CPC.  
C/W 1x25mm<sup>2</sup> 1/C EARTHING CU. CABLE CPC.  
C/W 1x35mm<sup>2</sup> 1/C EARTHING CU. CABLE CPC.

32A  
TP&N  
MCCB.  
232A  
TP&N  
MCCB.  
163A  
TP&N  
MCCB.  
463A  
TP&N  
MCCB.  
3100A  
TP&N  
MCCB.  
5SPACE  
6250A  
TP&N  
Al. SW.

3x200/5A MCT

D.A.

MAIN EARTHING TERMINAL



6 WAY TP&amp;N MCCB BOARD "DB-M"

## 39/F MCB &amp; MAIN SWITCH WOODEN CUPBOARD

1x25mm<sup>2</sup> 1/C EARTHING CU. CABLE

WATER PIPE

F.S. PIPE

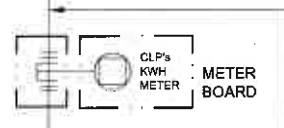
## LEGEND

D.A. DIGITAL NETWORK ANALYZER

4x70mm<sup>2</sup> 1/C PVC CU. CABLEC/W 1x35mm<sup>2</sup> 1/C EARTHING CU. CABLE CPC.

(TEST EXCLUDED)

## 39/F ELECT. METER ROOM



(Annex 6)

- [illegible]



DRAWING TITLE

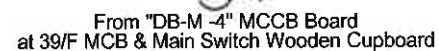
SCALE NOT TO SCALE (A4)

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(Annex 6)

- | DATE | DESCRIPTION | REVISION |
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2x1.5mm<sup>2</sup> 1/C PVC CU. CABLE  
2x2.5mm<sup>2</sup> 1/C PVC CU. CABLE  
2x4mm<sup>2</sup> 1/C PVC CU. CABLE  
C/W 1x1.5mm<sup>2</sup> 1/C PVC CU. EARTHING CABLE CPC  
C/W 1x2.5mm<sup>2</sup> 1/C PVC CU. EARTHING CABLE CPC  
C/W 1x4mm<sup>2</sup> 1/C PVC CU. EARTHING CABLE CPC

DRAWING TITLE

**SCHEMATIC WIRING DIAGRAM**

SCALE NOT TO SCALE (A4)

DESIGNATION	DATE
-------------	------

11-09-2021

13-2 - 2021



# 39/F MCB & MAIN SWITCH WOODEN CUPBOARD

(Annex 6)

1. ALL CABLE ARE COPPER CONDUCTOR UNLESS OTHERWISE SPECIFIED.
2. ALL RCDs / RCCBs / RCBOs SHALL HAVE OPERATING CURRENT OF 30mA UNLESS OTHERWISE SPECIFIED.

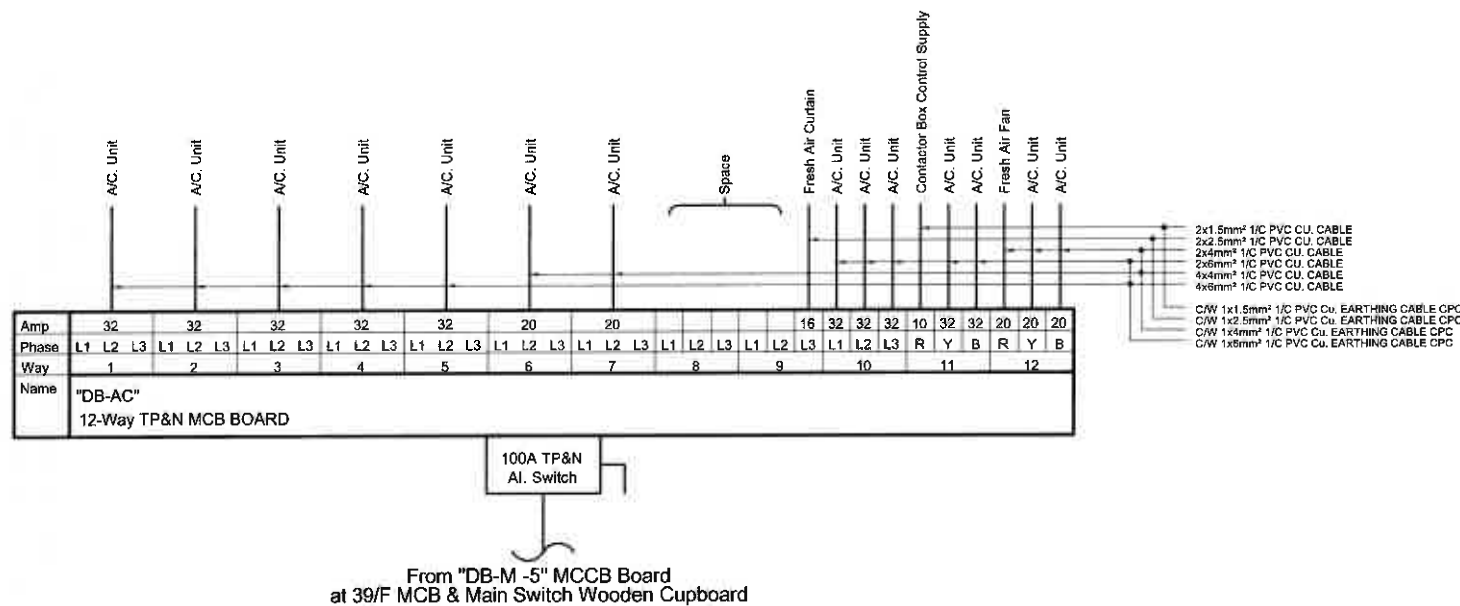
DATE	DESCRIPTION	REVISION

PROJECT  
PERIODIC INSPECTION, TESTING AND CERTIFICATION FOR ELECTRICAL INSTALLATION AT CONSTRUCTION INDUSTRY COUNCIL, UNIT A-C, 39/F, COS CENTRE, 56 TSUN YIP STREET, KWUN TONG, KOWLOON, HONG KONG.

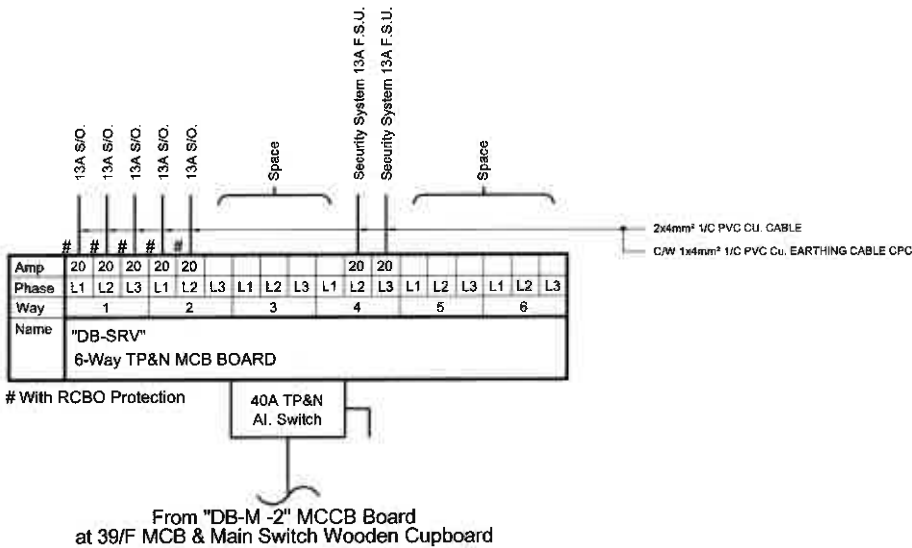
DRAWING TITLE  
SCHEMATIC WIRING DIAGRAM

SCALE NOT TO SCALE (A4)

DESIGNATION	DATE
	11/09/2021
	11/09/2021



1. ALL CABLE ARE COPPER CONDUCTOR  
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2. ALL RCDs / RCCBs / RCBOs SHALL HAVE  
OPERATING CURRENT OF 30ma UNLESS  
OTHERWISE SPECIFIED.



DATE	DESCRIPTION	REVISION

PROJECT

PERIODIC INSPECTION, TESTING AND  
CERTIFICATION FOR  
ELECTRICAL INSTALLATION AT  
CONSTRUCTION INDUSTRY  
COUNCIL,  
UNIT A-C, 39/F, COS CENTRE,  
56 TSUN YIP STREET, KWUN TONG,  
KOWLOON, HONG KONG.

DRAWING TITLE

SCHEMATIC WIRING DIAGRAM

SCALE	NOT TO SCALE (A4)
DESIGNATION	DATE

09 - 2021

09 - 2021

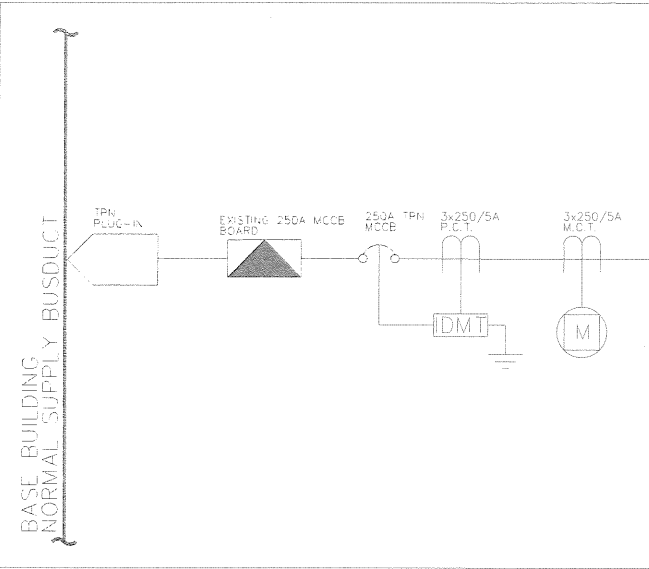
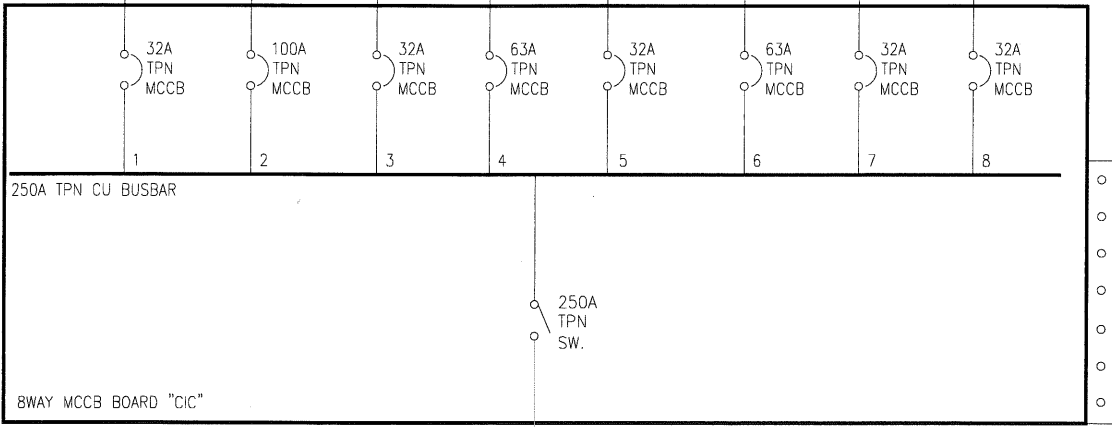
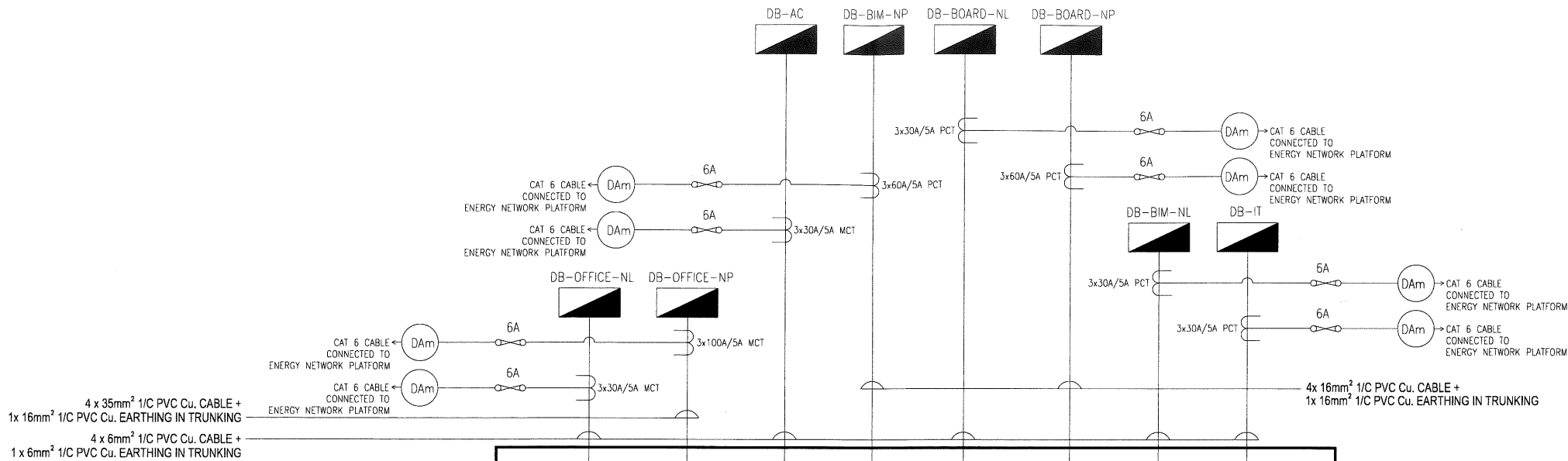
(Annex 6)

- | DATE | DESCRIPTION | REVISION |
|------|-------------|----------|
|      |             |          |
|      |             |          |
|      |             |          |
|      |             |          |
|      |             |          |



### SCHEMATIC WIRING DIAGRAM

	DESIGNATION	DATE
[REDACTED]		09 - 2021
		09 - 2021



BY LANDLORD


BY TENANT

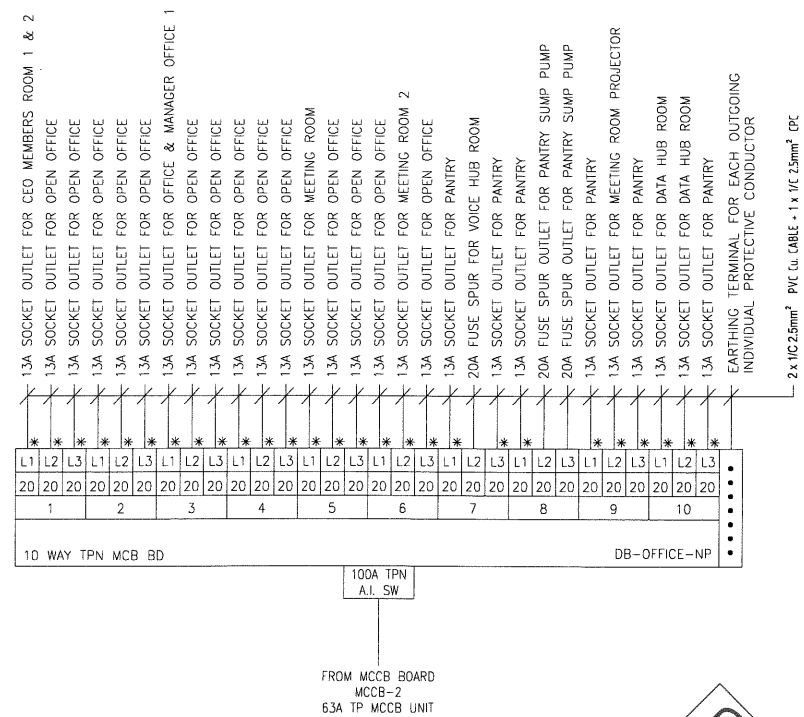
LEGEND FOR ELECTRICAL SERVICES

SYMBOL	DESCRIPTION
	MCB BOARD
	MCCB BOARD
	TRIPLE POLE A.I. SWITCH "X" DENOTED RATING
	TRIPLE POLE MCCB "X" DENOTED RATING
	ELECTRICAL METER
	IDMT EARTH FAULT PROTECTION RELAY
	CONNECT TO EARTH TERMINAL
	CURRENT TRANSFORMER "M.C.T." DENOTED MEASURING CURRENT TRANSFORMER "P.C.T." DENOTED PROTECTION CURRENT TRANSFORMER "Y" DENOTED RATING. (E.G. 200=200A)
	DIGITAL MULTI METER (SCHNEIDER MODEL:2120 DIGITAL MULTI-METER)

AS FITTED

REV.	A	AS-FITTED	27/12/2018
		DESCRIPTION	DATE

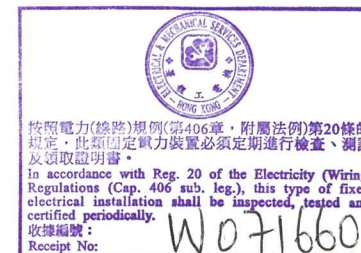
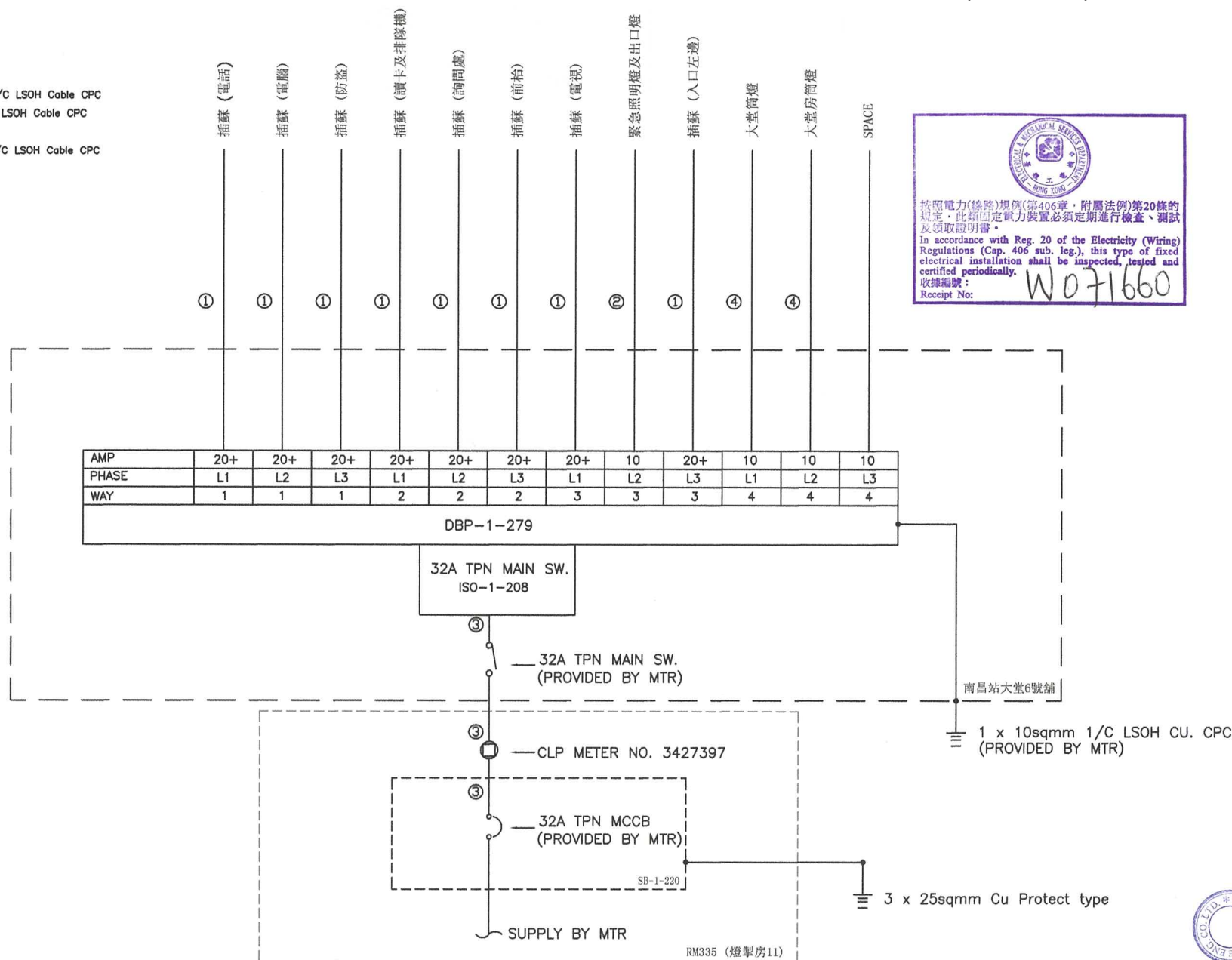
CLIENT	 <div>CONSTRUCTION INDUSTRY COUNCIL 建築業議會</div>	
PROJECT TITLE		
DESIGN AND RENOVATION WORKS FOR NEW OFFICE AT 29/F MEGA BOX		
DRAWING TITLE		
ELECTRICAL SCHEMATIC DIAGRAM		
DWG NO: E02		
REV. A	SHEET NO. 2 OF 15	
DRAWN BY: LH	SCALE: 1:200 (A3)	CHECKED BY: CC
DATE: 27/12/2018		
JOB NO: 8455		



8455

## CABLE SCHEDULE

CABLE NO.	SIZE:	CABLE
①	2.5sqmm	1/C LSOH Cu. Cable + 2.5sqmm 1/C LSOH Cable CPC
②	1.5sqmm	1/C FR Cu. Cable + 1.5sqmm 1/C LSOH Cable CPC
③	10sqmm	4/C XLPE/SWA/LSOH Cu Cable
④	1.5sqmm	1/C LSOH Cu. Cable + 1.5sqmm 1/C LSOH Cable CPC
+	RCBO	

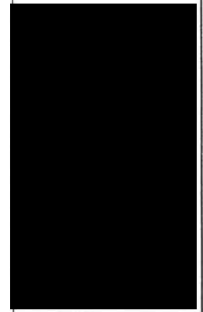


SCHEMATIC WIRING DIAGRAM

REV	DESCRIPTION	DATE	Project:	Drawing Title:	Scale:	Date:
			南昌站大堂6號舖	2016年電力測試	N.T.S.	NOV 2016
			Address:		Drawn By:	Checked By:
					R. LAI	K.K.CHAN








Drawing Title:	Schematic Wiring Diagram
Project No.:	P2022040401
Check By:	C M LEE
Drawn By:	C K KWOK
Scale:	N T S
Date:	May 16, 2021
Revision:	R1
Drawing No	

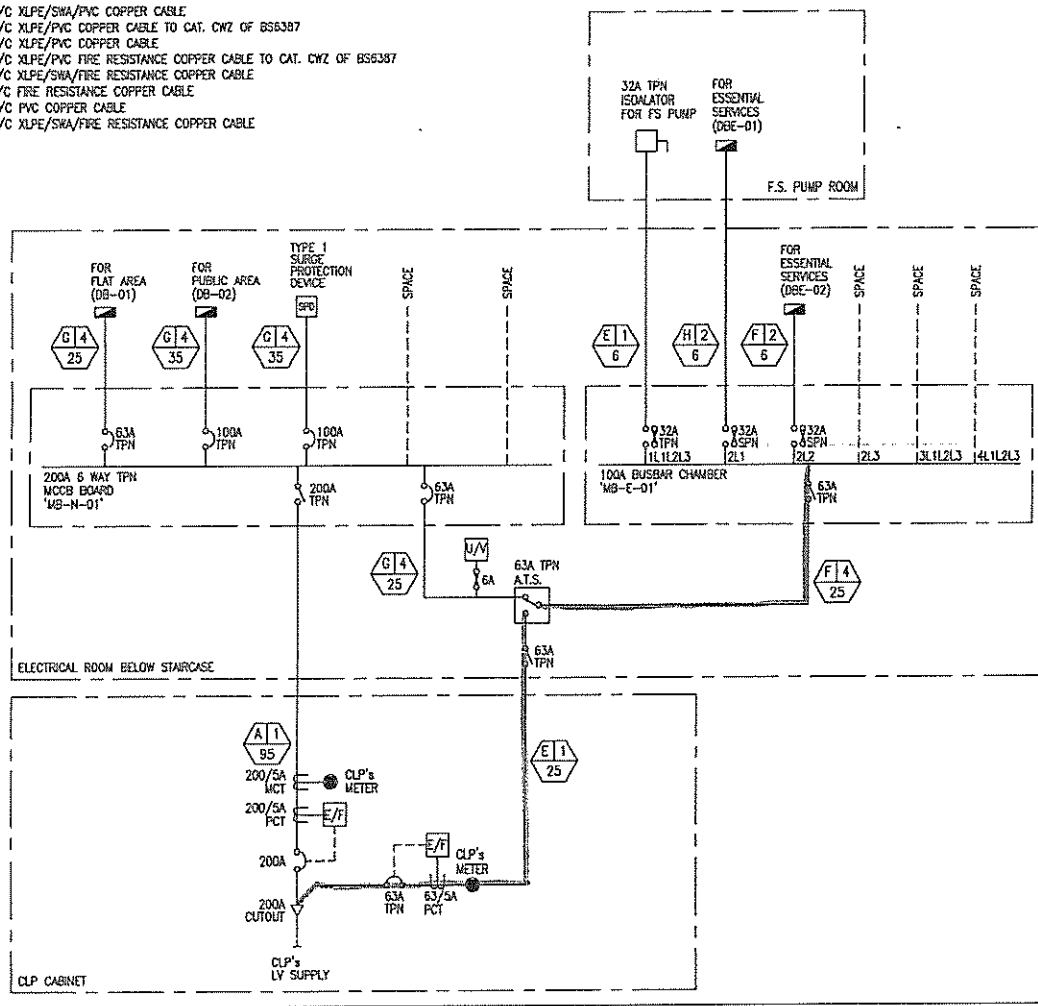


## NOTES:

1. THE POWER FACTOR SHALL BE AUTOMATICALLY CORRECTED UPON MEASUREMENT AT MCCB SWITCHBOARD OF THE ACTUAL POWER FACTOR. THE CORRECTION SHALL BE IN MULTIPLE STEPS TO ACHIEVE THE POWER FACTOR 0.85 LAGGING IN THE ELECTRICAL SYSTEM. ANY LEADING POWER FACTOR SHALL NOT OCCUR DURING OPERATION OF THE CORRECTION DEVICE.
2. CLEAN EARTH FOR TELECOMMUNICATION EQUIPMENT LESS THAN 3 ohm AT SKIRT LEVEL SHALL BE PROVIDED.
3. UNLESS OTHERWISE SPECIFIED, ALL ACB, MCCB, FUSE SWITCH ISOLATOR ARE TPN TYPE.
4. THE CONTRACTOR SHALL CO-ORDINATE WITH OTHER CONTRACTORS FOR THE EXACT LOCATION OF POWER SUPPLY TO THE OTHER SERVICES FOR APPROVAL.
5. CABLE LABEL SHALL REFER TO THE FOLLOWING:


 TYPES OF CABLE  
 QUANTITY OF CABLE  
 CONDUCTOR CROSS SECTIONAL AREA (mm<sup>2</sup>) FOR CABLE

- A - 4/C XLPE/SHA/PVC COPPER CABLE  
 B - 1/C XLPE/PVC COPPER CABLE TO CAT. CWZ OF BS6387  
 C - 1/C XLPE/PVC COPPER CABLE  
 D - 1/C XLPE/PVC FIRE RESISTANCE COPPER CABLE TO CAT. CWZ OF BS6387  
 E - 4/C XLPE/SHA/FIRE RESISTANCE COPPER CABLE  
 F - 1/C FIRE RESISTANCE COPPER CABLE  
 G - 1/C PVC COPPER CABLE  
 H - 2/C XLPE/SHA/FIRE RESISTANCE COPPER CABLE



Rev	Description
0	SHOP DRAWING
A	SHOP DRAWING
B	SHOP DRAWING
AF	AS-FITTED DRAWING

Rev	Drawn	Checked	Approved	Date

Check all measurements on site. Do not make off drawings.  
 This drawing is to be read in conjunction with the Specification and any discrepancies are to be immediately reported to the Architect.  
 This drawing remains the copyright property of the Architect and is not to be reproduced in whole or in part without permission of the Architect.

Project Title  
**CIC - MIC DEMONSTRATION PROJECT**

Drawing Title  
**ELECTRICAL SYSTEM SCHEMATIC WIRING DIAGRAM**

Drawn By  
 Checked By  
 Approved By

Project No. Issue Date.

Cad File No. (dwg)

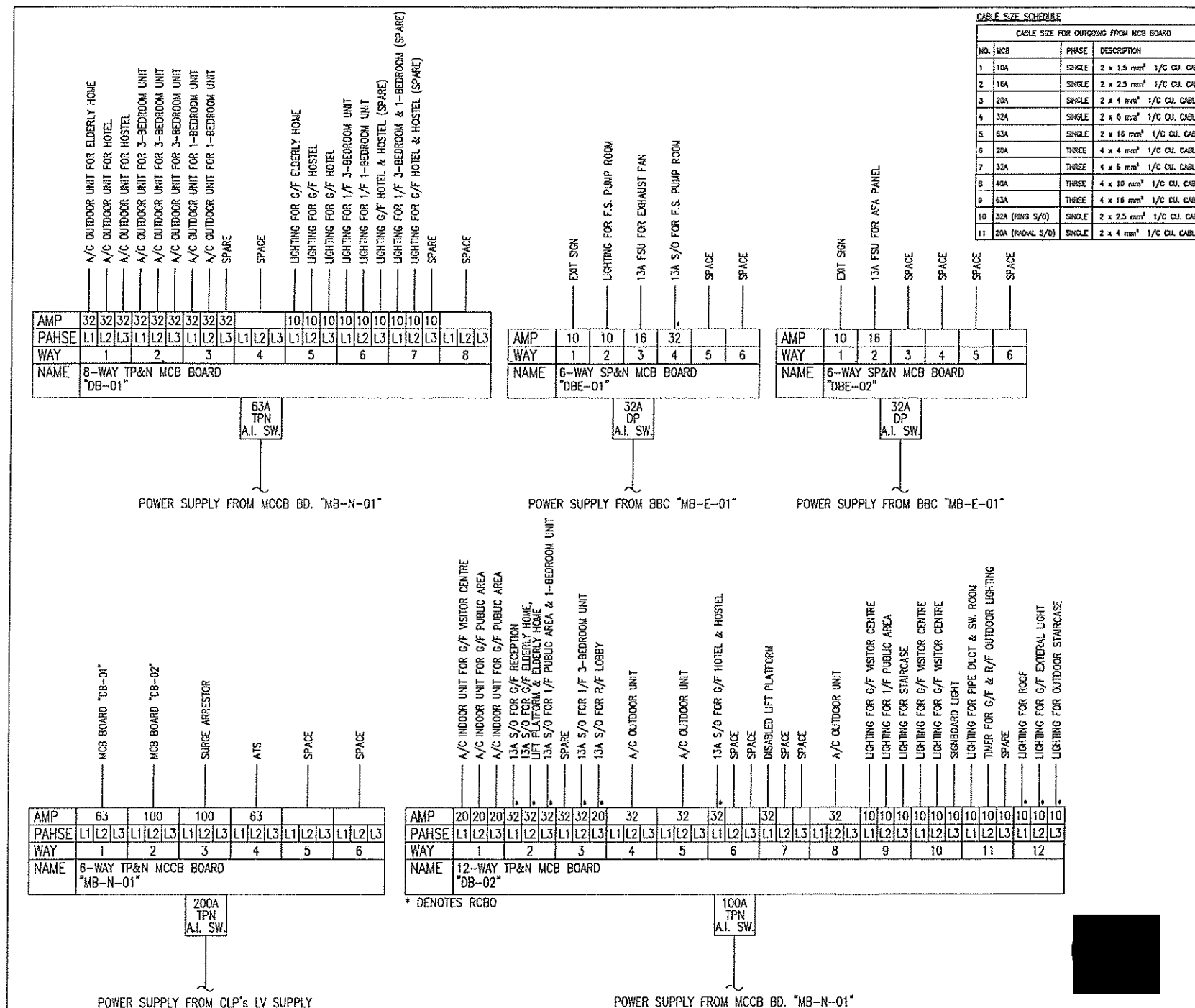
SCALE  
NIL

Drawing No.  
**J3711/EL/102**

Authorised Person's/  
 Registered Structural Engineer's Signature

CLIENT





Rev	Description
AF	AS-FITTED DRAWING

Rev	Drawn	Checked	Approved	Date

Check all measurements on site. Do not scale off drawings.  
This drawing is to be read in conjunction with the Specification and any discrepancies are to be immediately reported to the Architect.  
This drawing remains the copyright property of the Architect and is not to be reproduced in whole or in part without permission of the Architect.

Project Title  
CIC - MIC DEMONSTRATION  
PROJECT

Drawing Title  
MCB BOARD DETAIL

Drawn By			
Checked By			
Approved By			

Project No.	Issue Date.
-------------	-------------

Cad File No. (dwg)

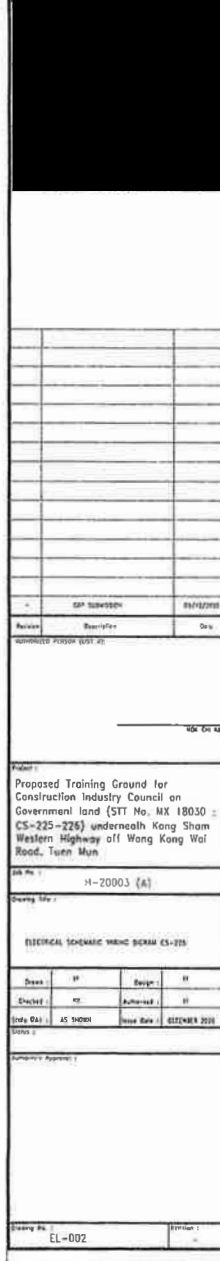
SCALE. \_\_\_\_\_

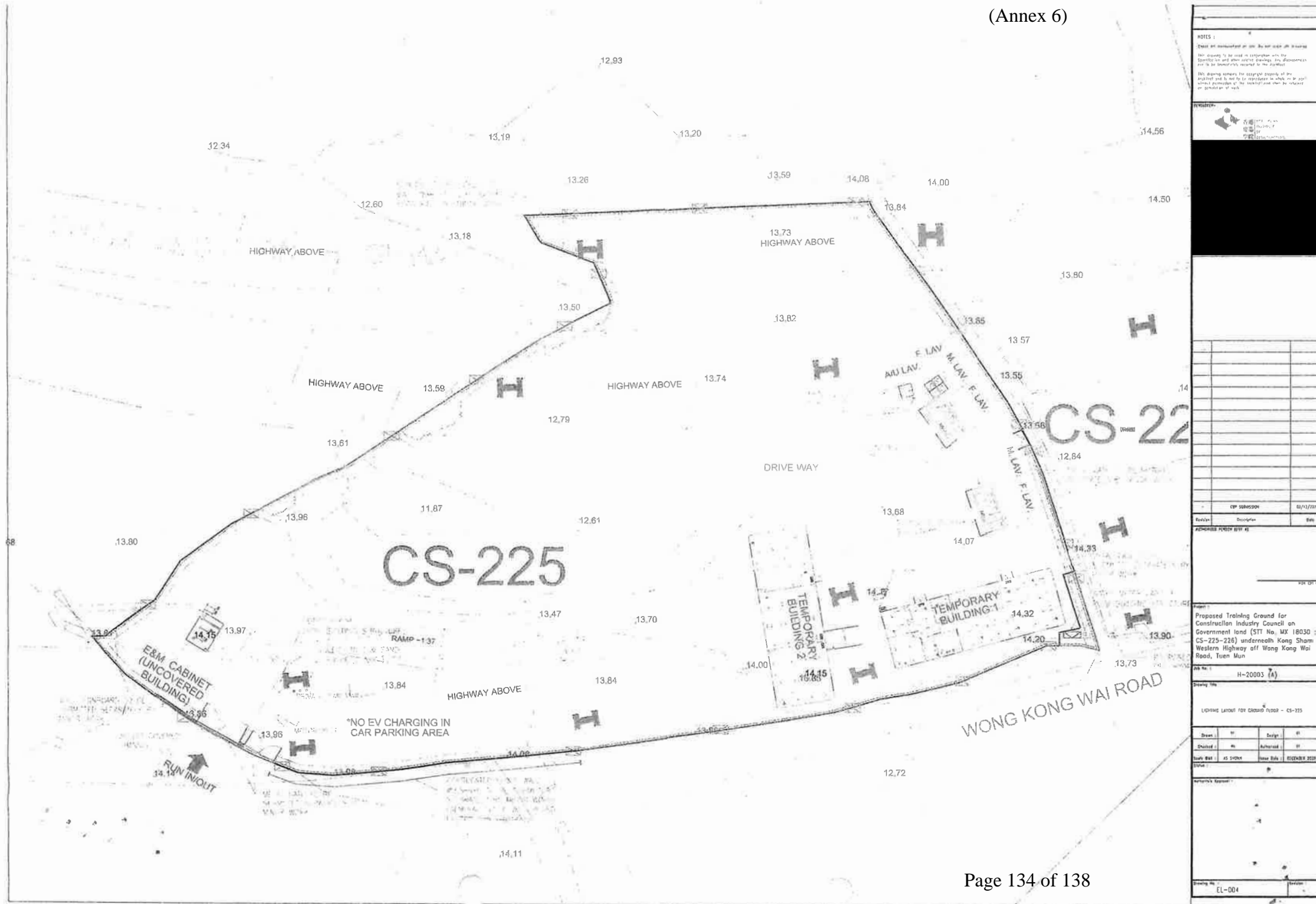
Drawing No.  
J3711/EL/112

Authorized Person's/  
Registered Structural Engineer's Signature

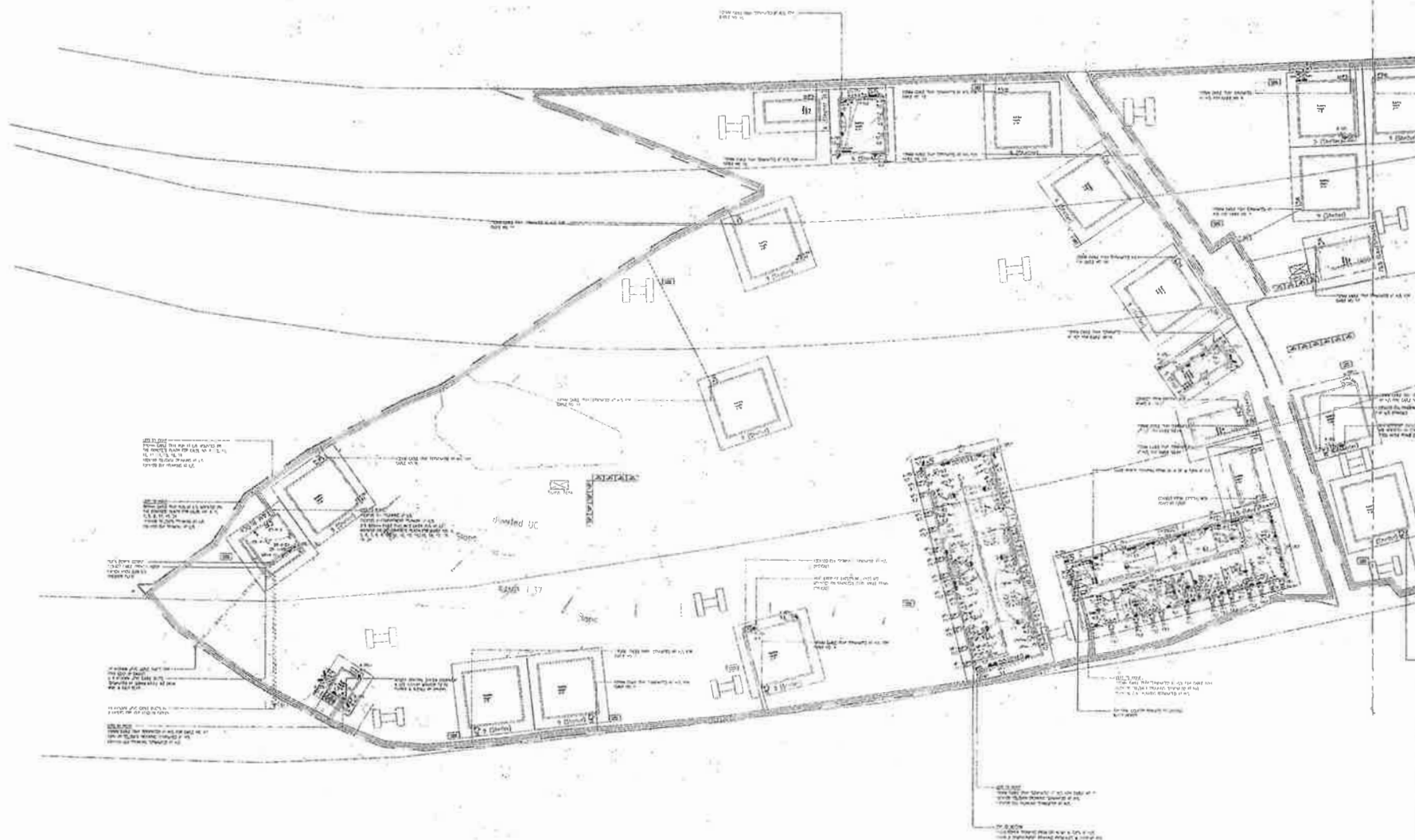


CONSTRUCTION  
INDUSTRY COUNCIL  
建造業議會

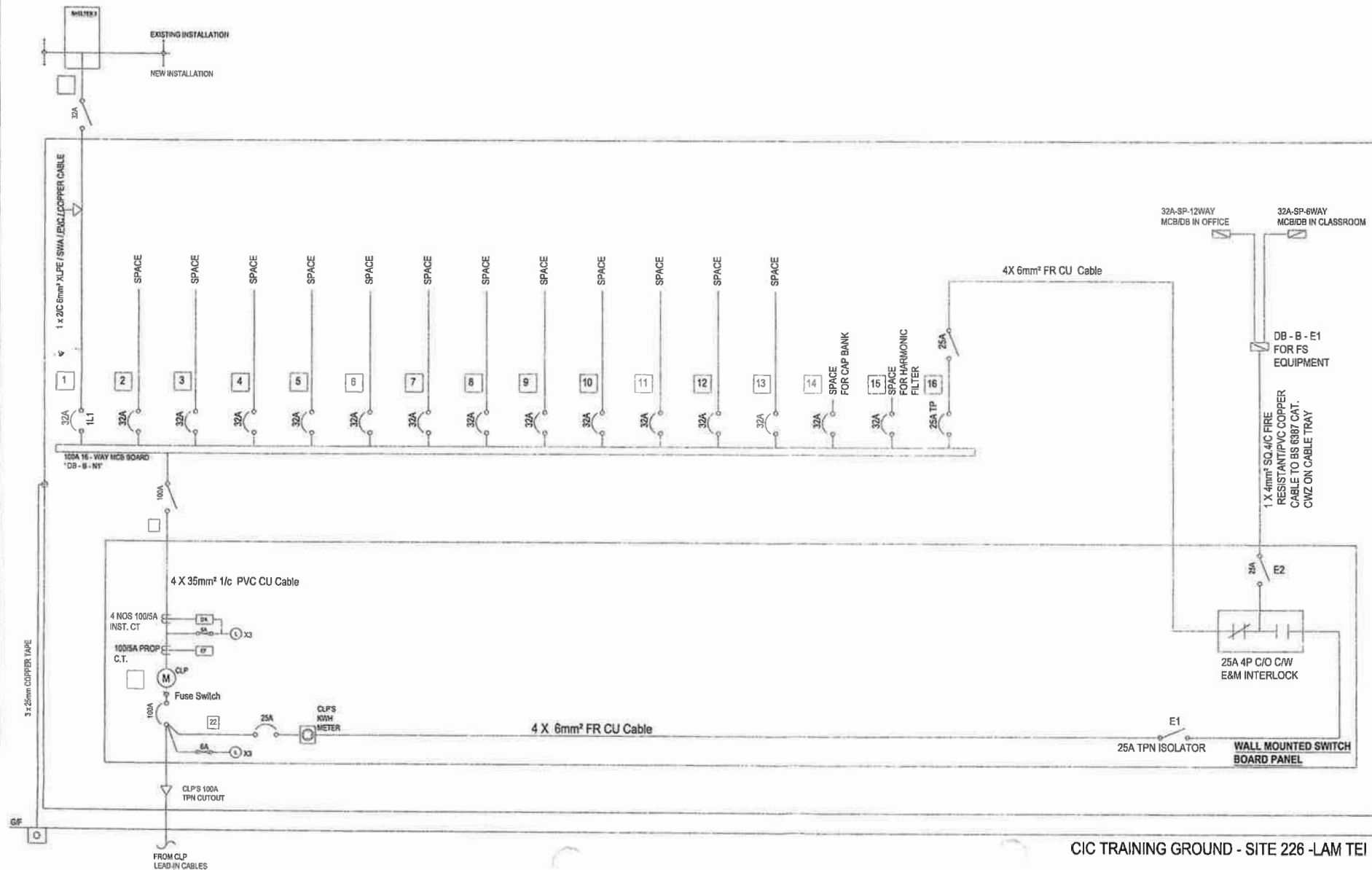


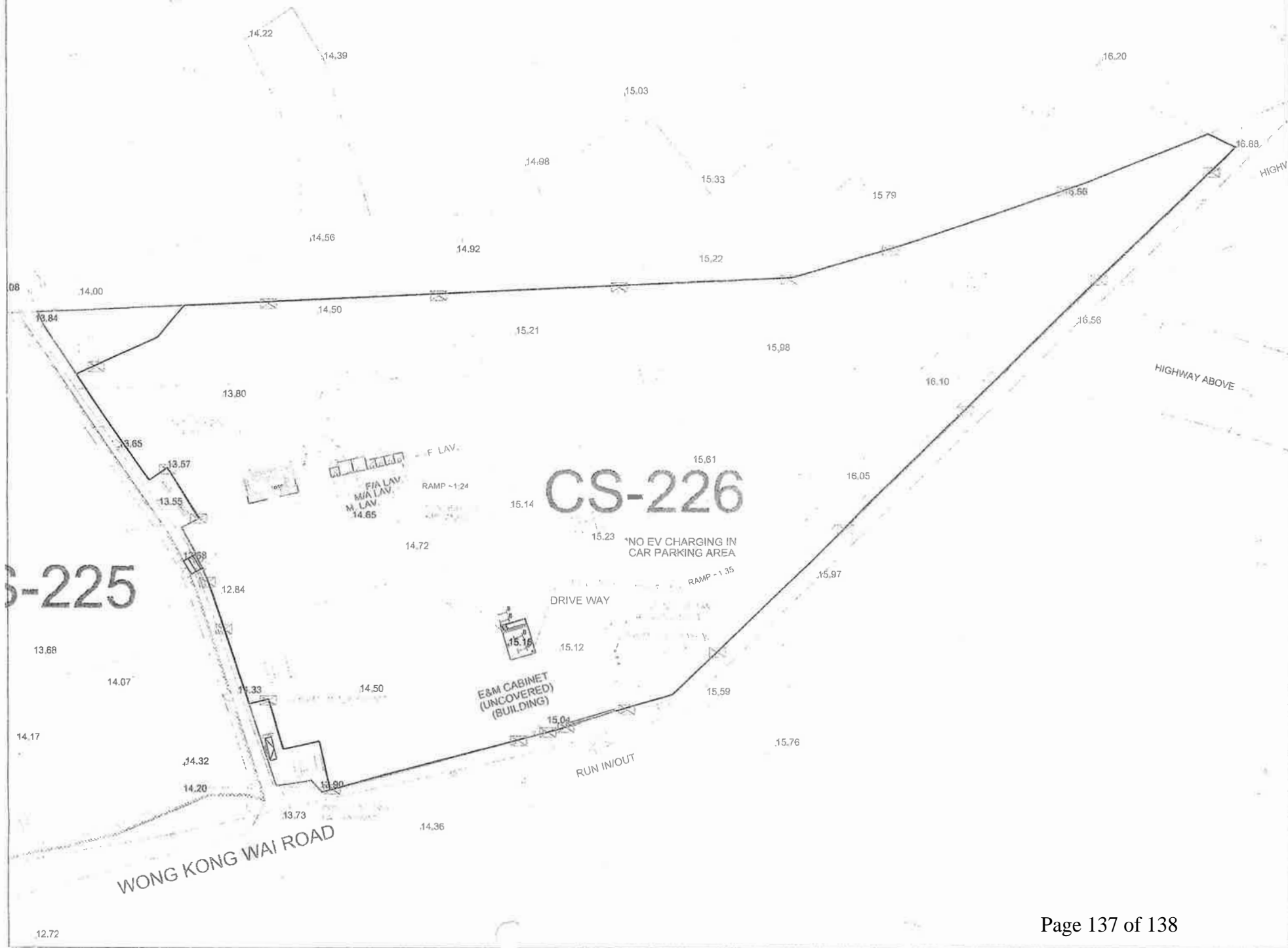


Rev. No. : 2/2000 (A)																	
Date : 2/2000																	
<b>NOTES :</b> Check all measurements on site. See also other drawings. This drawing is to be used in conjunction with the Specification and other related drawings. Any discrepancies are to be immediately reported to the Engineer. This drawing represents the existing property of the Engineer and is not to be used for any other purpose without the permission of the Engineer and shall be used as a guide only.																	
<b>LEGEND :</b> 																	
<table border="1"> <thead> <tr> <th>Rev. No.</th> <th>Description</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Initial</td> <td>01/01/2000</td> </tr> <tr> <td>2</td> <td>Revised</td> <td>02/01/2000</td> </tr> </tbody> </table>		Rev. No.	Description	Date	1	Initial	01/01/2000	2	Revised	02/01/2000							
Rev. No.	Description	Date															
1	Initial	01/01/2000															
2	Revised	02/01/2000															
<b>PROJECT :</b> Proposed Training Ground for Construction Industry Council on Government land (STT No. MX 18030 : CS-225) underneath Kowloon Western Highway off Wang Kong Wei Road, Tuen Mun																	
<b>Rev. No. :</b> 4-20003 (A)																	
<b>Drawing Title :</b>																	
<b>ELECTRICAL LAYOUT FOR GROUND FLOOR - CS-225</b>																	
<table border="1"> <thead> <tr> <th>Drawn</th> <th>By</th> <th>Design</th> <th>By</th> </tr> </thead> <tbody> <tr> <td>Drawn</td> <td>By</td> <td>Design</td> <td>By</td> </tr> </tbody> </table>	Drawn	By	Design	By	Drawn	By	Design	By	<table border="1"> <thead> <tr> <th>Checked</th> <th>By</th> <th>Approved</th> <th>By</th> </tr> </thead> <tbody> <tr> <td>Checked</td> <td>By</td> <td>Approved</td> <td>By</td> </tr> </tbody> </table>	Checked	By	Approved	By	Checked	By	Approved	By
Drawn	By	Design	By														
Drawn	By	Design	By														
Checked	By	Approved	By														
Checked	By	Approved	By														
<b>Scale :</b> AS SHOWN																	
<b>Notes :</b>																	
<b>Contractor's Approval :</b>																	
<b>Drawing No. :</b> EL-001																	



REMARKS: EXISTING UNDERGROUND GOVERNMENT WATER MAINS WITHIN THE SITE BOUNDARY ARE INDICATED ON WSP'S DRAWING [DWG. NO. W67880/6-NW-17C&22A] NO DIVERSION WORKS WILL BE CARRIED OUT. NO E&M SERVICES OR ANY OBSTRUCTION IS ALLOWED TO BE INSTALLED WITHIN 1.5 METERS FROM THE CENTERLINES OF THE EXISTING WATER MAINS OR WITHIN A DISTANCE OF 1 METER FROM ANY HYDRANT OUTLET OF THE GOVERNMENT WATER MAINS.





NOTES:

1. This drawing is to be used in conjunction with the Specification and other related drawings. Any discrepancies are to be corrected by reference to the Specification.

2. This drawing remains the copyright property of the Engineer and shall not be reproduced or used in any form without permission of the Engineer and shall not be liable for completion of work.

ENGINEER:

PROJECT:

PROPOSED TRAINING GROUND FOR CONSTRUCTION INDUSTRY COUNCIL ON GOVERNMENT LAND (STI No. MX 18030 : CS-225-226) UNDERNEATH KONG SHAM WESTERN HIGHWAY OFF WONG KONG WAI ROAD, TUN MUN

DATE: H-20003 (A)

DRAWING TITLE: LAYING LAND FOR GROUND FLOOR - CS-226

Drawn	By	Group	By
Checked	By	Reviewed	By
Scale	AS SHOWN	Scale	AS SHOWN

Author's Signature:

Signature:

Drawing No.: EL-005







# 检验检测报告

## Test Report



报告编号:	电委2018-11-0185
委托单位:	广州市文宝厨房设备有限公司
样品名称:	静电除油烟机
型号规格:	F104
报告日期:	2018年11月30日

广州质量监督检测研究院

## 重要声明

- 1、广州质量监督检测研究院（下称“本院”）是广州市人民政府依法设置的综合性产品质量监督检验检测机构，属社会公益型的非营利性技术机构，为各级政府执法部门进行监督管理提供技术支持和接受社会各界的委托检验。
- 2、本院及设立的国家产品质量监督检验中心（下称“中心”）和省级授权产品质量监督检验机构（下称“省站”）保证检验检测的科学性、公正性和准确性，对检验检测的结果负责，并对委托单位所提供的样品和技术资料保密。
- 3、报告无主检、审核和批准人员签字，或涂改，或未盖本院（中心、省站）“检验检测专用章”，或无骑缝章无效。未经本院（中心、省站）许可，不得部分复印、摘用或篡改本报告的内容。
- 4、送样委托检验检测结果仅对来样有效；未经本院（中心、省站）同意，样品委托人不得擅自使用检验检测结果进行不当宣传。
- 5、送样委托检验检测的样品及相关信息均由委托方提供，本院（中心、省站）不对其真实性及完整性负责。
- 6、对检验检测报告若有异议，应于报告收到之日起十五日内向本院（中心、省站）提出，逾期不予受理。
- 7、本院（中心、省站）未加盖资质认定标志（CMA）的检验检测报告，涉及未取得资质认定的项目，仅作为科研、教学或内部质量控制之用。

## 设立在广州质量监督检测研究院的国家质检中心和省级授权质检机构

国家包装产品质量监督检验中心（广州）

国家化妆品质量监督检验中心（广州）

国家高分子工程材料及制品质量监督检验中心（广东）

广东省质量监督日用化工产品检验站

广东省质量监督鞋类产品检验站

广东省质量监督钟表检验站

广东省质量监督计算机和网络产品检验站

广东省质量监督婴童产品检验站

广东省质量监督家用及类似用途电源产品检验站（广州）

## 业务联系方式

化工业务部      020-83186957   83193967   83392709   31002536

轻工包装业务部   020-83354114   83398676   83183524   82022363

建材消防业务部   020-83334528   82022335   83355302   82020817

轻工机电业务部   020-82022358   83398701

投诉处理：质保审查部      020-83179105

样品退样：样品仓库      020-83186557

联系地址：广州市番禺区石楼潮田工业区珠江路1-2号（总部），邮编：511447

广州市越秀区八旗二马路38号（分部），邮编：510110

## 报告进度和真伪查询

方式一：网站查询，网址[www.qmark.com.cn](http://www.qmark.com.cn)

方式二：二维码查询，见本报告第1页右下角

消防處  
牌照及審批總區  
通風系統課  
香港九龍九龍灣常悅道 11 號  
新明大廈 2 樓



(Attachment 4 - Annex 7)  
**FIRE SERVICES DEPARTMENT**  
**LICENSING & CERTIFICATION COMMAND**  
**Ventilation Division**  
2/F, Centre Parc, 11 Sheung Yuet Road,  
Kowloon Bay, Kowloon  
Hong Kong

本處檔號 Our Ref.: FP (LC) 316/28  
來函檔號 Your Ref.:  
圖文傳真 Fax: 2367 3206  
電話 Tel. No.: 3961 5299

1 April 2019

Man Po Engineering Co., Ltd.  
Unit C-D, 5/F.,  
Block A, Marvel Industrial Building,  
25-31 Kwai Fung Crescent,  
Kwai Chung,  
New Territories,  
Hong Kong



(Attn. : Mr. KWOK Ka-man)

Dear Sir,

**“Man Po” MP Series Electrostatic Precipitators**

I refer to your letters of 29.1.2019 and 15.3.2019 enclosing a set of test reports, a set of product catalogues, O&M manuals, drawings, valid quality certificates, safety door interlock photos and test reports with respect to the captioned products for our approval.

I would inform you that we have no objection to the use of Man Po “MP” Series electrostatic precipitators in mechanical ventilating and kitchen exhaust systems and subject to their compliance with Part XI of the FSD Circular Letter No. 4/96 and according to the following details:

Manufacturer	:	Guangzhou Man Po Kitchen Equipment Co., Ltd., PRC
Product Name	:	“Man Po” Electrostatic Precipitator
Model	:	“MP” Series a) F101,F102,F103, F104 b) F202, F203,F204 c) F303,304
Description	:	Duct-type unit, comprising stainless steel or galvanized steel casing, stainless steel pre / after mesh filters, stainless steel ionizer and collector cell (stainless steel and aluminium), auto-wash system and factory inbuilt control panel which includes power pack and electrical safety interlocking system.
Power Supply	:	Suitable for 220V, 50Hz single phase supply

/2....

Testing Laboratory : Guangzhou Quality Supervision and Testing Institute  
(廣州質量監督檢測研究院)

Test Reports : For Model F101, F102, F103, F104  
 a) No. 2018-12-0050 0004284-1 of 11.1.2019  
 b) No. 2018-12-0051 0004284-2 of 11.1.2019  
 c) No. 2018-12-0052 0004284-3 of 11.1.2019  
 d) No. 2018-12-0053 0004284-4 of 11.1.2019  
 For Model F202, F203, F204  
 e) No. 2018-12-0054 0004284-5 of 11.1.2019  
 f) No. 2018-12-0056 0004284-6 of 11.1.2019  
 g) No. 2018-12-0057 0006284-7 of 11.1.2019  
 For Model F303, F304  
 h) No. 2018-12-0058 0004284-8 of 11.1.2019  
 i) No. 2018-12-0060 0004284-9 of 11.1.2019

Test Standards : UL710:2017 (6<sup>th</sup> Edition) Exhaust Hoods for Commercial Cooking Equipment  
 UL867:2016 (5<sup>th</sup> Edition) Standard for Safety-Electrostatic Air Cleaners

Test Result : Conform to the applicable test criteria

Applications : General kitchen exhaust system

Remark : a) The electrostatic precipitator shall not be used in hazardous locations or for the handling of hazardous gases / mixtures.  
 b) All units shall be accompanied with an ex-factory inspection certificates issued by Guangzhou Quality Supervision and Testing Institute (廣州質量監督檢測研究院) to verify compliance with the above mentioned standards.  
 c) This assessment letter supersedes our previous one of the same series dated 4.3.2014.  
 d) This assessment is subject to review by January 2029 or with the updating of the test standard.

Yours sincerely,




(LEUNG Kam-man)  
for Director of Fire Services

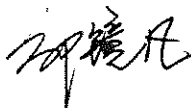
# 广州质量监督检测研究院 检 验 检 测 报 告

报告编号:电委2018-11-0185

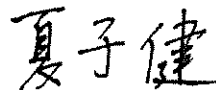
第 1 页 共 4 页

产 品 名 称		静电除油烟机	生产日期	----
商 标		MP	编号或批号	----
型号 / 规格 / 等级		F104	限用日期/保质期	----
			委托单号	0004283-4
委托单位	广州市文宝厨房设备有限公司	检验类别		抽样检验
		样品数量		1台
生产单位	广州市文宝厨房设备有限公司	委托日期	2018年11月14日	
来样方式	现场检验	验讫日期	2018年11月29日	
检验依据	UL 710:2017 (Edition 6) Standard for Safety for Exhaust Hoods for Commercial Cooking Equipment、UL 867: 2016 (Edition 5) Standard for Safety for Electrostatic Air Cleaners			
判定依据	UL 710:2017 (Edition 6) Standard for Safety for Exhaust Hoods for Commercial Cooking Equipment、UL 867: 2016 (Edition 5) Standard for Safety for Electrostatic Air Cleaners			
样品状况	正常			
检测环境说明	按标准要求			
检 验	所检项目符合UL 710:2017 (Edition 6)及UL 867: 2016 (Edition 5)标准要求。本次抽样检验项目合格。			
结 论	 签发日期: 2018年11月30日 此处未盖“检验检测专用章”本报告无效。			
备 注	1. 检验结果中“——”为“不适用”。 2. 抽样机身编号: MP-EP14-239、MP-EP14-240、MP-EP14-241、MP-EP14-242、MP-EP14-243、MP-EP14-244、MP-EP14-245、MP-EP14-246、MP-EP14-247、MP-EP14-248、MP-EP14-249、MP-EP14-250、MP-EP14-251、MP-EP14-252、MP-EP14-253、MP-EP14-254、MP-EP14-255、MP-EP14-256、MP-EP14-257、MP-EP14-258、MP-EP14-259、MP-EP14-260、MP-EP14-261、MP-EP14-262、MP-EP14-263、MP-EP14-264、MP-EP14-265、MP-EP14-266、MP-EP14-267、MP-EP14-268			

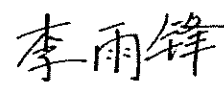
批准:



审核:



主检:




地址: 广州市番禺区石楼潮田工业区珠江路1-2号

(5645/2018.12.03)  
防伪查询码: 30880CE2263A7D17

# 广州质量监督检测研究院 检 验 结 果

报告编号: 电委2018-11-0185

第 2 页 共 4 页

序号	检验项目	单位	标 准 要 求	检 验 结 果	单项评价
			-----	-----	
1	总则	---	外壳、开口等不应有锐边。	符合标准要求	符合
			若外壳、框架的漏装或损坏会导致危险, 则这些部件应能适应预期的使用条件。	符合标准要求	
2	旋转部件	---	旋转部件应有足够强度以防断裂、松脱。	符合标准要求	符合
			旋转部件的安置应使: a) 按旋转方向收紧; b) 使用键、螺钉等来适当定位。	符合标准要求	
3	外壳和护栏	----	运动部件应加外壳或护栏。	-----	----
4	冲击试验	----	外壳部件应经受冲击试验且无损坏。	符合标准要求	符合
5	开关和联锁	----	开关 若开关的意外操作会造成危险, 则其执行机构应适当防护。	符合标准要求	符合
			联锁 若符合下列任一条件, 运动部件可以用联锁来防护: a) 盖子打开3秒内停止运动; b) 联锁装置阻止盖子打开, 直至部件停止运动。	----- -----	
6	外表面温度	°C	温升试验时, 外表面温度不应超过: 手柄或旋钮≤85。	47.8	符合
7	性能	----	测试电压及频率应符合标准要求。	符合标准要求	符合
8	泄漏电流	----- mA	所有的泄漏电流均应被测试。 正常使用时泄漏电流应≤0.5。	0.25	符合
9	潮湿条件下的 泄漏电流	----- mA	潮湿处理, 温度 (32±2)°C, 相对湿度 (88±2)%, 48h。 泄漏电流应≤0.5	0.31	符合
10	输入功率检查	----	应不大于额定功率的110%。 (额定功率: 350W, 实测功率: 251W)	71.7%	符合
11	输出电压检查	----	应不大于额定电压的110%。 (额定电压: 13000V, 实测: 13782V)	106.0%	符合
12	电源线拉紧放 松试验	----	15.9kg负荷试验后, 应符合标准要求。	-----	----
13	接地电阻	Ω	接地装置和其他任何需要接地的金属部件之间的接地回路的电阻≤0.1。	0.04	符合
14	温度试验	----	额定电压下, 以最大负载工作至稳定。 最大负载, 可以利用从短路至开路来模拟。	符合标准要求	符合
			a) 最大输出电流	-----	
			b) 最大输入电流	-----	
			c) 最大输入功率	符合标准要求	

批准:

何镜凡

审核:

夏子健

主检:

李雨锋



# 广州质量监督检测研究院 检 验 结 果

报告编号: 电委2018-11-0185

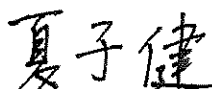
第 3 页 共 4 页

序号	检验项目	单位	标 准 要 求	检 验 结 果	单项评价
			----	----	
		℃	温度不得超过规定值。 接线端子≤75 内部连接线≤60 总开关≤55 绕组≤100	48.7 39.4 33.7 54.6	
15	耐压试验	----	在初级回路和暴露部件或接地固定金属之间, 施加1000V+2倍最大的额定初级电压值, 1min不击穿。	符合标准要求	符合
			在初级绕组和次级绕组之间, 及次级绕组和谐振绕组之间, 施加最大电压测量值的125%或次级额定电压值 (两者取较大值), 1min不击穿。	符合标准要求	
			在有一个终端连接至外壳的初级绕组全部终端之间, 施加最大额定初级电压值的150%电压, 1min不击穿。	符合标准要求	
16	燃烧测试	-----	试验期间, 出口气体温度不应超过190℃。	102.7℃	符合
			火焰不能进入与排烟机连接的导管。	符合标准要求	
			导管中的油不能点燃。	符合标准要求	
			机内的油不能渗透到外面。	符合标准要求	
			烟罩的金属部件 (材料: 304不锈钢) 不应超过767℃。	209.4℃	
17	非正常操作	----	产品在使用过程中, 不会因操作不当而引起火灾或电击的危险。	符合标准要求	符合
18	稳定性	----	便携式或固定的产品倾斜到与水平线成10度角时不应翻倒, 在测试过程中产品不通电。	符合标准要求	符合
19	电源线后推释放试验	----	在离产品1英寸 (25.4毫米) 的电源线上施加不大于6磅 (26.7 N) 的后推力, 直到电源线弯曲, 试验结果应符合标准要求。	-----	----
20	收集器手柄牢固测试	----	除便携式和家用式产品外, 连接在收集器上用于移动的手柄应能承受收集器本身重量的4倍, 试验期间手柄不应损坏。	符合标准要求	符合
21	清洗	----	带有固定安装的用于清洗离子收集器框架部件的管道式产品应符合下列规定: a) 应有联锁装置, 当自动或手动清洗时的电路应断电; b) 初级电路应有联锁装置, 当系统清洗时鼓风机风扇的电机应断电。	符合标准要求 符合标准要求	符合
			带有固定安装的用于自动或手动粘合离子收集器框架部件的管道式产品应有联锁装置: 当粘合剂开始清洗时, 电路和鼓风机风扇的电机均应断电。	-----	
22	通用变压器	%	变压器实测输出电压V1: ---- V, 变压器过载开路输出电压V2: ---- V $V2/V1 \times 100 \leq 2$ 。	-----	符合

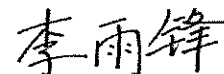
批准:



审核:



主检:




(5645/2018.12.03)

地址: 广州市番禺区石楼潮田工业区珠江路1-2号

防伪查询码: 30880CE2263A7D17

广州质量监督检测研究院  
检 验 结 果

报告编号: 电委2018-11-0185

第 4 页 共 4 页

序号	检验项目	单位	标 准 要 求	检 验 结 果	单项评价
			-----	-----	
		℃	变压器第一次50%负载时稳定的表面或内心温度T1: ----℃, 变压器第二次50%负载时稳定的表面或内心温度T2: ----℃。 T2-T1≤5。	-----	
		----	如果产品有保护装置, 则该项目可以省略。	符合标准要求	
23	热老化试验	----	经热老化试验后, 带电部件与非带电金属部件之间应能承受耐压试验。	符合标准要求	符合



批准: 何镜凡

审核: 夏子健

主检: 李雨锋







# 检验检测报告

## Test Report



报告编号:	电委2018-11-0187
委托单位:	广州市文宝厨房设备有限公司
样品名称:	静电除油烟机
型号规格:	F203
报告日期:	2018年11月30日

广州质量监督检测研究院

## 重要声明

- 1、广州质量监督检测研究院（下称“本院”）是广州市人民政府依法设置的综合性产品质量监督检验检测机构，属社会公益型的非营利性技术机构，为各级政府执法部门进行监督管理提供技术支持和接受社会各界的委托检验。
- 2、本院及设立的国家产品质量监督检验中心（下称“中心”）和省级授权产品质量监督检验机构（下称“省站”）保证检验检测的科学性、公正性和准确性，对检验检测的结果负责，并对委托单位所提供的样品和技术资料保密。
- 3、报告无主检、审核和批准人员签字，或涂改，或未盖本院（中心、省站）“检验检测专用章”，或无骑缝章无效。未经本院（中心、省站）许可，不得部分复印、摘用或篡改本报告的内容。
- 4、送样委托检验检测结果仅对来样有效；未经本院（中心、省站）同意，样品委托人不得擅自使用检验检测结果进行不当宣传。
- 5、送样委托检验检测的样品及相关信息均由委托方提供，本院（中心、省站）不对其真实性及完整性负责。
- 6、对检验检测报告若有异议，应于报告收到之日起十五日内向本院（中心、省站）提出，逾期不予受理。
- 7、本院（中心、省站）未加盖资质认定标志（CMA）的检验检测报告，涉及未取得资质认定的项目，仅作为科研、教学或内部质量控制之用。

## 设立在广州质量监督检测研究院的国家质检中心和省级授权质检机构

国家包装产品质量监督检验中心（广州）

国家化妆品质量监督检验中心（广州）

国家高分子工程材料及制品质量监督检验中心（广东）

广东省质量监督日用化工产品检验站

广东省质量监督鞋类产品检验站

广东省质量监督钟表检验站

广东省质量监督计算机和网络产品检验站

广东省质量监督婴童产品检验站

广东省质量监督家用及类似用途电源产品检验站（广州）

## 业务联系方式

化工业务部      020-83186957   83193967   83392709   31002536

轻工包装业务部   020-83354114   83398676   83183524   82022363

建材消防业务部   020-83334528   82022335   83355302   82020817

轻工机电业务部   020-82022358   83398701

投诉处理：质保审查部      020-83179105

样品退样：样品仓库      020-83186557

联系地址：广州市番禺区石楼潮田工业区珠江路1-2号（总部），邮编：511447

广州市越秀区八旗二马路38号（分部），邮编：510110

## 报告进度和真伪查询

方式一：网站查询，网址[www.qmark.com.cn](http://www.qmark.com.cn)

方式二：二维码查询，见本报告第1页右下角

消防處  
牌照及審批總區  
通風系統課  
香港九龍九龍灣常悅道 11 號  
新明大廈 2 樓



(Attachment 4 - Annex 7)  
**FIRE SERVICES DEPARTMENT**  
**LICENSING & CERTIFICATION COMMAND**  
**Ventilation Division**  
2/F, Centre Parc, 11 Sheung Yuet Road,  
Kowloon Bay, Kowloon  
Hong Kong

本處檔號 Our Ref.: FP (LC) 316/28  
來函檔號 Your Ref.:  
圖文傳真 Fax: 2367 3206  
電話 Tel. No.: 3961 5299

1 April 2019

Man Po Engineering Co., Ltd.  
Unit C-D, 5/F.,  
Block A, Marvel Industrial Building,  
25-31 Kwai Fung Crescent,  
Kwai Chung,  
New Territories,  
Hong Kong



(Attn. : Mr. KWOK Ka-man)

Dear Sir,

**“Man Po” MP Series Electrostatic Precipitators**

I refer to your letters of 29.1.2019 and 15.3.2019 enclosing a set of test reports, a set of product catalogues, O&M manuals, drawings, valid quality certificates, safety door interlock photos and test reports with respect to the captioned products for our approval.

I would inform you that we have no objection to the use of Man Po “MP” Series electrostatic precipitators in mechanical ventilating and kitchen exhaust systems and subject to their compliance with Part XI of the FSD Circular Letter No. 4/96 and according to the following details:

Manufacturer	: Guangzhou Man Po Kitchen Equipment Co., Ltd., PRC
Product Name	: “Man Po” Electrostatic Precipitator
Model	: “MP” Series a) F101,F102,F103, F104 b) F202, F203,F204 c) F303,304
Description	: Duct-type unit, comprising stainless steel or galvanized steel casing, stainless steel pre / after mesh filters, stainless steel ionizer and collector cell (stainless steel and aluminium), auto-wash system and factory inbuilt control panel which includes power pack and electrical safety interlocking system.
Power Supply	: Suitable for 220V, 50Hz single phase supply

/2....

Testing Laboratory : Guangzhou Quality Supervision and Testing Institute  
(廣州質量監督檢測研究院)

Test Reports : For Model F101, F102, F103, F104  
a) No. 2018-12-0050 0004284-1 of 11.1.2019  
b) No. 2018-12-0051 0004284-2 of 11.1.2019  
c) No. 2018-12-0052 0004284-3 of 11.1.2019  
d) No. 2018-12-0053 0004284-4 of 11.1.2019  
  
For Model F202, F203, F204  
e) No. 2018-12-0054 0004284-5 of 11.1.2019  
f) No. 2018-12-0056 0004284-6 of 11.1.2019  
g) No. 2018-12-0057 0006284-7 of 11.1.2019  
  
For Model F303, F304  
h) No. 2018-12-0058 0004284-8 of 11.1.2019  
i) No. 2018-12-0060 0004284-9 of 11.1.2019

Test Standards : UL710:2017 (6<sup>th</sup> Edition) Exhaust Hoods for  
Commercial Cooking Equipment  
UL867:2016 (5<sup>th</sup> Edition) Standard for  
Safety-Electrostatic Air Cleaners

Test Result : Conform to the applicable test criteria

Applications : General kitchen exhaust system

Remark : a) The electrostatic precipitator shall not be used in  
hazardous locations or for the handling of  
hazardous gases / mixtures.  
b) All units shall be accompanied with an ex-factory  
inspection certificates issued by Guangzhou  
Quality Supervision and Testing Institute (廣州質  
量監督檢測研究院) to verify compliance with  
the above mentioned standards.  
c) This assessment letter supersedes our previous  
one of the same series dated 4.3.2014.  
d) This assessment is subject to review by January  
2029 or with the updating of the test standard.

Yours sincerely,




(LEUNG Kam-man)  
for Director of Fire Services

# 广州质量监督检测研究院 检 验 检 测 报 告

报告编号:电委2018-11-0187

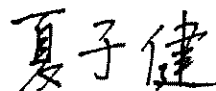
第 1 页 共 4 页

产 品 名 称	静电除油烟机	生产日期	----
商 标	MP	编号或批号	----
型号 / 规格 / 等级	F203	限用日期/保质期	----
		委托单号	0004283-6
委托单位	广州市文宝厨房设备有限公司	检验类别	抽样检验
		样品数量	1台
生产单位	广州市文宝厨房设备有限公司	委托日期	2018年11月14日
来样方式	现场检验	验讫日期	2018年11月29日
检验依据	UL 710:2017 (Edition 6) Standard for Safety for Exhaust Hoods for Commercial Cooking Equipment、UL 867: 2016 (Edition 5) Standard for Safety for Electrostatic Air Cleaners		
判定依据	UL 710:2017 (Edition 6) Standard for Safety for Exhaust Hoods for Commercial Cooking Equipment、UL 867: 2016 (Edition 5) Standard for Safety for Electrostatic Air Cleaners		
样品状况	正常		
检测环境说明	按标准要求		
检 验  结 论	<p>所检项目符合UL 710:2017 (Edition 6)及UL 867: 2016 (Edition 5)标准要求。本次抽样检验项目合格。</p> <div style="text-align: center;">  <p>签发日期: 2018年11月30日 此处未盖“检验检测专用章”本报告无效。</p> </div>		
备 注	<p>1. 检验结果中“——”为“不适用”。</p> <p>2. 抽样机身编号: MP-EP23-189、MP-EP23-190、MP-EP23-191、MP-EP23-192、MP-EP23-193、MP-EP23-194、MP-EP23-195、MP-EP23-196、MP-EP23-197、MP-EP23-198、MP-EP23-199、MP-EP23-200、MP-EP23-201、MP-EP23-202、MP-EP23-203、MP-EP23-204、MP-EP23-205、MP-EP23-206、MP-EP23-207、MP-EP23-208、MP-EP23-209、MP-EP23-210、MP-EP23-211、MP-EP23-212、MP-EP23-213、MP-EP23-214、MP-EP23-215、MP-EP23-216、MP-EP23-217、MP-EP23-218</p>		

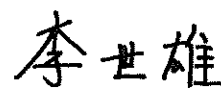
批准:



审核:



主检:




(5645/2018.12.03)

地址: 广州市番禺区石楼潮田工业区珠江路1-2号

防伪查询码: 0D3CA93B577C283C

# 广州质量监督检测研究院 检 验 结 果

报告编号: 电委2018-11-0187

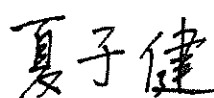
第 2 页 共 4 页

序号	检验项目	单位	标 准 要 求	检 验 结 果	单项评价
			----	-----	
1	总则	---	外壳、开口等不应有锐边。	符合标准要求	符合
			若外壳、框架的漏装或损坏会导致危险, 则这些部件应能适应预期的使用条件。	符合标准要求	
2	旋转部件	---	旋转部件应有足够强度以防断裂、松脱。	符合标准要求	符合
			旋转部件的安置应使: a) 按旋转方向收紧; b) 使用键、螺钉等来适当定位。	符合标准要求	
3	外壳和护栏	----	运动部件应加外壳或护栏。	-----	----
4	冲击试验	----	外壳部件应经受冲击试验且无损坏。	符合标准要求	符合
5	开关和联锁	----	开关 若开关的意外操作会造成危险, 则其执行机构应适当防护。	符合标准要求	符合
			联锁 若符合下列任一条件, 运动部件可以用联锁来防护: a) 盖子打开3秒内停止运动; b) 联锁装置阻止盖子打开, 直至部件停止运动。	-----	
6	外表面温度	℃	温升试验时, 外表面温度不应超过: 手柄或旋钮≤85。	52.4	符合
7	性能	----	测试电压及频率应符合标准要求。	符合标准要求	符合
8	泄漏电流	mA	所有的泄漏电流均应被测试。 正常使用时泄漏电流应≤0.5。	0.26	符合
9	潮湿条件下的泄漏电流	mA	潮热处理, 温度 (32±2)℃, 相对湿度 (88±2)%, 48h。 泄漏电流应≤0.5	0.29	符合
10	输入功率检查	----	应不大于额定功率的110%。 (额定功率: 700W, 实测功率: 480W)	68.6%	符合
11	输出电压检查	----	应不大于额定电压的110%。 (额定电压: 13000V, 实测: 13533V)	104.1%	符合
12	电源线拉紧放松试验	----	15.9kg负荷试验后, 应符合标准要求。	-----	----
13	接地电阻	Ω	接地装置和其他任何需要接地的金属部件之间的接地回路的电阻≤0.1。	0.04	符合
14	温度试验	----	额定电压下, 以最大负载工作至稳定。 最大负载, 可以利用从短路至开路来模拟。	符合标准要求	符合
			a) 最大输出电流	-----	
			b) 最大输入电流	-----	
			c) 最大输入功率	符合标准要求	

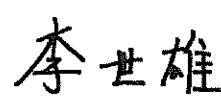
批准:



审核:



主检:




(5645/2018.12.03)

地址: 广州市番禺区石楼潮田工业区珠江路1-2号

防伪查询码: 0D3CA93B577C283C

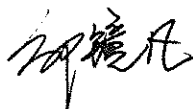
# 广州质量监督检测研究院 检 验 结 果

报告编号: 电委2018-11-0187

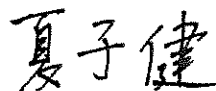
第 3 页 共 4 页

序号	检验项目	单位	标 准 要 求	检 验 结 果	单项评价
			----	----	
		℃	温度不得超过规定值。 接线端子≤75 内部连接线≤60 总开关≤55 绕组≤100	44.7 38.6 35.1 52.2	
15	耐压试验	----	在初级回路和暴露部件或接地固定金属之间, 施加1000V+2倍最大的额定初级电压值, 1min不击穿。	符合标准要求	符合
			在初级绕组和次级绕组之间, 及次级绕组和谐振绕组之间, 施加最大电压测量值的125%或次级额定电压值 (两者取较大值), 1min不击穿。	符合标准要求	
			在有一个终端连接至外壳的初级绕组全部终端之间, 施加最大额定初级电压值的150%电压, 1min不击穿。	符合标准要求	
16	燃烧测试	----	试验期间, 出口气体温度不应超过190℃。	104.5℃	符合
			火焰不能进入与排烟机连接的导管。	符合标准要求	
			导管中的油不能点燃。	符合标准要求	
			机内的油不能渗透到外面。	符合标准要求	
			烟罩的金属部件 (材料: 304不锈钢) 不应超过767℃。	216.7℃	
17	非正常操作	----	产品在使用过程中, 不会因操作不当而引起火灾或电击的危险。	符合标准要求	符合
18	稳定性	----	便携式或固定的产品倾斜到与水平线成10度角时不应翻倒, 在测试过程中产品不通电。	符合标准要求	符合
19	电源线后推释放试验	----	在离产品1英寸 (25.4毫米) 的电源线上施加不大于6磅 (26.7 N) 的后推力, 直到电源线弯曲, 试验结果应符合标准要求。	-----	----
20	收集器手柄牢固测试	----	除便携式和家用式产品外, 连接在收集器上用于移动的手柄应能承受收集器本身重量的4倍, 试验期间手柄不应损坏。	符合标准要求	符合
21	清洗	----	带有固定安装的用于清洗离子收集器框架部件的管道式产品应符合下列规定: a) 应有联锁装置, 当自动或手动清洗时的电路应断电; b) 初级电路应有联锁装置, 当系统清洗时鼓风机风扇的电机应断电。	符合标准要求 符合标准要求	符合
			带有固定安装的用于自动或手动粘合离子收集器框架部件的管道式产品应有联锁装置: 当粘合剂开始清洗时, 电路和鼓风机风扇的电机均应断电。	-----	
22	通用变压器	%	变压器实测输出电压V1: ---- V, 变压器过载开路输出电压V2: ---- V $V2/V1 \times 100 \leq 2$ 。	-----	符合

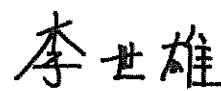
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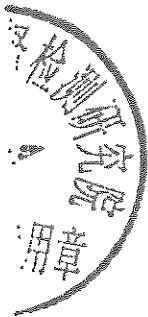
防伪查询码: 0D3CA93B577C283C

广州质量监督检测研究院  
检 验 结 果

报告编号: 电委2018-11-0187

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序号	检验项目	单位	标 准 要 求	检 验 结 果	单项评价
			-----	-----	
		℃	变压器第一次50%负载时稳定的表面或内心温度T1: ---℃, 变压器第二次50%负载时稳定的表面或内心温度T2: ---℃。 T2-T1≤5。	-----	
		----	如果产品有保护装置, 则该项目可以省略。	符合标准要求	
23	热老化试验	----	经热老化试验后, 带电部件与非带电金属部件之间应能承受耐压试验。	符合标准要求	符合



批准: 邵晓凡

审核: 夏子健

主检: 李世雄



(5645/2018.12.03)

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**Registered Safety Officer's Specification**

The duties of Safety Supervisor shall be as stipulated in the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations; The duties of the Safety Officer shall be solely directed towards safety and health matters. In addition to the duties stipulated in the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations, the Safety Officer's duties include:

i. Site inspection:

- Carry out comprehensive safety inspections on all activities on the Site including temporary works and scaffolding at weekly intervals. The safety inspection shall identify any unsafe operation or potential hazards;
- The Safety Officer shall be clearly identified on the Site by wearing an armband or a safety helmet appropriately marked in Chinese and English;
- The Contractor shall empower the Safety Officer to order any person working on the Site to suspend any unsafe operation or to take urgent action to make safe the Site or the Works or to disallow any practice which may infringe the Safety Plan or any statutory safety requirement;
- Give prior notice to the CM of the date and time of the weekly inspection and allow the CM or his representatives to attend the inspection;
- Liaise with the Nominated Sub-contractors' Safety Supervisors;
- Prepare safety inspection reports.

ii. Safety Plan:

- Supervise and monitor implementation of the Safety Plan;
- Ensure that sub-contractors and all persons working on the Site are made aware of and comply with the Safety Plan.

iii. Accident / Incident report, investigation and follow up actions:

Carry out the duties relating to accident / incident report, investigation and follow up actions as specified in the Safety Plan;

iv. Training:

- Include in the Safety Plan or its monthly update the programme and the number of workers to receive training including site specific induction training, tool box talks and Silver Card training for the coming month;
- Conduct general induction training, site specific induction training as specified. Supervise the conduction of tool box talks specified;

- Identify those workers in the specified trades without valid Silver Card and coordinate their enrolment in requisite Silver Card training provided by CIC;
  - At the end of each period of interim certificates report, report to the CM the actual number of workers trained as specified.
  - The safety officer shall be responsible for delivering all CIC's Contractor Safety Requirements and supplementary safety documents to site technical staffs, including management of contractor, supervisor, engineers, technicians, works and etc, and conducting safety training sections. A safety test/assignment shall be implemented for the staffs with acceptable evaluation before any work's commencement. Additionally, the training records and evaluation forms shall be properly documented in order to facilitate CIC's review if necessary
- v. Site Safety Committee:
- Arrange and coordinate Site Safety Committee;
  - Invite Nominated Sub-contractors' Safety Supervisors to attend Site Safety Committee meeting and other safety-related meetings.
- vi. Risk Assessment Report:
- Prepare risk assessment reports for the following month and recommend measures to remove or minimize hazards;
  - Adopt the methodology given at the leaflet Five Steps to Risk Assessment issued by LD.
- vii. Action on LD's contravention notices:
- Attend to the notices issued by LD to the Contractor advising that safety related regulations are contravened, in particular:
    - Construction Site (Safety) Regulations;
    - Subsidiary regulations of the Factories and Industrial Undertakings Ordinance.
  - Take all necessary actions to ensure full compliance with all statutory requirements;
  - Report monthly to the CM the following LD's notices received:
    - Construction Site Inspection Report with category Part I or Part II contravention;
    - Improvement Notice;
    - Suspension Notice.
- viii. Safety Officer's report:
- Compile and report the above duties to the CM at the monthly site meetings;
- ix. Safety and health training:
- Provide all employees and others with adequate information, instruction and training on safety and health. Adopt the methodology given at the guide Five Steps to Information, Instruction and Training issued by LD. State in the safety and health policy the detail arrangements for providing safety and health training;
  - The safety and health training shall include but not limited to the following:
    - General induction training;

- Site specific induction training;
  - Tool box talks;
  - Trade specific safety and health training to be arranged and conducted by the respective Nominated Sub-contractors;
  - Silver Card training;
  - Lunchtime's safety talks.
- x. Programme for inspection, thorough examination and testing of hazardous conditions:
- Closely monitor the implementation of the safety and health legal requirements, policies and procedures by effective arrangements including formal inspection, thorough examination and testing. This function must be allocated to suitably trained and experienced competent individuals. Reports (in the format prescribed by legislations if required) highlighting actions to be taken following an inspection shall be speedily prepared and issued to the appropriate manager and the CM;
  - Inspections should include, but not limited to:
    - Excavation, shafts, earthworks and tunnels;
    - Cofferdams and caissons, and suspected dangerous atmospheres;
    - All scaffolding;
    - All false work;
    - All working platforms;
    - Safety belts and anchorage systems (refer to the Guidance Notes on Classification and Use of Safety Belts and their Anchorage System issued by LD with respect to the information on some anchorage systems, the types, uses and specifications of safety belts under several national safety standards);
    - Coverings for openings;
    - Gangways and runs;
    - Guard rails, barriers, toe boards and fences;
    - Local exhaust;
    - Pressure system and gas containers;
    - Breathing apparatus, revival and other safety and rescue equipment;
    - Electrical equipment and appliances;
    - Fire fighting equipment;
    - First-aid box provisions.
  - Inspections, thorough examination and testing shall include, but not limited to:
    - Suspended working platforms;
    - Lifting appliances and lifting gear;  
(Refer to the Construction Sites (Safety) Regulations and the Guidance Notes on Inspection, Thorough Examination and Testing of Suspended Working Platforms and the Guidance Notes on the Inspection, Thorough Examination and Testing of Lifting Appliances and Lifting Gear issued by LD).
    - Tower cranes (including its anti-collision system), static and mobile cranes;

- Material hoists and passenger lifts.
- xi. Accident / Incident report, investigation and follow up actions:
- Report accidents / incidents and dangerous occurrence as defined in the Factories and Industrial Undertakings Regulations to LD in the prescribed Form 2 with Supplementary Information on Accidents on Construction Sites & Dangerous Occurrence Report Form;
  - Copy such reports to the CM according to GCC Clause 5.21;
  - Notify the CM immediately of all 'reportable accidents' as defined under the Factories and Industrial Undertakings Regulations and of the accidents / incidents to be reported in prescribed forms using smartphone or the web through the Housing Authority Safety Alert Module and followed by submission of a hard copy of the completed documents to the CM under the accident / incident reporting procedures of the HD set out at the Housing Authority Site Safety Website and comply with the procedures;
  - Notify the HD Site Staff immediately (i.e. within the day of the accident / incident) of accidents / incidents on Site, including:
    - Serious accidents / incidents;
    - Reportable accidents, dangerous occurrence and near miss / incidents (if the accidents / incidents, though not serious by immediate effect, may have potentially serious consequence, such as those involving but not limited to falling from height, falling object, being struck by moving object, injury to head, profuse bleeding, injured person becoming unconscious, body of injured person pierced by foreign object, public safety etc.) on Site;
    - Death of person;
    - Tree failure incidents of any of the following nature occur:
      - > Loss of human life;
      - > Major injury where the injured is admitted or to be admitted to hospital;
      - > Substantial damage to properties;
      - > Serious / complete blockage to main pedestrian / vehicular access;
      - > Death of person.
  - Provide statistics and analysis of accidents / incidents, investigate and ascertain the contributory factors and root causes, identify the trends and recommend means of prevention and improvement;
  - The accident / incident investigation shall include, but not limited to, the following major items:
    - Causes of the sub-standard safety performance;
    - Potential deficiencies of the safety control system;
    - Areas of review and lessons learnt;
    - Recommendations to prevent recurrences;
    - Improvements to the safety control system to meet the Legislations and recommendations of the investigation report.
- xii. Emergency preparedness:
- An emergency situation means a situation requiring emergency

assistance of fire services / police / ambulance etc.. It includes:

- An accident which results in death or serious injury;
  - A fire breaking out which requires rescue crews from Fire Services Department to effect control;
  - A flood that causes or threatens life on Site;
  - A leakage of dangerous goods or chemicals;
  - Any other accident / incident which creates a dangerous situation.
- Evacuation plans to be drawn for all areas. Call the hotline 999 and notify HD resident site staff immediately in case of emergency. Calling the local police station, fire services station and ambulance depot for police, fire services and ambulance can be accepted as an alternative to calling the hotline 999. The procedures are to be reviewed and revised periodically, especially when the work-site configuration is altered or changes in some way;
  - Prepare emergency procedures for the following situations:
    - Fire;
    - Accidents / Incidents;
    - Typhoons;
    - Heavy rainstorms, black rainstorms;
    - Tree failures;
    - Working in confined space;
    - Geotechnical concerns such as flood, landslip / rockfall, retaining wall failure, ground subsidence, or any land instability.

ANNEX 9 -  
SUPPLEMENTARY SAFETY  
DOCUMENT

# Content

## **Supplementary Safety Document**

- 1) Resurfacing of external area Works
- 2) Window Fabrication and Installation
- 3) Shutters / Door Fabrication and Installation
- 4) Tanking and Waterproofing
- 5) Refurbishment at External wall
- 6) Metal Work
- 7) Spalling repair
- 8) Chemical injection
- 9) Replacement of stop ball valve, water pipe or waste pipe

Appendix D of 5) Refurbishment at external wall – Form 2 Sample

Appendix D of 5) Refurbishment at external wall – Form 3 Sample

Appendix E of 5) Refurbishment at external wall – Form 1 Sample

Appendix F of 5) Refurbishment at external wall - Daily Checklist Sample

1) Resurfacing of external area Works

a) Method statement

1. Erect temporary railing around working area with warning notices of DANGER, NO ENTRANCE, TRAFFIC DIVERSION, in English and Chinese.
2. Take up and clear away the existing paving & planter system.
3. For Granolithic finish resurfacing, Mixed in cement and granite aggregate 1 : 2 (i.e. Type C ) and minimum quantity of water 1 : 3 (i.e. 4.5L : 14L) consistent with workability.
4. Mixed by mechanical mixer or, where any other approved mixing method.
5. Lay monolithic and bonded screeds in one coat.
6. Lay and compact screeds level or to falls, as required.
7. Cement sand screeds shall be fully cured prior to re-open to public.
8. Screeds shall be laid in bays, 20m<sup>2</sup> per bay for screed thickness not greater than 15 mm.
9. Approved joint filler or approved joint sealant with polyethene foam backing rod placed at each designated locations
10. Allowing a minimum of 12 hours to elapse between the laying of adjoining bays.
11. The working area will be temporarily separated during screeding procedure and provide necessary instruction & signs for alternative accessibility to pedestrian at all times during the course.
12. Cleaning and entirely re-open site to the public.

“Sikadur® Combiflex® SG System” joint sealing system

I. Surface Preparation

1. All concrete substrate must be clean, dry, sound, dense, defect-free and have an even and fine gripping structure. Chip off sharp protrusions with a hammer where necessary.
2. The substrate should have sufficient strength (min. compressive strength is 25 N/mm<sup>2</sup>) and moisture content less than 4%.
3. Insufficiently strong layers and oil contamination must be removed mechanically. Suitable preparation such as sandblasting, high-pressure water jetting or scrubbing/milling are required.
4. In case of large or deep cavities, the original concrete profile may be reinstated with cementitious mortar. Small cavities may be leveled using an epoxy mortar.

II. Mixing of Sikadur®-31 CF Normal

1. Under normal circumstances, full quantities of both components are mixed together.
2. Component B is added to component A and mixed with a low-speed mixer for at least 3 minutes with a mixing spindle attached to a slow speed electric drill (max. 300 rpm) until the material becomes smooth in consistency and a uniform grey colour.
3. Avoid aeration while mixing. Then, pour the whole mix into a clean container and stir again for approx. 1 more minute at low speed to keep air entrapment at a minimum.



4. Mix only that quantity which can be used within its potlife.

### **III. Application of Sikadur®-31 CF Normal**

1. Apply the mixed “Sikadur®-31 CF Normal” on both sides of the joint / crack onto the prepared substrate using a suitable trowel or spatula. If the concrete substrate is damp, force the adhesive firmly into the substrate.
2. The thickness of this layer of adhesive should be minimum ~2 mm and the width on each side of the joint / crack at least minimum 40 mm.

### **IV. Application of “Sikadur® Combiflex® SG”**

1. Select the correct tape size depends on expected performance.
2. Apply the “Sikadur® Combiflex® SG” tape within the open time of the adhesive.
3. Press the tape firmly, without entrapping air, into the adhesive using a suitable roller.
4. The adhesive should be squeezed out on both sides of the tape by ~5 mm.
5. In situations with high joint movement, place the tape into the joint as a loop.

### **V. Application of top layer of Sikadur®-31 CF Normal**

1. Apply the top layer of adhesive at a thickness of > 1 mm on both sides of the joint / crack, producing a fully covering layer.

### **VI. Sikadur® Combiflex® SG Tape connections**

1. The “Sikadur® Combiflex® SG” Tape ends are connected by hot air thermal welding.
2. The welding area must be prepared by abrading and roughening the surface with sandpaper. Roughen the tapes only in the welding areas otherwise their adhesive bond can be affected.
3. The corners of the overlap were chamfered.
4. Overlaps have to be 40-50 mm.

### **VII. Cleaning**

1. The uncured material can be cleaned with an approved solvent. The cured material can only be removed mechanically.
2. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

### **VIII. V. Protection**

- a. Protect from general traffic for at least 1 day after installation.

- Avoid application in drying wind

b) Safety precautions

Potential risks associated with the work:

1. Fall from height
2. Fall of object
3. Electrical Hazard
4. Noise Hazard
5. Housekeeping
6. Use of hand tools
7. Flying Object

Public safety

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

1. General Work Rules For Safety
2. Work from height
3. Chemicals and Hazardous Substances
4. Personal Protective Equipment
5. Prevention of Heat Stroke
6. Abrasive Wheel
7. Housekeeping
8. Fire Safety
9. Manual Handling

- The below refers to supplementary specific items for the works

(i) Falling Object

- Hand strap must be installed to the hand tools and electric hand tools, and must be worn by the workers during the detection and repair works if any.
- A catch fan made by wooden board should be provided and secured on the erected gondola to prevent objects such as screws falling from height.
- Safety netting should be installed from the edge of canopy to the ground floor and secured when necessary.
- Before and after each day works, site workers will be required to tidy and remove the debris from the gondolas as to minimize the possible of falling object.

(ii) Flying fragments

- Approved type eye protectors should be worn by workers

## 2) Window Fabrication and Installation

### a) Method Statement

- 1) Sufficient safety measures must be set up in the public area.
- 2) Basic protection must be provided before the maintenance works.
- 3) A qualified person should be appointed to carry out the maintenance and repair of aluminum windows.
- 4) The worker should wear the Personal Protective Equipment (PPE) if necessary, public area must be fenced
- 5) Safety measures must be provided and set up before the maintenance works.
- 6) Besides, safety advice for the whole works must be confirmed by qualified supervisor.
- 7) Take down & set aside the window grille, if any, and will be re-fixed or replaced to original location after the repairing works had been done.
- 8) Clean the surface of the window, such as a clean and dry cloth, so as to effectively fix the window before taking down. The appropriate tools should be used to secure the window  
Warning sign should be posted at the apparent location
- 9) To use suitable tool, such as a clean brush and chisel, to remove dust, dirt and any visible residue from the window and frame
- 10) REX 2003 Rexseal should be properly applied to rivet holes
- 11) Take down & set aside window sash(s) for preparation. When replace the fixing components such as screws and rivets, measures against bi-metallic action leading to corrosion must be taken to avoid direct contact between 2 incompatible materials. A common example of bi-metallic action is between aluminum & stainless steel, i.e. application of REX 2003 between hinge and frame/sash
- 12) In case of the original rivet holes were enlarged due to corrosion, we may consider adding stainless steel rivets at proper & spared position, as well as preserve the original fixed rivets for better security;
- 13) Take down, set aside 4-bar hinge and refix it with 6 nos. of 4.8mm dia. S.S. rivets and pointed with REX 2003 Rexseal (For if the window hinge is mal-functioned, replace the window hinge)
- 14) Apply REX 2003 Rexseal to the heads of the rivets to further improve resistance to corrosion
- 15) Ease, Adjust and Check the function and smoothness of windows after works.
- 16) Refix the window grille to original location (if any); Site clearance.

### b) Safety Precautions

Potential risks associated with the work:

- Electrical Hazard
- Fall from height
- Fall of object
- Housekeeping
- Use of hand tools
- Public safety
- Fire hazard

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

10 Electrical Safety

15 Working At Heights

07 Housing Keeping

05 Fire Safety

- The below refers to supplementary specific items for the works
  - (i) Fall of object
- Use of Toe Boards and Guardrails that install toe boards on scaffolding and elevated platforms to prevent tools or materials from sliding off.
- Guardrails help secure the perimeter and reduce the risk of items being accidentally knocked over
- Tool Lanyards and securing equipment that attach tools to workers using lanyards to prevent them from dropping.
- Secure loose materials and equipment Tool Lanyards and Securing Equipment
- Overhead Protection that use debris nets, catch platforms, or canopies to shield workers below from falling objects.
- Designate exclusion zones beneath overhead work areas and restrict access.
- Regular Inspections that inspect scaffolding, platforms, and equipment daily to ensure they're secure.
- Check that all fall protection systems are in place and functioning properly.

(ii) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't designed for (e.g., using a wrench as a hammer).
- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance<sup>(1)</sup>.

- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.
- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

### (iii) Public safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are a risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action plan that includes public protection measures.
- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

### 3) Shutters / Door Fabrication and Installation

#### a) Method statement

1. After material delivery, joint inspection of doors and frame will be held by EO & contractor
2. Material Checking and approved by PSA representative
3. Awaiting approval of installation of door and frame from EO
4. Preparation of works to specific location
5. Provide necessary protection (i.e. fencing, floor protection, etc.) to door replacement.

##### **For Timber door:-**

6. Take down and cart away existing timber door and frame.
7. Supply and fix new door and frame, refer to relevant drawing
8. Bed frame with cement mortar to wooden door frame.
9. P/A wood preservative to wooden door frame at rear face.
10. Supply and fix the following new ironmongeries:
  - a) Stainless Steel pull handles
  - b) S.S. plate with acid etching.
  - c) 102x102x3mm thk. stainless steel butt hinges to BS 7352 : 1990 or BS EN 1935 : 2002
  - d) Ø 10 x 120mm Frame Anchors.
  - e) Rubber door stop.
  - f) Overhead door closer to BS EN 1154 : 1997 with self –adjusting back check, in standard or parallel installation (optional)

##### **For Metal Door:-**

11. Take down and cart away existing metal door and frame.
12. Supply and fix new door and frame, refer to relevant drawing
13. Bed frame with cement mortar to door frame.
14. Zinc Rich Primer should be painted to the affected area after welding procedure if any.
15. Supply and fix the following new ironmongeries:
  - a) Stainless Steel pull handles
  - b) S.S. plate with acid etching.
  - c) Ø 25 x 200 Long butt hinges for SS door & Ø 25 x 150 Long for GMS door
  - d) M10 x 75 mm Anchors Bolt for SS door & M10 Drop in Anchor with Screw for GMS door.
  - e) Overhead door closer to BS EN 1154 : 1997 with self –adjusting back check, in standard or parallel installation (optional)
16. All exposed metal surface of new door leaf and frame should be finished in approved colour with an approved synthetic painting system.
17. Make good all affected finishes adjoining the new door and match the existing.
18. Make good all affected areas.
19. Clean and tidy all working areas.
20. Works needed to be certified by EO right after completion

#### b) Safety Precautions

Potential risks associated with the work:

- Electrical Hazard
- Fall from height
- Noise Hazard
- Housekeeping
- Use of hand tools
- Public safety
- Collapse of roller shutter/Door

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

10 Electrical Safety

15 Work at Heights

28 Noise Control

07 Housekeeping

- The below refers to supplementary specific items for the works

(i) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't designed for (e.g., using a wrench as a hammer).
- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.

- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

## (ii) Public Safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action plan that includes public protection measures.
- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

## (iii) Collapse of roller shutter/Door

- Identify potential hazards such as mechanical failure, improper use, or environmental factors (e.g., wind, vibration).
- Check for worn-out components, non-standard parts, or unauthorized modifications that could compromise safety.
- Install anti-fall devices to prevent uncontrolled descent in case of mechanical failure.
- Equip doors with hold-to-run controls and key switches to ensure deliberate operation only.
- Follow recognized standards such as BS EN 12453:2001 for powered rolling doors.
- Eliminate handholds and footrests to prevent people from being lifted or trapped.



- Ensure doors are CE marked if modified or refurbished significantly.
- Training and awareness that to train workers on safe operation procedures and emergency protocols.
- Educate staff on recognizing signs of malfunction and reporting issues promptly.
- Public and Worker Protection that to restrict access to areas near roller shutters during operation.
- Use barriers, warning signs, and overhead protection where necessary.

#### 4) Tanking and Waterproofing

##### a) Method statement

##### **Preliminary preparation**

- (i) All material should be fabricated off site and delivered to site to minimize disturbance to public and to suit the actual site conditions.
- (ii) External ground area from working location should be cordoned off to prevent hazard to pedestrians by falling objects.

##### **Work procedure**

##### (i) Work preparation:

- Any undulations or protrusions on the surface would be removed in order to obtain smooth surface. The surface must be thoroughly cleaned and free from dust, dirt loose materials, oil or grease.
- 50 x 50mm size fillet made of cement-sand (1:3) mix would be placed along corners of walls or neck columns and any other junctions
- Existing S.S. angle at the edge of the upper roof shall be loosen and temporary fix with longer screws for lapping of waterproofing membrane AII and after the membrane applied shall re-fix for make good.
- Cement-sand (1:3) mix is recommended as a patch repair / blinding layer to provide a smooth surface.

##### (ii) Application

- The deck must be rigid, smooth and clean of all debris.
- Roll out the material to full length and align 8/10 cm side lap.

- Roll material back again, torch the bottom surface of the membrane right before contact with the deck and then unroll it slowly and uniformly, pressing it down with feet to ensure bonding.
- For junctions, the end laps should be at least 10 cm and each excess roll should be placed on top of the previous roll starting from the drainage system onwards.
- Each finished overlap should be reheated by torch along the joint and melted bitumen should be spread with trowel to ensure a smooth connection.
- Rubber-bitumen sealant will be applied to the vertical corner of cement-sand (1:3) or concrete.
- Conduct water test when the works finished.

#### b) Safety Precautions

Potential risks associated with the work:

- Fall from height
  - Fall of object
  - Noise Hazard
  - Housekeeping
  - Use of hand tools
  - Public safety
  - Heat Stress
- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -
    - 15 Working At Heights
    - 28 Noise Control
    - 07 Housing Keeping
    - C38 Fire Safety
  - The below refers to supplementary specific items for the works

##### (i) Fall of object

- Use of Toe Boards and Guardrails that install toe boards on scaffolding and elevated platforms to prevent tools or materials from sliding off.
- Guardrails help secure the perimeter and reduce the risk of items being accidentally knocked over
- Tool Lanyards and securing equipment that attach tools to workers using lanyards to prevent them from dropping.

- Secure loose materials and equipment Tool Lanyards and Securing Equipment
- Overhead Protection that use debris nets, catch platforms, or canopies to shield workers below from falling objects.
- Designate exclusion zones beneath overhead work areas and restrict access.
- Regular Inspections that inspect scaffolding, platforms, and equipment daily to ensure they're secure.
- Check that all fall protection systems are in place and functioning properly.

#### (ii) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't designed for (e.g., using a wrench as a hammer).
- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance<sup>(1)</sup>.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.
- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

#### (iii) Public safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or

phases of construction are introduced.

- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are a risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action plan that includes public protection measures.
- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

## 5) Refurbishment at external wall

### a) Method statement

1. All workers must be equipped with suitable personal protective equipment.
2. Smoking is not allowed within the estate.
3. Adequate notices and warning signs will be posted at suitable locations during work in progress.
4. Gondolas should be installed on site after advanced notice is given to the Estate Management Office.
5. Gondolas should be enclosed with barriers at Ground Level.
6. Power supply to gondolas must be disconnected when unattended at Ground Level.
7. Overloading must be avoided at all time, easy understanding notices or guideline must be posted on gondola.
8. Safety Officer should ensure all the equipments & workers to fulfill all statutory requirements.
9. When gondola could not be used at some locations, double row scaffolding should be provided.
10. Before commencement of works, the Estate Management Office will be informed 7 days in advance.
11. Notices and warning signs will be posted on barriers during course of the works.
12. Hand strap should be provided to each worker for their use during in inspection and repairing work at gondola's operation.

### **Survey of the External Wall Mosaic Tiles, Painting, facade, etc.:**

1. Use the void detector to confirm the precise extent of the areas which need to be repaired and shall mark it out with CIC site staff prior to the removal of tiles. Form F1 shall be used for survey and repair record.
2. Mobile phone or walkie talkies will be used for proper communication.
3. Digital recorder will be used to record the detail of making out, repair and void detection. Video recording shall be finished with audio description of the works including locations (estate, block and elevations).
4. Our foreman should check the video for each column before shifting the gondola to next column. Surveying works should be re-do if any missing areas are found.
5. The sound record shall be easily identified under sound or hollow condition.
6. The video shall be passed to CIC site staff for record in electronic file format.

### **Repair to External Wall Render Patch & Mosaic Tiling - Option A**

- 1 The survey records will be used for the ordering of mosaic tile (wastage will be allowed). The delivery of the mosaic tile will be closely monitored for prompt delivery. No repair work will commence until the delivery of the mosaic tile to site. (i.e. if existing finishing is Mosaic Tiles)
- 2 The works should be completed stage by stage & column by column.
- 3 Each gondola erected would be properly fenced with tarpaulin sheeting to avoid falling objects down to street level. In addition, the works area at ground level should be fully fenced with barriers and covered with green net below the repairing columns.
- 4 Saw cutting shall be done by lightweight mechanical tools perpendicular to the surfaces for the full depth of the tiles around the perimeter of the area to be repaired. Cut lines shall follow the joints of the tiling to produce a square or rectangular area for repair.
- 5 Carefully break out tiles/rendering using hand held mechanical hammers or chisels.
- 6 Avoid large areas of tiles/rendering becoming detached during breaking out operations. CIC approval will be obtained before breaking out areas larger than the 'Marked-out Size' recorded.
- 7 If any sleeve bolt holes are found on the concrete substrate, repair the bolt hole in
- 8 Remove all dirt, grease, mould, oils, organic growth, loose and unsound materials by high pressure water jetting the repair area at minimum pressure of 2000 p.s.i. (Use brushes instead of jetting for areas within 150mm around windows)
- 9 While the repair surface is still damp, apply approved cement based bond coat to the repair area. Avoid covering too large area at any one time to ensure that the rendering is applied when the bond coat is still tacky.
- 10 For external render wall, apply new backing render according to standard approved by CIC

- 11 For tiled external walls, apply new backing render according to standard approved by CIC
- 12 Material for rendering shall be mixed in accordance with the manufacturer's Instructions.
- 13 Supply and lay approved mosaic wall tiles. (i.e. if existing finishing is Mosaic Tiles)
- 14 Paint & apply 1nos coat layer of sealer and 2nos coat layers of external emulsion paint on the wall surface (i.e. if existing finishing is render)
- 15 Form 20mm movement joints in tiling over existing movement joints and reinstate all previous movement joints.
- 16 Upon repairing works finished at each column, soundness test by void detector should be carried out and video recording shall be made.

**Repair to maintenance strategy for the cast-in anchor channels provided for hanging air-conditioner units at building facade**

- 1 If the channels are generally in good or fair condition, it is recommended to remove the rust, prime and repaint them during every cycle of redecoration works
- 2 If the overall condition of the block is fair but there are minor de-bonding of mosaic/rendering finishes in individual locations, the defects should be repaired and a gap sealed with sealant should be left adjacent to both sides of the channels.
- 3 If there are concrete spalling cases or serious de-bonding of rendering or mosaic finishes, the channels and defective concrete should be removed, then the voids be patched up with concrete repair mortar and re-finishes to match existing. The soffit of the fins shall apply paint for finishing. The works should be done whenever necessary, i.e. when safety hazard exists.

**Important Notes:-**

- Void Detection  
The contractor shall demonstrate the repair carried out is sound by detecting voids using the void detector tool.
- Materials bags and containers  
The contractor shall submit to the PO receipts of materials purchased and keep all used material bags and containers on site for checking.
- Notification to Project Officer for Inspection  
After repair of sleeve bolt holes, the Contractor shall give at least 1 day's notice to the PO for inspection;-
  - i. After breaking out
  - ii. After repair of sleeve bolt holes
  - iii. After cleaning of concrete substrate
- iv. Completion of void detection survey after the laying of new tiling/render finish
- Record drawings of repair  
The contractor shall provide record drawings of repaired areas. Each patch should have its own identification number.

## b) Safety Precautions

- 1 For the execution of refurbishment to external wall of the premises surround, high risk will be created to the site workers, users and the public such as fall of person and fall of object.
- 2 In order to minimize the potential risk and provide a safe working environment to site workers, purpose build and modified gondola to suit the profile. Gondola should be adopted as access and working platform, the temporary gondola should be certified safe by a Registered Professional Engineer before bring into use.
- 3 Temporary electric gondola will be anchored at the roof of the building and descend to the ground after work each time. A piece of long plywood should be hanged and fixed securely to the gondola leaning against the external wall of the building to catch the loose debris while breaking the tiles or renders. The gondola cages will be fitted with light weight duty screen at its railing to prevent flying particles fall down to the public area.
- 4 Form 1, 2 & 3, notice of safe working load and maximum persons carried should be displayed on gondola
- 5 In order to protect the public when removal of spalled concrete and mosaic tiles in progress, the affected areas including the area beside covered pedestrian pavement in building surround will be provided with safety nets and barriers. The safety net should be erected from the edge of any Canopy to the ground. And the underneath area of gondola will be fenced off by the plastic barriers. Adequate warning signs and diversion notices will be clearly displayed at prominent area site cleaning will be carried out on the work area to remove the debris generated. No object shall be throw down from height in the work progress.
- 6 In addition an assigned site agent/ foreman shall be engaged and going around the work site location to provide frequency and sufficient supervision and maintaining a safe environment for the public.

### Potential risks associated with the work:

- Gondola Operation
- Fall from height
- Fall of object
- Electrical Hazard
- Noise Hazard
- Housekeeping
- Use of hand tools
- Public safety

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

19 Safe Use of Suspended Working Platform

15 Work at Heights

10 Electrical Safety

07 Housekeeping

- Procedure about Suspended Working Platform (Gondola) Safety specifically for refurbishment of external wall, supplementary information as below: -
  1. The gondola shall be of good mechanical construction, made of strong and sound material, and free from patent defect,
  2. Every structure supporting the gondola shall be of good construction and adequate strength, of sound materials and free from patent defect,
  3. The arrangement for fixing, anchoring and supporting the gondola shall be adequate to secure its safety,
  4. To provide sufficient and secure roof anchorage and fittings which are designed and constructed for safe hanging of the gondola,
  5. The erection and relocation of the gondola shall be conducted by authorized and competent persons,
  6. The entire set up of the gondola including its suspension system shall be properly maintained, and shall be inspected by a competent person at least once per week and has a report in the prescribed form (Form 1),
  7. The lever, handle, switch or other devices used for controlling the operation of the gondola shall be clearly and legibly marked on it,
  8. The gondola shall be thoroughly examined by a competent examiner in every 6 months and after each substantial alteration or repair affecting its strength and stability, and has a certificate in the prescribed form (Form 2), and also it shall be load tested and thoroughly examined in every 12 months by a competent examiner with certificate in the prescribed form (Form 3). The competent examiner from The Standard Engineering & Consultants Limited. Form 2, 3, 6, 7 sample refer to Appendix D
  9. The gondola shall be clearly marked on it its safe working load and the number of riders allowed. Overloading shall be strictly prohibited,
  10. Wire ropes shall be of good construction, sound material, adequate strength and free from patent defect, with a test certificate in the prescribed form (Form 6 or Form 7),
  11. The gondola shall be thoroughly checked by a competent person in every week, and has a certificate in the prescribed form (Form 1), Form 1 sample refer to Appendix E. Daily check on the gondola safety must be carried out by the operator or site foreman. Daily checklist sample refer to Appendix F,



12. Safety net should be erected on the railings of the gondola to prevent material or object falling down ,
13. All gondola workers should be formally trained and obtain a gondola safety training certificates prior they are allowed to work on the gondolas, and all of them should be over the age of 18,
14. Independent life lines shall be provided and workers should attach their safety belts to the fall arrestor of the life lines,
15. Other personal safety equipment, such as safety helmet, gloves, eye goggles, ear plug must be worn by workers when necessary.
16. The workers should not be left gondola unless gondola down to appropriate location by co-worker or site foreman at 1/F platform or ground floor.
17. The control rope must be used if there is some obstacle under the gondola on ground floor. At least 2 Co-worker or foreman must use the control rope control the gondola up or down from ground floor to prevent the gondola crash the obstacle.
18. The control key of gondola must remove and keep by the foreman during the worker leave the gondola to prevent unauthorized used by tenants and public.
19. The electric supply box on the roof must been locked and the key must keep by the foreman to prevent unauthorized used by tenants and public.
20. Barrier shall be provided during the gondola stay on the ground floor to prevent tenants and public close to gondola.

- The below refers to supplementary specific items for the works

(i) Fall of object

- Use of Toe Boards and Guardrails that install toe boards on scaffolding and elevated platforms to prevent tools or materials from sliding off.
- Guardrails help secure the perimeter and reduce he risk of items being accidentally knocked over
- Tool Lanyards and securing equipment that attach tools to workers using lanyards to prevent them from dropping.
- Secure loose materials and equipment Tool Lanyards and Securing Equipment
- Overhead Protection that use debris nets, catch platforms, or canopies to shield workers below from falling objects.
- Designate exclusion zones beneath overhead work areas and restrict access.
- Regular Inspections that inspect scaffolding, platforms, and equipment daily to ensure they're secure.
- Check that all fall protection systems are in place and functioning properly.

(ii) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't designed for (e.g., using a wrench as a hammer).
- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance<sup>(1)</sup>.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels<sup>(2)</sup>.
- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

(iii) Public Safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and

reduced speed limits when construction affects roadways.

- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action plan that includes public protection measures.
- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

## 6) Metal Work

### a) Method statement

#### **Installation of metal parts**

1. Material delivery should carry out inspection and ensure the materials to fulfill all requirement and drawing.
2. Measurement of thickness of the cross section and checking of sufficient galvanized layer for different kinds of metal parts by sampling.
3. Cut and breaking out the existing defective metal parts
4. Remove all dirt, grease, oils, loose and unsound materials before installation of bolt anchors. Metal primer for galvanized metal should be applied to the soffit of the metal plates and the surface of the G.M.S. for preparing of painting
5. G.M.S bolt anchor should be installed for each holes of metal plates. Confirmation of proper leveling, straight alignment, and marked position after installed G.M.S bolt anchor.
6. Confirmed the all of materials fixing, installation and application should be in accordance with the manufacturer's instructions.
7. After welding procedure, galvanized paint for minor touch up should be applied to the welded location for protection.
8. Apply approved sealant around the metal plates if necessary and to fill up the spacing between the metal plate and concrete after installation of bolt anchor.
9. 1 coat of primer & 2 layers of coats of approved paint would be applied on the surface.
10. Reinstatement works, general cleansing and make good defective area after completion of works.

#### **Important Notes:-**

##### **1. Materials**

- i. The contractor shall submit the receipts of materials ordering and delivery note for checking.
- ii. All of the materials installation should ensure to fulfill all requirement of drawing, statutory requirements and manufactory's installation.

##### **2. Notification to Project Officer for Inspection**

The Contractor shall give at least half day to the PO for inspection;-

- i. Measurement of thickness of the cross section and checking of sufficient galvanized layer for different kinds of metal parts by sampling.
- ii. Carried out setting out and alignment line
- iii. After drilled holes for installation of bolt anchors
- iv. Apply paint by 1 coat of primer & 2 layers of coats of bitumen paint
- v. After completion

b) Safety Precautions

Potential risks associated with the work:

- Fall from height
- Fall of object
- Electrical Hazard
- Noise Hazard
- Housekeeping
- Use of hand tools
- Public safety
- Flying Object
- Fire Hazards

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

15 Work at Heights

10 Electrical Safety

28 Noise Control

07 Housekeeping

05 Fire Control

- The below refers to supplementary specific items for the works

(i) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't designed for (e.g., using a wrench as a hammer).
- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure

your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.

- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

## (ii) Public Safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action plan that includes public protection measures.
- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

## (iii) Flying Object

- Approved type eye protectors should be worn by workers

- 7) Spalling repair  
a) Method statement

**Spalling Repair Works**

- (i) Strut up dust screen to enclosed the working area and cover up wall & floor near the working area and access. (Enhanced Service Quality's item to be measured separately)
- (ii) Electric wire should be held on a height over 1.5m to avoid hazard to public.
- (iii) Protective barrier should be fencing off the equipment & material storage point if placed at public area.
- (iv) Warning Sign & notice should be provided to protective barriers & dust screen
- (v) Vacuum machine should be used for reduce the dust when carrying out works.
- (vi) Marking out the repair area.
- (vii) Saw cutting the perimeter of the defective concrete 10mm depth with electric disc cutter and using the vacuum pump cleaner to prevent the dust disspreading.
- (viii) Breaking out the defective concrete to min.10mm depth back of existing reinforcement bars with light electric breaker and removing all loose or cracked concrete until all remaining concrete appears solidly bonded together.
- (ix) Repairing the concrete substrate and remove rusty on existing reinforcement bars by machinery brushing, grinding, etc. to the exposed reinforcement before inspection.
- (x) Moisture should be sprayed before priming and apply bond coat. Priming the reinforcement and applying bond coat for the concrete substrate and primed reinforcement as per manufacturer's recommendation.
- (xi) Applying the repair mortar on the repaired areas by the quality worker.
- (xii) After the curing of the repaired mortar, paint the repaired areas with 1 coat of sealer & 2 coats of emulsion paint.
- (xiii) Clear up the working area.

## Repair works for floor Surface by Rapid-setting repair mortar

### **SURFACE PREPARATION**

- Break out the repair area to a depth of at least 10mm.
- Expose and remove all loose rust from corroded reinforcement.
- Apply *OPTIMIX PE Polymer Emulsion* cement slurry primer (*PE* : Cement = 1 : 1.5) to the cleaned reinforcement and allow to dry.
- Concrete substrate should be soaked with potable water to saturated surface dry conditions, and excess water should be removed.
- To improve bonding, Approved primer for mortar used to pre-treat the substrate before application of the mortar.

### **MIXING AND APPLICATION**

- Mix one bag of Approved fast setting mortar with specific amount of potable water to achieve the desired consistency.
- Mechanical mixing with pan mixer or slow speed drill fitted with a suitable paddle is recommended.
- The powder should be slowly added to the required amount of water and mixed for about 5 minutes or until a lump-free homogeneous mixture is achieved.
- The mortar should be placed within 10 minutes after mixing to ensure its fluidity.
- The mortar can normally be applied up to 50mm under a single application or 250mm with Approved 10mm Aggregate or proper graded aggregates.

### **CURING**

- With the excellent water retention properties of the mortar, self-curing of the applied mortar is considered adequate.
- Water curing is only required under extremely hot conditions or when excessive rapid drying occurs.

b) Safety Precautions

Potential risks associated with the work:

- Fall from height
- Fall of object
- Electrical Hazard
- Noise Hazard
- Housekeeping
- Use of hand tools
- Flying Object
- Public safety

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

15 Work at Heights

10 Electrical Safety

28 Noise Control

07 Housekeeping

- The below refers to supplementary specific items for the works

(i) Fall of object

- Use of Toe Boards and Guardrails that install toe boards on scaffolding and elevated platforms to prevent tools or materials from sliding off.
- Guardrails help secure the perimeter and reduce the risk of items being accidentally knocked over
- Tool Lanyards and securing equipment that attach tools to workers using lanyards to prevent them from dropping.
- Secure loose materials and equipment Tool Lanyards and Securing Equipment
- Overhead Protection that use debris nets, catch platforms, or canopies to shield workers below from falling objects.
- Designate exclusion zones beneath overhead work areas and restrict access.
- Regular Inspections that inspect scaffolding, platforms, and equipment daily to ensure they're secure.

Check that all fall protection systems are in place and functioning properly.

(ii) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't



designed for (e.g., using a wrench as a hammer).

- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.
- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

### (iii) Public Safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action

plan that includes public protection measures.

- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

(iv) Flying Object

Approved type eye protectors should be worn by workers

8) Chemical injection

a) Method statement

General

The repair materials should be of a single or low number of components. The Contractor shall submit evidence of previous track records, test records and manufacturer's recommendations in relation to his proposed repair materials and method statements for approval.

Injection equipment should consist of proper tool, hand pump or pump operated by controllable electrically pressurized device, mechanical packer, injection hose etc., as recommended by the manufacturer.

Polyurethane resin / gel should never come into contact with the eyes, nose and mouth.

All areas recorded with ' confirmed ' seepage or ' suspected ' seepage moisture readings according to measurement by approved moisture meter shall be repaired by chemical injection.

For chemicals injection to cracks with width wider than 0.3 mm, the cracks shall be sealed up first with materials recommended by the manufacturer. The sealing material must flush with the adjacent finishes of the ceiling.

#### Sealing of Cracks to Ceiling / Wall by Chemical Injection Method

- (1) Submit proposed materials with manufacturer's catalogue, job references, relevant testing reports, MSDS and a method statement for sealing of cracks / voids including surface preparation and touching up / painting finishes and arrange demonstration for compliance for SO 's approval prior to commencement of works.
- (2) Drill holes along and beside the cracks at 45° inclined from the crack surface to intersect leakage.
- (3) The drilled holes shall penetrate the cracks at a depth of 1/2 thickness of the ceiling / wall slabs and at suitable interval not greater than 150 mm c/c.
- (4) Flush the cracks or voids prior to resin injection to remove all deposits of dirt, dust, lime, salt or other contaminants with clean water and, with steel wire brush if necessary, in strict accordance with manufacturer's instructions.
- (5) Inject the cracks or voids with approved polyurethane resin or other injection materials strictly in accordance with the manufacturer's instructions. Inspection to nearby affected area / opposite side of the wall / upper floor slab so as to ensure no adverse influence such as excessive resin take place during the injection process.
- (6) After first injection to all required areas, apply second injection unless otherwise recommended by the manufacturer.
- (7) Allow curing as recommended by the manufacturer.
- (8) Upon completion of injection, make good and re-paint the repaired and affected areas to match existing.

#### Sealing Infiltration to Porous Concrete, Sandy Substrate or Net-Work of Fine Cracks to Ceiling / Wall OR Repair of Leakage through Pipe Sleeve / Floor Drain surround by Chemical Injection Method

- (1) Submit proposed materials with manufacturer's catalogue, job references, relevant testing reports, MSDS and a method statement for sealing of porous concrete including surface preparation and touching up / painting finishes and arrange demonstration for compliance for SO 's approval prior to commencement of works.
- (2) Identify the wet patches and potential infiltration areas by approved moisture meter or other methods / equipments as approved by SO.
- (3) Drill holes vertically to the infiltration areas or around the pipe sleeve / floor drain at suitable interval not greater than 100 mm c/c.

b) Safety Precautions

Potential risks associated with the work:

- Fall from height
- Fall of object
- Electrical Hazard
- Noise Hazard
- Housekeeping
- Use of hand tools
- Flying Object
- Public safety

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

15 Work at Heights

10 Electrical Safety

28 Noise Control

07 Housekeeping

- The below refers to supplementary specific items for the works

(v) Fall of object

- Use of Toe Boards and Guardrails that install toe boards on scaffolding and elevated platforms to prevent tools or materials from sliding off.
- Guardrails help secure the perimeter and reduce the risk of items being accidentally knocked over
- Tool Lanyards and securing equipment that attach tools to workers using lanyards to prevent them from dropping.
- Secure loose materials and equipment Tool Lanyards and Securing Equipment
- Overhead Protection that use debris nets, catch platforms, or canopies to shield workers below from falling objects.
- Designate exclusion zones beneath overhead work areas and restrict access.
- Regular Inspections that inspect scaffolding, platforms, and equipment daily to ensure they're secure.

Check that all fall protection systems are in place and functioning properly.

(vi) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't

designed for (e.g., using a wrench as a hammer).

- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.
- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

#### (vii) Public Safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling objects are risk. Secure tools and materials when not in use to prevent accidental drops.
- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action

plan that includes public protection measures.

- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

(viii) Flying Object

Approved type eye protectors should be worn by workers

## 9) Replacement of stop ball valve, water pipe or waste pipe

### a) Method Statement

#### **(1) Replacement of stop ball valve (更換波子掣)**

- i) T/D, C/A existing stop ball valve
- ii) S/F 12mm dia. UPVC stop ball valve
- iii) Replace 12mm dia. UPVC flushing water pipe (approx. 400mm long) with 2 nos. of joint to existing pipe.

#### **(2) Replacement of fresh water supply pipe (更換水喉)**

- (i) Disconnect fresh water supply pipe.
- (ii) Remove and clear away existing defective fresh water supply pipe and associated fittings.
- (iii) Supply and fix copper pipe with white polyethylene sleeve covered with all necessary fittings such as bend, tee, cross, joint to existing pipe including flexible connection joint, and including all distribution, cutting hole and subsequent making good to the surrounding areas.
- (iv) Provide earth bonding installation to the newly installed plumbing system if required.
- (v) Make good all affected areas.
- (vi) Clean and tidy all working areas.
- (x) Provide enhance service quality for replacement of potable pipe. (Enhanced Service Quality's item to be measured separately)

#### **(3) Replacement of UPVC waste/soil pipe (換污水膠筒<200mm 包括拆除及搬走)**

- i) Replace 32 or 40, 50, 100mm dia. UPVC pipe with all necessary bend or branch & joint to existing, if more than 50mm dia. all bend & branch with screw access

### b) Safety Precautions

Potential risks associated with the work:

- Fall from height
- Fall of object
- Electrical Hazard
- Noise Hazard
- Housekeeping
- Use of hand tools
- Public safety
- Flying Object
- Fire Hazards

- The below items refer to the obligation content in the Annex - Contractor's Safety Requirement: -

15 Work at Heights

10 Electrical Safety

28 Noise Control

07 Housekeeping

05 Fire Control



- The below refers to supplementary specific items for the works

(iv) Use of hand tools

- Use the Right Tool for the Job: Never substitute tools for tasks they weren't designed for (e.g., using a wrench as a hammer).
- Inspect Tools Before Use: Check for cracks, loose parts, or wear. Damaged tools should be repaired or replaced immediately.
- Keep Tools in Good Condition: Regularly clean, sharpen, and lubricate tools to ensure optimal performance.
- Wear Safety Goggles: Protect eyes from flying particles, especially when chiseling, hammering, or cutting.
- Use Gloves: Prevent cuts and improve grip but avoid gloves when operating rotating tools to prevent entanglement.
- Store Tools Properly: Keep tools in designated boxes or racks when not in use to prevent damage and clutter.
- Avoid Carrying Tools in Pockets: Use tool belts or buckets when climbing ladders or working at height.
- Tool-Specific Precautions. For example, hammers: Use the correct type, ensure your head is secure, and swing with a clear path. Chisels: Avoid using damaged chisels; always wear eye protection. Wrenches: Use the correct size, pull rather than push, and never use extensions for extra torque. Screwdrivers: Use insulated ones for electrical work and never use them as pry bars or chisels.
- Do Not Modify Tools: Altering tools can compromise their integrity and safety.
- Never Use Damaged Tools: Even minor defects can lead to serious accidents.
- Avoid Over-Torquing: Use torque wrenches when needed to prevent damage to fasteners and tools.

(v) Public Safety

- Hazard Assessment that to conduct a thorough hazard assessment of the site and surrounding areas before work begins. Reassess periodically as new tasks or phases of construction are introduced.
- Site Perimeter Control that to fence and gate the entire project perimeter to restrict unauthorized access. Use clear signage to indicate restricted zones and potential hazards.
- Installing debris nets, barricades, or overhead protection in areas where falling

objects are risk. Secure tools and materials when not in use to prevent accidental drops.

- Traffic and Pedestrian Management that to use trained flaggers, lane barriers, and reduced speed limits when construction affects roadways.
- Ensure nighttime visibility with proper lighting and reflective signage.
- Emergency Preparedness that to develop and communicate an emergency action plan that includes public protection measures.
- Prepare for severe weather and utility disruptions.
- Ongoing Monitoring to inspect the exterior of the site throughout the day and adjust controls as needed.

(vi) Flying Object

Approved type eye protectors should be worn by workers

## Appendix D of 5) Refurbishment at external wall – Form 2 Sample

**Safety Plan 7.3.8** The gondola shall be thoroughly examined by a competent examiner in every 6 months and after each substantial alteration or repair affecting its strength and stability, and has a certificate in the prescribed form (Form 2), and also it shall be load tested and thoroughly examined in every 12 months by a competent examiner with certificate in the prescribed form (Form 3).

### Form 2 Sample

Name of Owner  
擁有人姓名: Shen Hing Gondola Co., Ltd.

Cor. no. 18/112#3

**FORM 2**  
表格二

[section 20(1)]  
[附例第 20(1)條]

**FACTORIES AND INDUSTRIAL UNDERTAKINGS (SUSPENDED WORKING PLATFORMS) REGULATION**  
**CERTIFICATE OF THOROUGH EXAMINATION OF SUSPENDED WORKING PLATFORM**

Form approved by the Commissioner for Labour for the purposes of Section 20(1) of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation

工廠及工業經營(吊船)規例  
吊船的徹底檢驗證書

本表格乃由勞工處處長就工廠及工業經營(吊船)規例第 20(1)條的需要而認可

Address of Installation  
安裝地址: 葵輝樓

Location  
WOL

Description of suspended working platform e.g. identification mark, dimensions of working platform, safe working load, maximum number of persons that can be carried safely, platform's design, identification mark, work platform's size, safe working load, safety harness, etc.	Date of thorough Examination 徹底檢驗的日期	Specify repairs required to enable the suspended working platform to be used safely. If no such repairs are required, state "None". 列明所需修理以能安全地使用此吊船。如無需要修理，則填寫“無”。	Specify repairs (other than those listed in Column (3)) required before the issue of the next certificate. If no such repairs are required, enter "None". 列明在下一次發給證書前所需的修理(除第(3)欄內所列舉的修理)。如無需要修理，則填寫“無”。	State whether the suspended working platform is in safe working order. 說明吊船是否處於安全操作狀態。
(1)	(2)	(3)	(4)	(5)
<b>Temporary Suspended Working Platform</b> Owner ID: <u>2</u> Maker/Model: <input type="checkbox"/> 騰昇 LTD63 <input type="checkbox"/> 龍功 ZLPN30 <input type="checkbox"/> 騰升 ZLP803 <input type="checkbox"/> 康德/HKS Details: refer to Form 3. SWL: <u>250</u> Kg (exclusive weight of platform) Max. no. of persons: TWO (2)	<u>12/11/2018</u>	None	None	In safe working order

I hereby certify that the suspended working platform described in this certificate was thoroughly examined by me on 12/11/2018  
茲證明本人於 年 月 日徹底檢驗本證明書所述的吊船。

Name and signature of Registered Professional Engineer  
註冊專業工程師姓名及簽署: \_\_\_\_\_

Qualification RPE (Reg. No. 0616470)  
資格

Date of issue 12/11/2018  
簽發日期

Discipline Mechanical  
類別

Any competent examiner who delivers to an owner a certificate or report which is to his knowledge false as to a material particular commits an offence and is liable on conviction to a fine of \$200,000 and to imprisonment for 12 months.  
任何合資格檢驗員，如向擁有人提交他自知有虛假事項的證明書或報告，即屬犯罪，一經定罪，可處罰款二十萬元及監禁十二個月。

SWP-F2

### Form 2 signature and office stamp sample

thoroughly examined

# Appendix D of 5) Refurbishment at external wall – Form 3 Sample

## Form 3 Sample

Cont no: 18112 #3

FORM 3  
表格三

[section 20(2) & (3)]  
[ 規例第 20(2)及(3) 條 ]

### FACTORIES AND INDUSTRIAL UNDERTAKINGS (SUSPENDED WORKING PLATFORMS) REGULATION

#### CERTIFICATE OF LOAD TEST AND THOROUGH EXAMINATION OF SUSPENDED WORKING PLATFORM

Form approved by the Commissioner for Labour for the purposes of Section 20(2) & (3) of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation

工廠及工業經營(吊船)規例  
吊船的負荷測試及徹底檢驗證明書

本表格乃由勞工處處長就工廠及工業經營(吊船)規例第 20(2)及(3)款的需要而認可

1. Name of owner of the suspended working platform. 吊船擁有人的姓名。	
2. Address of installation of the suspended working platform. 吊船的安装地址。	葵健樓 Location: 1201
3. (a) Description of suspended working platform, eg. identification mark, mode of suspension, dimensions of platform etc. 吊船的說明, 例如識別標記、懸吊形式、工作平台的尺寸等。  (b) Date of manufacture (if ascertainable) 製造日期(如能確定)。	<b>Temporary Suspended Working Platform</b> Owner ID: 3 Maker/ Model: <input checked="" type="checkbox"/> 康昇 LTD63 <input type="checkbox"/> 鼎坊 ZLP630 <input type="checkbox"/> 鼎坊 ZLP800 <input type="checkbox"/> 浩強/ HK8 Winch S/n: 1503770, 1503518 Safety device S/n: 15F30 (1503636, 1506036) Platform size: 2.0 x 0.7 x 1.0 M (H) Suspension & wire rope: φ8.3 mm x 4 Lifeline: φ16 mm x 2 Travel: From 7/F to Roof SWL: 250 Kg (exclusive the weight of platform) Max. nos. of persons: TWO (2)
4. Design and construction — 設計及構造 — Is the suspended working platform of good design platform and construction, of adequate strength, made of sound material and properly installed? 吊船的設計及構造是否良好、強度是否足夠、物料是否堅佳及是否妥當安裝?  State "Yes" or "No". If "No", specify what defects have been found. And the suspended working platform is not in safe working order in paragraph 9 below. 說明 "是" 或 "否"。如屬 "否", 則列舉其毛病所在。並於下述第九段內, 說明吊船不是處於安全操作狀態。	Yes  Note : Details of any renewals or alterations required should be given in paragraph 7 below. 附註 : 如需要進行任何更換或修改工程, 應將詳情註明於下述第 7 段。
5. Are the following parts of the suspended working platform in safe working order? 下列吊船的部分是否處於安全操作狀態?  State "Yes" or "No". 說明 "是" 或 "否"。	
(a) anchorage and support. 錨定及支持。	Yes
(b) suspension. 懸吊。	Yes
(c) counterbalance and counterweights. 平衡系統及平衡物。	N/A
(d) platform. 工作平台。	Yes
(e) access to and egress from the suspended working platform, 吊船的進出途徑。	N/A
(f) drums and pulleys. 鼓及滑輪。	N/A

## Appendix D of 5) Refurbishment at external wall – Form 3 Sample

(a) bridle. 制動器。	Yes
(b) control levers, switches or other operating devices. 控制桿、開關或其他操作器材。	Yes
(c) winches, climbers or other lifting appliances. 絞車、爬升器或其他起重機械。	Yes
(d) safety ropes and safety devices (If applicable under Section 14, state "Yes" or "No". If not, state "N/A"). 安全繩索及安全器材 (如根據第14條適用, 請明註 "是" 或 "否", 如不適用, 請明 "不適用")。	Yes
(e) Other parts. 其他部份。	Yes
6. Test load applied (tonne). 測試時使用的負荷(公噸)。	375 Kg
7. Specify repairs, renewal or alterations required to enable the suspended working platform to be used safely. If no such repairs, renewals or alterations are required, enter "None". 列明所需修理、更換或修改工後能安全地使用此吊船。如無需要修理、更換或修改, 則填寫 "無"。	None
8. Specify repairs (other than those listed in paragraph 7) required before the issue of the next certificate. If no such repairs are required, enter "None". 列明在下文發證前所需的修理 (除第7段內所列舉的修理)。如無需要修理, 則填寫 "無"。	None
9. State whether the suspended working platform is in safe working order. 這吊船是否處於安全的工作狀態。	Yes
10. Safe Working load (tonne). 安全操作負荷 (公噸)	2.5 Tonne Kg (Exclusive the weight of platform)
11. Specify the maximum number of persons that can be carried safely. 列明安全操作時最多人數。	Two (2)
12. Other observations. 其他觀察。	None

I certify that on 12/11/2018 I load tested and thoroughly examined this suspended working platform and that the foregoing is a correct report of the result.  
茲證明本人於 \_\_\_\_\_ 年 \_\_\_\_\_ 月 \_\_\_\_\_ 日為此吊船進行了負荷測試及徹底檢驗, 而前文所述的測試及檢驗結果是正確的。

Name and Signature of Registered Professional Engineer \_\_\_\_\_  
註冊專業工程師的姓名及簽署

Qualification \_\_\_\_\_  
資格

Discipline \_\_\_\_\_  
界別

Name and address of person, company, or association by whom the person conducting the test and examination is employed.  
雇用執行此項測試及檢驗的人士、公司或機構的姓名或名稱及地址。

The Standard Engineering  
& Consultants Ltd.  
62, UG/F, Tseung Wan Garden, Tseung  
Wan, NT, Hong Kong

Date of issue 12/11/2018  
簽發日期

Any competent person who delivers to an owner a certificate or report which is to his knowledge false as to a material particular commits an offence and is liable on conviction to a fine of \$200,000 and to imprisonment for 12 months.

任何合資格檢驗員, 如向擁有人提交他自知有虛假要項的證明書或報告, 即屬犯罪; 一經定罪, 可處罰款二十萬元及監禁十二個月。

SWP-F3-2

Form 3 signature and office stamp Sample

thoroughly examined

## Appendix E of 5) Refurbishment at external wall – Form 1 Sample

**Safety Plan 7.3.6** The entire set up of the gondola including its suspension system shall be properly maintained, and shall be inspected by a competent person at least once per week and has a report in the prescribed form (Form 1)

### Form 1 Sample

Name of Owner 擁有人姓名:		<b>FORM 1</b> 表格一		[Section 19(1)] [規則第 19(1)條]
Address of Installation 安裝地址: 葵青區 香港海濱		<b>Factories and Industrial Undertaking (Suspended Working Platforms) Regulation</b> <b>CERTIFICATE OF WEEKLY INSPECTIONS OF SUSPENDED WORKING PLATFORM</b> Form approved by the Commissioner for Labour for the purpose of Section 19(1) of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation		
		工廠及工業經營 (吊船) 規例 吊船的每週檢查證明書 本表格乃由勞工處處長就工廠及工業經營 (吊船) 規例第 19(1)條的需要認可		
Description of suspended working platform and identification mark 吊船的描述及識別標記	Date of Inspection 檢查日期	Result of Inspection (covering all lifting appliances and gear, the working platform, counter-balance, ballast, outriggers, anchoring, supporting or fixing arrangements, all mechanical and electrical apparatus and safety devices) State whether in safe working order 檢查結果 (包括所有起重機械及裝置、工作平台、平衡系統、壓重物、支撐物、錨定、支撐或固定安排、所有機械器具及安全裝置) 吊船是否處於安全操作狀態。	Name, signature and Designation of the competent person who made the inspection 進行檢查的合資格的人的姓名、簽署及職級	
(1)	(2)	(3)	(4)	
	2/11/2017	檢查時處於安全操作狀態		
Winch S/N: 150710 & 1503618				
Owner's ID: No. 3				
Max. S.W.L.: 250kg				
Max. number of person: Two(2)				

An owner shall ensure that a suspended working platform is not used for carrying persons unless he has obtained a certificate of weekly inspection signed by a competent person stating that the suspended working platform is in safe working order. Otherwise, he commits an offence and is liable on conviction to a fine of \$200,000 and to imprisonment for 12 months.

在未取得合資格的人簽署的每週檢查證明書，證明吊船處於安全操作狀態，擁有人如使用該吊船載人，即屬犯罪；一經定罪，可以處罰款二十萬元及監禁十二個月。

### Form 1 signature and office stamp Sample

Appendix F of 5) Refurbishment at external wall - Daily Checklist Sample

合約編號：20179067

地點：葵芳邨裝修樓

每日開工前吊船安全檢查表

為了確保吊船能夠繼續安全使用，在每天開工或前班班，合資格的人（或加持有資歷的持牌人員）應同時檢查其他可直接影響吊船安全的組件。檢查範圍如下：

項目	檢查項目	吊船編號							
		3	4	5	6				
1	張貼吊船中英文告示，安全操作負荷及容許人數	/	/	/	/				
2	每週檢查表（表格一）	/	/	/	/				
3	檢驗證明書（表格二及三）	/	/	/	/				
4	吊重機械裝置、鋼絲繩索和吊環的狀況	/	/	/	/				
5	制動系統和自動安全裝置的狀況	/	/	/	/				
6	防止傾倒裝置的狀況	/	/	/	/				
7	外伸支架、吊臂支撐座、護欄和固定裝置的狀況	/	/	/	/				
8	電力電纜、控制裝置和基礎的狀況	/	/	/	/				
9	電箱外殼完整及可上鎖	/	/	/	/				
10	救生繩、安全吊帶和它們的繫縛物的狀況	/	/	/	/				
11	工作平台的護欄及踢腳板的狀況	/	/	/	/				
12	吊船上人員持有有效操作證，佩帶安全帶及繫於獨立救生繩上	/	/	/	/				
13	測試吊船制動裝置安全角度不超過 14 度	/	/	/	/				
	檢查人士姓名：(曾工 / 吊船操作員)	L	L	L	L				
	檢查日期：11/12/2018 (pm)								

\* 檢查結果 - ✓ - 良好狀況

\* - 需改善及更換

N/A - 不適用

\*\* 跟進行動 - 如於檢查結果填寫「\*」者，須於此部份填寫有關之跟進行動。

外觀檢查和實際檢查的目的，在於查閱機件是否有以下的情況，包括異常的磨損、故障、漏油、過熱、腐蝕、奇怪的噪音、鬆動、安裝誤差、表面的裂縫、過載、不正當的鬆脫或損壞，以及過度震動等。應把在檢查中發現的任何欠妥之處記錄在維修記錄中，隨後並應即時進行簡單的修理如旋緊螺絲及螺帽等。如修理涉及吊船的力度和穩定性、驅動機械裝置的效能和效率、電氣設備的功能，以及各種安全裝置的正常功能，便該停止使用該吊船。並把吊船送回維修承辦商修理，再進行測試和徹底檢驗，然後才可以重新使用。

Signed by Foreman:

Counter sign by Safety Officer:

Sample of signature by Foreman

Sample of signature by Safety Officer

**General Conditions of Contract**

**for**

**Term Contract for Provision of Repair and Maintenance of**

**Electrical & Mechanical Works and Builder's Works cum**

**Onsite Technician Services**

**for**

**the Construction Industry Council**

Aug 2025



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**General Conditions of Contract for**  
**Term Contract for Provision of Repair and Maintenance of**  
**Electrical & Mechanical Works and Builder's Works cum**  
**Onsite Technician Services**

## **1 Definitions**

In the Contract as hereinafter defined the following words and expressions shall have the meaning hereby assigned to them except when the context otherwise requires:

“Agreement” means and includes the Memorandum of Agreement, General Conditions of Contract, any Special Conditions of Contract, the Assignment Brief and its annexes (if any), the Fee Proposal and such other documents as may be referred to in the Memorandum of Agreement.

“Assignment” means that part of the Project undertaken by the Contractor as detailed in the Assignment Brief and its annexes (if any) or the Purchase Order.

“Assignment Brief” means the document attached to the Memorandum of Agreement which describes the Project and sets out the details of the Assignment or the part of the Purchase Order which describes the Project and sets out the details of the Assignment. All other amendments/ variations made due to the Project shall also be regarded as part of the works included under the Assignment.

“Contract” means the Agreement or the Purchase Order (as the case may be).

“Contractor” means the person, consultant, firm or company who enters into a Contract with the Employer, including the Contractor’s permitted assignees.

“Constructional Plant” means all appliances or things of whatsoever nature required for the execution of the Works but does not include materials or other things intended to form or forming part of the permanent work or vehicles engaged in transporting any personnel, Constructional Plant, materials or other things to or from the Site.

“Defects Liability Period” means the defects liability period named in the Contract commencing on the day following the date of completion of the Works or any Section or part thereof certified by the Employer’s Representative in accordance with Clause 59.

“Deliverables” means all the reports, drawings, documents, software, certificates and other items described in the Assignment Brief or the Purchase Order which are to be produced by the Contractor under this Contract.

“Employer” means the Construction Industry Council.

“Employer’s Representative” means the Project Director or the Project Manager.

“Goods”, “Services” and “Works” means goods, works, services, surveys and investigations and/or other duties and obligations as may be prescribed by the specifications/requirements to be supplied or done by the Contractor under the Contract.

“Government” means the Government of the Hong Kong Special Administrative Region.

“HKSAR” means the Hong Kong Special Administrative Region.

“Intellectual Property Rights” means trademarks, service marks, patents, design rights, trade names, copyright, domain names, database rights, new inventions, rights in know-how, designs, processes, and other intellectual property rights whether now known or created in future (of whatever nature and wherever arising) and in each case whether registered or unregistered and including applications for the grant of any such rights;

“Project” means the scheme described in the Contract.

“Project Director” means the person as may be appointed from time to time by the Employer and notified in writing to the Contractor to act as the project director for the purposes of the Project.

“Project Manager” means the person as may be appointed from time to time by the Employer and notified in writing to the Contractor to act as the project manager for the purposes of the Project.

“Project Materials” means the goods, services, works and/or deliverables manufactured, created, generated, supplied, performed or done by the Contractor in discharging its duties in relation to the Goods, Services, Works and/or the Deliverables under the Contract, including but not limited to the Goods, Services, Works and Deliverables.

“Purchase Order” means a purchase order issued by the Employer to the Contractor requesting the supply of Goods, Services and/or Works herein including the contents of the quotation and the terms and conditions hereof. The Purchase Order is limited to the terms and conditions:-

- (i) specified herein;
- (ii) specified on the contents of the purchase order so issued to the Contractor; and
- (iii) if applicable, specified in the Employer’s written agreement with the Contractor.

## **2 Singular and Plural**

Words and expressions in the singular include the plural and words and expressions in the plural include the singular where the context so implies.

## **3 Headings**

The index, marginal notes or headings in any documents forming part of the Contract shall not in any way vary, limit or extend the interpretation of the Contract.

## **4 Laws**

- (A) The Contract shall be governed by and construed according to the laws for the time being in force in the HKSAR.
- (B) The Contractor shall comply with all laws of HKSAR. The Contractor shall not employ illegal workers or any person who are forbidden by the laws of HKSAR or not entitled for whatever reasons to undertake any employment in HKSAR for the purpose of performing its obligations under the Contract. The Contractor and those engaged by the Contractor shall hold valid licences when performing the Contractor's obligations under the Contract whenever so required by the law.

## **5 Interpretation**

The Interpretation and General Clauses Ordinance (Cap. 1) shall apply to the Contract. Words importing one gender (whether masculine, feminine or neuter) shall be taken to include any other gender where the context requires.

## **6 Memorandum of Agreement**

Where the Contract is an Agreement, the Contractor when called upon to do so shall enter into and execute a Memorandum of Agreement which shall be prepared at the cost of the Employer in the form annexed with such modifications as may be necessary.

## **7 Documents Mutually Explanatory**

- (A) Save to the extent that any Special Conditions of Contract provides to the contrary, the provisions of the Special Conditions of Contract shall prevail over those of any other document forming part of the Contract.
- (B) Subject to sub-clause (A) of this Clause the several documents forming the Contract are to be taken as mutually explanatory of one another but in the

case of ambiguities and discrepancies the same shall be subject to the Employer's interpretation and adjustment.

## **8 Use of English Language and Metric Units**

All the correspondence in connection with the Contract shall be in English. All Deliverables shall be in English and metric units shall be used throughout, unless otherwise stated in the Contract or approved by the Employer or the Employer's Representative in writing.

## **9 Confidentiality**

- (A) Except otherwise explicitly declared by the Employer as non-confidential, all information and documents provided by the Employer to the Contractor or created by the Contractor in the course of or as a result of the Project shall be regarded as confidential information ("**Confidential Information**"). The Contractor shall take all practical measures to protect the Confidential Information from unauthorized access, disclosure, erasure or use for purposes other than this Project.
- (B) Save for the purposes of performing the Contract, the Contractor shall not disclose any and all Confidential Information, the terms and conditions of the Contract or any information, specifications, documents, drawing, plan, software, data or particulars furnished by or on behalf of the Employer or the Employer's Representative in connection therewith, to any person other than a person employed or engaged by the Contractor in performing the Contract or any approved sub-consultants / sub-contractors or the Contractor's legal and insurance advisers, except where required by law or regulation, order of the Court, arbitral authority of competent jurisdiction, requested by a professional body of which the Contractor is a member or disclosure of Confidential Information is with prior written consent from the Employer.
- (C) Any disclosure to any person, sub-consultants / sub-contractors or advisers permitted under sub-clause (B) of this Clause shall be in strict confidence and shall extend only so far as may be necessary for the purpose of the Contract and the Contractor shall take all necessary measures to ensure the confidentiality of any such disclosure.
- (D) The Contractor shall ensure that all receiving parties of the Confidential Information are informed of its confidential nature and procure the receiving parties to treat such information in strict confidence. The Contractor shall be responsible for the consequences of any breach of the confidential obligation,

whether on the part of the Contractor itself or the receiving parties to whom the Contractor discloses the Confidential Information.

- (E) The Contractor shall not without the prior written consent of the Employer, which consent shall not be unreasonably withheld, to make any public announcement, press release or otherwise publish, either alone or in conjunction with any other person, in any newspaper, magazine, or periodical, any article, photograph or illustration relating to the Contract.
- (F) If the Contractor has provided the Employer or the Employer's Representative with documents and information which the Contractor has declared in writing to be confidential and stamped accordingly whether in relation to his practice or special circumstances or for other good causes, unless the Employer or the Employer's Representative within TWO (2) months of receipt of such information by notice in writing disagrees, such information will be treated as confidential. The Employer and the Employer's Representative shall not permit the disclosure of such confidential information to third parties without the prior written consent of the Contractor.
- (G) All personal data submitted by the Contractor will be used by the Employer for the purpose of this Contract only. By entering into the Contract, the Contractor is regarded to have agreed to and to have obtained from each individual whose personal data is provided by the Contractor to the Employer for the purpose of the Contract, his consent for the disclosure, use and further disclosure by the Employer for the purposes of the Contract and all other purposes arising from or incidental to it. Under the provisions of the Personal Data (Privacy) Ordinance (Cap. 486) ("PDPO"), an individual to whom personal data belongs and a person authorized by him in writing has the right to request access to or correction of personal data as provided for in sections 18 and 22 and Principle 6 of Schedule 1 to the PDPO. The right of access includes the right to obtain a copy of the personal data provided. Written enquiries or requests should be addressed to the Project Manager with sufficient details, failing which the Project Manager may be unable to process and consider the incomplete information submitted.
- (H) Should the Project be terminated prematurely due to any reasons or completed satisfactorily as certified by the Employer or the Employer's Representative, the Contractor shall return all related findings, statistics, documents, materials belonging to the Employer and related to the



Contractor, and/or destroy any information collected from the Employer or the Employer's Representative including both hard copies and electronic copies within SEVEN (7) working days of the termination or completion.

- (I) The sub-clauses of this Clause shall survive the termination of this Contract (however occasioned) and shall continue in full force and effect notwithstanding such termination.

## **10 Data Privacy**

- (A) If for the purposes of the Contract the Contractor collects personal data on the Employer's behalf or the Employer will entrust personal data with the Contractor, the Contractor shall comply in all aspects with the Personal Data (Privacy) Ordinance (Cap. 486) and any other applicable data protection laws and regulations in relation to the personal data that it collects or processes on behalf of the Employer.
- (B) The Contractor shall procure that its sub-contractors be subject to the same data protection obligations the Contractor owes to the Employer and remain fully liable to the Employer for the fulfillment of the obligations of itself and its sub-contractor(s).
- (C) The Contractor shall have personal data protection policies and procedures in place and implemented and provide adequate training to its relevant staff. The Contractor shall take all reasonable precautions and exercise all due diligence to protect the entrusted personal data from leakage, unauthorized or accidental access, processing, erasure, loss or use.
- (D) Save for those personal data with the purpose for which has not been fulfilled, timely return, destruction or deletion of the personal data shall be strictly abided by the Contractor. The use or disclosure of the personal data for any purpose other than the purpose for which the personal data is entrusted to the Contractor by the Employer under the Contract is strictly prohibited.
- (E) The Contractor shall notify the Employer promptly and without undue delay of any potential data breach involving the entrusted personal data. The Contractor and its applicable sub-contractors shall cooperate with the Employer to investigate and mitigate the relevant impact and prevent any recurrence. The Contractor shall also comply with any requests or directions from the Employer and the related authorities/regulators in relation to the personal data.

- (F) The Contractor shall give all reasonable assistance to the Employer for the purpose of audit inspection by the Employer on such records, personal data and other information held by the Contractor in relation to the handling and storage of the entrusted personal data. The Contractor shall also answer queries or supply information reasonably requested by such personnel in pursuance of such audit inspection.
- (G) The sub-clauses of this Clause shall survive the termination of this Contract (however occasioned) and shall continue in full force and effect notwithstanding such termination.

## **11 Cybersecurity**

- (A) The Contractor shall take and procure that its sub-contractors to take all reasonable cybersecurity measures to protect any and all information and data (including personal data mentioned in this Clause) relating to the Assignment stored or processed electrically from leakage or divulgence and ensure that no such information and/or data would be accessed or obtained or viewed or otherwise known to third parties that are not meant to be involved in the Contractor's discharge of its obligations under the Project.
- (B) The Contractor shall be and procure that its sub-contractors to be keenly aware of cybersecurity risks such as phishing attacks, Internet of Things attacks, identity theft, ransomware, password attacks, web attacks, malware attacks, etc., ensure that its electronic devices used to store / process / transfer such information / data are immune from such risks, and avoid all such risks.
- (C) If any information and/ or data (including personal data mentioned in this Clause) is leaked or divulged or accessed or obtained or viewed or otherwise known to third parties that are not meant to be involved in the Contractor's discharge of its obligations under the Project as a result of the Contractor's breach of its duties under sub-clauses (A) and (B) above, the Contractor shall indemnify the Employer from all loss and/of damage suffered by the Employer so caused by the Contractor's breach.
- (D) The sub-clauses of this Clause shall survive the termination of this Contract (however occasioned) and shall continue in full force and effect notwithstanding such termination.

## **12 Information to be supplied by the Employer**

The Employer shall keep the Contractor informed of such matters as may appear to him to affect the performance of his duties under the Contract and shall give such assistance, approvals, and decisions in writing as and when they shall reasonably be required for the Contractor's performance of his duties under the Contract.

## **13 Information to be supplied by the Contractor**

The Contractor shall keep the Employer and the Employer's Representative informed of all matters related to the Contract within the knowledge of the Contractor including details of all staff employed by the Contractor and all other people directly or indirectly engaged by the Contractor and shall, when requested to do so, answer all reasonable enquiries received from the Employer and the Employer's Representative, render reports at reasonable intervals when asked to do so and make viable recommendations to the Employer and the Employer's Representative as to the manner in which the Assignment should be proceeded with.

## **14 Retention of Documents and Audit Inspection**

- (A) For a period of TWO (2) years commencing from the completion of the Works or provision of the Services or supply of the Goods under the Contract, the Contractor shall retain and provide space at its own costs to retain all softcopies and hardcopies of all his records, data, accounts and other information in respect of or in relation to its discharge of its obligations under the Contract.
- (B) The Contractor shall give all necessary assistance to Employer for the purpose of audit inspection to inspect such records, data, accounts and other information whatsoever in relation to the Project and shall answer queries and/or supply information reasonably requested by such personnel in pursuance of such audit inspection.

## **15 Attendance at Meetings**

The Contractor shall, if reasonably possible, attend or be represented at all meetings convened by the Employer to which he may be summoned and shall advise and assist the Employer and the Employer's Representative in all matters relating to the Deliverables.

## **16 Inspection**

- (A) The Contractor shall permit the Employer and the Employer's Representative

to enter its premises at any reasonable time in order to inspect the Goods, Services and/or Works in the course of manufacture, provision or storage. If, as a result of such inspection, the Employer or the Employer's Representative is not satisfied that the Goods, Services and/or Works will comply with the Contract requirements, it shall notify the Contractor in writing and the Contractor shall, as soon as possible, take all necessary steps to ensure compliance. An inspection or notification by the Employer or the Employer's Representative (with or without comments or approval) shall not relieve the Contractor of its obligations under the Contract. It remains the Contractor's duty to ensure full compliance with its obligations under the Contract.

- (B) The Contractor shall at all times provide the Employer and the Employer's Representative with reasonable facilities to inspect or view the Goods, Services and/or Works, documents, records and correspondence in the Contractor's possession relevant to the Contract.

## **17 Approval of Documents**

- (A) The Contractor shall, when so requested by the Employer or the Employer's Representative, submit to him for his approval such record, data, account or other documents, matters or things prepared by them as a direct requirement of the Assignment as the Employer's Representative may specify or require.
- (B) No such approval shall affect or relieve the Contractor of its obligations under the Contract.

## **18 Delegation of Employer's Power**

The Contractor shall take instructions and directions and, where appropriate, receive the Employer's decisions and views only through the Employer or the Employer's Representative and, subject to any limitations imposed by the Employer or the Employer's Representative in any letter of authority granted by the Employer or the Employer's Representative, the Employer or the Employer's Representative may delegate his powers to such other person.

Where the Contractor for whatever reason does not manage to reach the Employer's Representative for the purposes set out in the Contract, the Contractor shall liaise with the Employer direct for those purposes. For the avoidance of doubt, the Employer has the power to exercise any right conferred upon the Employer's Representative and may exercise the same as it sees fit.

## **19 Amendments to the Assignment Brief**

- (A) The Employer shall make any changes to the Assignment Brief which he considers necessary or desirable for the successful completion of the Assignment or the Project.
- (B) Any queries on, or suggestions for amendments to the Assignment Brief shall be referred to the Employer for his clarification or instructions regarding further action.

## **20 Written Approval**

The Contractor shall obtain the written approval of the Employer prior to entering into any commitment to expenditure for which there is provision for reimbursement under the Contract.

## **21 Consultation**

The Contractor shall, as may be necessary for the successful completion of the Assignment, consult all authorities, including public utility companies, those who may be specified by the Employer in connection with the Assignment and bodies or persons affected by the Assignment.

## **22 Response to Queries**

- (A) The Contractor shall promptly respond to queries on the findings and conclusions of this Assignment raised during the period defined in the Assignment Brief by the Employer, the Employer's Representative or by any person who may be appointed or nominated by the Employer or the Employer's Representative for the Project.
- (B) The Contractor shall use his best endeavours to promptly respond to queries on the findings and conclusions of this Assignment raised after the period defined in the Assignment Brief by the Employer or any person who may be appointed or nominated by the Employer.

## **23 Exclusive Ownership and Intellectual Property Right Indemnities**

- (A) The Contractor guarantees that neither the sale nor use of goods nor the performance or provision of the Project Materials will infringe any local or foreign copyright, patent or trade mark or any kind of Intellectual Property Rights.
- (B) The Contractor shall indemnify and keep the Employer, its authorized users,

assignees and successors-in-title (hereinafter **“indemnified parties”**)  
indemnified from and against:

- (i) all and any demands, claims, actions, arbitrations, proceedings, threatened, brought or instituted against the indemnified parties arising from the Contractor's infringement of any kind of Intellectual Property Rights (**“IP Claims”**) in performing its duties under the Contract; and
- (ii) all liabilities and indebtedness (including without limitation liabilities to pay damages or compensation), loss, damage, costs and expenses incurred or suffered by indemnified parties (including all legal and other costs, charges, and expenses) on a full indemnity basis, which indemnified parties may pay or incur in initiating, defending, counter-claiming, settling or compromising any action or proceeding by or against indemnified parties

which arise directly or indirectly from or relate to the Contract. The indemnity herein shall survive termination of this Contract (howsoever occasioned).

- (C) In event of such IP Claims, the Contractor shall do all things and take such action (including procuring any required licenses, consents of authorizations or modifying or replacing any infringing item) without charge to the Employer as shall be necessary to prevent or remedy (without detracting from the overall functions or performance) any infringement, provided that the Employer will use reasonable endeavors to mitigate its loss; the Contractor shall at all times act in such a way as to minimize interruption and disruption to the operation of the Employer.
- (D) The Employer shall become the exclusive owner of all Project Materials, save those Project Materials under licence or those Project Materials in respect of which there is a pre-existing copyright or patent, supplied or produced by, for or on behalf of the Contractor under the Contract. Notwithstanding the above, the Contractor hereby grants the Employer and its affiliates an irrevocable royalty free license to use, copy or modify such pre-existing materials for its internal business purposes.
- (E) The Intellectual Property Rights in the Project Materials shall upon creation be vested in the Employer. In the event that the Contractor requests and the

Employer grants written consent such that the Intellectual Property Rights for specific Project Materials are not assigned to the Employer, the Contractor hereby grants to the Employer and its affiliates an irrevocable royalty free license to use, copy or modify the Project Materials with a right to sublicense those Project Materials to third parties for any purposes intended by the Employer. For the avoidance of doubt, any such license granted shall not be determined if the Contract is suspended or terminated pursuant to Clause 43 or otherwise.

## **24 Care, Diligence and Indemnity**

- (A) The Contractor shall exercise and shall ensure that its sub-contractors exercise all reasonable professional skill, care and diligence in the performance of all and singular of the Services or carrying out the Works and, insofar as his duties are discretionary, shall act fairly between the Employer and any third party.
- (B) The Contractor acknowledges that time and quality are of the essence in the performance of the Contract, and the Contractor shall deliver the Goods to the designated place, provide the Services and/or carry out the Works in strict adherence to the delivery date(s) or schedule(s) or completion date set forth in the Contract or extended pursuant to the terms of the Contract or otherwise agreed by the Contractor and the Employer's Representative. If the Contractor shall fail or refuse to make delivery of the Goods in the Project Materials as aforesaid, the Employer shall have the right to cancel / terminate the Contract and to procure the Goods from any other sources and the Contractor shall be liable for any sum so incurred in excess of the Contract price.
- (C) All Project Materials are subject to inspection and rejection by the Employer notwithstanding any prior payment, which, in itself and without more, does not mean or imply the Employer's acceptance of the Project Materials. The Project Materials would be accepted by the Employer if the Project Materials have been provided / performed in accordance with the terms and conditions of the Contract and to the satisfaction of the Employer.
- (D) The Project Materials must conform in all respects with the Contract requirements. All Goods/Works in the Project Materials must be of sound materials, workmanship (and design, where the Contractor is responsible for this), and shall be equal in all respects to relevant samples or patterns provided by or accepted by the Employer. All Services in the Project

Materials shall be performed in a sound manner and shall be free from any defects (major or minor) including (to the extent that the Contractor is responsible for design) defects in design or installation.

- (E) The Project Materials shall be in accordance with any applicable local or international standards. The Project Materials shall at the time of delivery or performance comply with all relevant requirements of any applicable statute, statutory rule or order or other instrument having the force of law.
- (F) The Employer's signature given on any delivery note or other documentation presented for signature in connection with delivery of the Project Materials only suggests the receipt of the Project Materials, and is not evidence of actual quantity, quality or condition of the Project Materials or the Employer's acceptance of the Project Materials.
- (G) Acceptance of all or part of the Project Materials shall not:-
  - (i) waive the Employer's right to cancel or return all or any portion of the Project Materials that do not conform to the Contract requirements;
  - (ii) oblige the Employer to accept future delivery of the Project Materials;  
or
  - (iii) preclude the Employer from making any claim for damages or breach of warranty; or
  - (iv) prejudice the Employer's right to reject any and all of the Project Materials that do not meet the provisions of sub-clause (D) of this Clause.
- (H) All Project Materials must pass the Employer's acceptance tests. The Employer shall be entitled to reject any and all Project Materials that do not meet the provisions of sub-clause (D) of this Clause. If by the nature of the Project Materials any defects or any failure to conform to sub-clause (D) of this Clause does not or would not become apparent (despite the carrying out of any examination or acceptance tests) until after use, the Employer may reject the same even after a reasonable period of use. No Project Materials returned as defective by the Employer shall be replaced by the Contractor without a prior written notice by the Employer of the rejection.



- (I) Any Project Materials rejected under sub-clause (H) must at the request of the Employer be replaced or re-performed as the case may be by the Contractor at the Contractor's own expense. Alternatively, the Employer may elect (at the Employer's option) to terminate the Contract pursuant to the terms and conditions of Contract in respect of the rejected Project Materials in question and the whole of the remainder of the Project Materials (if any) covered by the Contract. All rejected Goods of the Project Materials will be removed from the site and returned to the Contractor at the Contractor's expense. If the Contractor fails to remove the rejected Goods from the site, the Employer may continue to store such Goods and the Contractor shall fully reimburse the Employer for all storage costs and delivery costs incurred or to be incurred immediately upon the Employer's demand in writing.
- (J) Without prejudice to the Employer's rights under sub-clause (I) under this Clause, the Employer shall be entitled to return any Goods to the Contractor for a full refund in respect of such returned Goods within THIRTY (30) days of the Employer's demand for return. All rejected Goods of the Project Materials will be returned to the Contractor at the Contractor's expense. If the Contractor fails to so refund within THIRTY (30) days of the Employer's demand for return, the Contractor shall be liable to pay interest on such amount(s) to be refunded at an interest rate of 1% above the rate of prime.
- (K) The Contractor shall, in respect of any work done or information supplied by or on behalf of the Employer, report to the Employer any errors, omissions and shortcomings of whatsoever nature of which the Contractor becomes aware in carrying out the Assignment.
- (L) The Contractor shall advise the Employer, as soon as practicable, of any actual or foreseeable delay in meeting the delivery schedules or date for completion and the reason therefor.
- (M) The Contractor shall indemnify and keep indemnified the Employer against all claims, damages, losses or expenses arising out of or resulting from any negligence in or about the conduct of and performance by the Contractor, his servants or agents or sub-consultants/sub-contractors of all tiers, in carrying out the Assignment.
- (N) The Contractor shall be liable for, and shall indemnify the Employer against, any expense, liability, loss, claim or proceedings whatsoever arising under

any statute or at common law in respect of personal injury to or the death of any person whomsoever arising out of or in the course of the Contract, save to the extent that the same may be due to any deliberate default, negligence or willful misconduct of the Employer or of any person for whom the Employer is responsible.

- (O) The Contractor shall be liable for, and shall indemnify the Employer against, any expense, liability, loss, claim or proceedings in respect of any injury or damage whatsoever to any property real or personal in so far as such injury or damage arises out of or in the course of the Contract, save to the extent that the same may be due to any deliberate default, negligence or willful misconduct of the Employer or of any person for whom the Employer is responsible.
- (P) The Contractor has to keep all the Contractor's property in safe custody or that of his sub-contractors and/or sub-consultants and employees on site. The Contractor shall indemnify the Employer in respect of any loss, damages, injury or death of the Contractor, his sub-contractors/sub-consultants and employees in consequence of the malfunction of, loss of or damage to the said property, save to the extent that the same may be due to any deliberate default, negligence or willful misconduct of the Employer or of any person for whom the Employer is responsible.
- (Q) Unless it is specifically allowed in other part of the Contract, if the Contractor or the Employer shall default on carrying out its obligations under the Contract, the Contractor or the Employer may by notice in writing to request the defaulting party to perform the obligations promptly in order to avoid and minimize any loss and damage that such failure may cause. In addition, the defaulting party shall indemnify any direct loss or damages so caused to the Contractor or the Employer (as the case may be) as a result of the default of this Contract.
- (R) If either the Contractor or the Employer has breached any terms and conditions under this Contract, the defaulting party shall indemnify against all related actual financial losses and expenses necessarily incurred by the Contractor or the Employer (as the case may be) arising from the breach.
- (S) The Employer has the rights to recover any expense, loss or claim from payment payable to the Contractor by notice in writing, the same may be deducted or offset from any sum then due or which at any time thereafter

may become due to the Contractor under the Contract or any other contracts the Contractor has entered into with the Employer.

- (T) The Contractor's liability for loss or damages arising from or in relation to this Project, as a result of breach of contract, tort (including negligence,) or otherwise in relation to the Contractor's performance of its obligations under the Contract, is limited to a liability cap as THREE (3) times of the Contract sum. This sub-clause does not apply when the Court or an arbitral tribunal finds that the Contractor has engaged in willful misconduct or fraudulent behavior or gross negligence or a fundamental breach of the Contract.
- (U) The sub-clauses of this Clause in respect of the Contractor's obligations to indemnify the Employer shall survive the termination of this Contract (however occasioned) and shall continue in full force and effect notwithstanding such termination.
- (V) Subject always to the Employer's right of rejection (in which case all title to and risks in any rejected Goods in the possession of the Employer shall remain with or pass back to the Contractor upon the Employer's request for rejection), all title to and risks in the Goods shall pass from the Contractor to the Employer upon delivery and written acceptance of the Goods by the Employer.
- (W) The Contractor shall provide and employ and shall ensure that any of his sub-contractors shall provide and employ in connection with the execution of the Works or the Services sufficiently skilled, competent, qualified, experienced personnel as is necessary for the proper and timely execution of the Works or the Services.

## **25 Instruction and Procedure**

The Contractor shall comply with all reasonable instructions of the Employer and the Employer's Representative. The Employer and/or the Employer's Representative may issue to the Contractor general instructions on procedure and shall supply such additional information as may be required. The Contractor shall follow such procedures as far as possible and shall obtain prior written approval from the Employer or the Employer's Representative for any intended major departure from such procedures. Nothing in this Clause shall relieve the Contractor's obligations under the Contract.

## **26 Not used**

## **27 Not used**

## **28 Programme to be Submitted and Agreed**

- (A) The Contractor may propose changes to some or all of the key dates specified in the Assignment Brief for incorporation into the draft programme prepared under sub-clause (B) of this Clause for the Employer or the Employer's Representative to agree. If any of such proposed changes are agreed by the Employer or the Employer's Representative, who may impose conditions on his agreement, the corresponding key dates shall be changed and the changed dates incorporated into the draft programme.
- (B) The Contractor shall submit a draft programme which shall be in accordance with the requirements of the Assignment Brief and shall incorporate the key dates specified in the Assignment Brief, including any changes agreed under sub-clause (A) of this Clause. The Employer or the Employer's Representative shall either agree the draft programme or instruct the Contractor to submit a revised draft programme which the Contractor shall prepare.
- (C) If the Employer or the Employer's Representative do not agree the revised draft programme submitted under sub-clause (B) of this Clause, he shall issue an instruction under Clause 25 to the Contractor.
- (D) When the Employer or the Employer's Representative has agreed the draft programme or the revised draft programme submitted under sub-clause (B) of this Clause or such other draft programme as may result from sub-clause (C) of this Clause, the agreed draft programme or revised draft programme shall become the Agreed Programme for carrying out the Assignment and shall be amended only with the prior written approval of the Employer or the Employer's Representative.

## **29 Payment**

Subject to the other provisions of this Agreement and to the Contractor duly and promptly delivered the Project Materials to the satisfaction of the Employer, the Employer shall pay the Contractor in accordance with the Fee Proposal or the Purchase Order (as the case may be).

### **30 Fees to be Inclusive**

- (A) Prices and the currency shall be as specified in the Contract. Unless provided otherwise, the fees set out in the Fee Proposal or the Purchase Order (as the case may be) shall be inclusive of all taxes, labour, materials and expenses incurred in the course of provision of the Project Materials.
- (B) If required by the Employer, the detailed price list should also be provided, covering all items affecting the price such as the taxes, service charges, etc.

### **31 Payment in Hong Kong Dollars**

Unless provided otherwise, payments shall be made in Hong Kong dollars.

### **32 Expenses incurred in currencies other than Hong Kong dollars**

The Contractor shall specify in its claims for other reimbursement expenses incurred in currencies other than Hong Kong dollars the date on which the expenses were paid. Payment shall be arranged by conversion to Hong Kong dollars at the Selling (T.T.) rate in use by the Hong Kong and Shanghai Banking Corporation at the commencement of business on the date the expense was paid.

### **33 Payment of Accounts**

- (A) Subject to clause 29, the Contractor shall submit to the Employer an invoice and accompanied by such documents, information and explanations as the Employer may require in respect of the Project Materials. The Employer may request such further documentation as it deems necessary or desirable to verify the invoice. Original invoices shall be submitted by mail to Employer's headquarters (of which the address may be changed upon the Employer's written notice to the Contractor) unless otherwise required by the Employer.
- (B) Except as provided for in sub-clause (C) of this Clause accounts of all money due from the Employer to the Contractor in accordance with the Contract shall be paid within THIRTY (30) days after receipt of the invoice and supporting documentation requested by the Employer and verification of the Contractor's invoice and supporting documentation by the Employer.
- (C) If any item or part of an item of an account rendered by the Contractor is reasonably disputed or subject to reasonable requisitions by the Employer or the Employer's Representative, the Employer shall within THIRTY (30) days after receipt of the invoice by the Employer inform the Contractor in writing

of all items under dispute or subject to requisitions. The Contractor shall cancel the original invoice and reissue an invoice for the undisputed amount within TEN (10) days.

- (D) The Contractor and the Employer shall promptly investigate any disputed invoice and shall act reasonably to resolve the dispute. Any disputed invoice or part of an invoice agreed by the Employer to be payable following resolution shall be re-invoiced as appropriate. Notwithstanding the foregoing, the Contractor shall continue to provide the Project Materials in full as if the dispute and/or requisitions did not exist.
- (E) The Contractor shall be responsible for ensuring that all information on invoices is complete and accurate, and that specific reference is made to the Contract reference number assigned by the Employer.

### **34 Rendering of Accounts**

The Contractor shall render his accounts for interim payments in accordance with the Fee Proposal or the Purchase Order (as the case may be).

### **35 Not used**

### **36 Reduction of Lump Sum Fees**

If there shall be a reduction in the Services or Works resulting from:

- (i) explanations or adjustment made under sub-clause (B) of Clause 7;
- (ii) changes to the Assignment Brief made under sub-clause (A) of Clause 19;
- (iii) clarifications or instructions given under sub-clause (B) of Clause 19;  
and
- (iv) instructions given under Clause 25;

then the Employer shall be entitled to a reduction in the lump sum fees in respect of such a reduction in the Services.

### **37 Not used**

### **38 Employer's Assignment and Novation**

- (A) The Employer may assign or transfer the whole or any part of its rights and/or benefits under the Agreement at any point in time to any third party without the Contractor's consent. Any such assignment or transfer shall be notified to the Contractor as soon as practicable.
- (B) The Employer shall have the right to novate to a third party ("**Novatee**") all of the Employer's rights, interests and benefits, obligations, liabilities and duties, without limitation, known and unknown, existing and contingent, actual and otherwise, in connection with the Agreement at any point in time. The Contractor shall enter into a novation agreement with the Employer and the Novatee to the effect that:
- (1) the Novatee shall assume all rights, interests and benefits, obligations, liabilities and duties of, and all claims for and against, the Employer in connection with the Agreement in place of the Employer as if the Novatee were the original party to the Agreement;
  - (2) the Novatee shall have power to exercise all rights expressed to be those of the Employer under the Agreement;
  - (3) the Novatee shall perform and comply with, and be bound by, each and every duty and obligation of the Employer under the Agreement as if the Novatee were named in the Agreement in place of the Employer; and
  - (4) the Contractor shall release and discharge the Employer from any and all obligations, liabilities and duties in relation to the Contractor of any kind, known and unknown, existing and contingent, actual and otherwise in connection with the Agreement.

A specimen of the novation agreement is annexed as Appendix 1 hereto.

### **39 Contractor's Non-Assignment**

The Contractor shall not, without the prior written consent of the Employer, assign or otherwise transfer the benefit and/or obligations of the Contract or any part thereof to any third party, and the performance of the Contract by the Contractor shall be deemed to be personal to the Contractor.

#### **40 Employment and Replacement of sub-consultants / sub-contractors**

The Contractor shall obtain the prior written approval of the Employer for:

- (i) the appointment of sub-consultants / sub-contractors to undertake any part of the Assignment; and
- (ii) the replacement of any sub-consultants / sub-contractors appointed under sub-clause (i) of this Clause.

#### **41 Liability of Contractor for acts and default of sub-consultants / sub-contractors**

The appointment of sub-consultants / sub-contractors to undertake any part of the Assignment shall not relieve the Contractor from any liability or obligation under the Contract and the Contractor shall be responsible for the acts, default and neglects of any sub-consultants / sub-contractors, their agents, servants or workmen fully as if they were the acts, default and neglects of the Contractor, the Contractor's agents, servants or workmen.

#### **42 Publicity relating to the Contract**

The Contractor shall submit to the Employer all advertising or other publicity materials relating to the Contract or the Project Materials in connection with the Contract wherein the Employer's name is mentioned or language used from which a connection with the Employer can reasonably be inferred or implied. The Contractor shall not publish or use any advertising or other publicity materials without the prior written consent of the Employer.

#### **43 Suspension, resumption or termination**

- (A) If the Contractor is delayed or prevented from performing its obligations under the Contract by circumstances beyond its reasonable control (including acts of God, war, riot etc.), such performance shall be suspended and if it cannot be completed within a reasonable time after the due date as specified in the Contract, the Contract may be terminated by the Employer.
- (B) Unless sub-clause (A) of this Clause apply, the Employer reserves the right to terminate the whole or any part of the Contract or any consignment on account thereof if the same is not completed in all respects in accordance with the instructions and requirements specified in the Contract and with the foregoing conditions, in particular with Clause 24, compliance with which by



the Contractor is of the essence and a fundamental condition of this Contract.

- (C) The Contract may be suspended or terminated by the Employer for convenience without giving any reason by giving the Contractor ONE (1) month's prior notice in writing.
- (D) Upon suspension or termination and unless the provisions in this Contract otherwise provide, the Contractor shall be paid all fees and expenses commensurate with the Services performed by them and accepted by the Employer up to the date of suspension or termination less all fees and expenses previously paid to the Contractor. The Contractor has the obligations to stop work immediately but in an orderly manner and deliver to the Employer documents in its possession, custody and/or control relating to the Project. The Employer shall not be liable for any loss of profits and other losses incurred by the Contractor as a result of the termination or suspension caused by the Contractor or arising from a fault on the part of the Contractor.
- (E) In the event of suspension or termination and unless the provisions in this Contract otherwise provide, the Contractor shall be entitled to reimbursement of the actual cost of or an amount in fair compensation for the related actual financial commitment or obligation outstanding after the giving of the notice of suspension or termination which he has properly incurred in accordance with the Contract prior to the giving of the notice of suspension or termination.
- (F) The payments referred to in sub-clauses (D) and (E) of this Clause shall be deemed in full and final payment for the Project Materials up to the date of suspension or termination. The Contractor shall be entitled to such payments only if the suspension or termination is not attributable to default on the part of the Contractor.
- (G) For service resumption after suspension, the Employer shall give a written notice to the Contractor in no less than SEVEN (7) working days before the planned resumption date of the Project. The Contractor shall thereafter continue with the Services with the same terms and conditions set forth in the Contract. The Project period shall be extended for a period corresponding to the period of suspension or otherwise mutually agreed between the Employer and the Contractor.
- (H) In the event of suspension and subsequent resumption of the Project the

Contractor shall be reimbursed any expenses necessarily incurred as a result of such resumption.

- (I) If the Project is resumed any payment of fees under this Clause except in respect of abortive work that has to be re-done shall rank as payment on account towards the payable payment under the Contract.
- (J) Should the Contract continue to be suspended for a period of more than two years then either:
  - (i) it may be terminated upon the written notice of either party; or
  - (ii) it may be renegotiated with the agreement of both parties.
- (K) Upon expiry or early termination of the Contract (howsoever occasioned):
  - (i) the Contract shall be of no further force and effect, but without prejudice to:
    - (1) the Employer's rights and claims under the Contract or otherwise at law against the Contractor arising from antecedent breaches of the Contract by the Contractor (including any breach(es) which entitle the Employer to terminate the Contract);
    - (2) the rights and claims which have accrued to a Party prior to the Termination; and
    - (3) the continued existence and validity of those provisions which are expressed to or which in their context by implication survive the termination of the Contract.
- (L) If there is any breach of GCC Clause 4, the Employer may terminate the Contract and the Contractor is not entitled to claim any compensation (except for the Project Materials that was accepted by the Employer before the termination of the Contract but was not paid for at the time of termination). The Contractor shall be liable for the related actual financial loss or expenses necessarily incurred by the Employer as a result of the termination of the Contract.

(M) Without affecting the generality of the foregoing sub-clauses and notwithstanding any provision in this Contract, upon the occurrence of any of the following events, the Contractor is not entitled to claim any compensation (except for the Project Materials that was accepted at the Employer before the termination of the Contract but was not paid for by the time of termination) and the Employer may (a) immediately terminate the Contract without prior notice, (b) engage a replacement contractor to carry out and complete the remaining items that have yet to be completed under the Contract, (c) claim for loss, damage and/or expense incurred by the Employer against the Contractor as a result of the termination of the Contract under this sub-clause (including engaging a replacement contractor to carry out and complete the remaining items that have yet to be completed under the Contract), (d) carry out, deliver and complete such Goods / Works / Services by its own resources or by other contractors:

- (i) the Contractor, his sub-contractors of any tiers or employees or agents or the subcontractors' employees have engaged or are engaging or are reasonably believed to have engaged or be engaging in acts or activities that are likely to constitute or cause the occurrence of offences endangering national security or which would otherwise be contrary or prejudicial to the interest of national security; or
- (ii) the continued engagement of the Contractor his sub-contractors of any tiers or employees or agents or the subcontractors' employees or the continued performance of the Contract is contrary or prejudicial to the interest of national security;
- (iii) the Contractor shall at any time become bankrupt, insolvent, or shall be placed in receivership or go into liquidation or receivership, or a petition for liquidation, bankruptcy or receivership (whether voluntary or involuntary, save for the purpose of reconstruction or amalgamation) is filed against the Contractor, but without any prejudice to any right or action or remedy which shall have accrued or shall accrue thereafter to the Employer;
- (iv) the Contractor is found to be or is reasonably suspected to have been involved in collusion in the quotation process, and breach or non-compliance with any requirements of the Anti-collusion Clause of the Terms of Quotation / Conditions of Tender (in which case the Employer also has the right to report all suspected instances of

bid-rigging to the Competition Commission ("**Commission**") established under the Competition Ordinance (Cap. 619) and provide the Commission with any relevant information, including but not limited to information on the bid and the Contractor's personal data; the Contractor may also lose his right for submitting quotations or tenders to the Employer in the future);

- (v) the Contractor or the Contractor's sub-contractors of any tiers or employees or agents or the subcontractors' employees do not comply or are reasonably suspected to fail to have complied with the relevant laws of HKSAR (including but not limited to Prevention of Bribery Ordinance (Cap. 201) as set out in Clause 47 below) and the terms and conditions of the Contract;
- (vi) any serious accident (personal injury/ death/ damage to property) occurs arising from or is reasonably suspected to have arisen from the Contractor's failure to comply with any sub-clauses of Clause 50.

The Employer shall be entitled to deduct from monies otherwise payable to the Contractor to cover the actual loss being suffered by the Employer; if the monies otherwise payable to the Contractor are not sufficient to cover the Employer's actual loss, the Contractor shall be liable to fully reimburse the Employer for the same accordingly.

#### **44 Probity**

The Contractor shall at all times be a business entity of integrity. Its tendering, contracting and/or sub-contracting practices shall be transparent and the Contractor must be accountable for the same. The Contractor shall secure due and timely payment to its suppliers, sub-contractors and employees.

#### **45 Appeal to Employer**

The Contractor shall have the right to appeal to the Employer against any instruction or decision of the Employer's Representative which the Contractor considers to be unreasonable.

#### **46 Settlement of Disputes**

- (A) If any dispute or difference of any kind whatsoever shall arise between the Employer and the Contractor in connection with or arising out of the Contract, either party shall be entitled to refer the dispute or difference to the

Employer and the partner or director of the Contractor, who shall meet within TWENTY ONE (21) days of such matter being referred to them.

- (B) If the dispute or difference cannot be resolved within TWO (2) months of a meeting under sub-clause (A) of this Clause or upon written agreement of the Employer and the Contractor that the dispute or difference cannot be resolved in such meeting, either the Employer or the Contractor may at any time thereafter request that the matter be referred to mediation in accordance with and subject to the Hong Kong International Arbitration Centre Mediation Rules or any modification thereof for the time being in force.
- (C) If the matter cannot be resolved by mediation, or if either the Employer or the Contractor do not wish the matter to be referred to mediation then either the Employer or the Contractor may within the time specified herein require that the matter shall be referred to arbitration in accordance with and subject to the provisions of the Arbitration Ordinance (Chapter 609, Laws of Hong Kong) or any statutory modification thereof for the time being in force and any such reference shall be deemed to be a submission to arbitration within the meaning of such Ordinance. Any such reference to arbitration shall be made within NINETY (90) days of either the refusal to mediate, or the failure of the mediation. The parties agree that all provisions of Schedule 2 to the Arbitration Ordinance are applicable to the arbitration.
- (D) The Hong Kong International Arbitration Centre 2014 Domestic Arbitration Rules shall apply to any arbitration instituted in accordance with this Clause unless the parties agree to the contrary.

#### **47 Prevention of Bribery**

- (A) The Contractor shall duly inform his employees who are engaged either directly or indirectly in the formulation and implementation of any project of the Employer that the soliciting or accepting of an advantage as defined in the Prevention of Bribery Ordinance (Cap. 201) (“**POBO**”) is not permitted. The Contractor shall also caution his employees against soliciting or accepting any excessive hospitality, entertainment or inducements which would impair his impartiality in relation to the projects of the Employer.
- (B) The Contractor shall prohibit and prevent his employees, agents and sub-consultants / sub-contractors or any others directly or indirectly engaged by the Contractor who are involved in this Contract from offering, soliciting or accepting any advantage as defined in the POBO when conducting business in

connection with this Contract. Without the approval of the Employer, it is an offense under the Prevention of Bribery Ordinance to offer or give any gift, loan, fee, reward, commission, office, employment, contract, other services in favour of, or discount to any staff of the Employer. Any such offence committed by the Contractor or his employees, agents and sub-consultants / sub-contractors or any others directly or indirectly engaged by the Contractor will render the tender null and void. The Employer may also terminate the Contract granted without prior notice and hold the Contractor liable for any loss or damage so caused to the Employer.

#### **48 Declaration of Interest**

- (A) On appointment and during the currency of the Contract, the Contractor must declare any interest that the Contractor and any of his associated companies may have in any projects or contracts with the Employer if such interest is considered to be in real or apparent conflict with the duties of the Contractor under this Contract or the duties of his associated companies under any contracts with the Employer. The Contractor shall not undertake any services, which could give rise to conflict of interest, except with the prior written approval of the Employer which approval shall not be unreasonably withheld.
- (B) In any case, the Contractor shall not undertake and shall procure that any of his associated companies does not undertake any services for any entity in respect of a contract between that entity and the Employer for which the Contractor is providing a service to the Employer.

#### **49 Insurance**

##### **(A) Employees' Compensation Insurance Policy**

- (i) Without prejudice to the Contractor's obligations, liabilities and responsibilities under the Contract and his obligation to insure by law, and unless the Assignment Brief otherwise specifies, the Contractor shall at his own expenses warrant to take out and maintain an Employees' Compensation Insurance Policy ("**EC policy**") covering all liabilities arising from any death of, accident or injury to any workmen or other persons in the employment of the Contractor and any sub-contractor of all tiers and the Employer and/or any related subsidiaries of the Employer shall not be liable for any damages or compensation in respect thereof. Such EC policy shall be maintained during the Contract period and for the whole of the time that such workmen or other persons are employed on the delivery of Goods / Works / Services including the Maintenance Period or Defects

Liability Period (if applicable). In this EC policy, the Employer and/or any related subsidiaries of the Employer should be named as joint insured and “Waiver of Subrogation Clause against Construction Industry Council and/or any related subsidiaries of Construction Industry Council (if any)” should be included. Considering the Employer and/or any related subsidiaries are named as joint insured in this insurance cover, W338 Indemnity to Principal Clause is optional to be included. However, the wording of “the Company shall not be liable under this Endorsement (except under the Ordinance) in respect of any injury by Accident or Disease due to or resulting from any act default or neglect of the Principal (Employer) his servants or agents” should be removed from clause wording of W338 Indemnity to Principal Clause. If the Contractor shall fail to effect and maintain the EC policy or if the Contractor shall fail to provide any evidence thereof which he is required to under item (i), the Employer may at its own discretion terminate the Contract.

- (ii) Before the commencement of delivering Goods and/or Works and/or Services under the Contract, subject to the terms of the Assignment Brief, effect and maintain an EC policy, in joint name with the Employer and/or any related subsidiaries (including Endorsements revised W348 and W204) which he is required to effect pursuant to item (i) above together in case of sub-contractor(s) involved with satisfactory proof of payment of the current premiums thereof, and produce a copy of the EC policy to the Employer unless otherwise mentioned in the assignment brief. If the Contractor shall fail to effect and maintain the EC policy or if the Contractor shall fail to provide any evidence thereof which he is required to under item (ii), the Employer may at its own discretion terminate the Contract. The Contractor shall effect and keep in force during the Contract period at his own expense a policy of insurance against all claims, demands or liability aforesaid in the Contract with an insurance company of the Employer's choice and shall continue such insurance during the continuance of the Contract.
- (iii) In the event of any of the Contractor's sub-contractors of all tiers or employees or agents or the subcontractors' employees suffering any injury or death in the course of the Contract and whether there be a claim for compensation or not, the Contractor shall within SEVEN (7) working days give notice in writing of such injury or death to the

Employer.

**(B) Public Liability Insurance Policy (“PLI policy”)**

Without limiting the Contractor's obligations under the Contract, and if the Assignment Brief so specifies, the Contractor shall take out and maintain until the end of the term of the contract, a PLI policy of Insurance cover in the joint names of the Employer and/or any related subsidiaries, the Contractor and subcontractors of any tier in a sum of not less than HK\$30,000,000 for any one accident and unlimited during the period of insurance, against any liability, loss, claim, expense or proceedings whatsoever incurred, sustained or made by any person arising under any Enactment or at common law, in respect of the personal injury or death of any person or the damage to any real and/or personal property arising out of the execution of the Services or any act or omission by the Contractor in connection with the Contract, with established insurers of repute, subject to the Employer's approval unless otherwise mentioned in the assignment brief. If the said PLI policy provides that the insurers will not be responsible for payment of any certain amount of compensation (including, without limitations, the amount of any excesses and deductibles), the Contractor shall be solely responsible for such payment and shall reimburse the Employer forthwith if the Employer shall be required to make such payment. For the avoidance of doubt, if the Assignment Brief specifies other requirements for the PLI policy, the requirements specified in the Assignment Brief shall prevail over the requirements under this Clause 49(B).

**(C) Contractors' All Risks including Third Party Liability Insurance Policy (“CAR policy”)**

(i) Without limiting the obligations, liabilities and responsibilities of the Contractor under the Contract, unless otherwise specified in the Assignment Brief, the Employer has effected, with insurers of the Employer's choice, for the benefit *inter alia* of the Employer, the Contractor and his sub-contractors of any tier and other direct specialist contractors a CAR policy in respect of *inter alia*:

- (a) Loss and damage to the Works under the Contract;
- (b) Third party liability

Refer to **Appendix 2** for an **insurance synopsis** (“**Insurance Synopsis**”) and reference should be made thereto for its full terms and effect.

(ii) CAR policy only covers contracts falling within the Contract Details



as stated in the said Insurance Synopsis. Should any contract be not covered within the Contract Details, or if it is specified in the Assignment Brief that the Employer has not effected a CAR policy, the Contractor must arrange another CAR policy in the joint name with the Employer and/or any related subsidiaries, at the Contractor's own cost, subject to the Employer's approval. Minimum coverage for third party liability under Section II of CAR policy (Liability to Third Parties) is HK\$30,000,000 for any one accident and unlimited in aggregate within the period of insurance during the period of insurance. Whilst the insurance cover for Section I of CAR policy (Own Damage to Contract Work), will be up to contract value of the Work, and including its Professional Fees, Removal of Debris at the % of contract value to be agreed with the Employer. For the avoidance of doubt, if the Assignment Brief specifies other requirements for the CAR Policy, the requirements specified in the Assignment Brief shall prevail over the requirements under this Clause.

- (iii) The Contractor shall for himself and on behalf of all sub-contractors of any tier accept the CAR policy as if it has been effected by himself and shall with all due diligence observe and fulfil, and procure that all sub-contractors of any tier observe and fulfil, the terms, provisions and conditions contained therein.
- (iv) The Contractor shall be deemed to have read and understood the terms, provisions, conditions, exclusions and excesses of the CAR policy. If, in the Contractor's opinion, the amounts and / or risks insured are insufficient to cover the Contractor's risks, duties, obligations and liabilities under the Contract, at common law or otherwise, the Contractor may effect such further insurance at his own expense as he considers necessary.
- (v) It is acknowledged and understood that the CAR policy is subject to excesses and exclusions. In the event of a claim under the CAR policy in respect of a matter for which the Contractor is responsible or liable under the Contract, the full amount of such excesses and exclusions shall be borne by the Contractor. In the event of any default by the Contractor in making good any damage to the works where required by the terms and conditions of the Contract, the Employer may deduct the applicable policy excess from any sums

due or to become due to the Contractor under this Contract or recover the same as a debt due from the Contractor.

- (vi) Save for any case in which the relevant loss or injury arises from any act or neglect of the Employer or any person for whom the Employer is responsible, all costs and incidental expenses incurred in relation to claims including the preparation and submission of all formal claims under the CAR policy shall be borne by the Contractor.
- (vii) The Contractor shall forward to Employer's Representative a copy of all notices and claims submitted by him or all sub-contractors of any tier pursuant to the terms of the CAR policy within 24 hours of dispatch of such notice or claim. Upon a written request from the Employer, the Employer shall be entitled to take over the conduct of any claim submitted by the Contractor or all sub-contractors of any tier under the CAR policy, and in any such event the Contractor hereby appoints, and shall procure that all sub-contractors of any tier appoint, Employer as his or their agent for that purpose.
- (viii) All monies to be received under the CAR policy shall be paid to the Employer as loss payee. The Contractor and all sub-contractors of any tier hereby irrevocably authorize the Employer to give good discharge to the insurers for such monies.
- (ix) Upon the occurrence of any loss or damage to the works under the Contract, the Contractor with due diligence shall restore the works damaged, replace or repair any unfixed materials or goods which have been destroyed or injured, remove and dispose any of debris and proceed with the carrying out and completion of the works. All monies received under the CAR policy (less any amounts to cover professional fees) shall be paid to the Contractor by instalments under the Interim Payment Certificates or Final Payment Certificates issued by the Employer's Representative. The Contractor shall not be entitled to any payment in respect of the restoration of work damaged, the replacement and repair of any unfixed materials or goods, and the removal and disposal of debris other than the monies received under the said CAR policy.

**(D) Professional Indemnity Insurance Policy (“PII policy”)**

- (i) Without limiting his obligations and responsibilities nor his liability to indemnify the Employer under Clause 24, the Contractor shall, if the Assignment Brief specifies, as from the date of commencement of the Contract, and thereafter, maintain an insurance cover up to 6 years from contract completion to meet any claims that may be made by the Employer in respect of any negligence in or about the conduct of and performance by the Contractor, his sub-consultants of all tiers, his servants and agents of all and singular the Services.
- (ii) In the event that through no fault of the Contractor it becomes impractical or unreasonable to maintain the said cover for the full period required by sub-clause (i) of this Clause, the Contractor may propose alternative arrangements for the Employer’s approval.
- (iii) The foregoing insurance policy or policies shall be affected with an insurer (or insurers) and in terms acceptable to the Employer. Throughout the period of insurance, the Contractor shall each year lodge with the Employer a certificate signed by and on behalf of the Contractor’s insurers stating that the said policy or policies of insurance remain in full force.
- (iv) Unless otherwise specified in the Assignment Brief, the amount of insurance cover as mentioned in sub-clause (i) of this Clause shall be a minimum of THREE (3) times of the Contract sum or HK\$10,000,000 in the aggregate, whichever is higher.

**50 Safety Precaution**

- (A) The Contractor shall be responsible for taking all necessary steps in ensuring the safety of all persons and properties affected by the work stipulated under the Assignment in the vicinity of the works at all stages, whether or not they are engaged in the execution of the works. The Contractor shall throughout the progress of the Works take full responsibility for the adequate stability and safety of all operations on the Site.
- (B) Pursuant to the Employer’s Contractor’s Safety Requirements, Factories and Industrial Undertakings Ordinance (Cap. 59), Occupational Safety and Health Ordinance (Cap.509) and all sub-legislations thereunder, whilst executing the Contract, it shall be the duty of the Contractor to ensure the health and safety at work of all persons employed by him, and it shall be the

duty of every person employed to take care for the safety of himself and of other persons who may be affected by his acts or omissions at work. The Contractor shall ensure full compliance of all such requirements.

- (C) The Contractor, his subcontractors of all tiers and employees employed by the Contractor for construction work or container handling under the Contract shall hold valid Construction Industry Safety Training Certificates (commonly known as “**Green Cards**”) and any other relevant mandatory certificates required for safe operation of equipment/machines for the works.
- (D) In addition, the Contractor, his subcontractors of all tiers and employees employed by the Contractor for construction trade(s) of high risk under the Contract shall also hold valid Specified Trade Safety Training Certificates (commonly known as “**Silver Cards**”).
- (E) The Contractor must supervise and ensure all his sub-contractors and employees wear appropriate personal protective equipment, e.g. protective clothing, safety helmet, safety shoes, harness, fall arresting system, eye-protector, ear protector, and mask, etc., as the Employer may consider necessary or appropriate or as legally required. Any such personal protective equipment must be provided, maintained and replaced as necessary by the Contractor at his own expenses.
- (F) Smoking is not permitted in the workplace. If the Works involve the use of naked flame, the Contractor must implement sufficient fire prevention measures.
- (G) The Contractor shall take adequate steps (e.g. provide a suitable working platform) and provide all necessary equipment at its own expenses to prevent any person from falling from a height of 2 metres or more. The Employer’s Guidelines on Work-above-ground Safety shall be strictly followed.
- (H) Without prejudice to the foregoing sub-clauses, the Contractor shall adopt all reasonable measures to ensure the health, safety and wellbeing of its employees, and those of third parties on the site. The Contractor shall also ensure that the Contractor and his sub-contractors of all tiers comply at all times with all relevant legislations, statutory rules and regulations, and all guidelines, best practices and industrial standards published and/or updated by the Employer from time to time (including but not limited to those annexed hereto (if any)). The Contractor is encouraged to achieve higher standards

where possible.

## **51 Avoidance of Nuisance and Making Good Working Areas**

- (A) The Contractor shall take all necessary measures to ensure that the Contractor's operations be carried out in such manner as to cause as little inconvenience as possible to residents, the public or the operation of construction sites in the vicinity of the premises where the Contractor carries out the Works. The Contractor shall be held responsible for any claim, which arises from non-compliance with this clause.
- (B) The Contractor shall take all reasonable care so as not to cause any damage to property or not to cause any nuisance. The Contractor shall indemnify the Employer from any claim against the Employer arising from default of the Contractor in this respect.
- (C) The Contractor must maintain the workplace in a safe condition and ensure that every access to and egress from the workplace is safe. The Contractor shall also ensure that all means of escape from the workplaces are kept free from obstruction.
- (D) The Contractor shall confine his operations to the minimum areas required for the works and shall at all times work in a clean, tidy and considerate manner having proper regard to other contractors/consultants working in the same site. As soon as work has been completed for any location, the Contractor shall remove all debris resulting from his activities and make good any damage.
- (E) All refuse shall be delivered properly to the refuse collection warehouse specified by the Employer at the end of each working day or on any dates specified by the Employer.

## **52 Disclosure of Information**

The Employer shall have the right to disclose to any person, whenever it considers appropriate or upon request by any third party (written or otherwise), and in such form and manner as it deems fit:

- (i) the fees, costs and expenses payable by the Employer for engaging the Contractor; and
- (ii) the quotation or fee proposal submitted by the Contractor.

### **53 Code of Conduct for Staff**

- (A) The Contractor shall explicitly prohibit his employees from soliciting or accepting any advantages as defined in the Prevention of Bribery Ordinance (Cap. 201) in discharging its duties under the Contract.
- (B) The Contractor shall implement a system requiring his employees to declare to him any interest they or their immediate families have or may have any conflict between their personal interest and their official positions in relation to this Assignment.
- (C) The Contractor shall prohibit his employees from taking up any outside work or employment, which could create or potentially give rise to a conflict of interest situation in connection with this Assignment.
- (D) The Contractor shall take adequate measures to protect any confidential / privileged information entrusted or obtained in relation to the Contract; and procure that his employees must not disclose to a third party any of such information without prior written consent from the Employer.
- (E) The Contractor shall prohibit his employees from introducing or recommending, directly or indirectly, service providers (including contractors) to owners, tenants or occupiers of premises in buildings covered by this Contract.
- (F) When carrying out the Works delivered under the Contract, all workers have to wear the temporary work permit issued by Employer. If the temporary work permit is lost, the Contractor, his sub-contractors of all tiers or employees or agents or the subcontractors' employees have to report to the Employer and request a re-issue of the temporary work permit at HK\$100 each.
- (G) If the Contractor finds it necessary to park their motor vehicles within the premises of the Employer, an application has to be lodged with the Employer in advance. If the application is approved by the Employer, the parking permit issued by the Employer and the contact telephone number of the driver using the parking permit has to be displayed on the motor vehicles.

### **54 Rights of Third Parties**

Notwithstanding the Contracts (Rights of Third Parties) Ordinance (Chapter 623 of

the Laws of Hong Kong), no one other than a party to this Contract will have any right to enforce any of the terms in this Contract.

## **55 Non-Waiver**

No forbearance, delay or indulgence by either party in enforcing the provisions of this Contract shall prejudice or restrict the rights of that party or be regarded as a waiver of that party, nor shall any waiver of a party's rights operate as a waiver of any subsequent breach and no right, power or remedy herein conferred upon or reserved for either party is exclusive of any other right, power or remedy available to that party and each such right, power or remedy shall be cumulative. No waiver shall be effective unless it is in writing and signed by an authorized representative of the waiving party.

## **56 Severability**

In case any provision in this Contract shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby and such provision shall be ineffective only to the extent of such invalidity, illegality or unenforceability, and each term and provision of this Contract shall be valid and enforced to the fullest extent permitted by law.

## **57 Contractor's Claims for Extras**

- (A) The Contractor shall send to the Employer's Representative once in every month an account giving particulars (as full and detailed as possible) of all claims for any extension of time for completion of the Works and for additional expense (if any) to which the Contractor may consider himself entitled and of all extra or additional work carried out by the Contractor during the preceding month.
- (B) No claim for extension of time for completion of the Works and / or payment for additional expense or extra or additional work which has not been made within a reasonable time to enable the circumstances and reasons for extensions or the additional expense to be ascertained and evaluated shall be considered.
- (C) If the Employer's Representative is of the opinion that the delay is caused by:
  - (i) inclement weather and/or its consequences hampering the progress of the Works, or
  - (ii) the hoisting of tropical cyclone warning signal No. 8 or above or the

- issue of a Black Rainstorm Warning or the Government's announcement of extreme conditions, or
- (iii) an instruction issued under Clause 25, or
  - (iv) a variation ordered under Clause 62, or
  - (v) a substantial increase in the work required to be done not resulting from a variation ordered under Clause 62, provided that the increase was not apparent from the Contract documents, or
  - (vi) the Contractor not being given possession of any part of the Site pursuant to the Contract or is subsequently unduly deprived of it by the Employer, or
  - (vii) a disturbance to the progress of the Works for which the Employer is responsible, or
  - (viii) the Employer suspending the Works in accordance with Clause 43 insofar as the suspension is not occasioned by the circumstances described in Clause 57 (D)(i) to (v), or
  - (ix) any utility undertaking or other duly constituted authority failing to commence or carry out timely any work thereby hampering or preventing the execution of the Works, provided that the Contractor has taken all practical measures to cause it to commence or to proceed with such work timely, or
  - (x) any Nominated Sub-contractor for any reason specified in sub-clause (C)(i) to (ix) of this Clause, provided that the Contractor has taken all reasonable measures to prevent, or
  - (xi) change in law, or
  - (xii) unforeseen site conditions, or
  - (xiii) any special circumstance hampering the progress of the Works,

then the Employer's Representative shall within a reasonable time consider whether the Contractor is fairly entitled to an extension of time for the completion of the Works or any Section thereof as claimed by the Contractor or at all.

- (D) Notwithstanding the general powers of the Employer's Representative under the provisions of this Clause to determine whether the Contractor is fairly entitled to an extension of time, the Contractor shall not be entitled to an extension of time for the completion of the Works or any Section thereof if the cause of the delay is:

- (i) a suspension not provided for in the Contract, or
- (ii) a suspension necessary by reason of inclement weather conditions



- affecting the safety or quality of the Works or any part thereof, or
- (iii) a suspension necessary by reason of some default on the part of the Contractor or any person carrying out the Works except person for whom the Employer is responsible, or
  - (iv) a suspension necessary for the proper execution of the Works or for the safety of the Works or any part thereof or for the safety and health of any person or the safety of any property on or adjacent to the Site in as much as such necessity does not arise from any act or default of the Employer or
  - (v) a shortage of Constructional Plant or labour.
- (E) If in accordance with sub-clause (A) of this Clause the Employer's Representative considers that the Contractor is fairly entitled to an extension of time for the completion of the Works or any Section thereof, the Employer's Representative shall within a reasonable time determine, grant and notify in writing to the Contractor such extension. If the Employer's Representative determines that the Contractor is not entitled to an extension, the Employer's Representative shall notify the Contractor in writing accordingly.
- Provided that the Employer's Representative in determining any such extension shall take into account all the circumstances known to him at that time, including the effect of any omission of work or substantial decrease in the quantity of any item of work.
- Provided further that the Employer's Representative shall, if the Contractor shall so request in writing, make a subsequent review of the circumstances causing delay and determine whether any further extension of time for completion should be granted.
- For the avoidance of doubt if the Employer's Representative grants an extension of time in respect of a cause of delay occurring after the Employer is entitled to recover liquidated damages in respect of the Works or any Section, the period of extension of time granted shall be added to the prescribed time or previously extended time for the completion of the Works or, as the case may be, the relevant Section.
- (F) For the purposes of determining whether or to what extent the Contractor may be entitled to an extension of time under sub-clause (C) of this Clause the Employer may require the Contractor to submit full and detailed

particulars of the cause and extent of the delay to the progress of the Works. If the Contractor fails to comply with the provisions of this sub-clause, the Employer shall consider such extension only to the extent that the Employer's Representative is able on the information available.

- (G) Whenever the Employer's Representative grants an extension of time for completion in accordance with this Clause, the Contractor shall revise the programme referred to in Clause 28 accordingly.
- (H) Except as provided elsewhere in the Contract, any extension of time granted by the Employer's Representative to the Contractor shall be deemed to be in full compensation and satisfaction for any loss or injury sustained or sustainable by the Contractor in respect of any matter or thing in connection with which such extension shall have been granted and every extension shall exonerate the Contractor from any claim or demand on the part of the Employer's Representative for the delay during the period of such extension but not for any delay continued beyond such period.
- (I) For the purpose of this Clause, "Black Rainstorm Warning" means a warning issued by the Director of the Hong Kong Observatory of a heavy rainstorm in, or in the vicinity of, Hong Kong by the use of the heavy rainstorm signal commonly referred to as Black.

## **58 Commencement of the Works**

The Contractor shall commence the Works on the date for commencement of the Works as notified in writing by the Employer or the Employer's Representative and shall proceed with the same with due diligence. The Contractor shall not commence the Works before the notified date for commencement.

## **59 Time for Completion**

- (A) The Works and any Section thereof shall be completed within the time or times stated in the Assignment Brief calculated from and including the date for commencement notified by the Employer in accordance with Clause 58 or such extended time as may be determined in accordance with Clause 57.
- (B) General Holidays shall be included in the time for completion unless otherwise stated in the Contract.

## **60 Liquidated Damages**

- (A) If the Contractor fails to complete the Works or where the Works are divided into Sections any Section within the time for completion prescribed by Clause 59 or such extended time as may be granted in accordance with Clause 57, then the Employer shall be entitled to recover from the Contractor liquidated damages. The payment of such damages shall not relieve the Contractor from his obligations to complete the Works or from any other of his obligations under the Contract.
- (B) The liquidated damages shall be calculated using the rate per day prescribed in the Contract, either for the Works or for the relevant Section, whichever is applicable. Provided that, if the Employer's Representative certifies completion under Clause 61 of any part of the Works before completion of the Works or any part of any Section before the completion of the whole thereof, then the rate per day of liquidated damages for the Works or the relevant Section shall from the date of such certification be reduced in the proportion which the value of the part so certified bears to the value of the Works or the relevant Section, as applicable, both values as of the date of such certification shall be determined by the Employer's Representative.
- (C) The period for which liquidated damages shall be calculated shall be the number of days from the prescribed date for completion or any extension or revision thereof of the Works or the relevant Section until and including the certified date of completion.
- (D) All monies payable by the Contractor to the Employer pursuant to this Clause shall be paid as liquidated damages for delay and not as a penalty.
- (E) If the Contractor fails to complete the Works by the time stated in the Contract pursuant to Clause 59, or such extended time as may be determined in accordance with Clause 57, then the Contractor shall pay or allow to the Employer a sum calculated at the rate as specified at the Assignment Brief as liquidated and ascertained damages for the period during which the Works shall so remain or have remained incomplete, and the Employer may deduct such sum from any monies due or to become due to the Contractor under the Contract.

## **61 Completion of the Works**

- (A) When the Works have been substantially completed and have satisfactorily passed any final test that may be prescribed by the Contract, the Contractor

may serve notice in writing to that effect to the Employer's Representative, accompanied by an undertaking to carry out any outstanding work during the Defects Liability Period, requesting the Employer's Representative to issue a certificate of completion in respect of the Works. The Employer's Representative shall, within TWENTY ONE (21) days of the date of receipt of such notice either:

- (i) issue a certificate of completion stating the date on which, in the Employer's Representative's opinion, the Works were substantially completed in accordance with the Contract and the Defects Liability Period shall commence on the day following the date of completion stated in such certificate, or
  - (ii) give instructions in writing to the Contractor specifying all the work which, in the Employer's Representative's opinion, is required to be done by the Contractor before such certificate can be issued, in which case the Contractor shall not be permitted to make any further request for a certificate of completion and the provisions of sub-clause (B) of this Clause shall apply.
- (B) Notwithstanding the provisions of sub-clause (A) of this Clause, as soon as in the opinion of the Employer's Representative the Works have been substantially completed and satisfactorily passed any final test which may be prescribed by the Contract, the Employer's Representative shall issue a certificate of completion in respect of the Works and the Defects Liability Period shall commence on the day following the date of completion stated in such certificate.
- (C) The Contractor shall carry out any outstanding work as soon as practicable after the issue of the certificate of completion or as reasonably directed by the Employer's Representative and in any event before the expiry of the Defects Liability Period. The Contractor's obligation to provide, service and maintain site offices, latrines and the like, shall continue for as long as may be required by the Employer and the Employer's Representative before the expiry of the Defects Liability Period.
- (D) The provisions of sub-clauses (A), (B) and (C) of this Clause shall apply equally to any Section.
- (E) (i) The Employer's Representative shall give a certificate of completion in

respect of any part of the Works which has been completed to the satisfaction of the Employer's Representative and is required by the Employer for permanent occupation or use before the completion of the Works or any Section.

- (ii) The Employer's Representative, following a written request from the Contractor, may give a certificate of completion in respect of any substantial part of the Works which has been completed to the satisfaction of the Employer's Representative before the completion of the Works or any Section and is capable of permanent occupation and/or permanent use by the Employer.
  - (iii) When a certificate of completion is given in respect of a part of the Works such part shall be considered as completed and the Defects Liability Period for such part shall commence on the day following the date of completion stated in such certificate.
- (F) Any certificate of completion given in accordance with this Clause in respect of any Section or part of the Works shall not be deemed to certify completion of any ground or surface requiring reinstatement unless the certificate shall expressly so state.

## **62 Variations**

- (A) The Employer's Representative may order in writing any variation to any part of the Works that is necessary for the completion of the Works or is in his opinion desirable for or to achieve the satisfactory completion and functioning of the Works. The Contractor shall forthwith carry out such variation in accordance with the Employer's Representative's instruction.
- (B) No variation ordered by the Employer's Representative shall in any way vitiate or invalidate the Contract but all such variations shall be valued in accordance with Clause 63.
- (C) Any variation ordered by the Employer's Representative may include a requirement for the Contractor to prepare and submit within FOURTEEN (14) days of the Contractor receiving the variation order, a lump sum quotation in writing for complying with the order.
- (D) (i) Notwithstanding sub-clause (C) of this Clause, prior to ordering a variation, the Employer's Representative may request the Contractor to submit a lump sum quotation in writing within FOURTEEN (14) days of

receipt of such request, or within such other time as may be agreed between the Employer or the Employer's Representative and the Contractor.

- (ii) In the event that the Contractor is not subsequently instructed by the Employer's Representative to execute the variation referred to in Clause 61(D)(i) above, the Contractor shall be entitled to any cost incurred in the preparation of the lump sum quotation which cost shall be ascertained and certified by the Employer's Representative.
- (E) (i) The Contractor may propose a variation by submitting in writing to the Employer's Representative a proposal together with sufficient details and justification to show that:
- (1) the time for construction of the Works can be reduced, and/or
  - (2) the future maintenance cost can be reduced, and/or
  - (3) the quality of design and/or the construction of the Works can be enhanced, and/or
  - (4) the Contract sum can be reduced by the amount of the lump sum reduction that the Contractor can offer to the Employer, and
  - (5) in any event:
    - (1) the quality of the design or construction of the Works is not prejudiced, or
    - (2) the proposed variation is in the interests of the Employer.
- (ii) The Employer's Representative shall within TWENTY EIGHT (28) days of receipt of the Contractor's proposed variation and supporting detailed information under sub-clause (E)(i) of this Clause, or within such time as may be agreed between the Contractor and the Employer's Representative, but solely at the discretion of the Employer, confirm whether or not he agrees to the proposed variation and, if so, order the Contractor in writing to carry out the proposed variation under this sub-clause.
- (iii) No adjustment shall be made to the Contract sum by virtue of this sub-clause except the reduction pursuant to sub-clause (E)(i)(4) of this Clause.

### **63 Valuation of Variations**

- (A) The Employer shall determine the sum (if any) which in his opinion shall be added to or deducted from the Contract sum as a result of a variation order given by the Employer's Representative under Clause 62 (other than a variation ordered under sub-clause (E) of Clause 62) in accordance with the following principles:

- (1) by valuation in accordance with sub-clause (D) of this Clause, or
  - (2) by acceptance of a lump sum quotation prepared and submitted by the Contractor to the Employer's Representative in accordance with sub-clauses (E) and (F) of this Clause.
- (B) The valuation of any variation ordered by the Employer's Representative in accordance with sub-clause (A) of Clause 62 shall include the cost (if any) of any disturbance to, or prolongation of both varied and unvaried work.
- (C) In the event of the Employer's Representative and the Contractor failing to reach agreement on any rate or price under the provisions of sub-clause (D) of this Clause, the Employer's Representative shall fix such rate or price as shall in his opinion be reasonable and notify the Contractor accordingly.
- (D) The Employer's Representative shall determine the value of a variation as follows:
- (1) Any item of work omitted shall be valued at the rate or price set out in the Contract for such work or, in the absence of such a rate or price, at a rate or price agreed between the Employer and the Contractor.
  - (2) Any work carried out which is the same as or similar in character to and executed under the same or similar conditions and circumstances to any item of work priced in the Contract shall be valued at the rate or price set out in the Contract for such item of work.
  - (3) Any work carried out which is not the same as or similar in character to or is not executed under the same or similar conditions or circumstances to any item of work priced in the Contract shall be valued at a rate or price based on the rates or prices in the Contract so far as may be reasonable, failing which, at a rate or price agreed between the Employer and the Contractor.

Provided that if the nature or extent of any variation ordered in accordance with sub-clause (A) of Clause 62 relative to the nature or extent of the Works or any part thereof shall be such that in the opinion of the Employer's Representative any rate or price contained in the Contract for any item of work is by reason of such variation rendered unreasonable or inapplicable then a new rate or price shall be agreed between the Employer's Representative and the Contractor for that item, using the Contract rates or prices as the basis for determination and taking into account the provisions of sub-clause (B) of this Clause.

- (E) Any lump sum quotation submitted by the Contractor to the Employer's Representative in accordance with sub-clause (C) or (D) of Clause 62 shall indicate how the lump sum was calculated by showing separately full details of:
- (1) the cost of complying with the order,
  - (2) the cost of preparing the lump sum quotation,
  - (3) the cost (if any) of any disturbance to or prolongation of varied and unvaried work as a consequence of complying with the order, and
  - (4) such other information as will enable the Employer and its representative to evaluate the lump sum quotation.
- (F) The Employer's Representative shall notify the Contractor not later than FOURTEEN (14) days from the receipt of any such lump sum quotation (or such other time as may be agreed between the Employer's Representative and the Contractor) whether or not it has been accepted. If accepted, the amount specified in the lump sum quotation, or otherwise agreed between the Employer's Representative and the Contractor, shall be the full sum to which the Contractor is entitled for complying with that order.
- (G) In the event that a lump sum quotation is submitted in accordance with sub-clause (C) or (D) of Clause 62 and the lump sum quotation is not accepted by the Employer's Representative, then the work ordered under sub-clause (A) of Clause 62 shall be valued in accordance with sub-clause (E) of this Clause.
- (H) The Contractor shall supply the Employer's Representative with any further information reasonably requested by the Employer's Representative within FOURTEEN (14) days of the request to enable him to value any variation ordered under sub-clause (A) of Clause 62.
- (I) The Employer's Representative shall within TWENTY EIGHT (28) days of the receipt of the information requested under sub-clause (H) of this Clause notify the Contractor of his valuation.

## **64 Valid Certificates of Intermediate Trade Testing or higher qualifications**

Except for carrying out general cleaning, delivering or sweeping tasks or having special approval of the Employer's Representative, all workers employed by the



Contractor or sub-consultants of all tiers to work under this Contract shall hold valid certificates of intermediate trade testing (or higher qualifications) relevant to the trades under which they are working. A list of such workers with their valid and relevant qualifications shall be submitted to the Employer's Representative before the commencement of works.

## **65 Loss & Expense**

If upon written application by the Contractor to the Employer's Representative, the Employer's Representative is of the opinion that the Contractor has been or is likely to be involved in expenditure for which the Contractor would not be reimbursed by a payment made under any other provision in the Contract by reason of the progress of the Works or any part thereof having been materially affected by:

- (A) any variation ordered in accordance with Clause 62 (other than a variation where the relevant lump sum quotation submitted in accordance with sub-clause (C) or (D) of Clause 60 has been accepted by the Employer's Representative or a variation ordered under sub-clause (E) of Clause 62), or
- (B) the testing of plant, materials or workmanship not required by the Contract but directed by the Employer's Representative unless the inspection or test showed that the plant, work, materials or workmanship were not in accordance with the Contract, or
- (C) delay caused by any person or any company, not being a utility undertaking, engaged by the Employer in supplying materials or in executing work directly connected with but not forming part of the work, or
- (D) late delivery of materials, plant or equipment by the Employer,

then the Employer's Representative shall ascertain the cost incurred and shall certify accordingly.

## **66 Registered Specialist Trade Contractors Scheme (RSTCS)**

- (A) Where the Contractor is to sub-contract part of the Works, execution of which involves trades available under the Registered Specialist Trade Contractors Scheme (RSTCS) of the Employer, the Contractor shall engage, for the purposes of execution of such part of the Works, sub-contractors who have completed their registration under the relevant trades available under the RSTCS before the commencement of the works under the relevant sub-contracts. The Contractor shall not engage a sub-contractor who is

suspended or in the process of an appeal against his suspension from registration under the RSTCS unless the suspension is lifted before the commencement of the works under the relevant sub-contracts.

- (B) The Contractor shall ensure that where any part of the Works is sub-contracted to a sub-contractor engaged under Clause 66(A) above, execution of which involves trades available under the RSTCS is further sub-contracted (irrespective of any tier), only sub-contractors (irrespective of any tier) who have completed their registration under the relevant trades available under the RSTCS before the commencement of the Works under the relevant further sub-contracts are engaged for the purposes of execution of such part of the Works. The Contractor shall also ensure that a sub-contractor (irrespective of any tier) who is suspended or in the process of an appeal against his suspension from registration under the RSTCS shall not be engaged for the aforesaid further sub-contracting (irrespective of any tier) unless the suspension is lifted before the commencement of the works under the relevant further sub-contracts.

## **67 Temporary Work Permit**

When carrying out the Works, all workers have to wear the temporary work permit issued by the Employer. If the temporary work permit is lost, the Contractor or worker shall report to the Employer and request a re-issue at \$30.

## **68 Maintenance Certificate**

(1) Upon the expiry of the Defect Liability Period, or where there is more than one such Period, certificate upon the expiry of the latest Period and when all outstanding work referred to under Clause 61 and all work of repair, reconstruction, rectification and making good any defect, imperfection, shrinkage and other fault identified shall have been completed, the Employer's Representative shall issue a maintenance certificate stating the date on which the Contractor shall have completed his obligation to execute the Works.

(2) No certificate, other than the maintenance certificate, shall be deemed to constitute approval of any work or other matter in respect of which it is issued or shall be taken as an admission of the due performance of the Contract or any part thereof.

Provided that the maintenance certificate shall not be deemed to constitute approval of any work or other matter in respect of which it is issued which has not been carried out in accordance with the Contract and which the Employer's

Representative could not with reasonable diligence have discovered before the issue of the maintenance certificate

(3) The issue of any certificate including the maintenance certificate shall not be taken as relieving either the Contractor or the Employer from any liability the one towards the other arising out of or in any way connected with the performance of their respective obligations under the Contract. Provided that the Employer shall not be liable to the Contractor for any matter or thing arising out of or in connection with the Contract or the execution of the Works unless the Contractor shall have made a claim in relation thereto in accordance with the time limits specified in Clause 57.

## Appendix 1

### NOVATION AGREEMENT

**THIS NOVATION AGREEMENT** is made the                      day of                      20     .

**BETWEEN:**

**Construction Industry Council**, duly incorporated under the Construction Industry Council Ordinance (Cap. 587 of the Laws of Hong Kong) with its registered office address at 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon, Hong Kong (the “**Employer**”);

[**Contractor**], a company incorporated under the laws of [country] with company number [\*] having its registered office at [address] (the “**Contractor**”); and

[**Novatee**], a company incorporated under the laws of [country] with company number [\*] having its registered office at [address] (the “**Novatee**”).

**WHEREAS:**

- A. The Employer and the Contractor have entered into a Contract for [Tender Title] (the “**Contract**”) for [description of works] at [address]. Pursuant to the Contract, the Employer shall have the right to novate to a third party all of the Employer’s rights, interests and benefits, obligations, liabilities and duties, without limitation, known and unknown, existing and contingent, actual and otherwise, in connection with the Contract at any point in time.
- B. The Employer desires to novate the aforesaid rights, interests and benefits, obligations, liabilities and duties to the Novatee pursuant to the Contract and be released and discharged from the Contract in accordance with this Novation Agreement.

- C. The Novatee agrees to take over the Employer's full benefits, obligations and remedies under the Contract from the Employer in accordance with this Novation Agreement.
- D. The Contractor agrees that the Novatee takes over the Employer's full benefits, obligations and remedies under the Contract from the Employer in accordance with this Novation Agreement.
- E. The date of execution of this Novation Agreement is taken as the Novation Date.

**THE PARTIES AGREE that:**

**Novation**

1. With effect from the Novation Date, the Novatee:
  - (a) assumes, in place of the Employer, all rights, interests and benefits, obligations, liabilities and duties of, and all claims for and against, the Employer, known and unknown, existing and contingent, actual and otherwise, in connection with the Contract at any point in time;
  - (b) assumes the power to exercise all rights expressed to be those of the Employer under the Contract; and
  - (c) shall perform and comply with, and be bound by, each and every duty and obligation of the Employer under the Contract

in every way as if the Novatee were named in the Contract in place of the Employer.
2. By its execution of this Novation Agreement, the Novatee hereby represents to the Contractor and the Employer that it is duly incorporated, validly existing, has full power, authority and legal right to enter into the transactions contemplated by, and

perform the obligations assumed pursuant to, this Novation Agreement and the Contract, and has taken all necessary action to authorise execution of this Novation Agreement.

### **Release**

3. With effect from the Novation Date, the Contractor (a) releases and discharges the Employer from all obligations, liabilities, duties, actions, claims, proceedings and demands of any kind, known and unknown, existing and contingent, actual and otherwise in connection with the Contract without any recourse against the Employer, and (b) accepts the obligations and liabilities of the Novatee under the Contract in lieu of the obligations and liabilities of the Employer otherwise under the contract, and (c) agrees to be bound by the terms of the Contract in every way as if the Novatee were named in the Contract in place of the Employer.

### **Acknowledgement and acceptance**

4. The parties hereto hereby acknowledge that this Novation Agreement constitutes novation of all the rights and obligations of the Employer under the Contract to the Novatee and the Contractor hereby agrees and accepts that this Novation Agreement constitutes a sufficient undertaking by the Novatee to perform the obligations of the Employer under the Contract.
5. This Novation Agreement and the rights and obligations of the parties hereunder shall be governed by and construed in accordance with the laws of Hong Kong Special Administrative Region. For any dispute over the validity of this Novation Agreement (if any), the parties irrevocably submit to the non-exclusive jurisdiction of the courts of Hong Kong. For the avoidance of doubt, this clause shall not affect the dispute resolution mechanism under the Contract.

This Novation Agreement had been executed as on the day and year first before written.

For and on behalf of  
the CONSTRUCTION INDUSTRY COUNCIL  
by

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## Appendix 2

### Insurance Synopsis of Contractors' All Risks including Third Party Liability Insurance

#### Summary

<b>Type</b>	:	Contractors' All Risks – Open Cover
<b>Terms</b>	:	To follow the terms, limits and conditions of Asia Insurance Company Limited's Contractors' All Risks policy wording including all amendments / endorsements as detailed and agreed hereon.
<b>Insured</b>	:	Construction Industry Council as principal and/or all Main Contractors and its sub-contractors of every tier.
<b>Period of Insurance</b>	:	From Commencement Date to Expected Completion Date Local Hong Kong Time (both days inclusive)  Defect Liability Period if any should be included
<b>Contract Details</b>	:	<p><u>Scope and Nature</u></p> <p>Renovation / Restoration / Maintenance / Alteration / Repair Work and/or Installation Work of Building Services including building maintenance work and/or builder's work but excluding construction/ erection/ demolition of building structure (i.e. structural walls, columns, beams and slabs of a building) and/or Installation/ Maintenance/ Repair Work of Building Services equipment; office equipment; training equipment; and trade test equipment carried out at the premises of the Insured which are covered under the Property Policy but definitely excluding any construction sites.</p> <p><u>Contract Value of Each Contract</u></p> <p><b>Contract Value at inception (i.e. at the time when the Contract was granted)</b></p> <p><u>Period of Insurance for Each Contract</u></p> <p>(1) Insured Contract other than Maintenance Contract Work</p> <p>(a) Contract Period Follow the original Contract Period of each contract work provided that: - - the duration of the Contract Period shall not exceed 120 days; - the Insured Contract must commence within the Period of Insurance specified in the Schedule</p> <p>(b) Maintenance Period Follow the original Maintenance Period of each contract work provided that the duration of the Maintenance Period shall not exceed 12 months immediately after the Original Contract Period.</p> <p>(2) Maintenance Contract Work only The Period of Insurance in respect of the Maintenance Work shall follow the original Contract Period of each Maintenance Work provided that:- - the duration of the Maintenance Work shall not exceed 12 months;</p>



		- the Insured Contract must commence within the Period of Insurance specified in the Schedule.
<b>Coverage</b>	:	<p><u>Section I – Material Damage</u></p> <p>To indemnify the Insured in respect of loss of or damage to the Insured Property whilst at the site during the Period of Insurance arising from any cause whatsoever not excluded by the original policy.</p> <p><u>Insured Property – Item 1</u></p> <p>The permanent and temporary works constructed erected or in the course of construction or erection in performance of the contract and all other property for which the insured contractors are responsible under the contract whilst on the site and subject to its value being included in the sum insured however excluding constructional plant and temporary buildings.</p> <p><u>Insured Property – Item 2</u></p> <p>Removal of debris: costs and expenses necessarily incurred by the Insured with the consent of the Insurers in dismantling and removing debris of the portion or portions of the property insured under item (1) destroyed or damaged by any peril hereby insured against.</p> <p><u>Sum Insured: 4% of Individual Contract Value</u></p> <p><u>Insured Property – Item 3</u></p> <p><u>Professional Fees: costs and expenses in respect of architects' surveyors and consulting engineers' fee incurred in the reinstatement of the insured property consequent upon its loss or damage but not for preparing any claim it being understood that the amount payable hereunder shall not exceed the scale charges of the appropriate professional body.</u></p> <p><u>Section II – Liability to Third Parties</u></p> <p>To indemnify the Insured in respect of all sums which the Insured shall become legally liable for:</p> <ul style="list-style-type: none"> <li>(i) accidental death bodily injury illness or disease suffered by any person</li> <li>(ii) accidental loss or damage to physical property arising out of the performance of the contract</li> </ul> <p>and in addition the insurers shall be liable for</p> <ul style="list-style-type: none"> <li>(iii) all costs and expenses of litigation recovered by any claimant against the insured</li> <li>(iv) all costs and expenses of litigation incurred by the Insured with written consent of the insurers in resisting any claim</li> </ul> <p>Limit of Indemnity: HK\$30,000,000 for any one accident and unlimited for the period of insurance (costs and expenses inclusive)</p>
<b>Geographical Area and Jurisdiction</b>	:	Hong Kong SAR

Excess	:	<div>Section I – Material Damage</div> <table><tr><td></td><td>For contract with value of HK\$500,000 or below</td><td>For contract with value exceeding HK\$500,000 up to HK\$1,500,000</td><td>For contract with value exceeding HK\$1,500,000 up to HK\$3,000,000</td></tr><tr><td></td><td>HK\$</td><td>HK\$</td><td>HK\$</td></tr><tr><td>Act of God/Fire/Theft:</td><td>15,000</td><td>20,000</td><td>30,000</td></tr><tr><td>Others:</td><td>15,000</td><td>20,000</td><td>30,000</td></tr><tr><td>Temporary Works:</td><td>15,000 min or 50% of loss(*)</td><td>20,000 min or 50% of loss(*)</td><td>30,000 min or 50% of loss(*)</td></tr><tr><td>Water Damage to Work:</td><td>15,000 min or 20% of loss(*)</td><td>20,000 min or 20% of loss(*)</td><td>30,000 min or 20% of loss(*)</td></tr><tr><td>Designer/Testing:</td><td>15,000</td><td>20,000</td><td>30,000</td></tr><tr><td>Strike, Riot and Civil Commotion /Malicious Damage</td><td>15,000 min or 20% of loss(*)</td><td>20,000 min or 20% of loss(*)</td><td>30,000 min or 20% of loss(*)</td></tr><tr><td>Typhoon / Storm / Tempest</td><td>15,000 min or 20% of loss(*)</td><td>20,000 min or 20% of loss(*)</td><td>30,000 min or 20% of loss(*)</td></tr><tr><td>(*) – whichever is the greater</td><td colspan="3"></td></tr></table> <div>Section II – Liability to Third Party</div> <table><tr><td></td><td>HK\$</td></tr><tr><td>Third Party Property Damage</td><td>: 40,000 min or 10% of loss (*)</td></tr><tr><td>Vibration / Removal / Weakening of Support</td><td>: 40,000 min or 20% of loss (*)</td></tr><tr><td>Underground Services</td><td>: 40,000 min or 20% of loss (*)</td></tr><tr><td>Oil-Filled/Fibre-Optic Cable</td><td>: 40,000 min or 40% of loss (*)</td></tr><tr><td>Principal Property</td><td>: 40,000 min or 20% of loss (*)</td></tr><tr><td>Water Damage to Third Party Property</td><td>: 40,000 min or 20% of loss (*)</td></tr><tr><td>Third Party Bodily Injury</td><td>: 40,000 min or 10% of loss (*)</td></tr><tr><td>Strike, Riot and Civil Commotion /Malicious Damage</td><td>: 20,000 min or 20% of loss(*)</td></tr><tr><td>(*) – whichever is the greater</td><td>: 40,000 min or 10% of loss (*)</td></tr></table>		For contract with value of HK\$500,000 or below	For contract with value exceeding HK\$500,000 up to HK\$1,500,000	For contract with value exceeding HK\$1,500,000 up to HK\$3,000,000		HK\$	HK\$	HK\$	Act of God/Fire/Theft:	15,000	20,000	30,000	Others:	15,000	20,000	30,000	Temporary Works:	15,000 min or 50% of loss(*)	20,000 min or 50% of loss(*)	30,000 min or 50% of loss(*)	Water Damage to Work:	15,000 min or 20% of loss(*)	20,000 min or 20% of loss(*)	30,000 min or 20% of loss(*)	Designer/Testing:	15,000	20,000	30,000	Strike, Riot and Civil Commotion /Malicious Damage	15,000 min or 20% of loss(*)	20,000 min or 20% of loss(*)	30,000 min or 20% of loss(*)	Typhoon / Storm / Tempest	15,000 min or 20% of loss(*)	20,000 min or 20% of loss(*)	30,000 min or 20% of loss(*)	(*) – whichever is the greater					HK\$	Third Party Property Damage	: 40,000 min or 10% of loss (*)	Vibration / Removal / Weakening of Support	: 40,000 min or 20% of loss (*)	Underground Services	: 40,000 min or 20% of loss (*)	Oil-Filled/Fibre-Optic Cable	: 40,000 min or 40% of loss (*)	Principal Property	: 40,000 min or 20% of loss (*)	Water Damage to Third Party Property	: 40,000 min or 20% of loss (*)	Third Party Bodily Injury	: 40,000 min or 10% of loss (*)	Strike, Riot and Civil Commotion /Malicious Damage	: 20,000 min or 20% of loss(*)	(*) – whichever is the greater	: 40,000 min or 10% of loss (*)
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Conditions (inter alia)	:	<div>1. Revised Cross Liability Clause/ As per Asia’s standard Contractors’ All Risk Policy Jacket</div> <div>2. B1 – Safety Precaution Clause amended to delete the 24 hours watchman requirement.</div> <div>3. B2 – Special Conditions for Underground Services Clause</div>																																																												

		<p>4. S001 Strike, Riot and Civil Commotion and Malicious Damage Endorsement. (Applicable to Section I only) The maximum liability under this extension is restricted to the sub-limit of HK\$1,500,000 in aggregate for all losses for the whole period of insurance.</p> <p>5. A6 – Extra charges for overtime, night work, work on public holiday and ex-press freight (15% of adjusted loss)</p> <p>6. A1 – Extended to cover liability to third party property damage caused by vibration, removal or weakening of support (Limit: HK\$30,000,000 any one accident and in aggregate during any one period of insurance)</p> <p>7. A7 – Extended to cover employer's property under the care, custody or control of the insured contractors under Section II (Limit: HKD30,000,000 any one accident and in aggregate during any one period of insurance)</p> <p>8. Burning and Welding Clause</p> <p>9. 90 Days' Cancellation Notice Clause (Subject to Pro-rata Refund Cancellation)</p> <p>10. Extended Maintenance Period Cover</p> <p>11. 90 Days Non-Renewal Notice by Insurer</p> <p>12. Claim Control Clause</p> <p>13. 72 hours Clause</p> <p>14. Hong Kong Claim Jurisdiction Clause</p> <p>15. Revised Arbitration Clause</p> <p>16. A3 – Extension of Cover for Designer's Risks</p> <p>17. A4 – Extension of Cover for Inland Transit (Limit: HK\$100,000 any one loss)</p> <p>18. A5 – Extension of Cover for Off-Site Storage anywhere in HKSAR (Limit: HK\$100,000 any one loss)</p> <p>19. A2 – Extension of Cover for Testing and Commissioning (4 weeks)</p> <p>20. Escalation Clause (Limit: 15% of Contract Value)</p> <p>Other terms and conditions as per policy wording</p>
<b>Principal Policy Exclusions (inter alia)</b>	:	Other exclusions as per original policy.
<b>Applicable Jurisdiction and/or Law Practice</b>	:	Hong Kong SAR

<p><b>Contractors' Own Insurance Responsibilities</b></p>	<p>:</p>	<p>(a) The Contractor's All Risks including Third Party Liability Insurance does not cover the liability arising out of or in connection with the following:</p> <ul style="list-style-type: none"> <li>(i) motor vehicles and other Statutory Insurances.</li> <li>(ii) employees of the Insured Parties, sole proprietors and self-employed persons acting as sub-contractors, including labour masters and persons supplied by them, persons employed by labour only sub-contractors, self-employed persons, drivers and / or operators of plant hired to the Insured, student gaining work experience, and any other persons hired or borrowed by contractors. <b>"Contractors allow such persons to enter site at their own risk".</b></li> <li>(iii) deductibles of the Policy.</li> </ul> <p>(b) The Contractor's All Risks including Third Party Liability Insurance does not cover the physical loss of or damage to construction plant tools and equipment owned or leased by the contractors or for which the contractors may be responsible.</p> <p>(c) Contractors and Subcontractors are required to arrange Employees' Compensation Insurance complying with the Employees' Compensation Ordinance (Cap 282) in respect of their employees. Such insurance is to be endorsed to cover the Construction Industry Council as an Insured Party.</p> <p>(d) The Third Party Liability Insurance cover is HK\$30,000,000. Construction Industry Council advises contractors to review its adequacy in relation to their risks and liability under the contract with the Construction Industry Council and to purchase additional limit, if required, at their own costs.</p> <p>(e) The Contractor's All Risks including Third Party Liability Insurance only covers contract within the contract details as stated in the Insurance Synopsis of Contractors' All Risks including Third Party Liability Insurance. Should the contract not within the contract details, contractor must arrange another Contractor's All Risks including Third Party Liability Insurance, joint name with Construction Industry Council, at contractor's own cost. Minimum coverage for third party liability is HK\$30,000,000.</p> <p>(f) The Contractor should provide both insurance document and premium receipt of insurance covers arranged for CIC keeping record. Besides, other than policy excess, Contractor should also bear all the costs and expenses in case of claim</p>
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**Special Conditions of Contract**

**for**

**Term Contract for Provision of Repair and Maintenance**

**of**

**Electrical and Mechanical Works and Builder's Works**

**cum**

**Onsite Technician Services**

**for**

**the Construction Industry Council**

**August 2025**

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## A. GENERAL

The Conditions of Contract consist of:-

(i) The Articles of Agreements and General Conditions of Contract which will be the **Standard Form of Contract for Maintenance and Renovation Works for use in the Hong Kong Special Administrative Region, First Edition 2013**.

Copies of the Standard Form referred to above are not included in the tender documents but may be purchased from the Hong Kong Institute of Surveyors (HKIS). A copy of the Standard Form will be bound into the contract booklet for contract execution.

(ii) The Appendix to the Conditions of Contract contained herein at Part B which provides data required by certain clauses in the Conditions.

(iii) The Special Conditions of Contract contained herein at Part C which amend, modify, delete from or add to the standard form described in (i) above.

Note: Wherever the term "the Contract Administrator" as referred to in the Standard Conditions and other relevant part of the Contract Documents, it shall be amended to read as "the Employer/the Employer's representative".

In the event of any inconsistency or discrepancy, the order of precedence for interpretation shall be in the following descending order:

1. Special Conditions of Contract in this Attachment 7
2. Standard Form of Contract for Maintenance and Renovation Works for use in the Hong Kong Special Administrative Region, First Edition 2013
3. General Conditions of Contract in Attachment 8

## B. APPENDIX TO THE CONDITIONS OF CONTRACT

The following particulars will be inserted in the Appendix to the Conditions of Contract:

	Clause	
Project Title	-	Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the Construction Industry Council
Project Address	-	Refer to Individual Delivery Order instructed by the Employer
Name of the Quantity Surveyor	1.18	Beria Consultants Limited
Registered Address of the Quantity Surveyor	1.18	Level 30, Tower 2, Enterprise Square 5, 38 Wang Chiu Road, Kowloon Bay, Hong Kong
Date for Access to the Site	2	Refer to Individual Delivery Order instructed by the Employer
Names of Works	3	Refer to Individual Delivery Order instructed by the Employer
Contract Periods	4	Refer to Individual Delivery Order instructed by the Employer
Defects Liability Period	7.6	Refer to the Schedule of Rates (Page 4)
Period of Honouring Payment	-	THIRTY (30) Calendar Days upon receipt of invoice(s) and subject to verification of Certificate
Period of Completion of the Final Account	6.16	Within SIX (6) Months from the date of the Substantial Completion of the Works

## C. SPECIAL CONDITIONS OF CONTRACT

### **General**

#### **1.1 Context**

These Special Conditions of Contract are to be read in conjunction with the General Conditions of Contract. The General Conditions of Contract means the "Standard Form of Contract for Maintenance and Renovation Works for use in the Hong Kong Special Administrative Region, First Edition 2013" published by the Hong Kong Institute of Surveyors. Wherever these Special Conditions of Contract vary from the General Conditions of Contract the terms of the Special Conditions of Contract shall take precedence.

The 'Conditions of Contract' means the 'General Conditions of Contract' and the 'Special Conditions of Contract'.

#### **1.2 Typographical Errors**

The following typographical errors in the Conditions shall be corrected:

- (a) Third line of Clause 11.2.1(c) at Page 41, '*beach*' shall be changed to '*breach*'.

#### **1.3 Clause Numbering**

Each clause number of the Special Conditions of Contract matches the clause number of the General Conditions of Contract to be amended. Therefore the clause numbers in these Special Conditions of Contract may not run in sequence.

### **SCC-1 - Interpretations**

- (i) Delete Clause 1.1 '*Building Manager*' at Page 11.
- (ii) Delete Clause 1.2 '*Clerk of Works*' at Page 11.
- (iii) Delete Clause 1.9 '*Defects Rectification Certificate*' at Page 12.
- (iv) Replace the words '*Works*' in Clause 1.19 at Page 15 with '*Rates*'.
- (v) Replace the words '*Substantial*' in Clause 1.22 at Page 15 with '*Practical*'.
- (vi) Add the following as new Clause 1.25 '*Works*' :-

*"Works" means the works described in the Delivery Order instructed by the Employer.*



### **SCC-2 - Site**

- (i) Delete Clause 2.3 '*House Rules of Building Manager*' at Page 16.

### **SCC-3 - Works**

- (i) Delete Clause 3.2 '*Design of Permanent Work*' and Clause 3.3 '*Development of Design*' at Page 18.

### **SCC-4 - Time**

- (i) Delete Clause 4.3 at Page 16 and replace with the following :-

*'The Contractor shall commence the Works based on the Commencement Date stated in the Delivery Order, and shall complete the Works on or before the Completion Date stated in the Delivery Order.'*

- (ii) Delete Clause 4.9 '*Damages for Delayed Completion*' at Page 21.
- (iii) Replace all references to "*Substantial*" in Clauses 4.10.1 and 4.10.2 at Pages 21 to 22 with '*Practical*'.
- (iv) Replace all references to '*Works Section*' in Clauses 4.5.4, 4.7.1, 4.7.2, 4.10.1 and 4.10.2 at Pages 20 and 21 with '*Delivery Order*'.

### **SCC-5 - Contract Basis**

- (i) Delete the words '*and one unsigned copy*' in Clause 5.4.1 at Page 23.
- (ii) Delete Clause 5.4.2 at Page 23.
- (iii) Delete Clause 5.6 '*Documents on Site*' at Page 23.
- (iv) Add the words '*working*' between '*within 2*' and '*days*' in Line 2 of Clause 5.5.2 at Page 23.

### **SCC-6 - Prices**

- (i) Replace all references to '*Schedule of Works*' in Clauses 6.7.1, 6.7.2 and 6.8.1 at Page 25 with '*Schedule of Rates*'.
- (ii) Delete Clause 6.10 '*Prime Cost Rates*' at Page 26.
- (iii) Delete the words '*at monthly intervals after the commencement of the Works*' and replace with '*once the Works outlined in the Delivery Order is practically completed*' and delete the words '*until 1 month after substantial completion, and at bimonthly intervals thereafter.*' in Clause 6.15.1 at Page 27.
- (iv) Delete the words '*and shall issue a Payment Certificate to certify the net amount payable, if any, to the Employer with a copy to the Contractor within 14 days of receipt of the Contractor's application.*' in Clause 6.15.2 at Page 28.
- (v) Delete Clauses 6.15.4 (b), (c) and (f) at Page 28.
- (vi) Delete Clause 6.15.5 at Page 28.
- (vii) Delete Clauses 6.16.1 (d) and (j) at Page 29.
- (viii) Delete Clause 6.17.1 at Page 30.

### **SCC-8 - Contract Documents**

- (i) Replace the words '*Contract Award Time*' with '*receipt of a Delivery Order from the Employer*' in Clause 8.2.1 at Page 32.
- (ii) Replace the words '*this Contract*' with '*the period covered in a Delivery Order*' in Clause 8.2.2 at Page 32.
- (iii) Add the words '*when requested by the Employer*' between '*following progress reports*' and '*in reasonable number*' in Line 1 of Clause 8.3 at Page 33.
- (iv) Replace the words '*Within 14 days after the completion of a Works Section*' and replace with '*Upon completion of the Works and when requested by the Employer*' in Line 1 of Clause 8.4 at Page 33.

### **SCC-9 - General Obligations**

- (i) Add the following as new Clauses 9.1.4, 9.1.5 and 9.1.6 at Page 33 :-

*“(3) The Contractor shall in the course of carrying out the Works take full responsibility for the adequate stability and safety of all operations on the Site other than those persons for whom the Employer is responsible and have full regard for the safety of all persons on the Site.*

*(4) The Contractor shall comply with the Building Ordinance, the Construction Site (Safety) Regulations, all Labour Department Regulations, all Electrical and Mechanical Services Department Regulations, the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations and all other statutory requirements regarding safety on construction sites.*

*(5) The Contractor shall employ at least the number of safety officers and safety supervisors prescribed by the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations for the time being in force as at the date of the Contract. The Safety Officers shall be registered by the Commissioner for Labour under the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations and shall be employed on a full-time basis to undertake all duties entailed by the Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations and any additional duties as specified in the Contract. None of the requirements of this clause shall in any way relieve the Contractor of his obligations under Clause 9 of the Conditions. In particular, the Contractor shall not be relieved of his obligations to employ Safety Supervisors, any additional Safety Officers and/or any other safety personnel in excess of the number required by this clause as may be separately required by any Act or Ordinance of Government, instrument, rule, order, regulation or by-law as may be in force at any time during the progress and continuance of the Works.”*

- (ii) Replace the words “within a Work Section” with “instructed under a Delivery Order” and replace “Work Section” with “Delivery Order” in Clause 9.4 at Page 34.
- (iii) Delete the words ‘and headed by a construction manager at full-time on site authorized and able to communicate with and take instructions from the Contract Administrator and capable of managing the Works’ in Clause 9.7.1 at Page 34.

### **SCC-10 - Insurances and Bond**

- (i) It is confirmed that Clause 10.10 ‘Surety Bond and Cash Security’ at Page 39 and Appendix A ‘Surety Bond’ (Pro-Forma) at Pages 45 to 48 shall not be applicable to the Contract.

### **SCC-11 – Determination**

- (i) Delete Clause 11.2.1(a) at Page 41.

### **SCC-12 - Dispute Resolution**

- (i) Delete the words “*President or Vice-President for the time being of the Hong Kong Institute of Surveyors*” and replace with “*Hong Kong International Arbitration Centre*” in Clause 12.3.2 at Page 43.
- (ii) Delete the words “*President or Vice-President for the time being of the Hong Kong Institute of Surveyors. The President or Vice-President may, at his discretion, request the Hong Kong International Arbitration Centre to appoint the arbitrator*” and replace with “*Hong Kong International Arbitration Centre*” in Clause 12.4.2 at Page 44.
- (iii) Add the following words at the end of Clause 12.4.3 at Page 44 :-

*“Pursuant to Section 99 of the Arbitration Ordinance, parties confirm that the entirety of Schedule 2 (being Sections 1 to 7 thereof) to the Arbitration Ordinance will apply.”*

### **SCC-13 - Fair Wages (New Clause 13)**

The following clause shall be added as Clause 13 of the Conditions of Contract:-

*“(1) The Contractor shall pay rates of wages in compliance with the Minimum Wage Ordinance and observe hours and conditions of labour which are not less favourable than the general level of wages, hours and conditions observed by other employers whose general circumstances in the trade or industry in which the Contractor is engaged are similar.*

*(2) The Contractor shall in respect of all persons employed by him, whether in carrying out this Contract or otherwise, in every workshop or other place occupied or used by him for carrying out the Works comply with the conditions required by this clause.*

*(3) The Contractor shall be responsible for the observance of this clause by subcontractors of any tiers employed in the carrying out of the Works.*

*(4) In the event of default being made in the payment of any money in respect of wages of any person employed by the Contractor in and for carrying out this Contract and if a claim therefor is filed in the office of the Labour Department and proof thereof (including, where the claim is disputed by the Contractor or it is found necessary by the Commissioner for Labour, proof of final determination of the claim by an award or order of the Labour Tribunal or as the case may be the Minor Employment Claims Adjudication Board or a judgment of the District Court or, where the matter is subsequently further disputed by way of appeal, by a judgment of the Court of First Instance or the Court of Appeal) is furnished to the satisfaction of the Commissioner for Labour, the Employer may, failing payment of the said money by the Contractor, make payment of such claim on behalf of the Contractor to the person and any sums so paid shall be recoverable by the Employer from the Contractor.”*

**SCC-14 - Contracts (Rights of Third Parties) Ordinance (New Clause 14)**

The following clause shall be added as Clause 44 of the Conditions of Contract:-

*“(1) Any person or organization who is not a party to the Contract shall not have any right or entitlement under the Contracts (Rights of Third Parties) Ordinance to enforce or enjoy the benefit of any term or condition of the Contract and any such right or entitlement is hereby expressly excluded.*

*(2) The Contractor and the respective sub-contractors or suppliers (and/or designers employed by the Contractor) shall be prohibited to exclude any right or entitlement of the Employer (or any of his assignees in the case of an assignment) under the Contracts (Rights of Third Parties) Ordinance to enforce any term or condition of the sub-contract or supply contract.”*



Construction Industry Council (CIC)

Contractor's Safety Requirements

Version 1: 1 February 2025

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### Appendix 1 Relevant Safety and Health Legislations



## Preface

This Contractor's Safety Requirements sets out the obligations and practical guidelines to all Contractors of Construction Industry Council ("CIC") to observe in relation to Safety and Health matters when they are occupying or conducting any activities at CIC premises. Compliance of this Contractor's Safety Requirements is binding to the contract or other types of use agreement and these Contractor's Safety Requirements are not intended to replace the provisions of laws and regulations or accepted standards in Hong Kong.

Should you have any questions on this handbook, please contact the Corporate Safety Department at [enquiry@cic.hk](mailto:enquiry@cic.hk).

We may review and update the content of this Manual from time to time. Please check with the CIC's department head for the latest version.

### Statutory and Contractual Obligations

The Contractor shall be deemed to allow for the value of work in connection with meeting all statutory and contractual obligations in the upkeeping of safety and health in the execution of the works and any other related obligations, liabilities, risks and profit.

This Contractor's Safety Requirements contains the Safety and Health requirements in relation to the statutory and contractual obligations that are bound to the Contract, and the Contractor has obligations to fully comply with them with no cost or time implications.

If there is any non-compliance with the requirements, CIC reserves the right to charge the Contractor for all additional costs as a result of any additional arrangement, financial loss, damage or delays arising therefrom. CIC has the right to request the Contractor to take corrective actions until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.

CIC has the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

In addition, where the statutory and contractual obligations are not performed by the Contractor to the satisfaction of CIC, CIC reserves the right to terminate this Contract, and the Contractor is not entitled to claim any compensation. The Contractor shall be liable for all financial loss or expenses necessarily incurred by the CIC as a result of the termination of this Contract.

It is important to note that compliance with the requirements shown in the Contractor's Safety Requirements does not itself confer immunity from legal obligations in Hong Kong. Contractors are reminded to observe and comply with statutory provisions, relevant codes of practice, guidelines, guidance notes and other government departments' requirements from time to time so as to discharge their legal and other pertinent duties.

### Statutory Obligations:

In Hong Kong, potential duties and liabilities arise under statutes including but not limited to:-

1. Occupiers Liability Ordinance (Cap. 314) (“OLO”);
2. Factories and Industrial Undertakings Ordinance (Cap. 59) (“FIUO”) and Factories and Industrial Undertakings (Safety Management) Regulation (Cap. 59AF) (“FIUSMR”);  
and
3. Occupational Safety and Health Ordinance (Cap. 509) (“OSHO”).

The above statutes potentially apply to Contractors of CIC (who are “occupiers” within the ambit of OLO or OSHO, or “proprietors of undertaking” within the ambit of the FIUO / FIUSMR). Contractors are required to abide by the relevant provisions under the statutes. Some key principles are summarized below.

#### **Occupiers Liability Ordinance (Cap. 314)**

Under section 3(1) of the OLO, “an occupier of premises owes the same duty, the common duty of care, to all his visitors, except in so far as he is free to and does extend, restrict, modify or exclude his duty to any visitor or visitors by agreement or otherwise.”

The OLO does not define who is an occupier, and the common law test applies such that a person is an occupier if he or she has a sufficient degree of control over the premises.

An occupier would owe all visitors a “common duty of care” i.e. to take such care as in all circumstances of the case is reasonable to see that the visitor will be reasonably safe in using the premises for the purposes for which he is invited or permitted by the occupier to be there.

#### **Factories and Industrial Undertakings Ordinance (Cap. 59) and Factories and Industrial Undertakings (Safety Management) Regulation (Cap. 59AF)**

Section 6A(1) of the FIUO stipulates that “it shall be the duty of every proprietor of an industrial undertaking to ensure, so far as is reasonably practicable, the health and safety at work of all persons employed by him at the industrial undertaking.” “Industrial undertaking” is defined widely under the FIUO and includes factories, construction work, container handling,

and industries in which articles are manufactured, altered, cleansed, repaired etc.,

A “proprietor” includes the person for the time being having the management or control of the business carried on in such industrial undertaking.

FIUSMR is one of the subsidiary legislation promulgated under the FIUO to ensure industrial safety by promoting safety management and self-regulation by proprietors and their workforce.

Under the FIUSMR, the key duties of a proprietor are, inter alia, to:-

- (i) Develop, implement and maintain a safety management system containing elements specified under the FIUSMR;
- (ii) Establish not less than one safety committee (to review measures for improving the safety and healthy of the workers in the relevant industrial undertaking, and to
- (iii) implement the relevant measures);
- (iv) Appoint a registered safety auditor to conduct a safety audit or a safety review officer to conduct a safety review.

### **Occupational Safety and Health Ordinance (Cap. 509)**

The OSHO was enacted for the purpose of ensuring the safety and health of employees. Duties are attached (a) to an employer who is in control of the premises where the employee's workplace is located, and (b) to the occupiers of the premises, if the employer is not in control of the premises where the employees' workplace is located.

In particular, Section 7(1) of OSHO provides the occupier of the premises must ensure that:-

- (i) The premises; and
- (ii) The means of access to and egress from the premises; and
- (iii) Any plant or substances kept at the premises

are, so far as reasonably practicable, safe and without risks to health.

### **Other duties and liabilities**

In addition, there are potential duties and liabilities under the common law (tort of negligence,

tort of nuisance etc.,). Contractors should ensure that they understand these duties and liabilities.

### References

Chapter 59 Factories and Industrial Undertakings Ordinance

Chapter 314 Occupiers Liability Ordinance

Chapter 509 Occupational Safety and Health Ordinance

Apart from the above statutes, Contractors shall comply with relevant codes of practice, guidelines, guidance notes or any other guidances issued by government bodies or organization including the Labour Department, Fire Services Department, Electrical and Mechanical Services Department, Highways Department, Buildings Department, Construction Industry Council and Occupational Safety and Health Council.

The Contractor shall complete the project within the agreed budget and cannot charge the client for additional costs incurred due to their own errors, negligence, delays, acts or omissions in relation to any breach of or non-compliance with these Statutory and Contractual Obligations.

If there is any non-compliance with the requirements, CIC reserves the right to charge the Contractor for all additional costs as a result of any additional arrangement, financial loss, damage or delays arising therefrom. CIC has the right to request the Contractor to take corrective actions until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.

CIC has the right to suspend the works until the non-compliance or the unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

In addition, where the statutory and contractual obligations are not performed by the Contractor to the satisfaction of CIC, CIC reserves the right to terminate this Contract, and the Contractor is not entitled to claim any compensation. The Contractor shall be liable for all financial loss or expenses necessarily incurred by the CIC as a result of the termination of this Contract.

### Contractual Obligations:

In addition to the above obligations, the Contractor shall fully comply with all safety requirements as required by the Conditions of Contract, Terms and Conditions and Specifications under the particular contract. The Contractor shall also fully comply with the safety requirements of CIC standard document including this Contractor's Safety Requirements and the latest CIC publications. The CIC publications include but are not limited to:

1. Guidelines on Work-Above-Ground safety
2. Guidelines on Site Safety Measures on Working in Hot Weather
3. Guidelines on the Implementation of “P” and “N” Caring Programme
4. Guidelines on Safety Enhancement of and Notification Arrangement for Truss-out Bamboo Scaffolds
5. Guidelines on Planking Arrangement for Providing Working Platforms on Bamboo Scaffolds
6. Guidelines on the Design, Installation and Maintenance of Cast-in Anchors at External Walls of New Buildings
7. Guidelines on Safety of Lift Shaft Works: Volume 4 – Builders’ Lift within Lift Shaft
8. Guidelines on Safety of Lift Shaft Works: Volume 3 – Throughout the Occupation Stage of Building
9. Guidelines on Safety of Lift Shaft Works: Volume 2- During Lift Installation Stage until Issue of Occupation Permit and Handing Over to Developer
10. Guidelines on Fabrication of Reinforcement Cages of Bored Piles
11. Guidelines on Safety of Lift Shaft Works: Volume 1 - During Construction Stage and Before Handing Over to Lift Installation Contractor
12. Guidance Notes on How to Manage the Maintenance Works carried out by Registered Lift / Escalator Contractor
13. Guidelines on Safety of Site Vehicles and Mobile Plant
14. Reference Material - Guide to Smart Safety-related Technologies for Use in Construction works
15. Reference Material - On Fatal Zone Management
16. Reference Material - CIC Design for Safety Management System for the Hong Kong Construction Industry
17. Reference Materials on Construction Site Facilities for Workers

18. Building Services Safety Handbook
19. Standard and Guide on Scaffolding Safety
20. Standard and Guide on Lifting Operation
21. Reference Material on Construction Safety Assembly
22. Reference Material on Temporary Works Management Plan
23. Reference Material on Hole Management
24. Work at Height Safety Handbook
25. Lifting Safety Handbook

The Contractor shall complete the project within the agreed budget and cannot charge the client for additional costs incurred due to their own errors, negligence, delays, acts or omissions in relation to any breach of or non-compliance with these Statutory and Contractual Obligations.

### **Consequences of Breach**

If there is any non-compliance with the requirements, CIC reserves the right to charge the Contractor for all additional costs as a result of any additional arrangement, financial loss, damage or delays arising therefrom. CIC has the right to request the Contractor to take corrective actions until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.

CIC also has the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

In addition, where the statutory and contractual obligations are not performed by the Contractor to the satisfaction of CIC, CIC reserves the right to terminate this Contract, and the Contractor is not entitled to claim any compensation. The Contractor shall be liable for all financial loss or expenses necessarily incurred by the CIC as a result of the termination of this Contract.

The Contractor shall be liable to any loss or damage so caused to CIC. CIC shall be entitled to

recover in full from the Contractor forthwith. The Contractor shall also lose his right from submitting quotations or tenders to CIC in the future.

The Contractor shall indemnify and keep indemnified the CIC against all losses, damages, costs or expenses arising out of or in relation to any breach of or non-compliance with these Statutory and Contractual Obligations by the Contractor, including but not limited to additional costs due to price escalation, costs and expenses of re-tendering and other costs incurred.



Construction Industry Council (CIC)

Contractor's Safety Requirements

### 01 General Work Rules for Safety

- a. Sandals should not be worn in the workplace any time.
- b. Do not drink alcohol or take drugs while working.
- c. Horseplay at work is prohibited.
- d. Clean up the workplace before leaving.
- e. Emergency evacuation route should not be obstructed at all time.
- f. Always follow the correct working procedures.
- g. Always know the emergency response plan for your workplace.
- h. Whenever work-above-ground or working at height could not be avoided, suitable working platforms should be provided and used.
- i. When it is impracticable to provide a suitable working platform for working at height, the use of full body safety harness with an independent anchorage or fall arresting is only a last resort of fall protection when there is no alternative.
- j. Always wear proper personal protective equipment (“PPE”) for the work task.
- k. Never touch on live equipment without any protection.
- l. Report any hazardous conditions including near miss case.
- m. Do not use any machine or equipment unless you are properly trained.
- n. Smoking is prohibited at indoors and construction site.
- o. Specific training certificate should be obtained for work activities as required by relevant legislation such as work in confined space or electrical work.
- p. Keep fire exits, fire doors are not propped open, obstructed or otherwise disabled.
- q. Carry out dynamic risk assessment (“DRA”) before each shift and take necessary safety measures accordingly.
- r. Stop work and redo dynamic risk assessment where any changes in the working environment and / or original working procedures are identified.

### 02 Incident Reporting

- a. Contractors should provide one primary emergency contact number and one secondary emergency contact number to the CIC's Department Head, Premise Owner and Safety Department, and these contact numbers should be reachable 24 hours.
- b. If there is any accident, incident, near miss, occupational disease or dangerous occurrence (as defined in Schedule 1 of the Occupational Safety and Health Regulation (Cap 509)), Area in-charge of Contractor must notify the CIC's Department Head/Premise Owner responsible for the project immediately.
- c. Area in-charge of Contractor shall report the incident to CIC's Department Head/Premise Owner within 10 minutes with detail of the incident/accident (e.g. Location, Time, Description).
- d. CIC's Contractors have the obligation to conduct necessary investigations of any accident, incident or near miss caused by their work activities or their sub-contractors' work activities. The preliminary investigation report should be submitted to CIC within 24 hours after the occurrence of the incident. After the thorough investigation, a detailed report should be composed to illustrate the cause(s) and suggest recommendations to avoid reoccurrence.
- e. Detailed Investigation Report should be submitted to CIC by the Contractor within 14 working days after the occurrence of the incident.
- f. The Contractor has the obligation to suggest and implement necessary improvement measures to prevent the reoccurrence of accidents, incidents or near misses.
- g. Following incident happened at the CIC's premises, Contractor shall also report the case to relevant governmental departments:
  - \*Dangerous Occurrence : Report to Labour Department in writing within 24 hours after the dangerous occurrence concerned.
  - Death after the accident : Notify to Labour Department and the police station nearest to the workplace orally or in writing within 24 hours after becoming aware of the death and reported to Labour Department in writing within 7 days.

\* Dangerous Occurrence:

1. The disintegration of a revolving vessel, wheel, grindstone or grinding wheel that is operated by mechanical power.
2. The collapse or failure of a lifting appliance (except the breakage of chain or rope slings).
3. An explosion or fire that—
  - (a) causes damage to the structure of any workplace, or to any plant or substance at a workplace; and
  - (b) prevents the continuation of ordinary work at the workplace.
4. An electrical short circuit or electrical failure of electrical plant that—
  - (a) is followed by, or associated with, an explosion or fire; or
  - (b) causes structural damage to the plant,being a short circuit, failure, explosion, fire or damage that stops the operation of the plant or prevents it from being used.
5. An explosion of a receiver or container used for the storage at a pressure greater than atmospheric pressure or of any gas or gases (including air) or any liquid or solid resulting from the compression of gases.
6. A total or partial collapse of a roof, wall, floor, structure or foundation of premises where a workplace is located.
7. A total or partial collapse of any overburden, face, tip or embankment within a quarry.
8. The overturning of, or a collision with any object by—
  - (a) a bulldozer, dumper, excavator, grader, lorry or shovel loader; or
  - (b) a mobile machine used for the handling of any substance in a quarry.

- h. People should familiarize with emergency reporting procedure. When reporting emergency by telephone, the following information should be provided:
- Exact location including the name of the building and room number
  - The type of emergency
  - Your name and contact number
  - The reporter should remain on phone until the emergency operator ends the call.
  - Emergency evacuation procedure shall be developed and implemented.
  - 24 hours emergency contact number.
- i. The Contractor shall be liable to any loss or damage so caused to CIC in relation to the incident as a result of any acts, omissions or breach of safety requirements by the Contractors. CIC shall be entitled to recover in full from the Contractor forthwith.

### 03 Safety and Health Inspection / Audit

- a. The purpose of site inspection is to identify any potential hazard in the working area and implement adequate control measures to prevent accident. To ensure people uphold the high safety standards, conducting self-inspection of the working environment, plant, equipment and work behavior is highly recommended.
- b. The inspection record should be kept for at least a year and available for auditing if required.
- c. Under Cap 59AF Factories and Industrial Undertakings (Safety Management) Regulation, the proprietor or contractor of certain industrial undertakings (e.g. construction site, factory or industry involving manufacturing process) are required to develop, implement and maintain a safety management system which contains different key process elements. They are also required to appoint a registered safety auditor or reviewer to conduct a safety audit or review and submit the report with improvement action plan to the Commissioner for Labour in accordance to the legislative requirement. The audit report with improvement action plan should be kept for at least 5 years. For details, please refer to “Code of Practice on Safety Management”.
- d. Any observation of unsafe situation should be immediately addressed and reported to the Area in-charge of Contractor. All rectification work should be recorded in report format and submitted to CIC.
- e. CIC should have the right to assess Contractor's working areas, including but not limited to sites, offices and storage areas (including DG stores), for Safety and Health inspections or audits whenever necessary.
- f. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- g. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 04 Emergency Programme

To well prepare for emergency situation, you are advised to work out the followings:








- a. In case you hear the emergency alarm bell or the broadcast message in CIC premises regarding any emergency:
  - Keep calm;
  - Stop using the telephone lines for emergency;
  - Switch off electrical appliances if possible;
  - If time permits, pick up your important personnel belongings;
  - Follow the instructions of the emergency coordinator / fire marshal, go to the nearest exit door and evacuate through the escape route to the designated Emergency Assembly Area. WALK, DON'T RUN;
  - Don't use the lift;
  - Report to the emergency coordinator / fire marshal and stay in the designated assembly area for further instructions;
  - Do not attempt any re-entry to your office premises until instruction has been given by the CIC.
- b. Emergency procedure should be developed to address different emergency situations.
- c. All personnel should familiarize with the procedure through training or regular drill.
- d. Appropriate emergency equipment must be available and easily accessible at workplace.
- e. First aid facilities shall be provided and maintained in accordance with the statutory requirement:
  - For construction site, a separate first aid facility shall be provided and maintained for every 50 workmen or part thereof employed on the site;
  - For the workplace other than construction site, a separate first aid facility shall be provided and maintained for each 100 employers, or part of that number.
- f. The location of first aid box shall be readily and easily accessible.
- g. The first aid box shall be clearly marked "First Aid" and "急救".

- h. At least 2 responsible persons shall be assigned to manage each first aid box and the names of responsible persons of first aid box shall be affixed to it.
- i. Responsible person shall check and maintain the first aid provisions regularly in accordance to the requirement listed in the booklet “Hints on First Aid”.
- j. All first aid items are maintained in a serviceable condition, i.e. items are not expired for use.
- k. Provision of emergency showers and eyewash units might be required if you use hazardous substances for particular work activity. User shall be trained in the use of and be made aware of the location of emergency equipment.
- l. The type and quantity of items in the first aid box shall be specified according to Appendix of “Hints of First Aid”. Here is the link to the relevant “Hints of First Aid”(<https://www.labour.gov.hk/tc/public/pdf/oh/HintsOnFirstAid.pdf>)for implementation:
- m. In case emergency help is called, CIC shall be informed immediately.
- n. In case emergency situation may potentially affect other parties and/or common areas, CIC shall be informed immediately.



## 05 Fire Safety

- a. CIC prohibits smoking inside its facilities /premises unless within the designated smoking areas reviewed without objection by Department Head and Premise Owner. Violators will be asked to leave the premises.
- b. Properly use the fire extinguishing equipment in dealing with the identified fire risk.

Applications against different fire sources				
Types of fire extinguishers	Water agent	Foam agent	Carbon dioxide	Dry powder agent
Categories of fires				
Category I: ordinary fire sources - paper, cloth, wood, plastic, etc. 	✓	✓	✗	✓
Category II: flammable liquids or gases - solvents, fuels, LPG, etc. 	✗	✓	✓	✓
Category III: Electrical appliances - motors, electricity switches, etc. 	✗	✗	✓	✓

Source: Fire Safety at Workplace – Occupational Safety & Health Council

- c. A dry powder fire extinguisher (min 2kg) shall be provided to each site vehicle, mobile plant and major equipment.
- d. Access to exits, exit routes, fire equipment or prop open stairwell doors shall be free of obstruction.
- e. Flammable liquid and combustible material are easily ignited and thus shall be properly stored with provision of suitable fire extinguishing equipment nearby.
- f. Annual inspection of the fire service installation shall be arranged by approved contractor under fire services department.
- g. Hot work permit system shall be implemented for any welding or flame cutting and grinding operation.
- h. Unless CIC has approved the hot work permit application by the Contractor prior to each hot work operation, the hot work operation is not allowed.
- i. Fire warden shall be appointed to inspect the works area on completion of each shift where the fire services system has been deactivated for the works.
- j. All CIC premises users should participate in regular fire drills. Contractor in

construction site should arrange and conduct fire drill at regular interval.

- k. The distance between the highest point of stacked materials and sprinkler heads shall not be less than 500mm, otherwise the normal operation of the sprinkler heads will be affected. Generally speaking, a 500mm clearance below the sprinkler heads should be kept free from any goods/obstacles.
- l. Know the fire evacuation procedure and get familiar with routes of escape and location of the muster point.
- m. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- n. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.
- o. The Contractor shall be liable to any loss or damage so caused to Construction Industry Council in relation to the fire incident as a result of any acts, omissions or breach of safety requirements by the Contractors. Construction Industry Council shall be entitled to recover in full from the Contractor forthwith.

## 06 Personal Protective Equipment (PPE)

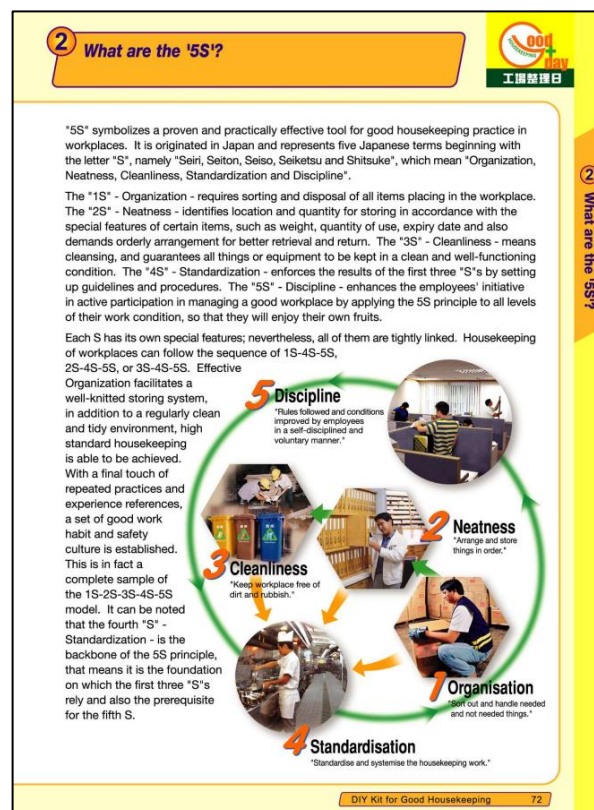
- a. Use of PPE is the last resort when other hazard control measures cannot eliminate all hazards.
- b. Appropriate PPE should be properly selected and provided when performing certain activities or working in designated areas.

Type of Protection	Example of PPE
Head Protection	Safety Helmet with Y-chin Strap
Eye Protection	Safety Goggle, Face Shield, Welding Goggle
Hearing Protection	Ear Muff and Plug
Hand Protection	Safety Gloves (Cut Resistance, Thermal and Chemical Protective Gloves etc.)
Foot Protection	Safety Shoes, Safety Boots
Skin Protection	Lab Coats, Safety Gloves
Respiratory Protection	Face Mask for Particles (N95, half face mask with filter etc.), Respirator with Cartridge for Chemicals
Fall Protection	Safety Harness, Fall Arrestor, Double Lanyard

- c. All PPE should comply with the relevant statutory requirement/ specification or an equivalent standard acceptable to fulfill mandatory requirement of international safety standard.
- d. All PPE should be regularly inspected for performance and maintenance in good working conditions. Any defective or expired PPE should not be used and be replaced immediately.
- e. Adequate training should be provided to personnel on inspection and use of the PPE.
- f. All PPE should be provided with appropriate accommodation for storage when it is not in use.
- g. In terms of Construction Site and where undertaking Construction Works, all persons shall wear Safety Helmet with Y-chin Strap, safety shoes and high visibility vests.
- h. Follows the rules of premise owner and instruction of CIC to use proper PPE for where not defined as a construction site (e.g. training grounds and event venues).
- i. Department head / premise owner will stop work if appropriate PPE is not used.

## 07 Housekeeping

- a. Conduct daily and weekly housekeeping exercises to maintain a safe environment for working on the workplaces.
- b. Ensure all workers tidy up and remove rubbish, scrap material and superfluous material from their working areas after every shift.
- c. In addition to daily tidying, a comprehensive housekeeping exercise should be implemented by all workers of Contractors and their Subcontractors under the supervision of Contractor's Area of in-charges on the last working day of each week.
- d. Full implementation of "5S" for good housekeeping practice in workplaces, which includes five complementary principles of "Organisation", "Neatness", "Cleanliness", "Standardisation" and "Discipline". Please strictly implement the "5S" in accordance with the following "Good Housekeeping DIY Kit" (Here is the link: [https://www.oshc.org.hk/oshc\\_data/files/trgkit/2016/CB020E.pdf](https://www.oshc.org.hk/oshc_data/files/trgkit/2016/CB020E.pdf))



Source: Good Housekeeping DIY Kit - Train. Kit – Occupational Safety & Health Council (Please click: [HERE](https://www.oshc.org.hk/oshc_data/files/trgkit/2016/CB020E.pdf) to browser)

- e. Temporary cords or hoses shall be hung at reasonable height level when routed across aisles.
- f. Stack and store all materials and equipment at a designated location. Material should be evenly and securely stacked to prevent from sliding, falling or collapsing. Heavy object should generally be stacked close to the ground to create a stable base with lower center of gravity.
- g. All materials shall not be stacked over 2m height.
- h. No one should be allowed to climb onto or from stacked materials.
- i. Keep clear from obstruction at all workplaces, passageways and stairways.
- j. Clean up spillage of liquid or other substances to eliminate slip and fall hazard.
- k. Fence off all the material stacking areas and storages by barriers properly and appropriate warning notices shall be displayed thereon.
- l. Protect and fence off sharp objects and other material. Remove all protruded objects if possible.
- m. Regular inspect, clean and repair all equipment and tools. Remove damaged equipment and tools.
- n. Sanitary facilities should be kept clean.
- o. Inspect the workplace regularly to assure its tidiness.
- p. Department Head or Premise Owner has right to suspend the works (all or partially) until the contractor has improved the housekeeping upon their satisfaction.
- q. When machinery is being stripped for maintenance or repairs, plant components or parts should be stored in a neat and tidy manner.

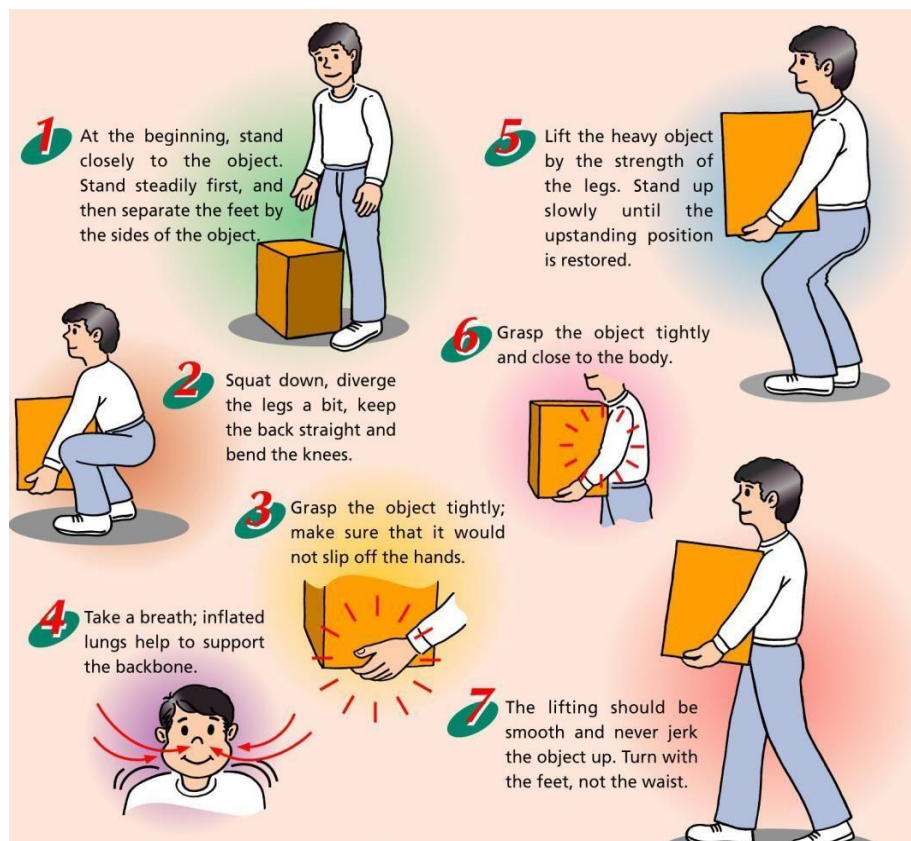
### Dust Control:

- a. Implement appropriate dust control measures, such as using dust nets, water spraying systems, or other dust suppression equipment, to reduce dust on the construction site.

- b. Provide workers with suitable PPE, such as suitable mask and goggles to protect them from health risks.
- c. Regularly clean dust with vacuums from the construction site / works areas, especially in high-dust areas at least 3 times a day to maintain good air quality.
- d. Materials shall be properly covered by tarpaulin or dust nets in material stacking areas and storages.
- e. Regularly monitor and evaluate dust levels on the construction site and adjust dust control measures as needed.
- f. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- g. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 08 Manual Lifting / Material Handling

- a. For handling of load over 16kg, conduct manual handling operation assessment by a competent assessor.
- b. Provide adequate and suitable training to the manual handling operators.
- c. Consider the characteristics of the task, loads, working environment, individual capabilities and other factors before carrying out manual handling operation.
- d. Use suitable accessories or mechanical aids in avoiding or relying on the manual handling operation whenever required.
- e. An individual should not lift, lower or carry loads over 55kg without mechanical aids.
- f. Use the correct manual handling operation technique:



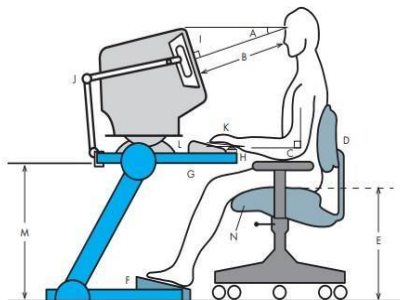
Source: General Safety Instructions for Manual Handling – Occupational Safety & Health Council (Please Click: [HERE](#))

- g. For proper manual lifting / material handling, refer to “An Employee Guide to Manual Handling Operation” and “Guidance Notes on Manual Handling Operations”.



## 09 Display Screen Equipment

- a. An employee would be a “DSE User”, if he, by the nature of his work, is required to use display screen equipment almost every day – (i) continuously for at least 4 hours during a day; or (ii) cumulative for at least 6 hours during a day.
- b. Work with DSE is subject to the requirements under Occupational Safety and Health (Display Screen Equipment) Regulation in Hong Kong.
- c. Perform a risk assessment of a workstation in the workplace before it is first used by users and review the assessment if there has been a significant change in the conditions of the previous assessment or in the workstation.
- d. Take appropriate steps to reduce any risk identified in a risk assessment to the lowest extent as is reasonably practicable.



- A Comfortable viewing angle, e.g. 15° - 20°
- B Comfortable viewing distance,  
e.g. 350 - 600mm for text of normal font size
- C Forearm and arm at about right angle
- D Adjustable back rest
- E Adjustable seat height
- F Firm foot rest if required
- G Adequate knee clearance
- H Wrist rest if required
- I Screen at right angle to line of sight
- J Adjustable document holder
- K Wrist kept straight or at most slightly inclined
- L Screen support adjustable for rotation and tilting
- M Adjustable table height preferable
- N Rounded or scrolled edge seat pad

Source: A Guide To Work With Computers – Occupational Safety and Health Branch, Labour Department (Please Click: [HERE](#))

- e. An employer shall provide with necessary safety and health training in the use of workstations.
- f. For more information, please refer to “Code of Practice for Working with Display Screen Equipment” and “A Health Guide on Working with Display Screen Equipment”.



### 10 Electrical Safety

- a. **Live work should be avoided unless absolutely necessary.** Where live work is unavoidable, adequate precautions as stipulated in “Code of Practice for the Electricity (Wiring) Regulations” published by the Electrical and Mechanical Services Department (EMSD) shall be taken to avoid danger for work involving the handling of energized parts or working within touchable distance, direct or indirect, of energized parts.
- b. The Contractor shall use cordless or battery-powered hand tools wherever practicable. If it is not practicable to use battery-powered hand tools, the Contractor shall ensure all power hand tools are double-insulated and operated at 110V or lower voltage.
- c. All power hand tools shall be checked, inspected and maintained in safe working order by a competent Registered Electrical Worker (REW) regularly.
- d. All power handheld / portable tools shall be tested by REW on quarterly basis. The test shall include functional test, protective conductor continuity test, polarity test and insulation test. After test, all tools and equipment shall be registered and recorded. Identification labels (with color code system as lifting gear) showing the registration number, type of tool, name of owner and date of test shall be affixed to the tools.
- e. Conductors shall be hung up to at least 2m off ground (clear height).
- f. Mechanical interlock devices shall be installed at the sockets 63A or more to prevent flashover during socket connection or disconnection of energized equipment.
- g. Sockets and plugs shall comply with the protection class corresponding to the circumstances of use for both Indoor and outdoor are IP67.
- h. For power strip, each socket of power strip shall be protected with a circuit breaker of rating not more than 16A. The whole power strip shall be further protected by a circuit breaker of rating not more than 16A and with a Residual Circuit Breaker (RCD) at setting 30mA.
- i. 220V and 380V power strip is prohibited.
- j. Ensure the portable electrical equipment is protected against leakage of current, such as double insulation, earth leakage circuit breaker (ELCB) or residual current circuit breaker (RCCB). Where residual current device is used, the function should
- k. be checked at regular intervals. Notice of “Press to test at least quarterly 最少每

三個月按鈕測試” should be permanently fixed at or near a residual current device.

- l. Never leave any operating battery charger unattended. Overnight charging is not recommended.
- m. Do not leave electrical appliances turned on overnight unless the appliances are designed to be left on (e.g. freezers, network servers).
- n. All general electrical installations should be properly installed and maintained in good working order by competent persons, e.g. Registered Electrical Worker.
- o. All wiring should be installed and maintained in a safe condition according to specification or regulation.
- p. All exposed electrical conductors should be properly insulated, covered or segregated to prevent contact by any person.
- q. No damaged or faulty switches, plugs, joints, fuses, boxes wiring or distribution boards shall be used.
- r. Access to the switchboard should be restricted to authorized electricians only.
- s. The following general safety practices shall be observed for work on electrical equipment:

- **Check before Act** – The scope of work and relevant circuit should be checked before starting any electrical work. Suitable lighting and adequate illumination should be provided for the workplace. The condition of tools and instruments should also be checked before carrying out electrical work.
- **Isolate and Lockout** – The circuit /equipment under maintenance should be isolated as far as practicable. The relevant isolator should be locked out. A suitable warning notice should be placed close to the isolator.
- **De-energize** – The circuit/equipment to be worked on should be checked to ensure that it is dead.
- The workplace should be kept **clean and tidy**.
- Keep hands away from any circuit or equipment or extraneous conductive parts that are not being worked on.
- Unauthorized people should not stay in the workplace.
- The requirements stated in any related safety procedures and checklists should be followed.
- Electrical installations, including but not limited to those newly installed, maintained, repaired or tripped under fault conditions, should be

properly inspected and tested prior to energization.

- t. Lockout-Tagout (LOTO) shall be performed to ensure that electrical equipment is properly shut off for work:
  - Lock off the power source by using the integral lock of the switch or switchboard, or by using separate padlock. The key of lock should be securely kept and controlled.
  - If the switch cannot be locked off physically, control of accidental access to the switch should be exercised by locking off the switch room, fencing off the switch, etc.
  - Warning notice, signs and tags should be put on the lock / switch to prevent interference of the switch.
  - “CAUTION—EQUIPMENT UNDER REPAIR” and “小心 — 器具待修” and/or “CAUTION—MEN AT WORK ( 小心 — 工程進行中 )” and/or “ELECTRICAL WORK IN PROGRESS, KEEP POWER OFF (電力工作進行中，切勿開啟電源)” in legible letters and characters each not less than 50 mm high, displayed at or near the electrical equipment and at the isolating device associated with the equipment is acceptable.
- u. Where temporary power is required to use in a workplace, Temporary Power Management Plan shall be submitted to CIC for review without objection prior to the commencement of works.
- v. The notice on treatment for electric shock published by the Labour Department shall be displayed in all parts of the premises where electricity is generated, transformed, or used and at such other places on those premises.



Source: Poster - Electric Shock, Labour Department (Please Click: [HERE](#))

- w. Electrical work should only be carried out by qualified electricians e.g. Registered Electrical Worker who are competent to the class of work to be performed.
- x. All temporary distribution boards should be locked; the name and contact information of responsible electrical worker and statutory warning notice should be displayed at distribution board.
- y. To confirm the electrical installation is safe and complying with the statutory safety requirements, the registered electrical worker or contractor should sign work completion certificate (Form WR1) and issue it to the premises owners after completion of the electrical installation or any work subsequent to repair, alteration or addition to an existing installation. This should be done before the installation is energized.
- z. If the electrical installation is subdivided into more than one part and individual parts are not inspected and tested by the same registered electrical worker, a single certificate (Form WR1) can only be issued and certified by registered electrical worker provided that he or she has received appropriate certificates (Form WR1(A)) signed by other registered electrical workers for the individual parts.
- ab. Periodic inspection and examination of the fixed electrical installation should be arranged in accordance with the Code of Practice for the Electricity (Wiring) Regulations. A test certificate (Form WR2) should be obtained after completion of periodic testing for the electrical installation.

Types of premises	Frequency
A. Places of public entertainment (e.g. cinema) B. Premises for the production or storage of dangerous goods (e.g. DG store) C. Premises with a high voltage fixed electrical installation (exceeding 1000V root mean square alternating current between conductors)	At least once <b>every 12 months</b>

<p>D. A hotel, a hospital, a nursing home, a school, an institution, or a child care centre</p> <p>E. A factory with an approved loading exceeding 200A</p> <p>F. Premises including commercial or residential unit and building with an approved loading exceeding 100A</p>	<p>At least once <b>every</b> <b><u>5</u> years</b></p>
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- ac. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- ad. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 11 Chemicals And Hazardous Substances

- a. Inventory list of all hazardous chemical substances should be developed and updated regularly.
- b. Periodic review of inventory list should be conducted.
- c. Use appropriate material of container to store chemical substance. All containers should be properly identified by proper labels and signs. Information contained in the labels shall be bilingual, i.e., in English and Chinese.
- d. A relevant Safety Data Sheet (SDS) in either English or Chinese should be provided for every hazardous chemical substance used.
- e. Storage or conveyance of hazardous chemical substances shall comply with the relevant legislations:
  - Dangerous Goods Ordinance (Cap. 295)
  - F&IU (Dangerous Substances) Regulations (Cap. 59AB)
  - F&IU (Carcinogenic Substances) Regulations (Cap. 59AA)
- f. Storage of hazardous chemical substances shall not exceed the allowable maximum quantity as stipulated by Dangerous Goods Ordinance (Cap. 295). Dangerous goods (DG) license is required if stores, uses or conveys hazardous chemical substances in excess of its individual exempt quantity or the aggregated quantities of the specific class of DG. Chemical users should refer to the Hong Kong Fire Safety Department website at <https://es.hkfsd.gov.hk/dg/en/> for most updated information on exempt quantity for particular hazardous chemical substance.
- g. The general condition of storage area of hazardous chemical substances should be as follow:
  - well ventilated;
  - located at a suitable distance from the public places and other hazardous materials;
  - different categories of substances are to be stored separately;
  - appropriate warning signs should be affixed to the outside of the store.

- h. Persons who require to handle and / or use, or supervise the handling and / or use of hazardous chemical substances should be properly trained in the handling of the substances, and have a knowledge of the potential hazards and the emergency procedure for handling substances.
- i. The wearing of PPE, e.g. gloves, safety goggles, etc. is essential if close contact with hazardous chemical substance is required.
- j. Do not leave any chemicals unattended and left container open without use; Chemical should be stored inside cabinet instead.
- k. A hazardous chemical substance should never be mixed with another material without a complete knowledge of any possible chemical reaction between the two.
- l. Flammable chemical substance shall not be applied onto live electrical apparatus and its proximity or naked flame and its proximity.
- m. Good ventilation should be maintained when flammable or volatile chemical substance is to be used.
- n. Emergency response plans including information of emergency contact numbers and / or contact person should be established based on the risks of the hazardous chemical substances being evaluated.
- o. Chemical waste producer is required to be registered with Environmental Protection Department.
- p. Chemical wastes shall be collected by the registered chemical waste collector. Do not throw chemical waste as general refuse.
- q. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- r. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 12 Compressed Gas Cylinders

- a. All gas cylinders shall:
  - be labeled or marked to identify contents and properly stored;
  - not be stored in exits or egress routes, damped areas, near salt or corrosive chemicals, fumes, heat, or where exposed to weather;
  - be stored within a well-ventilated areas;
  - be properly stored by grouping together in racks or banks with individual chains to secure them in an upright position;
  - be kept away from all flammable, combustible or incompatible substances;
  - not be dragged or physically carried. Move cylinders with a hand truck designed for the transport of cylinders. Cylinders caps shall be secured during transport;
- b. To prevent chemical reactions, cylinders with dis-similar contents shall not be grouped together.
- c. A person must not use a pressure receptacle for containing any Class 2 dangerous goods unless the receptacle is of a type approved by the Director of Fire Services.
- d. Close valves when cylinders are idle, empty or moved. Valve protection caps should be in place when cylinders are moved or stored.
- e. Release residual gas pressure from the hoses after the valve is turned off.
- f. Shall not store compressed gas cylinder exceeding the allowable maximum limit as stipulated under Dangerous Goods (Application and Exemption) Regulation 2012 (Cap. 295E).
- g. Dangerous goods license is required if stores, uses or conveys dangerous goods in excess of its individual exempt quantity as specified under Dangerous Goods (Application and Exemption) Regulation 2012 (Cap. 295E)
- h. Transportation of compressed gas cylinder in passenger lift is prohibited.
- i. Transportation must be by service lift only after registration with CIC.
- j. Regulators, hoses, and torch assemblies shall be in working order and checked for leaks prior to initial use or installation. If a leak develops, remove the cylinder to a safe location outside the building and report the case to CIC, premise owner and government authorities if needed.
- k. Cylinders must be only of types approved by the Authority with (for permanent and



liquefied gases) approved examination and testing of cylinders within the preceding 5 years and (for dissolved gases) approved examination within the preceding 12 months.

- l. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- m. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 13 Hot Work (Electric Arc Welding, Gas Welding And Flame Cutting)

If hot work shall be performed, it is CIC's requirement that Contractor shall prepare and submit method statement and risk assessment to CIC (for works within premises of CIC). The assessment shall include evaluation of other work in the vicinity that has the potential to create hazard. Hot work permit shall be granted from CIC and the precautionary measures shall be checked by the Contractor (applicable to construction site) before carrying out the activity.

- a. Risk assessment shall be carried out by competent person with implementation of hot work permit system for carrying out hot work activities.
- b. Factors to be considered in assessing risk include the gas supply system, working environment, particular of the works, size and shape of the workplace.
- c. Verify hot work equipment is in proper working order.
- d. All sources of flammable/ combustible substance should be isolated/ kept away.
- e. Provide suitable ventilation system.
- f. Firefighting equipment, e.g. portable fire extinguishers, fire blankets, sand buckets, etc., should be provided.
- g. Use non-combustible or flameproof shields to protect nearby personnel from direct rays of welding arcs.
- h. Any person carrying out hot work activities should be properly trained for use of the relevant equipment.
- i. Equip gas cylinder with suitable flashback arrestor and non-return valve.
- j. Wear proper PPE such as safety goggles, protective clothing, welding apron with sleeves or long sleeves welding uniform, insulated welding gloves, safety masks/ face shield and safety shoes.
- k. For manual electric arc welding, the workpiece should be earthed.
- l. Place the welding transformer and regulator outside the confined space where practicable for electric arc welding operation in a confined space.
- m. Ensure that slag, sparks and workpiece are completely cooled down before leaving the work area.
- n. Fire warden shall be appointed to inspect works area on completion of shift.
- o. Where arc welding is being conducted, fire retardant screens are to be erected to protect persons in the vicinity of the work, including vehicles and pedestrians, from injury due to sparks.

- p. Refer to “Code of Practice: Safety and Health at Work for Gas Welding and Flame Cutting”, and “Code of Practice: Safety and Health at Work for Manual Electric Arc Welding” for more information.
- q. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- r. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.
- s. The Contractor shall be liable to any loss or damage so caused to CIC in relation to the fire incident as a result of any acts, omissions or breach of safety requirements by the Contractors. Construction Industry Council shall be entitled to recover in full from the Contractor forthwith.

### 14 Boiler And Pressure Vessels

- a. The owner of a new boiler, air receiver or pressure vessel shall, not less than 30 days preceding the day on which it is intended to be used, apply to the Boilers and Pressure Vessels Division of the Labour Department for registration (Form 3).
- b. Every boilers and pressure vessels shall be examined by a boiler inspector / air receiver inspector periodically (Boiler: every 14 / 26 months, depends on the type of boiler and period of boiler usage; Air receiver / Steam receiver: every 26 months). After extensive repair or change of premises, the boiler / pressure vessel shall be examined by inspector again. A certificate of Fitness (Form 1 for a steam boilers/ Form 2 for pressure vessel other than a pressurized fuel container) should be issued by the inspector in accordance with ordinance.
- c. The certificate of fitness shall be kept in premises / location at which boiler or pressure vessel is installed.
- d. All boilers and pressure vessels shall be identified and numbered. Test pressure and maximum permissible operating pressure shall be marked on the boiler and pressure vessel.
- e. No boiler or steam receiver shall be operated except under the direct supervision of a competent person whose certificate of competency certifies that he is competent to operate all classes or types of boiler and steam receiver / competent to operate boilers or steam receivers of the class or type in question.
- f. No boiler or pressure vessel shall be operated at a greater pressure than the maximum permissible working pressure specified in the latest certificate of fitness.
- g. Nobody shall be allowed to remove the lead seal of the safety valve or attempt to adjust the setting of the safety valve to increase the steam pressure.
- h. In case an accident happens to a boiler or pressure vessel or its accessories with the risk of loss of life or property damage, the boiler or pressure vessel must be shut down immediately. The owner should report the accident to the Boiler and Pressure Vessels Division within 24 hours.
- i. Refer to “Chapter 56 – Boiler and Pressure Vessels Ordinance” and “Code of Practice for Owners of Boilers and Pressure Vessels” for more information. Other publications are available on the website of the Labour Department: [https://www.labour.gov.hk/eng/public/content2\\_10.htm](https://www.labour.gov.hk/eng/public/content2_10.htm) .

### 15 Working at Height and Work-above-ground

- a. The contractor shall provide the following equipment for working involving a possible fall of:

2m or more:

- Working platform shall be provided with guardrails and toe boards with reference to Construction Sites (Safety) Regulations Schedule 3 Part 5 & 6.
- The use of fall prevention and arrest systems shall be considered as last line of defense after conducting risk assessment.
- The height to least base dimension ratio of the mobile scaffolding without outriggers shall not be more than 3.

- b. Less than 2m but more than 900mm:

- Light-duty working platforms such as Hop-up platform or Step platform shall be used with guard rails.
- The height of Hop-up platform and Step platforms shall not be more than 1.2m and 1.8m respectively.

- c. Less than or equal to 900mm:

- Hop-up platform, Step platform or other means of support may be used.

- d. Working platforms shall either be closely boarded, planked or plated. Every board or plank forming part of the working platform shall be:

- i. Wider than 200mm and thicker than 25mm; or
- ii. Wider than 150mm if it is thicker than 50mm

- e. When it is impracticable to provide a suitable working platform for working at height, the use of full body safety harness with an independent anchorage or fall arresting is only a last resort of fall protection when there is no alternative equipment should be provided.

- f. Working platforms shall be at least 400mm wide. For use as a passage of transporting materials, the working platform must be at least 650mm wide.

- g. Working platforms shall be provided with a guardrail to a height of 900mm to 1150mm and an intermediate guardrail to a height of 450mm-600mm.
- h. Toe-board shall be at least to a height of 200mm to prevent materials falling from the working platform.
- i. Use of mobile platform of more than 4m height shall be jointly approved by Contractor Safety Officer.
- j. Any scaffold more than 6m in height shall not be fitted with wheels.
- k. Scaffolds shall be fitted with stair access instead of straight ladders for access to working platforms with width more than 1m and height more than 2m where practicable.
- l. Inspect fall protection equipment before use.
- m. Wear safety helmets with chin straps when working at heights.
- n. Do not perform overhead work when there is a danger of falling objects striking a person below. Isolate such work areas with barriers.
- o. Throwing or dropping tools and equipment is prohibited.
- p. Ladders should not be used for working at height of 2 meters or more.



Figure 1: Step Platform



Figure 2: Hop-up Platform



Figure 3: Mobile working platform

- q. For floor opening with either length of either side is over 800mm and the other side is more than 400mm, double rigid fencing with toe-board is required. For floor opening not subject to the size limit above, a securely fixed cover shall be provided or alternative measures (e.g. bolt, kicker or stopper at the back of plate with warning sign on the top) shall be taken to prevent the cover from accidental displacement.
- r. The thickness of timber and steel plate shall be more than 25mm and 5mm

respectively.

- s. Timber and rope are not allowed to be act as Floor Edge Protection.
- t. Where falsework is being erected, alerted or dismantled, the contractor shall develop the safe work procedures on erection, alteration and dismantling of falsework and erection of slab formwork.
- u. Staircase access tower shall be provided for ascending and descending during erection and dismantling of the falsework. Climbing on falsework is not allowed.
- v. The falsework shall be fully decked on the last platform and the last fully decked platform should be erected so that the workers can use it as a working platform for erection and adjustment of head jacks and slab formwork. Head jack should not be placed without full planking.
- w. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- x. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 16 General Safety Precaution Of Using Ladder

- a. Wooden ladder and A-shape ladder shall not be used in CIC premises.
- b. Ladders are intended for access to heights only. When the provision of a suitable working platform is not reasonably practicable. The Contractor shall establish and implement a permit system on their safe use.
- c. Check the ladder before use and maintain record on a comprehensive checklist.
- d. Ladders with broken steps or rails, missing anti-slip feet, or other defects are prohibited.
- e. Fiberglass ladder should be used for any electrical work.
- f. Facing the ladder and maintain a three-point contact with it when climb up or down.
- g. Place ladder on flat and firm level ground with non-slippery surface.
- h. Haul materials with a rope rather than carry up by ladder.
- i. Only one person uses ladder at a time.
- j. Place the ladder on a 1:4 ratio of setback distance to height.
- k. Keep at least 1 meter above the landing point.
- l. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- m. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.



### 17 Scaffolding Safety

- a. Erection, alteration and dismantling work of scaffold must be carried out by competent persons and trained workmen.
- b. A competent person of bamboo scaffolding and metal scaffolding should receive training and have practical experience as required in the “Code of Practice for Bamboo Scaffold Safety” and “Code of Practice for Metal Scaffolding Safety”.
- c. Wear safety harness and attach lanyard to an anchorage point or independent lifeline with fall arrester for the scaffolding work.
- d. Working platforms shall be provided with a guardrail to a height of 900mm to 1150mm and an intermediate guardrail to a height of 450mm-600mm.
- e. Toe-board shall be at least to a height of 200mm to prevent materials falling from the working platform.
- f. The scaffold should be erected on a firm and stable ground.
- g. Inspection on the scaffold should be arranged and conducted by the competent person before being taken into use for the first time, after substantial addition/alteration, at intervals not exceeding 14 days, and after exposure to adverse weather conditions every 14 days with completion of the statutory inspection form (CSSR Form 5).
- h. Fence off the working area with display of warning notice.
- i. No throwing or tipping of scaffolding material from height.
- j. A contingency plan for adverse weather shall be prepared. Inspection of the scaffold is required after adverse weather.
- k. Construction and planking arrangement of metal scaffolding should be in accordance with the technical requirement of manufacturer's instruction and “Code of Practice for Metal Scaffolding Safety” published by Labour Department.
- l. Any setting of scaffold that may affect the structure of the building shall seek prior approval from CIC.
- m. Design and calculation report signed by Registered Professional Engineer shall be submitted to CIC. Please comply with the requirements stated in the “Code of Practice for Metal Scaffolding Safety”.
- n. The Contractor shall not use “bamboo” for scaffolding and staging without the prior consent of CIC.

### 18 Mobile Elevating Work Platforms (MEWPs)

- a. Select a suitable MEWP to ensure that its safe working capacity, height and specifications are appropriate for the work.
- b. Safe work methods and procedure for the operation are required.
- c. Before the operation of MEWP, operators should have received appropriate training and be familiar with the operation for that specific model of MEWP.
- d. At the beginning of each shift, dynamic risk assessments should be conducted to evaluate the workplace conditions, including openings, steep slopes, overhead obstacles and traffic conditions; and
- e. Physical and functional checks for the MEWP to ensure that the MEWP is in safe working condition.
- f. Ensure that ground conditions are suitable for the operation of MEWP.
- g. A MEWP with its associated critical parts (e.g. boom, hydraulic cylinders, support structure and condition of tyres) should be regularly inspected, tested, and properly maintained in accordance with the manufacturer's instructions in order to ensure it is in safe working condition at all times.
- h. Workers working on the MEWP shall wear a suitable safety harness with its lanyard anchored to a specified anchorage point of the MEWP.
- i. Ensure that hand and foot controls are not obstructed.
- j. Maintain slow speed while travelling or moving a MEWP.
- k. Do not override any controls, including its safety devices.
- l. Suitable guardrail and toe-boards should be provided on the working platform.
- m. The machine should be fitted with an effective lock-on brake or other means to hold the unit on the maximum slope it is designed for while loaded with its safe working load.

n. **Secondary Guarding Device (“SGD”):**

All MEWPs used on site shall be fitted with SGD unless approved by CIC. SGD is an equipment fitted to a MEWP intended to reduce the risk of entrapment. SGD could be in form of physical barriers or smart devices such as proximity sensors. SGD could either be a build-in feature of MEWP, integrated with MEWP, supplied by MEWP manufacturer or a third-party product.

**Physical Barriers:** To be fitted around the basket of MEWP with adequate strength to eliminate the entrapment hazards. It shall be able to restrict further movement of MEWP once SGD hits any obstacles in the vicinity of MEWP.

**Smart Devices:** To fit one or more than one proximity sensor(s) at MEWP for detecting any obstacles around MEWP and overhead. A visual and/or audio warning signal shall be issued to alert the operator and/or workers on MEWP if the distance between the operator and/or workers on MEWP and any obstacles around MEWP or overhead is less than 500 mm or other specified distances.

In case the SGD is not a build-in feature of MEWP or the manufacturer is not liable for the installation of such SGD, the Contractor shall be liable for the installation.

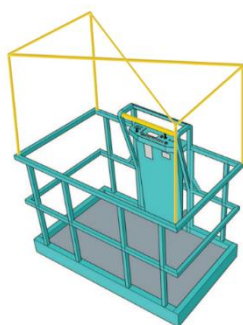


Figure 1: Secondary Guarding Device – Physical Barriers



Figure 2: Secondary Guarding Device – Physical Barriers

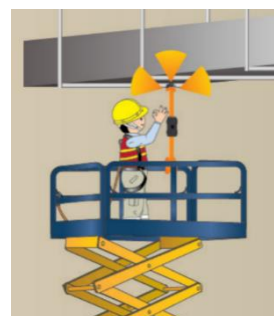


Figure 3: Secondary Guarding Device – Smart Devices

If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 19 Safe Use Of Suspended Working Platform

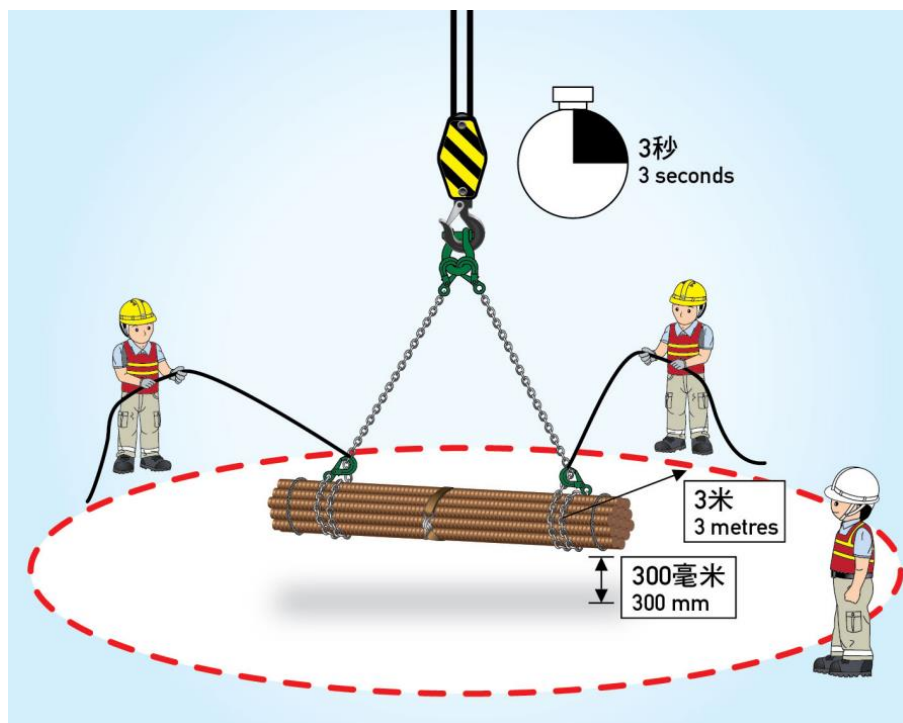
- a. Only trained person is allowed to work on suspended working platform.
- b. Wear suitable safety harness and attach the lanyard to an independent lifeline with fall arrester suitable anchorage and fittings on suspended working platform.
- c. Display notice of safe working load (SWL) and number of persons allowed.
- d. Do not overstretch the body outside a suspended working platform or overload a suspended working platform.
- e. Suspended working platform should not be used under adverse weather conditions.
- f. Maintenance record of suspended working platform should be kept.
- g. Consult competent person for erection, alteration and dismantling of a suspended working platform.
- h. All the suspension ropes and safety ropes should be inspected by a competent person.
- i. Weekly inspection should be carried out by competent person and recorded in statutory inspection form (SWP Form 1).
- j. Suspended working platform must comply with thoroughly inspected, examined and tested periodically in accordance with the statutory requirement.
- k. The Contractor is responsible to control the person who can operate the suspended working platform of the building; only the person on the authorization list can operate the suspended working platform.
- l. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- m. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

- n. Refer to “Code of Practice for Safe Use and Operation of Suspended Working Platforms” for more information.

Legal Requirement of Suspended Working Platform			
Applicable Regulation:	F & IU (Suspended Working Platforms) Regulation		
Item	Inspection Form No. (SWP)		
Suspended Working Platform	Form 1	Form 2	Form 3
Period	7 days	Preceding 6 months before put into use or after substantial repair, re-erection, adjustment to any member of the suspended working platform, failure or collapse	Preceding 12 months before use

### 20 Lifting Appliances And Lifting Gear

- a. The Contractor shall develop a lifting plan with due consideration to the size, shape, centre of gravity and weight of all loads to be lifted as well as the rigging methods for preventing any unintended movements of the loads.
- b. Establish a restricted work area with use of RED barriers and other appropriate controls to minimize the hazards to personnel from swinging or falling objects.
- c. Operator of the lifting appliance shall be properly trained and competent.
- d. Operator shall conduct inspection of the lifting appliance and complete the statutory inspection form (LALG form 1).
- e. Do not leave suspended loads unattended! No one should stay underneath the transportation route. Riggers and banksman shall alert any passerby during the lifting operation
- f. Strictly implement Safe Lifting "3, 3, 3" in accordance with the "Lifting Safety Handbook" issued by CIC as a hold point of lifting procedures before lifting: Keep 3m away from materials being lifted; lift up the materials 300mm from ground; and wait for 3 seconds for stabilising the lifting object before lifting operation.



Source: Lifting Safety Handbook – Safe Lifting 3,3,3 (Please Click: [HERE](#))

- g. Riggers and Signaller shall be thoroughly trained and competent for the lifting operation.
- h. Appoint a competent and experienced lifting supervisor to oversee the lifting operation in accordance with the lifting plan.
- i. Check the working environment and weather condition before carrying out the lifting activity.
- j. All lifting appliance and gear must comply with thoroughly inspected, examined and tested periodically in accordance with the statutory requirement.
- k. All safety features of the lifting appliance must be provided and maintained in good condition including the automatic safe load indicator.
- l. Implementation of colour coding system is recommended to indicate the lifting gear is being inspected and found to be in safe working order.
- m. Consult competent person for erection, dismantle and alteration operation of the lifting appliance.
- n. Risk assessment should be arranged to identify potential hazard and formulate method statement and control measure prior to the lifting activity.
- o. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- p. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.
- q. Refer to the publication of “Code of Practice for Safe Use of Tower Crane”, “Code of Practice on Safe Use of Mobile Crane” and “Guidance Notes on Inspection, Thorough Examination and Testing of Lifting Appliance and Lifting Gear” for

implementation.

Legal Requirement of Lifting Appliance and Lifting Gear							
Applicable Regulation:	Lifting Appliance and Lifting Gear Regulation						
Item	Inspection Form No. (LALG)						
	1	2	3	4	5	6	7
Crane	√		√		√		
Crane with anchoring or ballasting devices	√	√	√		√		
Winch, Crab	√		√		√		
Pulley Block, Ginwheel, Sheerlegs, Pile Driver, Pile Extractor, Excavator, Overhead Runway, Dragline, etc	√			√	√		
Lifting Gear						√	√
Fibre Rope							√
Period	7days	After erection	4 years		12 months	Before put into use	6 months
			Before use or after substantial repair, re-erection, failure, overturning or collapse				

Source: Guidance Notes on Inspection, Thorough Examination and Testing of Lifting Appliances and Lifting Gear (Please Click: [HERE](#))



### 21 Mechanical Plant

- a. Mechanical plant refers to any power-operated mobile machine which is operated by a person riding on the machine including excavator, bulldozer, loader, forklift, cranes, and cherry picker etc.
- b. Only trained operator can control the mechanical plant in compliance with regulation.
- c. Inspection should be arranged regularly and recorded in an inspection form to assure it is in safe working condition.
- d. Plant with malfunctioning safety features shall be removed from service until repairs are completed.
- e. Refueling shall be performed in area with adequate ventilation. Do not refuel vehicles while the engine is running.
- f. All mechanical plant should be maintained at its proprietary status. Any modification for the plant shall not be made unless it is being allowed by the manufacture's authentication or permission in written form.
- g. Refer to publication "A Guide to the Factories and Industrial Undertaking (Loadshifting Machinery) Regulation", "Guidance Notes on Safe Use of Loadshifting Machines for Earth Moving Operations on Construction Sites" and "Guidelines on Safety of Site Vehicles and Mobile Plant" for more information.
- h. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 22 Woodworking Machinery

- a. Woodworking machine must only be operated by persons who are competent for this purpose.
- b. All dangerous parts of the woodworking machinery should be properly guarded.
- c. Push stick/block must be available and used to prevent worker's hands from moving near the saw.
- d. Emergency stop must be installed to stop the machine in case of emergency.
- e. A stopping and starting devices should be provided to control the woodworking machine.
- f. Woodworking machine must be regularly checked and maintained in good condition. Operators must not use the machine if there is any sign of defect.
- g. The working area should be kept clean and free of obstruction. Wood chips should be regularly removed.
- h. The floor where the woodworking machine is installed should be maintained in good and level condition.
- i. Proper PPE (safety goggle and ear protectors) should be used when using the woodworking machine.
- j. Please refer to publication of "A Guide to the Factories & Industrial Undertakings (Woodworking Machinery) Regulation" for implementation.
- k. CIC also has the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 23 Machinery Guarding

- a. All hazardous moving parts of machinery within normal reach of personnel shall be completely guarded to prevent personnel from coming into contact with the moving parts of machinery or equipment.
- b. Make sure that effective guards are in place and working properly.
- c. Every guard should be rigid and of substantial construction.
- d. All plant and machinery should be regularly checked and maintained in good condition including the associated guarding.
- e. Guards should be secured in position at all times when the parts are in motion.
- f. Any attempt to alter or remove the guarding is not allowed.
- g. Turn off the machine for replacement or maintenance of guard.
- h. Please refer to the “Handbook on Guarding and Operation of Machinery” published by the Labour Department for the design and installation requirement of the guarding.
- i. Machine operations safety should follow as below:
  - Follow SOP, operator should be trained and authorized
  - Equipped with PPE, avoid loose clothing or long hair which might trapped in the rotating parts
  - Routine maintenance of machinery equipment should be conducted by technician
  - Follow safety control hierarchy: Elimination, isolation, engineering control, administrative control, PPE
  - In case of emergency, press emergency stop and report the case to Supervisor

## 24 Abrasive Wheel

- a. Mounting of abrasive wheel shall only be carried out by person who has been appointed in writing by the proprietor and by reason of training and practical experience, competent to perform that operation..
- b. Do not use defective wheels.
- c. Ensure the maximum permissible speed of abrasive wheel is clearly marked.
- d. Ensure the spindle speed is marked on the machine in both English and Chinese.
- e. Ensure the maximum permissible speed of abrasive wheel is higher than the spindle speed of machine.
- f. Ensure that the type of abrasive wheel used is suitable for the work to be carried out.
- g. Ensure the guard is in place after mounting of the abrasive wheel.
- h. Ensure the statutory warning notice for use of abrasive wheel is clearly displayed near the abrasive wheel or in a conspicuous location.

此告示已由勞工處處長批准，並須根據  
工廠及工業經營(砂輪)規例第14條所規定而張貼

### 使用砂輪時 應注意下列

危險	安全預防措施
(1) 砂輪爆裂之原因： 砂輪之內有雜質	用適當試驗辦法，檢查砂輪之 完整性與否。
過度轉動	查閱砂輪製造商之說明， 不可超過最高容許轉速。
過度磨削	砂輪須由一位專人安裝及調 至平衡之位置後始可人使用。
使用不當	勿用過大壓力。 磨削時應讓砂輪中側面打磨時， 應保持中心。
(2) 裝固輪子與磨盤之破裂	勿用機械或手力磨盤之外置磨座， 心輪磨盤須在內置內。
(3) 與砂輪接觸	使用：護罩、軟件、防護屏 (或護目鏡)。
(4) 飛濺之磨粒引發眼部受傷	砂輪應妥善修三氣磨機。

使用前須檢查清楚

This warning notice has been approved by the Commissioner for Labour  
and must be posted for the purpose of Regulation 14 of the Factories and  
Industrial Undertakings (Abrasive Wheels) Regulations

### WARNING NOTICE WHEN USING ABRASIVE WHEELS

DANGERS	SAFETY PRECAUTIONS
(1) Bursting of wheel, due to: Latent defect of wheel	Check soundness of wheel by ring test.
Over-speeding	Do not exceed maximum permissible speed of wheel as specified by manufacturer.
Faulty mounting	The wheel must be mounted by a trained and competent person appointed in writing.
Misuse by operator	Never use excessive pressure on the wheel. Use particular care when grinding on the side of a straight-edged wheel.
(2) Fractures of mounted wheels and points	The overhang not to exceed that is permissible by the manufacturer. The operator to be secured properly in the collet of chuck.
(3) Contact with wheel	Use: Wheel guards, work-rest, protective screen (or eye protectors).
(4) Eye injuries from flying particles	Wheels must be properly trued and dressed.

ALWAYS CHECK  
BEFORE YOU OPERATE

Source: Warning Notice When Using Abrasive Wheels – Labour Department

- i. The abrasive wheel shall be regularly inspected and maintained by the competent

person.

- j. Ensure the ground is in good condition, free from obstruction and not slippery when operating the machine.
- k. For carrying out grinding operation, proper protection of eye such as safety goggles is required.
- l. For more information, please refer to the publication of “Safety In The Use of Abrasive Wheel”.
- m. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- n. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 25 Work In Confined Space

- a. Confined space is defined to mean any place in which, by virtue of its enclosed nature, there arises a reasonably foreseeable specified risk, and without limiting the generality of the foregoing, includes any chamber, tank, vat, pit, well, sewer, tunnel, pipe, flue, boiler, pressure receiver, hatch, caisson, shaft or silo in which such risk arises.
- b. Specified risk means a risk of
  - Serious injury to any person at work arising from a fire or explosion;
  - The loss of consciousness of any person at work arising from an increase in body temperature;
  - The loss of consciousness or asphyxiation of any person at work arising from gas, fume, vapour, or the lack of oxygen;
  - The drowning of any person at work arising from an increase in the level of liquid; or
  - The asphyxiation of any person at work arising from a free flowing solid or the inability to reach a respirable environment due to entrapment by a free flowing solid.
- c. Any person who enters in the confined space must attend an approved safety training course in connection with confined space work and holds a relevant certificate.
- d. Risk assessment shall be conducted and submitted to CIC by competent person who receives approved safety training course and holds a relevant certificate before entry to confined space as required by regulation. Any changes in environment must be re-assessed.
- e. The result of risk assessment should be displayed at the entrance of confined space with warning notice.
- f. Before entry into confined space, the confined space should be adequately purged by inert gas purging, steam cleaning and forced ventilation. Atmospheric testing should also be carried out from outside of the confined space.
- g. Any person entering a confined space shall bring along a gas detector each therein to continuously monitor the atmosphere throughout the stay in the confined space.
- h. Make sure safety equipment and PPE are used throughout the whole confined space work including explosion-proof type of 2-way telecommunication equipment, explosion-proof type of atmospheric testing equipment, protective clothing, safety

helmet, respirators, ventilation equipment and safety harnesses with a lifeline connected to a man-lifting tripod or other lifting equipment approved by the Engineer for rescue purpose, etc.

- i. A worker should be assigned to standby at the entrance of confined space throughout the time of operation for emergency communication and coordination.
- j. Any person entering a confined space shall wear an audio and visual personal alarm of dead-man type maintaining its operating in active mode and is able to give out signals to alert the standby person stationed at the entrance of that confined space, and vice versa.
- k. Ensure all relevant control measures such as isolating critical valves or purging of fresh air are implemented before entering to the confined space.
- l. Establishment of an emergency rescue procedure to handle any emergency situation of the confined space work.
- m. Contractors shall conduct site check in every shift of confined space works.
- n. Refer to “Code of Practice for Safety and Health at Work in Confined Spaces” for implementation.
- o. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- p. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 26 Excavation And Trenching

- a. Ensure underground utility marking, signage, barricades and shoring are in place before excavation work.
- b. The Contractor shall provide competent person (under Cap 406 Electricity Supply Lines (Protection) Regulation) to conduct the underground utilities detection before excavation and full time supervision of the execution of the trial pit excavation works until the underground utilities are exposed for active detection, and for all excavation work at high risk areas as considered by CIC.
- c. The Contractor shall conduct passive and active detection for all underground utilities wherever practicable.
- d. The Contractor shall clearly mark the type, alignment and depth of the underground utilities (detected by passive and active detection) on ground.
- e. The Contractor shall submit the completed underground utilities detection report (Passive and Active) to CIC for review without objection within 3 working days after the detection.
- f. The Contractor shall develop separate permit to work system for different stages of excavation:
  - Inspection Pit for underground utilities detection
  - Trial Pit Excavation Stage
  - Bulk Excavation Stage
- g. The Contractor shall provide a full time competent person (under Cap 406 Electricity Supply Lines (Protection) Regulation) on site to supervise the works during the execution of the excavation works where considered by CIC as high risk areas.
- h. Excavation plant should be properly selected and maintained to ensure it is suitable for the work to be carried out.
- i. Operator of excavator should be competent and trained in the use of machine.
- j. Weekly inspection of excavator shall be arranged and recorded in the statutory inspection form (LALG Form 1).
- k. Place warning signage and barriers on all sides of excavated trench to prevent pedestrians from crossing.
- l. Inspection of excavation should be carried out by a competent person as required by law and recorded in the statutory inspection form (CSSR Form 4).
- m. Proper access should be provided for all excavation.



- n. Inform CIC before beginning of excavation work.
- o. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- p. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.
- q. Please refer to “Code of Practice for Safe Use of Excavator” for implementation.

Legal Requirements of Excavation for Implementation			
Item	Applicable Regulation	Inspection Form No.	Period
Inspection of Excavation	Construction Site Safety Regulation	Form 4	7 days
Inspection of Excavator	Lifting Appliance and Lifting Gear Regulation	Form 1	7 days
		Form 4	Before use or after substantial repair, re-erection, failure, overturning or collapse
		Form 5	12 months

### 27 Roadwork Safety

- a. All workers working along roadside must wear reflective vest at all time.
- b. The boundaries of all road works on carriageway must be clearly delineated by traffic cones. The requirement of traffic cone should conform to the general requirements of BS EN 13422:2004 and shall be of appropriate height. The white portion must be retroreflective and the red portion may be retroreflective or have a fluorescent finish.
- c. Traffic cone should be placed close enough together to give an impression of continuity and an appearance of substance. The maximum cone spacing can refer to the requirement listed under Code of Practice for the Lighting, Signing and Guarding of Road Works (COP-LSG) issued by Highway Department.
- d. Obstruction and excavation shall be adequately guarded at all time.
- e. Pedestrians shall be protected from the works and vehicles by rigid barriers (ex. Water-filled or temporary tubular barriers) which can clearly separate pedestrians from the work and trafficked carriage and warn pedestrian of their presence. The barriers should be placed with sufficient clearance to excavation, materials or plant to prevent dangers to pedestrians.
- f. Water-filled or temporary tubular barriers shall provide a clear and uniform overall appearance. Adjacent panels shall be interlocked together without gaps affecting their guarding purpose. The containment level of the barriers should be designed to meet BS EN 1317-2:2010 containment level T2 or above.
- g. During the hours of darkness or at times of poor visibility, all obstructions or road works must be properly delineated with prescribed road hazard warning lanterns to indicate to road users the limits of the works.
- h. General Road Works Signs shall be properly displayed on site. The method for display of signage shall align with the standard and requirement stated in COP-LSG.

- i. Approach and exit tapers shall be in place to guide any road-user to safely pass the works area. The use of traffic cones and barricades shall provide a uniform and consistent indication to road user of the obstruction or excavation on carriageway. Barricade signs should be used with flash arrow sign at location where visibility could be a problem.
- j. Adequate length of approach tapers and height and spacing of traffic cones shall be provided and it is recommended to refer to COP-LSG for general standard and requirement. All traffic arrangement shall be agreed by CIC.
- k. A minimum clear footway width of 1.5 meters should be maintained for pedestrians when work is carried out on footway. If it is impractical to provide the minimum width for the footway, an alternative route should be provided or a permission from CIC should be granted for reducing the width of footway.
- l. Any material storage on carriageway or footway shall be adequately guarded by continuous barriers. Stored plant and material should be kept as far back as possible from the edge of carriageway and in such a position that sightlines are not obstructed. A permission must be granted by CIC if material is needed to be stored on carriageway.
- m. If works are carried out on cycleway, a desirable minimum clear width of 1.8 meters should be maintained for cyclist.
- n. A lateral safety clearance shall be maintained between the works area and any part of trafficked carriageway.
- o. A longitudinal safety clearance shall be maintained between end of the approach taper and the works area which provides a margin of safety for both the traffic and road works personnel and should not be used as a working space. A minimum length of 10 meters longitudinal safety clearance zone shall be provided as recommended in the COP-LSG.

Whereas the provision of longitudinal safety clearance zone is not feasible, CIC must be informed of the situation with implementation of alternative arrangement.

- p. The normal minimum width of a single carriageway for two way traffic is 5.5 m. If this width cannot be provided, the carriageway must be reduced to a width not less than 3 m but not more than 3.7 m and traffic control equipment used to operate alternate one way working. Traffic control may be by approved portable light signals or “Stop/Go” signs.
- q. Emergency Vehicular Access (EVA) shall not be blocked at all times.
- r. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- s. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 28 Noise Control

#### Noise at work

- a. Ensure appropriate action to be taken to reduce risk of hearing impairment such as mechanical maintenance and provision of information, instruction and training.
- b. Carry out preliminary noise assessment with noise meter if the noise level is deemed to be unacceptable. E.g. It is difficult to be heard between people around 2 meters apart. If the noise level is identified to be 85dB(A) or above, a noise assessment is required to be conducted by a competent person.
- c. A workplace where the noise level reaches 90dB(A) or above is classified as ear protection zone. Any person staying inside ear protection zone shall put on suitable approved ear protectors. Demarcate and identify ear protection zone with labelling at the zone.
- d. Reduce noise intensity such as providing noise barrier.
- e. For more information, please refer to the “Guidance Notes on Factories and Industrial Undertaking (Noise at Work) Regulation” and “A Practical Guide to Industrial Noise Reduction” published by the Labour Department.

#### Construction Noise

- a. A valid Construction Noise Permit (CNP) is required for carrying out construction work with use of power mechanical equipment during restricted hours between 1900-0700 or at any time on a general holiday. A CNP is also required for carrying out of percussive piling during the permitted hours which generally falls into the period of 0700-1900. An application for CNP must be made to the Noise Control Authority.
- b. The carrying out of percussive piling is strictly prohibited from 1900-0700 and on

holidays.

- c. Regular maintenance should be arranged for machine and equipment as nuisance noise can be generated due to ageing or improper maintenance.
- d. To reduce construction noise, the following practices can be adopted:
  - Use of acoustic enclosure for stationary plant to minimize any noise generating from the source
  - Installation of noise barrier or sound absorbing materials such as mineral wool, woodwool propriety absorbent tiles or fiberglass to reduce environmental sound impacts
  - Use of quieter construction equipment such as Quality Powered Mechanical Equipment
  - Adopt quieter construction methods such as using prefabricated structure to replace in situ construction
- e. For more information, please refer to the “Chapter 400 - Noise Control Ordinance” and “A Concise Guide to the Noise Control Ordinance” released by the Environmental Protection Department.
- f. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- g. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.

### 29 Provision Of Safety Officers And Safety Supervisors

The Factories and Industrial Undertaking Ordinance (F&IU) provides for the safety and health protection to worker in the industrial sector. Employment of safety officer and supervisor is required to assist the proprietor of the industrial undertaking in managing safety and health.

- a. One registered safety officer shall be employed on a full-time basis when the total number of persons employed in the construction site or sites is 100 or more.
- b. One safety supervisor shall be employed where the total number of persons employed in each construction site is 20 or more.
- c. The workplace of contractor activities can be classified as construction work.

Construction work means: -

- i. The construction erection, installation, reconstruction, repair, maintenance (including redecoration and external cleaning), renewal, removal, alteration, improvement, dismantling, or demolition of any of the Specified Structures and Works;
  - ii. Any work involved in preparing for any operation referred to in paragraph (i), including the laying of foundations and the excavation of earth and rock prior to the laying of foundations;
  - iii. The use of machinery, plant, tools, gear, and materials in connection with any operation referred to in paragraph (i) or (ii).
- d. For more information, please refer to “Cap. 59Z Factories and industrial undertakings (safety officers and safety supervisors) regulations”.
  - e. In addition to the statutory obligations, the Contractor shall employ safety officer and supervisor as required by the particular contract. Should it be found that the Safety Officer(s) is not performing his duties to the standard approved by the CIC, then the CIC will employ a Safety Officer directly and any costs (salary and other expenses) arising therefrom will be charged to the Contractor.

### 30 Permit And License

- a. Any person requires to carry out contractor works on CIC premises is required to submit method statement and risk assessment to CIC for review. Work permit should be acquired from CIC if the work is commenced within CIC premises. Examples of work activities requires submission of method statement and risk assessment:
- Metal/Bamboo scaffolding
  - Excavation
  - Welding work
  - Lifting operation
  - Use of mechanical plant for work at height
  - Use of chemical substance
- b. Contractors are always responsible for ensuring that any work that requires a specific license is only performed by individuals who are appropriately registered and / or licensed.



### 31 Waste Management

- a. Contractors are fully responsible to comply all applicable local legislation for disposal of hazardous / construction waste they generate at CIC premises.
- b. In the event a hazardous material is released to the environment during the course of work in CIC premises, Contractors shall contact the CIC relevant departments and government authorities.

#### Construction Waste

- a. Construction waste means any substance, matter or thing which is generated as a result of construction work and abandoned whether or not it has been processed or stockpiled before being abandoned. It is a mixture or surplus material arising from site clearance, excavation, construction, refurbishment, renovation, demolition and road work.
- b. Construction waste producers need to open a billing account with Environmental Protection Department for disposal of construction waste at waste disposal facilities under the legislative requirement. For details, please refer to the Waste Disposal (Charges for Disposal of Construction Waste) Regulation.
- c. A construction waste management plan should be developed to provide an overall framework for waste management and reduction.
- d. Two types of construction waste can be identified:-
  - Inert material such as debris, rubble, earth, bitumen and concrete can be used for land reclamation and site formation and will be transported to public filling areas.
  - Non-inert material such as bamboo, timber, vegetation, packaging waste and

other organic materials should be disposed at landfills.

- e. General practices of reducing and recycling waste in construction industry:-
- Implement proper control and documentation on material flow to over-ordering materials
  - Adopt on-site sorting practice to recover waste for reuse and recycle
  - Use durable, reusable hoarding to replace timber hoarding
  - Replace bamboo scaffolding with metal scaffolding if possible
  - Utilize excess concrete for the production of pre-cast road blocks, curbs, etc.
  - Re-use excavated materials for backfilling, slope stabilization and reclamation, or transport excavated materials to other sites for re-use
  - Collect waste steel bars for recycling
  - Collect expired PPE for recycling

### Chemical Waste

- a. Chemical waste refers to any substance or thing being scrap material, effluent, or an unwanted substance or by-product arising from the application of or in the course of any process or trade activity, and which is or contains any substance or chemical specified in the prescribed schedule 1 of the Regulation that may cause pollution or constitute a danger to health or risk of pollution to the environment.
- b. A chemical waste producer license is required for any work process generating chemical waste.
- c. Storage, handling, transport and disposal of chemical waste shall be arranged in accordance to the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes:-
- Chemical waste shall be packed and held in containers of suitable design and

construction.

- All parts of the container in direct contact with chemical waste must be resistant to any chemical or other action of such waste.
  - Containers should be in good condition and free from corrosion, contamination, damage or any other defects which may impair the performance of the container.
  - The Containers should be securely sealed and closed.
  - Do not mix different types or sources of chemical wastes in same container.
  - Sufficient air space should be maintained when packing a container with liquid chemical waste to avoid leakage or permanent distortion of container due to liquid expansion.
  - Container of chemical waste should be labelled in both English and Chinese with appropriate size and dimension.
  - Information regarding the particular risks and safety precaution of the chemical waste should be clearly marked on the container.
- d. A licensed waste collector shall be appointed to collect the chemical waste at your workplace. Trip ticket shall be obtained and retained for record.

### 32 Wastewater Management

- a. All sewage should be discharged into sewers, not storm water drains which are only meant to carry rainwater into the sea.
- b. Except for discharges of domestic sewage into sewer and discharges of unpolluted water into storm drains / water bodies, effluent from industrial, institutional and commercial premises, discharge of domestic sewage from institutional and commercial premises in unsewered areas, domestic sewage treatment plant and domestic premises in unsewered area are subject to control and should obtain a Water Pollution Control Ordinance (WPCO) license before making discharge.
- c. Comply with the requirements as specified on the WPCO license.

#### Construction site effluent

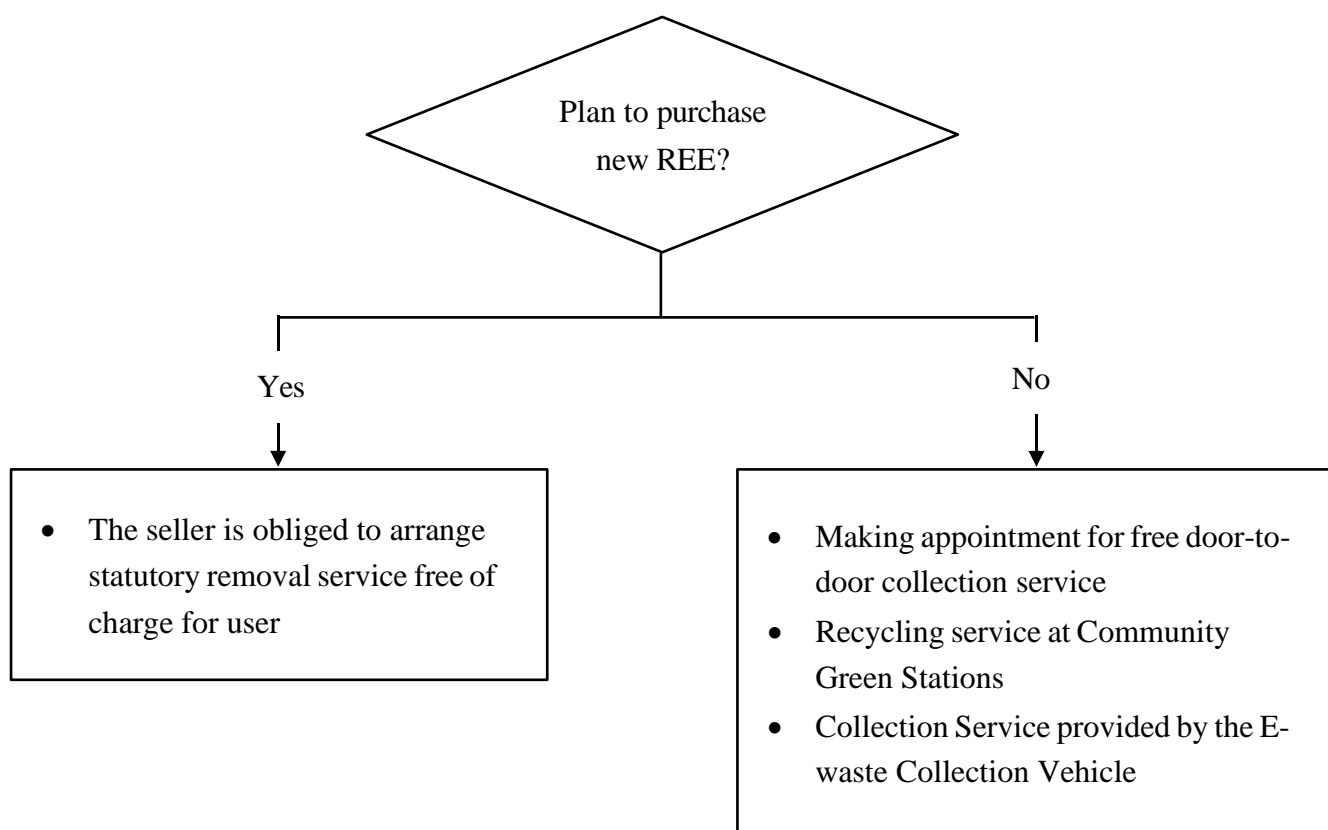
- a. All contaminated runoff is required to be treated before discharge to meet statutory requirements. Contractor should take all necessary preventive measures to avoid the contamination of surface runoff, e.g. covering stockpile of soil materials with plastic sheets.
- b. Contractor should always collect the construction wastewater and provide proper treatment before discharging into the foul sewer. Approval from the Drainage Services Department should be obtained for any discharge to foul sewer.
- c. Common water pollution control measures include:-
  - Minimize water consumption;
  - Cover up exposed soil surface and soil stockpile;
  - Deploy drip tray for stationary plants and chemical drums
  - Construct temporary site drainage for collection of construction site wastewater;
  - Deploy wastewater treatment facilities, e.g. sedimentation tanks, petrol

interceptor and pH regulator

- Reuse treated construction wastewater

### 33 Waste Of Regulated Electrical Equipment Management

- a. Contractor shall take the producer's responsibility on disposal of Regulated Electrical Equipment (REE). REE includes: air-conditioners, refrigerators, washing machines, televisions, computers, printer, scanners and monitors.
- b. Producer shall dispose REE properly in accordance with statutory requirement:



- c. Illegal disposal of REE at CIC premises is not allowed.
- d. For more information, please refer to the website of Waste Electrical and Electronic Equipment (WEEE): <https://weee.gov.hk/>

### 34 Air Emission Control

#### Construction Dust Control

- a. Adequate dust reduction measures should be implemented to reduce dust emission while carrying out construction work
- b. Apply water spraying on:
  - any dusty materials before loading and unloading
  - Stockpile of dusty materials
  - Area where excavation or earth moving activities are carried out
  - Any unpaved main haul road
  - Drilling work where dust is generated
- c. Provide hoarding of not less than 2.4m high from ground level along the construction site boundary which is next to a public vehicular or pedestrian road.
- d. Provide effective dust screens, sheeting or netting to enclose any scaffolding built around the perimeter of a building
- e. Cover or shelter any stockpile of dusty material
- f. Provide wheel washing facilities at the exit of site access to wash away any dusty material from the vehicle body and wheels before leaving the site
- g. Cover any dusty load on vehicle before leaving the site
- h. Do not operate plant, activity or process when air pollution control system or equipment has broken down
- i. It is required to notify EPD before commencement of work for the following types of construction work:
  - Site formation
  - Reclamation
  - Demolition of a building
  - Work carried out in any part of a tunnel that is within 100m of any exit to the

open air

- Construction of a building
- Road construction work

## Control of Non-road Mobile Machinery Emission

- All regulated machine (mobile machines or transportable industrial equipment) or non-road vehicles that are not licensed under the Road traffic (registration and Licensing of Vehicles) Regulations are required to meet the legal emission standard and smoke requirement. For details, please refer to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (Cap. 311Z.)
- For use of non-road mobile machinery (NRMM), prior approval is required from Environmental Protection Department with completion of application form.
- Approved or exempted NRMM labels must be displayed on the machine or vehicles. The size and colour of the label must refer to the requirement specified in the Regulation.

機械種類 Machine Type:
機械商標名稱及型號 Machine Trade Name & Model:
機械序號 Machine Serial Number:
引擎廠名及型號 Engine Make & Model:
<b>EPD-A-12Z45-20X1</b>
根據《空氣污染管制(非道路移動機械)(排放)規例》給予的核准 Approval given under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation

Sample of approval label

機械種類 Machine Type:
機械商標名稱及型號 Machine Trade Name & Model:
機械序號 Machine Serial Number:
引擎廠名及型號 Engine Make & Model:
<b>EPD-E-123T5-2Y11</b>
根據《空氣污染管制(非道路移動機械)(排放)規例》給予的豁免直至 年 月 日(如適用) Exemption given under the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation until dd/mm/yy (if applicable)

Sample of exempted label



### 35 First Aid Facilities

- a. First aid item mean: Under the Occupational Safety and Health Regulation, "first aid item" means an item of the kind specified in Schedule 2 of the Regulation or any additional item required by the Commissioner for Labour to be provided in the first aid facility.
- b. First aid facility requirements for workplace:
  - For construction site, a separate first aid facility shall be provided and maintained for every 50 workmen or part thereof employed on the site.
  - For the workplace other than construction site, a separate first aid facility shall be provided and maintained for each 100 employers, or part of that number.
  - Every first aid box or cupboard shall be marked "FIRST AID" in English and “急救” in Chinese.
  - All first aid items are maintained in a serviceable condition.
  - For the requirement of first aid items of first aid box, please refer to the publication by Labour Department named Hints on First Aid: ( <https://www.labour.gov.hk/tc/public/pdf/oh/HintsOnFirstAid.pdf> )
  - The person responsible for a workplace must designate a team of 2 or more of the employees to be responsible for the first aid box or cupboard and ensure that at least one member of the team is available in the work place when work is performed there.
  - A notice specifying the names of the members of the team has to be affixed to the first aid box or cupboard.

## 36 Lighting and Ventilation

### Lighting:

- a. It is essential for employees to work and move around safely in a workplace under adequate lighting.
- b. Some examples of recommended optimum levels of lighting for various activities / areas are listed below:

Task position or area	Optimum average illumination in lux
1. Office areas	
General Offices	500
Computer work stations	500
Drawing work stations	750
Other office areas, e.g. file storage	300

(Source: Guidelines for Good Occupational Hygiene Practice in a Workplace – Lighting from Labour Department)

### Ventilation:

- a. Every workplace shall be adequately ventilated by fresh air.
- b. The air within the workplace shall be kept free of impurities.
- c. All reasonably practicable steps shall be taken to protect employees from inhaling impurities and to prevent accumulation of the impurities at the workplace.
- d. Effective exhaust devices shall be installed and used as closely as possible to the source of the impurities.
- e. Regular preventive maintenance of mechanical ventilation systems shall be planned and performed.
- f. If water cooling towers are used, they should be properly maintained, e.g. used of biocides as appropriate, to prevent the growth of micro-organisms.




### 37 Traffic safety

#### When Driving in CIC premises

- a. Check carefully to ensure that there are no obstructions. Pay particular attention to the blind spots at the rear.
- b. Check if safety seat belt is properly fastened before drive.
- c. Strictly follow the site traffic safety instructions, including emergency vehicular access (EVA), speed limited, or etc.
- d. Drive in prescribed path and follow traffic signals.
- e. Allow pedestrian to use the pathway first. Do not park vehicles in unauthorized area.
- f. Do not overload vehicle, either in terms of passengers or loads.
- g. Reduce vehicle speed and pay particular attention during turning.
- h. Do not overload vehicle, either in terms of passengers or loads.
- i. Do not use your mobile phone or any other communication device when driving
- j. Do not drive under the influence of alcohol or drugs.
- k. Signal, reduce speed and check mirrors before turning or reversing.
- l. If there is any non-compliance with the requirements, CIC reserves the right to suspend the works until the non-compliance or unfavourable operation is rectified by the Contractor to the satisfaction of CIC with no cost or time implications.
- m. CIC has the right to arrange additional resources directly (e.g. Manpower, plants, equipment and materials) to rectify or facilitate the rectification for the non-compliance of the safety requirements by the Contractor, CIC has the right to charge the Contractor for the costs such as salary, associated administrative costs and related expenses arising therefrom.




### 38 Prevention of Heat Stroke

- a. It is applicable to work that needs to be carried out under hot weather or in high-temperature environments, such as:
- Work conducted in outdoor locations without shelters;
  - Work conducted in an indoor location without air-conditioning system installed;
  - Work conducted near heat sources or heat-generating facilities
- b. “Heat Stress at Work Warning” indicates the level of heat stress that employees face when working outdoor or indoor without an air conditioning system. The Warning system will be issued by the Labour Department, with the assistance of the Hong Kong Observatory.

Hong Kong Heat Index	Heat Stress at Work Warning	Warning Signs
30 to <32	Amber	
	Amber Heat Stress at Work Warning indicates the level of heat stress in certain work environments is high.	
32 to <34	Red	
	Red Heat Stress at Work Warning indicates the level of heat stress in certain work environments is very high.	
>=34	Black	
	Black Heat Stress at Work Warning indicates the level of heat stress in certain work environments is extremely high.	

- c. Employers are advised to implement the following measures against heat stress at the workplace:
- Perform a risk assessment for the heat stress of employees at the workplace and take effective preventive measures according to the assessment results.
  - Determine the risk control measures in accordance with the risk you identified in the assessment items as far as reasonably practicable to prevent employees from suffering heat stroke while working.
  - Develop suitable work/ rest schedules for employees to reduce the risk of heat stroke at work when the Heat Stress at Work Warning is in force.
  - The recommended hourly rest period for employees working outdoor is determined based on Level of Physical Workload x Level of Heat Stress at Work Warning.

Rest Arrangements for Outdoor Work in Times of Heat Stress at Work Warning

Physical Workload Heat Stress at Work Warning	Light	Moderate	Heavy	Very Heavy
		45 mins work 15 mins rest in each hour (75% work; 25% rest)	30 mins work 30 mins rest in each hour (50% work; 50% rest)	15 mins work 45 mins rest in each hour (25% work; 75% rest)
	45 mins work 15 mins rest in each hour (75% work; 25% rest)	30 mins work 30 mins rest in each hour (50% work; 50% rest)	15 mins work 45 mins rest in each hour (25% work; 75% rest)	Suspension of work
	30 mins work 30 mins rest in each hour (50% work; 50% rest)	15 mins work 45 mins rest in each hour (25% work; 75% rest)	Suspension of work	Suspension of work

- v. Write down the emergency response measures to be taken in case an employee working in hot environment requires support and/or assistance.
- vi. Communicate the heat stress risk assessment result to the relevant workers and provide appropriate instruction to ensure they take appropriate rest breaks according to the result.
- vii. Apply preventive and control measures such as:
  - Allow employees to have access to drinking water within 10 minutes of walking.
  - Relocate or isolate heat source.
  - Extract hot air from the workplace.
  - Provide PPE to reduce heat absorption.
  - Install mechanical devices (e.g., exhaust / insulation system) to regulate the temperature of work area.
  - Install air conditioning system, blowers, or misting fans.
  - Wear light-colored, thin, and loose-fitting clothing.
  - Provide sun protection sleeves that have good sweat-wicking and dry-fit properties for outdoor workers.
- viii. Please refer to “Guidance Notes on Prevention of Heat Stroke at Work” issued by Labour Department for implementation.

## Appendix 1 – Relevant Safety And Health Legislations

The followings are the ordinances and regulations related to occupational safety and health in Hong Kong:

1.	Gas Safety Ordinance	Cap 51
2.	Boilers and Pressure Vessels Ordinance	Cap 56
3.	Factories and Industrial Undertakings Ordinance	Cap 59
4.	Factories and Industrial Undertakings Regulations	Cap 59A
5.	Factories and Industrial Undertakings (First Aid in Notifiable Workplaces) Regulations	Cap 59D
6.	Factories and Industrial Undertakings (Notification of Occupational Diseases) Regulations	Cap 59E
7.	Factories and Industrial Undertakings (Woodworking Machinery) Regulations	Cap 59G
8.	Factories and Industrial Undertakings (Electrolytic Chromium Process) Regulations	Cap 59H
9.	Construction Sites (Safety) Regulations	Cap 59I
10.	Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations	Cap 59J
11.	Factories and Industrial Undertakings (Abrasive Wheels) Regulations	Cap 59L
12.	Factories and Industrial Undertakings (Work in Compressed Air) Regulations	Cap 59M
13.	Factories and Industrial Undertakings (Spraying of Flammable Liquids) Regulations	Cap 59N
14.	Factories and Industrial Undertakings (Goods Lifts) Regulations	Cap 59O
15.	Factories and Industrial Undertakings (Guarding and Operation of Machinery) Regulations	Cap 59Q
16.	Factories and Industrial Undertakings (Cartridge Operated Fixing Tools) Regulations	Cap 59R
17.	Factories and Industrial Undertakings (Protection of Eyes) Regulations	Cap 59S
18.	Factories and Industrial Undertakings (Noise at Work) Regulation	Cap 59T
19.	Factories and Industrial Undertakings (Fire Precaution in Notifiable Workplaces) Regulations	Cap 59V
20.	Factories and Industrial Undertakings (Electricity) Regulations	Cap 59W

21.	Factories and Industrial Undertakings (Safety Officers and Safety Supervisors) Regulations	Cap 59Z
22.	Factories and Industrial Undertakings (Carcinogenic Substances) Regulations	Cap 59AA
23.	Factories and Industrial Undertakings (Dangerous Substances) Regulations	Cap 59AB
24.	Factories and Industrial Undertakings (Suspended Working Platforms) Regulation	Cap 59AC
25.	Factories and Industrial Undertakings (Asbestos) Regulation	Cap 59AD
26.	Factories and Industrial Undertakings (Confined Spaces) Regulation	Cap 59AE
27.	Factories and Industrial Undertakings (Safety Management) Regulation	Cap 59AF
28.	Factories and Industrial Undertakings (Loadshifting Machinery) Regulation	Cap 59AG
29.	Factories and Industrial Undertakings (Gas Welding and Flame Cutting) Regulation	Cap 59AI
30.	Fire Services (Installations and Equipment) Regulations	Cap 95B
31.	Dangerous Goods Ordinance	Cap 295
32.	Dangerous Goods (Application and Exemption) Regulation 2012	Cap 295E
33.	Dangerous Goods (Control) Regulation	Cap 295G
34.	Radiation Ordinance	Cap 303
35.	Waste Disposal Ordinance	Cap 354
36.	Noise Control Ordinance	Cap 400
37.	Electricity Ordinance	Cap 406
38.	Builders' Lifts and Tower Working Platforms (Safety) Ordinance	Cap 470
39.	Fire Safety (Commercial Premises) Ordinance	Cap 502
40.	Occupational Safety and Health Ordinance	Cap 509
41.	Occupational Safety and Health Regulation	Cap 509A
42.	Occupational Safety and Health (Display Screen Equipment) Regulation	Cap 509B
43.	Fire Safety (Buildings) Ordinance	Cap 572
44.	Hazardous Chemicals Control Ordinance	Cap 595
45.	Mercury Control Ordinance	Cap 640
46.	Building (Administration) Regulations	Cap 123A
47.	Building (Demolition Works) Regulation	Cap 123





CONSTRUCTION  
INDUSTRY COUNCIL  
建造業議會



# GUIDELINES ON WORK-ABOVE-GROUND SAFETY



## **Disclaimer**

*Whilst reasonable efforts have been made to ensure the accuracy of the information contained in this publication, the CIC nevertheless would encourage readers to seek appropriate independent advice from their professional advisers where possible and readers should not treat or rely on this publication as a substitute for such professional advice for taking any relevant actions.*

## **Enquiries**

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## Preface

The Construction Industry Council (CIC) is committed to seeking continuous improvement in all aspects of the construction industry in Hong Kong. To achieve this aim, the CIC forms Committees, Task Forces and other forums to review specific areas of work with the intention of producing Alerts, Reference Materials, Guidelines and Codes of Conduct to assist participants in the industry to strive for excellence.

The CIC appreciates that some improvements and practices can be implemented immediately whilst others may take more time to adjust. It is for this reason that four separate categories of publication have been adopted, the purposes of which are as follows:

Alerts	Reminders in the form of brief leaflets produced quickly to draw the immediate attention of relevant stakeholders the need to follow some good practices or to implement some preventative measures in relation to the construction industry.
Reference Materials	Reference Materials for adopting standards or methodologies in such ways that are generally regarded by the industry as good practices. The CIC recommends the adoption of these Reference Materials by industry stakeholders where appropriate.
Guidelines	The CIC expects all industry participants to adopt the recommendations set out in such Guidelines and to adhere to such standards or procedures therein at all times. Industry participants are expected to be able to justify any course of action that deviates from those recommendations.
Codes of Conduct	Under the Construction Industry Council Ordinance (Cap 587), the CIC is tasked to formulate codes of conduct and enforce such codes. The Codes of Conduct issued by the CIC set out the principles that all relevant industry participants should follow. The CIC may take necessary actions to ensure the compliance with the Codes.

If you have attempted to follow this publication, we do encourage you to share your feedback with us. Please take a moment to fill out the Feedback Form attached to this publication in order that we can further enhance it for the benefit of all concerned. With our joint efforts, we believe our construction industry will develop further and will continue to prosper for years to come.

## 1. Introduction

- 1.1 Unsafe work-above-ground (i.e. any work not carried out on or from the ground or from part of a permanent structure) has been one of the major causes of fall from height accidents, resulting in serious injuries or even fatalities. Most of these accidents, however, could have been prevented if suitable working platforms had been provided and properly used. In some serious and fatality cases, control, if any, on use of ladders had been very slack, and conduct of risk assessments and formulation of method statements with due consideration of task-specific factors such as job locations and work nature, etc. had not been done.
- 1.2 For any work-above-ground, suitable working platforms should be the primary means of support to be considered for use. For work-above-ground below 2m where working platforms could not be erected under special working conditions (e.g. restrictive workplace), suitable light-duty working platforms should be used. Unless in very exceptional circumstances that working platforms or light-duty working platforms are impracticable to be used, use of ladders for work-above-ground should be prohibited. Under such exceptional circumstances where ladders have to be used, task-specific risk assessment should be conducted and safe system of work, such as a permit-to-work system, should be formulated and implemented beforehand. Ladders should not be used for any work-above-ground at 2m or more.
- 1.3 This publication makes reference to the core elements of a safe system of work and safety management system, and recommends necessary precautionary measures to enhance safety on work-above-ground, including task-specific risk assessments, appropriate method statements, use of suitable working platforms or other safe means of support and stringent control on use of ladders.

## **2. Limitations**

- 2.1 It is important to note that compliance with this publication does not itself confer immunity from legal obligations in Hong Kong. Employers and contractors are reminded to observe and comply with statutory provisions, relevant codes of practice and other government departments' requirements so as to discharge their legal and other pertinent duties related to work-above-ground.

## **3. Risk Assessment**

- 3.1 As regards work-above-ground, employers and contractors should conduct task-specific risk assessments and thereby formulate safe work methods and implement safety precautions and procedures as appropriate to prevent and eliminate work-related hazards before commencing work. In the first place, work-above-ground should be avoided as far as possible, for instance, by designing and using specific hand tools to allow the work to be done on the ground (e.g. using a long reach pole).
- 3.2 If there is genuine need to work above ground, employers and contractors should consider all relevant factors including the work nature, appliances and materials to be used, working height and working environment, etc. in formulating and implementing effective safety measures.

## **4. Safe Use of Working Platforms**

- 4.1 Whenever work-above-ground could not be avoided after conducting risk assessments, suitable working platforms (e.g. mobile working platforms) should be provided and used irrespective of the working height.
- 4.2 Working platforms should be suitably designed and constructed. All components of the working platforms should be made of suitable and sound materials of sufficient strength and capacity for the purpose for which they are used, and free from patent defect.
- 4.3 Working platforms should be erected on firm, even and level ground. The surrounding of working platforms should be kept free from waste and miscellaneous materials.
- 4.4 Erection and use of working platforms on ramps, stairs, unstable or uneven floor surface without suitable authentic accessories from the manufacturer to enhance the stability of the working platforms or in locations where the working platforms may be hit or struck by moving objects should be prohibited.
- 4.5 The surrounding of the working platforms should be free from exposed live metal parts or potentially exposed live conductors to prevent electrical hazard.
- 4.6 Working platforms should be provided with suitable access and egress (e.g. straight or inclined ladders with suitable hand grips). When ascending/ descending the working platforms, the workers should maintain 3 points of contact with the platforms (i.e. both hands gripping with one leg stepping at the same time or both legs stepping with one single hand gripping). Workers should keep the centre of gravity of their bodies within the working platforms and should not overload them. Workers should beware of overhead room and check for any obstruction to prevent accidental hit on the head before and during the use of working platforms. Every worker should wear a safety helmet with a chin strap.

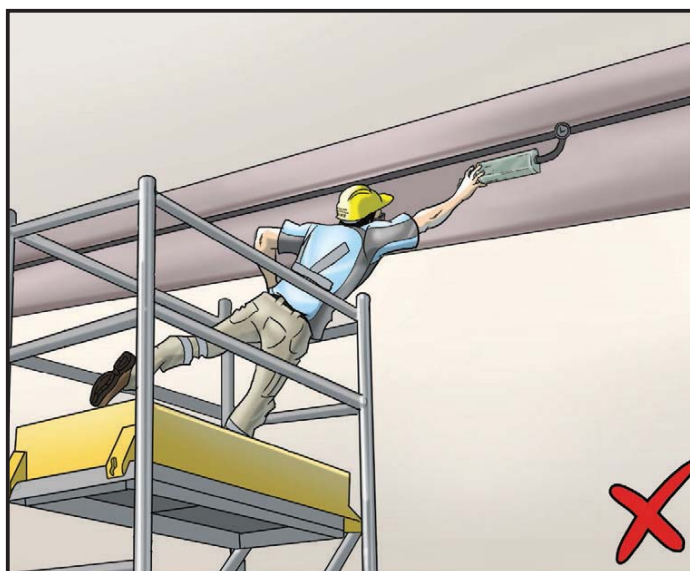


Ascending/descending the mobile working platform from the inside of a mobile working platform.



Workers should beware of overhead room and check for any obstruction to prevent accidental hit on the head before and during the use of working platforms. Safety helmets with chin straps should be used.

- 4.7 The safe height-to-base ratio and other safety recommendations in the instruction manual should be strictly followed - never deliberately increase the height of mobile working platforms beyond that recommended by the manufacturer. If required, the outriggers of the platform should be fully extended as per manufacturer's requirement to ensure its secure foundation and stability.
- 4.8 During use, the workers should not overstretch the bodies outside the working platforms. Take note of the safe loading capacity as stated by the manufacturer and never place excessive materials on the working platforms to avoid overloading and damaging the working platforms. All guard-rails and toe-boards provided on the working platforms should be kept erected, except for the time and to the extent necessary for the access of persons or the movement of materials but should be replaced or erected as soon as practicable afterwards. Stepping on the toe-boards or guard-rails of working platforms (either intermediate guard-rails or top guard-rails) is strictly prohibited.



Do not overstretch the body outside the working platform.

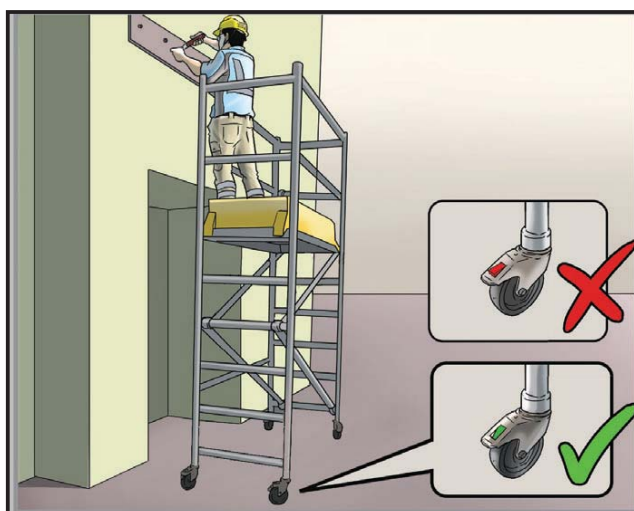


Do not lean on the guard-rail of the working platform.

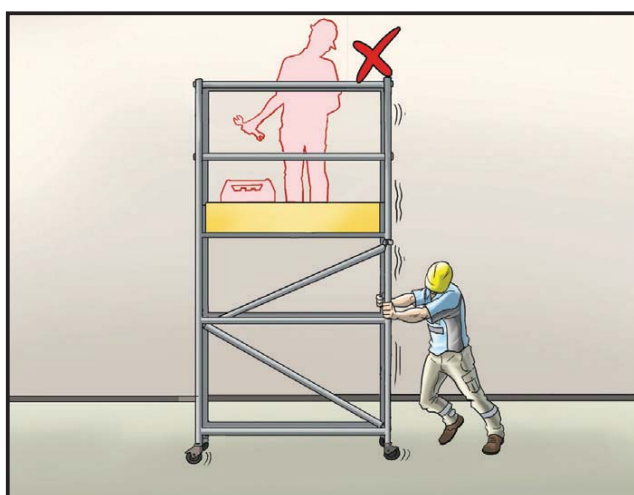
- 4.9 Be aware of weather conditions if the working platforms are to be used outdoors. Never cover the working platforms with canvas to prevent overturning due to windy weather. Where reasonably practicable, working platforms should be braced or tied into a permanent structure to enhance their stability. In case of typhoon and inclement weather, stop using the working platforms immediately and properly secure the platforms to prevent toppling in wind or dismantle it and keep it in a safe place.
- 4.10 All the castors of a mobile working platform should be firmly locked in position while ascending/descending and using the platform.



- 4.11 When a mobile working platform is being moved to another work location, do not allow any persons to stay or any object that may increase risk of toppling of the platform or loose objects (e.g. hand tools) that may fall during movement of platform to be placed thereon. Also, moving the platform on rough and uneven surfaces should be avoided as it may make the platform collapse or overturn.
- 4.12 Stop using the working platforms immediately when they are found damaged and label them with suitable signs and warning notices.
- 4.13 After use, the working platforms should be properly stored and maintained.



Ensure that all the castors are firmly locked in position while ascending/ descending and using a mobile working platform.



When moving the mobile working platform, no person should be allowed to stand and no object should be placed on the mobile working platform.

## 5. Safe Use of Light-duty Working Platforms

- 5.1 For work-above-ground below 2m where working platforms could not be erected under special working conditions (e.g. restrictive work space) and the work concerned is of simple nature, use of suitable light-duty working platforms such as step platforms or hop-up platforms should be considered. When light-duty working platforms are used, the following specific safety measures should be followed.



Step platform deployed for checking the ventilation system in a room where there is restricted space to accommodate a typical working platform.

- 5.2 It should be borne in mind that only one person is permitted to work on each light-duty working platform at one time.
- 5.3 Workers using light-duty working platforms should have received relevant safety training provided by the supplier, including erection and dismantling of the working platforms, or other equivalent training such that they clearly understand the safety instruction or manual of the manufacturer.
- 5.4 Before use, inspection (including visual check) of the light-duty working platform should be conducted according to the safety checklist provided by the supplier or other equivalent safety checklist to ensure that the working platforms are in good condition and free from damage. Besides, the stabilisers or outriggers of the light-duty working platforms should be fully extended and locked in position in accordance with the manufacturer's manual to ensure their stability before stepping on the platforms.

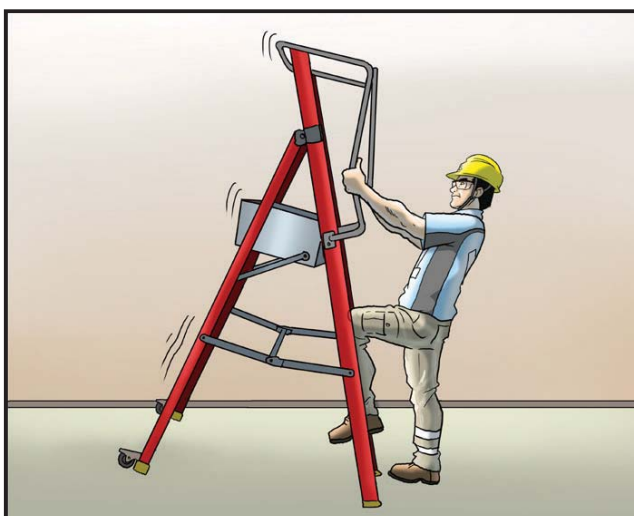


Before use, inspection (including visual check) of the light-duty working platforms according to the safety checklist provided by the supplier or other equivalent safety checklist should be conducted.

- 5.5 The workers should face the light-duty working platforms when ascending or descending the working platforms. Do not apply excessive force to the working platforms and induce lateral force rendering the overturning of the working platforms.



Worker should face the light-duty working platform when ascending or descending.



Do not apply excessive force to the working platform and induce lateral force rendering the overturning of the working platform.

## 6. Stringent Control on Use of Ladders

- 6.1 Ladders should normally be restricted for access/egress purpose only. Unless in very exceptional circumstances following a task-specific risk assessment, ladders should not be used for work-above-ground and in no cases should ladders be used for work at height of 2m or more. In particular, ladders should not be used for electrical work as far as practicable because even a mild electrical shock will likely cause loss of balance of the workers, resulting in fall from height.
- 6.2 If the use of ladders is unavoidable, it should be put under stringent control, such as through implementing a permit-to-work system, to ensure that adequate and suitable control and safety measures are put in place to safeguard the workers concerned. The permit-to-work for use of ladders should be issued by a competent person who is appointed by the proprietor/employer/contractor and by reason of substantial training and practical experience in relation to conducting risk assessment and issuance of permit-to-work, competent to conduct the duties, with a task-specific risk assessment conducted and all necessary safety measures related to use of ladders taken. While the implementation of a permit-to-work system is impracticable, pre-work check on use of ladder with the use of a checklist should be conducted. If ladders are unavoidably to be used for electrical work, the permit-to-work system or pre-work check should also cover other risk mitigation measures (e.g. the ladders to be used are made of non-conductive material) as appropriate.
- 6.3 The following are some guidance and key elements for a permit-to-work (in this case, a permit to work on use of ladder) system:

### In preparation stage:

- the persons who may permit the work should be clearly designated and made known to the workers concerned;
- suitable training and instruction in the issue, use and closure of the permit should be provided to the relevant personnel;
- the work to be done, work location, start time and duration of the permit should be clearly described and stated on the permit;
- task-specific risk assessment to identify potential hazards at the job site should be conducted;
- the work location and the equipment to be used should be inspected; and
- the safety precautions required to minimise risks associated with carrying out the intended work should be carefully considered and properly documented.

During work stage:

- no work should be allowed without the issuance of the permit or upon the expiry of the permit;
- the permit to work as well as the required precautions should be properly implemented, monitored and controlled;
- handing over of responsibilities between shifts, if applicable, should be properly done and clearly described on the permit; and
- the permit should be properly displayed during the time at which the work-above-ground concerned is taking place.

Post work stage:

- suitable steps should be carried out for reinstating the site to its original state when the required task is completed to ensure that any residual risks are removed before the site is handed over; and
- the permit to work should be properly kept for a reasonable period of time for record and future reference purposes.

6.4 The permit to use a ladder for working above ground less than 2 metres should only be considered in case of restrictive workplace that makes the erection of any working platform not practicable. Annex A lists out the conditions that should be imposed in such a situation.

6.5 Samples of permit to work and checklist for the assessment on use of ladders are shown in Annexes B and C respectively.

## **7. Use of Personal Protective Equipment**

7.1 The use of personal protective equipment (PPE) to prevent workers from falling from height should always be treated as the last resort. If this type of protective measures is needed on warranted occasions following a task-specific risk assessment, steps should be taken to ensure that suitable PPE coupled with appropriate anchorage system is provided, used and maintained, and the workers concerned use them properly.

## **8. Coordination and Communication**

- 8.1 An effective coordination and communication system should be established and maintained among the employer/contractor, different levels of management/supervisory personnel and workers to ensure clear understanding of the potential hazards, the associated hazard control program and the delineation of safety responsibilities.
- 8.2 The main contractors and subcontractors should clearly delineate their roles and responsibilities in the provision and use of working platforms, and the restrictions on the use of ladders, such as through agreements or contracts.

## **9. Monitoring and Control**

- 9.1 An effective monitoring and control system should be developed, implemented and maintained to ensure that the safe working procedures and safety measures for work-above-ground.
- 9.2 If any unsafe working conditions are found, the employer/contractors should suspend the work involved immediately. The work under suspension can only be resumed after all necessary improvement measures have been implemented effectively.

## **10. Safety Information, Instruction and Training**

- 10.1 Workers and site supervisory staff should be provided with necessary safety information, instruction and training to ensure that they are all familiar with the potential hazard of fall-from-height, safe work method and safety measures for the work-above-ground.

**Annex A**

**Conditions should be imposed when ladders are to be used**

- i) The design and build of the ladder should be suitable for the work. It should be provided with sufficient foothold and handhold along the climb and in the working position of the ladder;
- ii) The ladder should be of adequate strength and free from defect;
- iii) The ladder should be placed on a firm, even and level ground. It should be adequately secured and stabilized;
- iv) The use of ladder for strenuous or heavy work should be prohibited;
- v) The standing height and the time duration of the work on the ladder should be restricted;
- vi) Safe work procedures should be followed and suitable equipment/tool should be used;
- vii) Sufficient information, instruction and training in respect of working on ladders should be provided to all levels of site personnel, including the workers and the supervisors, so as to effectively communicate to them the hazards associated with the use of ladders and the conditions to be fulfilled under the permit-to-use system; and
- viii) An effective monitoring and control system should be established and put in place to ensure full implementation of the permit-to-use system.

**Annex B****Sample of Permit-to-work on use of ladder (for reference only)**

**\*\*Ladder should NOT be used for work-above-ground unless in very exceptional circumstances**

All parts are to be completed by the competent person

**Part I**

Company name:		Contact no.:	
Name of competent person:		Post:	
Date:		Duration of work:	From_____to_____
Location of work:			
Description of work:			

**Part II**

Item	Descriptions	Yes	No
1.	A proper working platform or other suitable means of support can be used for the work.		
2.	The work is of short duration.		
3.	The work is simple in nature.		
4.	The work requires the use of heavy equipment/tool.		
5.	The design and build of the ladder are suitable for the work.		

**\*Ladder should not be used if the answer to any of the questions falls in a box shaded in grey**

**Part III**

Item	Descriptions	Yes	No
1.	The ground on which the ladder to be placed is firm, even and level.		
2.	The surrounding is free from the risk of being hit or struck by moving objects.		
3.	The surrounding is free from live metal part or live exposed conductor.		



4.	The headroom is high enough to prevent accidental hit on worker's head when standing on the ladder.		
5.	The ladder is secure, free from damage and defect.		
6.	The ladder is placed in a right position and no overreach of the body for the work is required.		
7.	The spreaders or similar restraint devices (but not nylon ropes) of the ladder are fully extended and securely fixed.		
8.	All ladder legs are fitted with slip-resistant feet, placed on the same plane and in good contact with the ground.		
9.	3 points of contact with the ladder could be maintained while climbing along or working on the ladder.		

**Remarks:**


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Use of ladder is:

☐

not allowed

☐

allowed

Signature of competent person:

Name of competent person:

Post:

Date:

**Part IV (for use after the work has been completed)**

Item	Descriptions	Yes	No
1.	The site is reinstated to its original state.		
2.	All residual risks are removed.		
3.	The ladder is removed and locked.		

Signature of competent person:

Name of competent person:

Post:

Date:

**Annex C****Checklist on Use of Ladders**

Ladders should be restricted for access/egress purpose only unless in very exceptional circumstances. In no cases should ladders be allowed to be used for work at height of 2m or more. In particular, ladders should not be used for electrical work as far as practicable.

Item	Descriptions	Yes	No
<b>Part A</b>	<b>Ladder should not be used if the answer to any of the questions in Part A falls in a box shaded in grey.</b>		
1.	A proper working platform or other suitable means of support can be used for the work.		
2.	The work is of short duration.		
3.	The work is simple in nature.		
4.	The work requires the use of heavy equipment/tool.		
5.	The design and build of the ladder are suitable for the work.		
	<b>End of Part A</b>		
<b>Part B</b>	<b>The following conditions should be fulfilled before the ladder is to be used.</b>		
1.	The ground on which the ladder to be placed is firm, even and level.		
2.	The surrounding is free from the risk of being hit or struck by moving objects.		
3.	The surrounding is free from live metal part or live exposed conductor.		
4.	The headroom is high enough to prevent accidental hit on worker's head when standing on the ladder.		
5.	The ladder is secure, free from damage and defect.		
6.	The ladder is placed in a right position and no overreach of the body for the work is required.		
7.	The spreaders or similar restraint devices (but not nylon ropes) of the ladder are fully extended and securely fixed.		
8.	All ladder legs are fitted with slip-resistant feet, placed on the same plane and in good contact with the ground.		
9.	3 points of contact with the ladder could be maintained while climbing along or working on the ladder.		

## **Annex D**

### **Reference Materials**

1. Occupational Safety and Health Ordinance, Cap 509 and its subsidiary regulations
2. Factories and Industrial Undertaking Ordinance, Cap 59 and its subsidiary regulations
3. Code of Practice for Metal Scaffolding Safety, Labour Department
4. A Guide to the Provisions for Safe Places of Work under Part VA of the Construction Sites (Safety) Regulations, Labour Department
5. Guidebook on Prevention against Fall from Height, Labour Department
6. Construction Site Safety and Health Checklist, Labour Department
7. Guidebook on Safe Systems of Work, Labour Department
8. Safety leaflet on Five steps to risk assessment, Labour Department
9. 使用輕便工作台及流動工作台的安全指南, Occupational Safety and Health Council

## Feedback Form [GUIDELINES on Work-above-ground Safety]

Thank you for reading this publication. To improve our future editions, we would be grateful to have your comments.

(Please put a “✓” in the appropriate box.)

<b>1. As a whole, I feel that the publication is:</b>	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Informative	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comprehensive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Practical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. Does the publication enable you to understand more about the Work-above-ground Safety?</b>	Yes		No		No Comment
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<b>3. Have you made reference to the publication in your work?</b>	Quite Often		Sometimes		Never
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<b>4. To what extent have you incorporated the recommendations of the publication in your work?</b>	Most		Some		None
	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
<b>5. Overall, how would you rate our publication?</b>	Excellent	Very Good	Satisfactory	Fair	Poor
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>6. Other comments and suggestions, please specify (use separate sheets if necessary).</b>					
<b>Personal Particulars (optional):*</b> Name: Mr./Mrs./Ms./Dr./Prof./Ir/Sr^ _____ Company: _____ Tell: _____ Address: _____ E-mail: _____					

\* The personal data in this form will be used only for this survey. Your data will be kept confidential and dealt with only by the Construction Industry Council.

^ Circle as appropriate.

Please return the feedback form to:

CIC Secretariat – Council Services

E-mail: enquiry@cic.hk

Address: 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon

Fax No: (852) 2100 9090



Doc No.  
單據號: DOYYYYXXXXXX

To : XXX Limited  
致 : XXX 有限公司

Date  
日期: MM DD,YYYY

Attn.  
聯絡人 : Mr. XXX / Ms. XXX

Contract Period  
合約期 (yyyy-mm-dd) : 2024/01/01 - 2025/12/31

Tel  
電話 : XXXX XXXX

Minimum Order Amount / Quantity  
最低訂單金額 / 數量: 金額:N/A      數量:N/A

Fax  
傳真 : XXXX XXXX

File No. : (370) in P/AE/PUR/TDTC - Term Contract for Provision of Repair and Maintenance of Electrical and Mechanical Works and Builder's Works cum Onsite Technician Services for the CIC

檔案編號 : (370) in P/AE/PUR/TDTC - 為建造業議會提供機電工程及屋宇建築工程的維修及保養暨駐場技術員服務定期合約

Remark 備註 :  
 

Please supply the under mentioned goods / services at the below address: (請供應下述各項貨品 / 服務到下列送貨地點 :)

Item 項目	Description / Place of Delivery / Item Remark / Location / Frequency 名稱 / 送貨地址 / 項目備註 / 位置 / 頻率	Qty. 數量	UOM 單位	Unit Price 單價	Amount 金額
X-XXXX-XXX-0001	Item A 項目甲 Refer to Form Header 請參照下方 Item Remark 項目備註 :	X.XXX	次	X,XXX.XX	X,XXX.XX
X-XXXX-XXX-0002	Item B 項目乙 Refer to Form Header 請參照下方 Item Remark 項目備註 :	X.XXX	次	X,XXX.XX	X,XXX.XX
Total 合計					XX,XXX.XX



## 送貨通知

單據號: DOYYYYXXXXXX

所有發票均必需送交建造業議會總辦事處以待進行付款結算，通訊地址：九龍觀塘駿業街56號中海日升中心38樓

[illegible]

交貨日期 : MM DD,YYYY

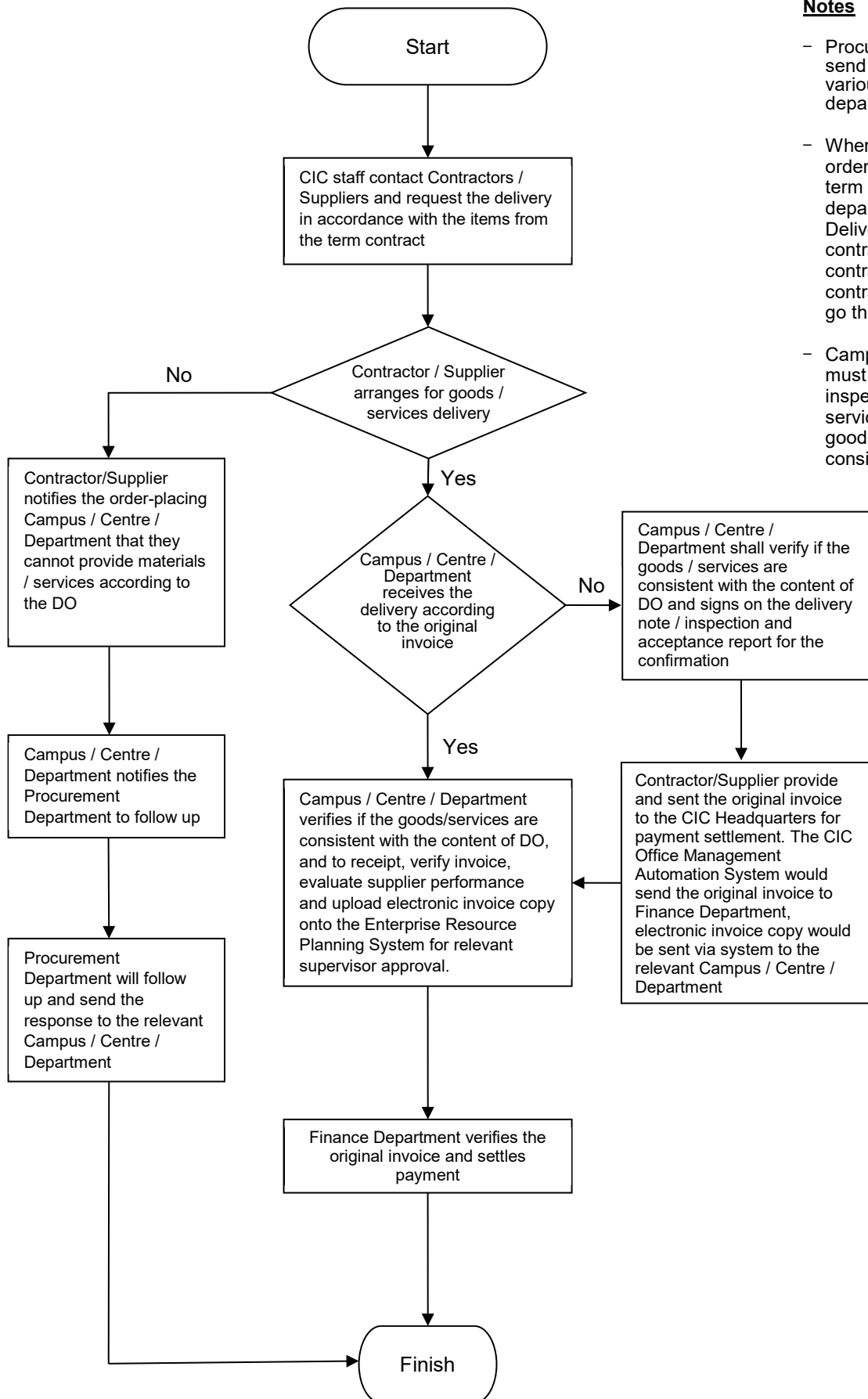
聯絡人 / 收貨人 : XXX XXXX XXXX  
姓名 Name 電話 Tel.

申請 : XXX

核准 : XXX

供應商簽署及公司印章

# Flowchart of Term Contract



## Notes

- Procurement Department shall send a copy of term contract to various campuses / centres / departments for information.

- Where it is necessary to place an order for the items stipulated in the term contract, campus / centre / department staff will dispatch Delivery Order (DO) to the contractor/supplier to the contractual prices of the term contract item is fixed, no need to go through quotation procedures.

- Campus / Centre / Department must arrange designated staff to inspect and accept the materials/ services, and to verify that the goods / services ordered are consistent with the content of DO.

- All invoice must be sent to CIC Headquarters – 38/F, COS Centre, 56 Tsun Yip Street, Kwun Tong, Kowloon. The Contact Person / Receiver name on the Delivery Order shall be indicated on the invoice.