CONSTRUCTION
INDUSTRY COUNCIL
建造業議會

GUIDELINES ON SAFETY OF LIFT SHAFT WORKS

VOLUME 2 – DURING LIFT INSTALLATION STAGE UNTIL ISSUE OF OCCUPATION PERMIT AND HANDING OVER TO DEVELOPER

www.hkcic.org

Version 1
January 2012

Disclaimer

This publication is prepared by the Construction Industry Council (CIC) to report findings or promote good practices on specific subjects for reference by the industry. To the best of our knowledge, information contained in this publication reflects the latest legislation, policy and rules as per the date of publication. You are strongly advised to seek independent advice on any future legislation, policy and rules amendments where possible.

This publication may become relevant before a court or tribunal to establish any alleged breach of a duty of care on the part of an industry stakeholder. However, it is NOT intended to constitute any professional advice on these or any other subjects. The CIC (including its members and employees) will NOT accept responsibilities for any consequences resulting from the use of or failure to use this publication.

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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 Guidelines, Codes of Practice 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 complete the adjustment. It is for this reason that three separate categories of publication have been adopted, the purpose of which is as follows:

Guidelines These are intended to guide industry participants to adopt new standards, methodologies or practices. The CIC strongly recommends the adoption of these Guidelines by industry stakeholders where appropriate.

Codes of Practice The CIC expects all industry participants to adopt the recommendations set out in such Codes as soon as practicable and to adhere to such standards or procedures therein at all times.

Codes of Conduct The CIC encourages the upholding of professionalism and integrity within the industry through self discipline. The Codes of Conduct set out the relevant principles that all industry participants are expected to follow.

The parties adopting the practices set out in this publication will normally be considered by the CIC in general as adopting good practices (where relevant) on the specific subjects. The parties using this publication should therefore seek appropriate advice from their professional advisers.

If you have attempted to follow this publication, we do urge you to share your feedback with us in order that we can further enhance them for the benefit of all concerned. On this basis the CIC Secretariat is in the process of developing a “feed-back” mechanism, whereby your views can be consolidated for such purposes. With our joint efforts, we believe our construction industry will develop further and will continue to prosper for years to come.

Terminology

In this document, unless the context otherwise requires:

OP	Occupation Permit
TOP	Temporary Occupation Permit
AP	Authorized Person
TCP	Technically Competent Person
RSE	Registered Structural Engineer
Guided-SWP	Guided suspended working platform
OSHC	Occupational Safety and Health Council
RSO	Registered Safety Officer
LD	Labour Department
CICTA	Construction Industry Council Training Academy
BA	The Building Authority

Guidelines on Safety of Lift Shaft Works
(Volume 2 – During Lift Installation Stage until Issue of Occupation Permit and Handing Over to Developer)

1. Purpose

1.1 This publication (Volume 2) sets out the good practices recommended by the Construction Industry Council (CIC) for enhancing work safety of site personnel working near or inside a lift shaft during lift installation stage until the issue of Occupation Permit (OP)[1] and handing over to developer. Three volumes of publications covering various stages are outlined below –

Volume 1 – During Construction Stage and Before Handing Over to Lift Installation Contractor
Volume 2 – During Lift Installation Stage until Issue of Occupation Permit and Handing Over to Developer
Volume 3 – Throughout Occupation Stage

[1] which may include Temporary Occupation Permit (TOP) issued for a particular portion of the building.

2. Definitions

2.1 In this publication, unless the context otherwise specifies –

(a) "Authorized Person (AP)" means a person whose name is on the authorized persons' register kept under Para. 3(1) of the Buildings Ordinance, Chapter 123 -

(i) as an architect;
(ii) as an engineer; or
(iii) as a surveyor**.**

(b) "Contractor", in relation to construction work, means any person or firm engaged in carrying out construction work by way of trade or business, either on his own account or pursuant to a contract or arrangement entered into with another person, including the private sector, the Government of the Hong Kong Special Administrative Region or any public body.

(c) "Main Contractor" is a Contractor who sub-contracts the lift installation works to or enters into a sub-contract with a Lift Installation Contractor to carry out the lift installation works; this includes the prescribed registered contractor appointed for the project under the Buildings Ordinance. A Main Contractor may also engage other subcontractors to provide temporary works and installation appliances to facilitate the lift installation works.

(d) "Lift installation works" means the actual lift installation by lift workers and should include but not limited to –

(i) equipment delivery and hoisting;
(ii) guide rail installation;
(iii) architrave, landing door, hall button and indicator installation;
(iv) machine room and machine-room-less devices installation;
(v) electrical wiring;
(vi) assembly of cage, counterweight and roping; and
(vii) adjusting and testing

(e) “Lift installation contractor” means a contractor registered under the Lifts and Escalators (Safety) Ordinance, Cap 327. (i.e. Registered Lift Contractor) and being appointed to carry out the lift installation works on site. The Lift Installation Contractor should engage competent lift workers to undertake lift installation works and should ensure that all the works are carried out in accordance with the requirements of the Lifts and Escalators (Safety) Ordinance, Cap 327. It should be obliged to supervise the workers and to provide instructions and guidelines to the workers.

(f) “Registered Lift Engineer” means a lift engineer registered under the Lifts and Escalators (Safety) Ordinance, Cap 327. A Registered Lift Engineer is required to ensure the lift works are of safe and good construction, and carry out test and examination of the lift after the installation.

(g) “Lift worker” means any frontline tradesman who performs all types of lift installation works under the supervision of a Lift Installation Contractor. A lift worker is allowed to work under the supervision of a “competent lift worker” as defined in (h) below.

(h) “Competent lift worker” means a person who has sufficient lift works experience and training satisfying the requirements stipulated in the Lifts and Escalator (Safety) Ordinance, Cap 327.

(i) “Technically Competent Person (TCP)” means a person possessing academic or professional qualifications and experience of building works or street works that satisfy the requirements set out in the Code of Practice for Site Supervision issued by the Buildings Department for a particular type of site supervision or management tasks.

(j) “Project Manager/ Engineer” means the assigned person(s) of the Main Contractor or the Lift Installation Contractor, whose primary responsibility is to coordinate the lift installation progress of a specific contract.

(k) “Registered Structural Engineer (RSE)” means a person whose name is for the time being on the structural engineers’ register kept under Para. 3(3) of the Buildings Ordinance, Chapter 123.

(l) “Installation Appliance” includes a lift car of an assembled lift, a guided suspended working platform (guided-SWP) and a platform lift when they are used for lift installation works inside a lift shaft. Annex A depicts the basic configurations of a lift car, a guided-SWP and a platform lift.

(m) “Temporary Works” should include the design, construction, maintenance, use and dismantling of scaffolds (including working platform, ladders and lift shaft platforms[2]), lift shaft protection cages for the purpose of lift installation, which shall be removed after the completion of lift installation works. For those equipment and facilities that have already been specified in the lift layout drawing and approved by the client’s representative (including Architect & Contract Manager etc.), they shall be treated as permanent works. Other than that and also those protection/safety measures which are not to be removed even after lift installation is completed, all works requested or arranged by Lift Installation Contractors for the lift installation are “Temporary Works”.

(n) “Jump lift” means a builder’s lift in which the lift installation is separated into phases in the same lift shaft. The lift is installed to carry site workers to designated floors where the lift shaft above is still in construction stage. The lift installation at the next phase might involve the hoist-up of machine components to an upper level. A Jump lift is a builder’s lift under the regulatory control of the Builders’ Lifts and Tower Working Platforms (Safety) Ordinance, Cap 470.

(o) “Machine-room-less” lift means a lift which has its driving machine and safety components located within the same lift shaft.

[2] The definition of the lift shaft platform should be made reference to the Volume 1 of the Guidelines.

3. Introduction

3.1 Upon completion/ partial completion of a lift shaft and at an appropriate timing determined by the Main Contractor, the lift shaft will be handed over to the Lift Installation Contractor for the carrying out of lift installation works. This publication will focus on the precautionary measures recommended for enhancing the safety of works involved in the lift installation stage until the issue of OP and handing over to developer.

3.2 This publication promotes safe practices for lift installation works, with reference to core ingredients of a safe system of work in the principles of risk assessment and elimination, hazard reduction, accident prevention and protection of workers.

3.3 In developing and implementing a safe system of work for any lift installation works, the Main Contractor and the Lift Installation Contractor should make their best effort to comply with the advice delivered in the Code of Practice for Safety at Work (Lift and Escalator), and to observe and follow other requirements governing the safety aspects of lift installation works stipulated under the Ordinance(s), Practice Notes and Code(s) of Practice as listed in Annex B. The safety measures for lift shaft works stipulated in Volume 1 of the Guidelines on Safety of Lift Shaft Works published by the CIC (Volume 1 of the Guidelines) should also be followed wherever applicable.

4. Limitations

4.1 It is important to note that compliance with this publication does not of itself confer immunity from legal obligations in Hong Kong. Employers or contractors are reminded to observe and comply with statutory provisions, relevant codes of practice and all other government departments' requirements so as to discharge their legal and other pertinent duties in respect of lift installation works and other users associated with the lift shafts.

4.2 Any standards, procedures, forms or specifications stipulated in this publication are by no means exhaustive. The Main Contractor and the Lift Installation Contractor should critically examine their applicability and suitability taking into account the actual site conditions and the specific hazards of the project.

5. Safe System of Work of Lift Installation Works

5.1 To ensure the safety and health of workers engaged in lift installation works, the Main Contractor and the Lift Installation Contractor should -

(a) plan the lift installation works (paragraph 6 refers);

(b) provide and maintain all safety provisions for temporary works, protective measures, plant and equipment (paragraph 7 refers);

(c) conduct risk assessment and prepare method statement for any lift installation work(s) including the erecting and dismantling of scaffolding and temporary works (paragraph 8 refers);

(d) implement specific precautions for lift installation works (paragraph 9 refers);

(e) develop and implement permit-to-work systems for typical lift installation processes inside a lift shaft (paragraph 10 refers);

(f) provide effective communication system, safety and health training and personal protective equipment to workers (paragraph 11 refers); and

(g) pay special attention to buildings under TOP arrangement (paragraph 12 refers).

5.2 It is strongly recommended that both Main Contractor and Lift Installation Contractor should make reference and comply with all the safety measures for lift shaft works as stipulated in Volume 1 of the Guidelines.

6. Planning of Lift Installation Works

6.1 Prior to the commencement of any lift installation work, the Main Contractor should liaise with the Lift Installation Contractor and prepare a lift installation safety plan with details on the risk assessments and method statements for the lift installation processes and the safety provisions to be adopted on site to ensure site safety of all lift installation procedures.

6.2 The lift installation safety plan should contain chapters covering the following:

(a) the type of lift to be installed. In case of a machine-room-less lift or a jump lift, copies of lift configurations should be attached to the plan;

(b) the plant and equipment of the lift installation works: the use of bamboo or metal scaffold, guided-SWP, platform lift or, in case of jump lift installation, the use of a heavy-duty lift appliance;

(c) the positions of floor openings in a lift machine room, structural links in the ceiling of a lift shaft and structural anchors and eye bolts for the uses of a guided-SWP, a trimmed scaffold and independent lifelines;

(d) the type of a heavy-duty lifting appliance to hoist up lift shaft platforms and machine components of a jump lift to upper level of a lift shaft;

(e) if a guided-SWP or a platform lift is used, the provision of lift shaft fencing in addition to lift shaft protection cages specified in Figure 5 of Volume 1 of the Guidelines;

(f) the administration of permit-to-work systems on hazardous trade processes such as hot work and electric arc process;

(g) if the building is under TOP arrangement, the corresponding safety and protection measures;

(h) the Risk Assessment Report. A sample of Risk Assessment Report is appended at Annex C; and

(i) Planning Team[3] should prepare a pre-work check reference. A sample of pre-work check table is appended at Annex D

[3] Please refer to paragraph 6.4 for the composition of the Planning Team.

6.3 When preparing the lift installation safety plan, guidelines prescribed by the Occupational Safety and Health Council (OSHC) or any other relevant codes of practice should be referred to. Reference should also be made to Volume 1 of the Guidelines in considering the safety management of any other works to be simultaneously conducted inside the lift shaft during the lift installation period.

6.4 A planning team comprised of site managerial and supervisory representatives from the Main Contractor, the Lift Installation Contractor and subcontractors, including Project Manager/Engineer, site agent, Registered Safety Officer (RSO), site supervisor and any related personnel who will be involved in the lift installation works or any other lift shaft works (as defined in Volume 1 of the Guidelines), should be lined up to participate in the planning process and the endorsement of the lift installation safety plan.

6.5 The Lift Installation Contractor should draft the lift installation safety plan and submit it to the planning team for consideration. After the planning team finalizes the plan, the plan should be signed by the Project Manager or Site Agent of the Main Contractor and properly documented by the RSO.

6.6 The content, frequency, and duration of safety and health training for lift workers should be specified in the lift installation safety plan.

6.7 Before the handover of a lift shaft, the planning team should develop a “handover checklist’ for checking and recording the conditions of the lift shaft to be taken over by the Lift Installation Contractor. “A sample of the Lift Shaft Handover Checklist’ is provided at Annex E for reference.

6.8 The Main Contractor and the Lift Installation Contractor should agree on the boundary and the portion of a lift shaft to be handed over. The handover arrangement should be properly documented, stating whether it would be a complete, partial or sectional handover for the subsequent management and maintenance of the lift shaft during the lift installation period. The safety provisions to be handed over and maintained by the Lift Installation Contractor should be explicitly addressed by the Main Contractor and acknowledged by the Lift Installation Contractor. The table at Annex F illustrates the major considerations before and after handing over of lift shaft to the Lift Installation Contractor by the Main Contractor.

6.9 Strict supervision should be administered on both routine works and hazardous trade processes. For routine works, site supervisors of the Lift Installation Contractor should conduct pre-work check on a half-day basis with focus on the use of safety devices including personal protective equipment (PPE). For hazardous trade processes (paragraph 10.4 refers) inside a lift shaft, the planning team should appoint suitable personnel to oversee the permit-to-work systems.

6.10 The planning team should examine the types of hot work and electric arc process that would be carried out inside a lift shaft. As far as practicable, hot work and electric arc works should be avoided inside a lift shaft. If it is unavoidable, no lift worker and other trade worker are allowed to work simultaneously inside a lift shaft during the hot work or electric arc process. Before carrying out any hot work and electric arc works, adequate measure/protection to resist the spread of fire should be provided in order to inhibit the spread of fire to or between floor compartments through the lift shafts and openings and within lift shafts. Any temporary facility/installation including scaffoldings, formworks, platforms, plankings and strutting etc. inside such lift shafts should be constructed of non-combustible materials; if no part of the building is under TOP arrangement, the safety precaution stipulated in paragraph 10.5(d) can be adopted as an alternative arrangement.

6.11 If a metal or bamboo scaffold is used for installation of a machine-room-less lift, the planning team should:

(a) examine the loading capacity of the metal or bamboo scaffold;

(b) prepare and approve a design plan to reinforce the scaffolds during the conveying of components at the top level; and

(c) modify the scaffolds to suit the purpose.

6.12 If a guided-SWP is used, the planning team should examine the design and construction of the appliance. The positions of floor openings at the machine room or the structural links at the ceiling of the lift shaft should be checked to ascertain that the suspension and safety ropes of the appliance are plumbed when they are hung from these openings or links.

6.13 If a guided-SWP or a platform lift is agreed to be used, the Main Contractor has to provide appropriate protection net/mesh with top and middle guards in about

1.8 m in height across the door openings of a lift shaft and behind lift shaft protection cages. The guards are hinged to allow the access to and egress from a guided-SWP or a platform lift.

6.14 Safe access to deep lift pit should be provided in the following ways:

(a) Where practicable for lift pit over 2.5 m deep, a separate permanent access point instead of cat ladder is recommended to be provided to facilitate the safe access to the lift pit;

(b) If the layout of the building so permits, it is strongly advisable that for the pit depth that exceeds 1.6 m, an access door shall be provided to the pit in the building design/planning stage. The design of the permanent access door should be in compliance with the Code of Practice on The Design and Construction of Buildings and Building Works for the Installation and Safe Use of Lifts and Escalators 1993 paragraphs 3.8.2 & 3.8.3;

(c) It is also recommended to provide a working platform or reserve space for the working platform if the pit depth exceeds 2.5 m for future maintenance and repair works; and

(d) However, if it is impracticable to maintain a permanent access point and to erect a working platform inside a deep pit, the requirements stipulated in paragraph 9.2(a) should be followed.

6.15 If floors with unfinished lift shaft or lift installation works will be occupied under TOP arrangement, additional lift shaft protection, including prevention of fire spread, should be designed in building planning stage and submitted by the AP to the Building Authority for acceptance/approval before application of TOP. The management of the premises should be kept informed of the designated lift shaft and related lift installation works and observe/maintain the related arrangements/protection including safe means of access (for workers only) to the lift shafts. When there is any plan to alter (including relocate/re-align) the lift shaft protection or the separation between the occupied area and the construction area, prior to the commencement of such alterations, corresponding proposals including alternative protection measures, should be properly prepared and reviewed by the planning team for consideration by the AP in accordance with paragraph 12 below.

6.16 The lift installation safety plan should stipulate strict requirements to ensure that:

(a) workers are not allowed to work at the same time above the lift pit if the installation works of lift pit equipment is in progress. If it is practicably unavoidable, a permit-to-work certificate is required and should only be issued on those working spaces properly separated and protected by crash deck(s); and

(b) lift workers are not allowed to work alone inside a lift shaft. If it is practically unavoidable, the worker should have sufficient communication devices such as motion sensor to generate alarm in addition to the provision of walkie talkie. The worker inside the lift shaft should be able to verbally communicate with a nearby co-worker.

6.17 A copy of the lift installation safety plan should be kept on site for inspections by relevant government officers.

7. Provision and Maintenance of Temporary Works, Protective Measures, Plant and Equipment

7.1 After handing over a lift shaft, the Main Contractor, the Lift Installation Contractor, scaffold contractor and owners of installation appliances and lifting appliances should continue to maintain in good and serviceable conditions of all temporary works, plant and equipment throughout the entire period of the lift installation works.

7.2 The Main Contractor should also properly maintain at all times:

(a) all the lift shaft safety provisions (including but not limited to those as described under paragraphs 7 & 12 of Volume 1 of the Guidelines), except for those specified temporary protection works which have been previously agreed with the Lift Installation Contractor to be under their maintenance responsibility. The responsibilities for the subsequent management and maintenance of all lift shaft protective measures until removal should be clearly defined and properly recorded in the lift installation safety plan. The Main Contractor and the Lift Installation Contractor should properly maintain their responsible parts of protective measures for lift shaft and lift installation works (e.g. lift shaft platforms, safety nets, scaffoldings, fall arrest system) and should ensure all of them are in good conditions and effective at all times; and

(b) all temporary safety measures and protection/fire separation as required for or related to TOP (if the building is under TOP arrangement) until full OP is issued. If alteration/modification is unavoidable, please refer to paragraph 12 for the necessary requirements and arrangements.

7.3 Any proposal for the removal, alteration or addition of the temporary works, plant and equipment should be reviewed and approved by the planning team prior to the commencement of such works.

7.4 The Main Contractor and the Lift Installation Contractor should keep proper records of all inspection records for safety provisions.

7.5 The Main Contractor should appoint suitable competent persons to conduct bi-weekly inspection and to maintain lift shaft platforms, scaffolds, safety nets, wall anchors and independent lifelines.

7.6 The Lift Installation Contractor should be responsible for the erection, dismantling and maintenance of those temporary works, plant and equipment for lift installation works that are not provided by the Main Contractor. The Lift Installation Contractor should ensure all of them are in good and serviceable conditions at all times.

Temporary Works

7.7 Generally, the Main Contractor should be responsible for the erection and dismantling, alteration, if required under the contract, of scaffold inside a lift shaft. The Lift Installation Contractor should inspect the conditions of the scaffold during the handover of the lift shaft. After the handover, the Lift Installation Contractor should properly use and maintain the scaffold in good conditions at all times and timely report to the Main Contractor for any identified damage on scaffold for immediate repair or replacement. The Lift Installation Contractor should not alter and cut any members of a scaffold.

7.8 In case of a metal or bamboo scaffold or a lift shaft platform is used, Form 5 issued under the Construction Sites (Safety) Regulations should be displayed on the scaffold at ground floor entrance of a lift shaft or at the lift shaft door opening where the lift shaft platform is located.

7.9 If a section of a scaffold is required to be trimmed short to facilitate lift car assembly, the altered scaffold should be supported and reinforced by designated anchors on the wall of a lift shaft in accordance with the designed requirements stipulated in the lift installation safety plan.

7.10 The Lift Installation Contractor should check the loading capacity of a scaffold used for the installation of a machine-room-less lift. Each machine component of the lift should be properly rigged when being conveyed onto the structures of the lift shaft top so as to avoid any sudden impact onto the scaffold due to the irregular movement of a suspended machine component.

7.11 Gangways connecting floor edges of a lift shaft and the scaffold should be regularly inspected bi-weekly to ensure its stability.

7.12 Proper working platform and safe access and egress should be maintained for competent persons to conduct regular inspections on scaffolds, installation appliances and lifting appliances.

7.13 Appropriate access ladder should be used for entering the lift pit and the lift landing should be properly guarded after entering the lift pit.

7.14 The Main Contractor and the Lift Installation Contractor should keep all the keys and locks of lift shaft protection cages in a neatly and orderly manner. The keys should only be released to other subcontractors under the conditions of a permit-to-work system.

7.15 The hinges and locks of lift shaft protection cages should be properly maintained to ensure that the cages could not be swung beyond the floor edges of a lift shaft. The hinges and locks should be free from dry concrete mix at all times.

7.16 If a guided-SWP or a platform lift is used, lift shaft protection cages should not be opened from outside when the opening is not protected by suitable guardrails. When reinstatement of the cage is required, the workers concerned should use safety harness and the lanyards should be secured to suitable anchors or independent lifelines.

7.17 A log book should be kept to register the locations of the door keys or the person-in-charge for holding such key(s).

7.18 Warning notices should be firmly fixed and properly maintained at prominent locations on or near lift shaft protection cages by the Main Contractor to remind all site personnel to take all necessary safety precautions when entering a lift shaft.

7.19 Openings for landing doors, emergency doors, inspection doors and access panels to the lift shaft should be properly covered and protected to prevent any working personnel or objects falling from height.

Plant

7.20 The Lift Installation Contractor should be responsible for erection, testing, examination, maintenance and dismantling of installation appliances, winches, chain block systems, other lifting appliances and lifting gear used inside a lift shaft for the lift installation works.

7.21 A guided-SWP should be tested, examined, inspected, maintained and operated in accordance with the provisions of the Factories and Industrial Undertakings (Suspended Working Platforms) Regulation. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Guided-SWP issued by the Labour Department (LD).

7.22 If a platform lift is used for the lift installation works, a Registered Lift Engineer should examine the appliance before it is put into use for the first time. The Lift Installation Contractor should also comply with the requirements of the Compliance Notes on Platform Lift issued by LD.

7.23 If a lift worker is assigned to work on a lift car top of an assembled lift during the lift installation works, the Lift Installation Contractor should engage a Registered Lift Engineer to examine the assembled lift before it is used to carry lift workers for the first time. The examination should be properly documented for checking. A sample of Examination Form is attached in Annex G.

7.24 When a winch, a chain block system or similar lifting appliance is used to convey lift components inside a lift shaft, a competent lift worker should be employed to install anchor bolts of the appliance. Lift components should be properly and securely rigged when they are raised or lowered by a lifting appliance inside a lift shaft. No lift worker should be allowed to stay below a suspended load inside the lift shaft at time of material conveyance by a lifting appliance.

Equipment

7.25 The Main Contractor should coordinate with the Lift Installation Contractor for the arrangement of electrical supply, earthing, illumination and ventilation on site. Temporary electricity at voltage 110V should be provided by the Main Contractor with circuits equipped with waterproof sockets for use by the Lift Installation Contractor. The location of temporary electricity supply should be indicated clearly on the lift installation safety plan.

7.26 The Lift Installation Contractor should ensure that adequate illumination by 110V temporary lighting connected to an isolated transformer having the centre tap of the secondary winding earthed, ventilation and effective communication systems are provided inside the lift shaft during the whole lift installation period.

7.27 All electrical appliances including portable electric tools, lighting devices and mechanical ventilation equipment provided by the Lift Installation Contractor should be effectively earthed except that it is an approved type that does not require earthing.

7.28 Proper connectors and power cables should be used for portable tools.

7.29 Appropriate lighting should be provided for works in the lift machine room and inside a lift shaft. Lighting devices should be properly protected against impact damage.

7.30 The Lift Installation Contractor should maintain the load-bearing pulleys or winches in good conditions and serviceable at all times.

7.31 Special fire precautions should be adopted and implemented for hot work and electric arc process. Fire retarding sheet should be used to prevent sparks of hot work or electric arc process from falling onto combustible materials or suspension/safety ropes of a guided-SWP (paragraph 10.5(d) refers).

7.32 The lifting appliances as specified in the lift installation safety plan for jump lift and machine-room-less lift installations should be tested and examined by the Main Contractor. The Lift Installation Contractor should be responsible for the testing and examination of other lifting appliances and installation appliances inside the lift shaft for the use of lift installation to ensure their proper functioning before use[4].

[4] The Factories and Industries Undertakings (Lifting Appliances and Lifting Gear) Regulation holds the Main Contractor and the lift installation contractor responsible.

7.33 For scaffold-less[5] or jump lift installation, the Lift Installation Contractor should collaborate closely with the Main Contractor to ensure work safety during the raising of temporary lift shaft platform or hoisting of any materials within the lift shaft. Common types of risk encountered during scaffold-less and jump lift installation are stipulated in paragraph 8 for reference.

7.34 For the installation of machine-room-less lift at the top of the lift shaft, the Lift Installation Contractor should ensure adequate safety provisions are in place.

7.35 After the lifting platform or lift car is installed in the lift shaft, the lift pit and lift shaft top should provide appropriate stopping devices which are accessible to the lift pit or lift shaft top and from the pit floor or top floor.

[5] Scaffold-less is an open term used in the lift installation which is not carried out by metal or bamboo scaffold. More specifically, the Guidelines only recommend the uses of guided-SWP and Platform Lift to facilitate the lift installation works but not other plant.

8. Risk Assessment and Method Statement

8.1 When hazards cannot be physically eliminated and some elements of risks remain, a safe system of work will be required. The system should be able to identify the potential risks and develop the corresponding intervention measures. It should be properly communicated and should be precisely implemented by all project participants. Workers, supervisors, engineers and project managers should be trained with the necessary skills and be fully aware of the potential risks and the precautions they need to adopt.

8.2 As an essence of a safe system of work, a risk assessment should be conducted by the planning team formed under paragraph 6 on each type of lift installation works, with close attention on those risks from jump lift and machine-room-less lift installations. The RSO should be consulted for completeness of the risk assessment process.

8.3 The assessment should include but not limited to hazards related to falling objects, fall-from-height, collapse of platform/ supporting structures for platform or lifting appliances, defective lifting appliance and lifting gear, improper rigging, absence of lighting and ventilation, electrocution, fire, etc as are relevant to the lift installation works. The assessment should include fire safety measures in carrying out lift shaft works, especially when, if unavoidable, hot works are to be carried out. With reference to each operation involved in the lift installation process, the assessment should recommend safety precautions and state the person responsible to execute the safety measures. The risk assessment report should be signed by the RSO and jointly endorsed by the Project Manager/Engineer of the Lift Installation Contractor and the Project Manager or a site agent of the Main Contractor.

8.4 During the preparation of method statement for each lift installation process, the Lift Installation Contractor and the planning team should carefully identify and assess the safety risks associated to each operation. The table at Annex C shows the most common types of risks encountered during the conventional lift installation procedures. They are by all means not exhaustive and the planning team should review their actual site situation in developing their own risk assessment.

9. Specific Precautions for Lift Installation

9.1 It is strongly advised that the planning team should refer to the guidelines, codes and regulations during the preparation of the lift installation safety plan and the formulation of method statement for any procedures involved in the lift installation process.

9.2 In conducting the risk assessment, the following safety precautions should be carefully considered (if corresponding hazards are found) and recorded for implementation as appropriate:-

(a) provide safe access to and egress from the lift shaft openings. In case of an access to a deep lift pit where it is impracticable to provide a standard ladder and working platform inside the deep lift pit, a suitable anchorage or a tailor-made cross beam (BSEN 795)[6] with a retractable device should be provided for a lift worker who wore a safety harness attached to the retractable device. The lift worker is then allowed to open a lift door and enter the lift pit via the steel ladder.

(b) no building materials or debris should be stored in front of any lift shaft opening;

(c) put in place rescue procedures and evacuation arrangement in case of fire, explosion, accident or other emergency situations, etc. occurring in any part of the building during the works;

(d) keep to minimum the number of persons working within a lift shaft at the same time to the extent that simultaneous working at two different levels is strongly NOT advisable; and

(e) provide communication equipment for use by the working personnel during the works, and specify key words/signals for clarity of use during communication.

[6] BSEN 795: 1997 Protection against falls from a height - Anchor devices - Requirements and testing

9.3 Method statements for any lift installation works should be prepared, taking into consideration of all safety measures from the risk assessment report. The related precautionary measures should be disseminated to all relevant parties to ensure that they are properly understood and followed. The sample of Risk Assessment Report at Annex C illustrates job hazards and the respective control measures of different activities under lift installation works.

9.4 Apart from the conventional lift installation methods, Lift Installation Contractors may adopt other approaches for lift installation with respect to specific site conditions. The risk assessment and preparation of method statement for such non-traditional methods should follow the principles as stated in the above paragraphs. Notwithstanding, the planning team is advised to note the following when applying scaffold-less, jump lift or machine-room-less lift installation methods:

(a) the use of installation appliances;

(b) the use of a heavy-duty lifting appliance to convey machine components of a jump lift to an upper level of a lift shaft; and

(c) the use of scaffolds or a guided-SWP in the installation of a machine-room-less lift.

9.5 If a guided-SWP or a platform lift is used for the lift installation works, the following specific safety precautions, but not limited to, should be adopted:

(a) the control switches, safety devices and/or pedal brakes of the appliance should be functionally checked by a competent person at the beginning of each work shift;

(b) a notice prescribing the maximum number of workers working on the platform should be clearly displayed on the appliance facing the lift shaft opening. The appliance should not be overloaded with workers on the platform under any circumstance;

(c) no worker is allowed to work alone on the platform;

(d) no works should be carried out while the appliance is moving;

(e) no other worker should be allowed to enter the lift shaft when the appliance is operating;

(f) worker(s) should immediately anchor safety harness(es) to the independent lifeline(s) before entering the platform;

(g) all portable tools should be properly placed in the tool box and bag when working on the platform;

(h) the platform of the appliance should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft. A warning notice should be posted at the control of the platform to that effect before entering the lift pit for works;

(i) lift car and frame assembly works should be carried out preferably at the lowest level;

(j) if the lift car and frame assembly works are carried out at the lowest level, the guided-SWP should be properly stopped at appropriate level above the lift pit and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect; and

(k) if the lift car and frame assembly works are carried out at the highest level, the guided-SWP should be properly stopped at one level below and locked in an inoperative mode. The switch key should be kept by the worker working inside the lift shaft and a warning notice should be posted at the control panel of the platform to that effect.

9.6 For jump lift installation, the Main Contractor and the Lift Installation Contractor should carefully assess the weight of the lift shaft platform and the machine component of a jump lift before deploying a heavy-duty lifting appliance, such as a tower crane, a heavy-duty winch or a heavy-duty derrick crane, to perform the hoist-up works. Safety precautions should be adopted and implemented to prevent any part of a suspended lift shaft platform or machine component of a suspended jump lift from being obstructed by wall projections of a lift shaft.

9.7 During the installation of a machine-room-less lift, it is prohibited to use a guided-SWP to convey any machine components of a lift inside a lift shaft. When a lift component is raised or lowered by a lifting appliance, the guided-SWP should be stationed at an appropriate level to avoid any contacts with a suspended load.

9.8 Any design and method statement for the construction of anchorages, including those temporary anchorages, for material and equipment lifting, plant operation, installation of lift appliance, connecting independent lifeline, or any other uses must be checked by a Registered Professional Engineer (either appointed by the Main Contractor or the Lift Installation Contractor) for certification of the load bearing capacity and the fixing details of the anchorages.

9.9 If a particular anchorage plus the corresponding applied load may have effect on the permanent structure by way of overstressing or overloading, the Main Contractor shall appoint a person whose qualification and experience are not inferior to a TCP of grade T5 to certify the plans, design information/justification, load bearing capacity, fixing details and/or method statement of the anchorages which are to be submitted to the Project RSE. The person so appointed should also certify the completion of such works.

9.10 In case there is construction work to be carried out above the handed over portion of lift shaft, the Main Contractor should provide and maintain a lift shaft platform to act as a separation formwork to protect the workers working below the platform. Such lift shaft platform should be designed, constructed, used and maintained following the provisions as stipulated in paragraph 9 of Volume 1 of the Guidelines, and should comply with the requirements of any relevant regulations, practice notes and codes of practice published by the Government such as the Buildings Department and Labour Department.

10. Implementation of a Permit-to-Work System

10.1 Following the provisions as stipulated in paragraph 10 of Volume 1 of the Guidelines, the Main Contractor should continue to manage and administer the permit-to-work system for controlling access to the lift shaft after handing over the lift shaft to the Lift Installation Contractor. The Main Contractor and the Lift Installation Contractor should ensure that all the safety provisions stipulated under the lift installation safety plan are readily in place before applying for the permit-to-work system inside the lift shaft.

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10.2 After handing over a lift shaft to the Lift Installation Contractor, a permit from the Main Contractor should be granted to the Lift Installation Contractor for the commencement of the lift installation works.

10.3 In general, the Main Contractor should endorse all permit-to-work systems for all hazardous trade processes. If any such hazardous trade processes involve the safety and health of lift workers only, the systems should be endorsed by the Main Contractor and the Lift Installation Contractor.

10.4 Permit-to-work systems should be enforced on the hazardous trade processes and implemented by the Main Contractor and Lift Installation Contractor respectively according to the nature of the hazardous trade processes. Each permit should specify its length of validity in terms of shift and the type of trade workers who are required to work inside the lift shaft.

10.5 The following hazardous trade processes indicate some examples:

(a) other trade workers are required to work inside the lift shaft where lift workers are installing a lift. In this case, the Main Contractor should, after consultation with the Lift Installation Contractor, issue a certificate of permit-to-work system endorsed by both the Main Contractor and Lift Installation Contractor to that effect;

(b) when lift workers are required to work below a guided-SWP or a platform lift, the Lift Installation Contractor should implement a permit-to-work system, with a control measure that the switch key of the appliance is kept by a lift worker staying below the platform;

(c) lift workers are required to work in a deep lift pit. Safety precautions, such as provision of safe access and egress, fall-arrest-system as stipulated in paragraph 9.2(a), work-in-pair, proper lighting and ventilation, should be adopted and implemented by the Lift Installation Contractor;

(d) hot work or electric arc process is conducted inside or near a lift shaft. The Lift Installation Contractor should also ensure that suitable fire precautions are taken to prevent hot sparks from the process falling onto combustible materials or suspension/safety ropes of a guided-SWP. At the work spot, suitable protective screen of fire retardant nature, such as tarpaulin should be used. If tarpaulin is being used as protective screen, its fire retardant characteristics should meet the requirements of BS 5867-2: 2008 (Type B performance requirements)[7] or other equivalent standards; and

(e) lift workers are required to work on the car top of an assembled lift car. The permit-to-work system should include the adoption of a switch lock on the Inspection Operation Panel on the car top or similar alternative measure to that effect.

10.6 The sample form of the permit-to-work system is provided at Annex C of the Volume 1 of the Guidelines.

10.7 The permit-to-work system as stipulated in paragraph 10 of Volume 1 of the Guidelines should be maintained and managed by the Main Contractor after handing over the lift shaft to the Lift Installation Contractor. The Lift Installation Contractor should apply to the Main Contractor for access to the lift shaft for the carrying out of lift installation works.

[7] BS 5867-2:2008, Fabrics for curtains, drapes and window blinds – Part 2: Flammability requirements – Specification.

11. Provision of Effective Communication system, Safety and Health Training and Personal Protective Equipment

11.1 The planning team should develop and implement an effective communication system for lift installation works. Such system should be clearly defined and properly recorded in the lift installation safety plan prior to the commencement of any lift installation work.

11.2 Adequate and effective communication means/equipment, such as walkie-talkie, layout plan showing the designated work area for different work groups, etc., should be provided to responsible persons of different parties involved in the lift installation works. Mobile phones should not be considered an effective communication for workers working inside a lift shaft.

11.3 Apart from the induction safety training provided by the Main Contractor, the planning team should plan and arrange regular safety and health training for workers, in relation to the implementation of lift installation works in accordance with the lift installation safety plan by the Lift Installation Contractor. Workers engaged in lift installation work should be briefed by the Lift Installation Contractor on the findings of the risk assessment report, the safety procedural steps of a method statement and the implementation of a permit-to-work system. The Main Contractor shall provide induction safety training to all Lift Installation Contractors.

11.4 Competent lift workers and lift workers should receive the following training:

(i) the mandatory safety training (Green Card) from a government recognised organisation;
(ii) not less than half day lift installation related safety training by a Lift Installation Contractor; and
(iii) Safety Training Course for Construction Workers of Specified Trade (Silver Card) from Construction Industry Council Training Academy (CICTA).

11.5 The safety and health training should include drills on steps and procedures to be followed in case of emergency or accident. Records of safety training should be properly kept.

11.6 Provision of personal protective equipment to ensure the safety and health of workers are considered as last resorts or secondary protection to cope with engineering measures to eliminate safety and health hazards. As a secondary protection against risks of fall from height inside a lift shaft, fall arresting system should be provided, properly maintained and used by all parties concerned.

11.7 The Main Contractor should install at least 3 sets of independent lifelines inside a lift shaft before handing over to the Lift Installation Contractor. At least one independent lifeline should be located near the door openings of a lift shaft. The independent lifelines should be anchored to eyebolts fixed by the Main Contractor. The position of lifelines should be defined in a lift installation safety plan. The Lift Installation Contractor may require to modify or adjust its position.

11.8 All workers, including other trade workers, if any, should be provided with suitable safety harnesses and fall arrestors when they are required to work inside a lift shaft. They should be instructed to wear the harnesses with their lanyards attached to fall arrestors and to lock fall arrestors onto independent lifelines or suitable anchorages.

11.9 All workers, including other trade workers, should be provided with reflective vests when they are required to work inside a lift shaft. They should be instructed to wear reflective garment (vest or equivalent) when they remain inside a lift shaft.

11.10 No worker is allowed to enter a lift shaft if he/she is not wearing a safety harnesses with a fall arrestor and a reflective garment.

12. Special Attention to Buildings Under TOP Arrangement

12.1 All the necessary safety measures (including features and provisions) for and pertaining to buildings under TOP arrangement as specified in paragraph 12 of Volume 1 of the Guidelines and in the preceding paragraphs of this Volume, including those for fire safety, occupants' safety and workers' safety, are applicable and must be maintained at all times during the carrying out of and after the completion of lift installation works, until a full OP is issued. For fire protection, reference should be made to the requirements stipulated in the relevant Codes of Practice (Codes) concerning fire safety issued by the Building Authority (BA).

12.2 Any safety measures required or specified under the TOP should be properly covered by the lift installation safety plan. The Main Contractor and the Lift Installation Contractor should strictly maintain and follow the specified measures to ensure the occupied area is under sufficient protection at all times. Such measures should also be included in the Main Contractor's on-site induction safety training to brief the workers.

12.3 If alterations / modifications to the aforesaid safety measures or site arrangements are required, prior to the commencement of any such work, the planning team should be consulted, including the corresponding proposed alternative protective measures. Advice on such proposals from the AP must be sought to confirm if the proposed works need prior acceptance/approval from the BA.

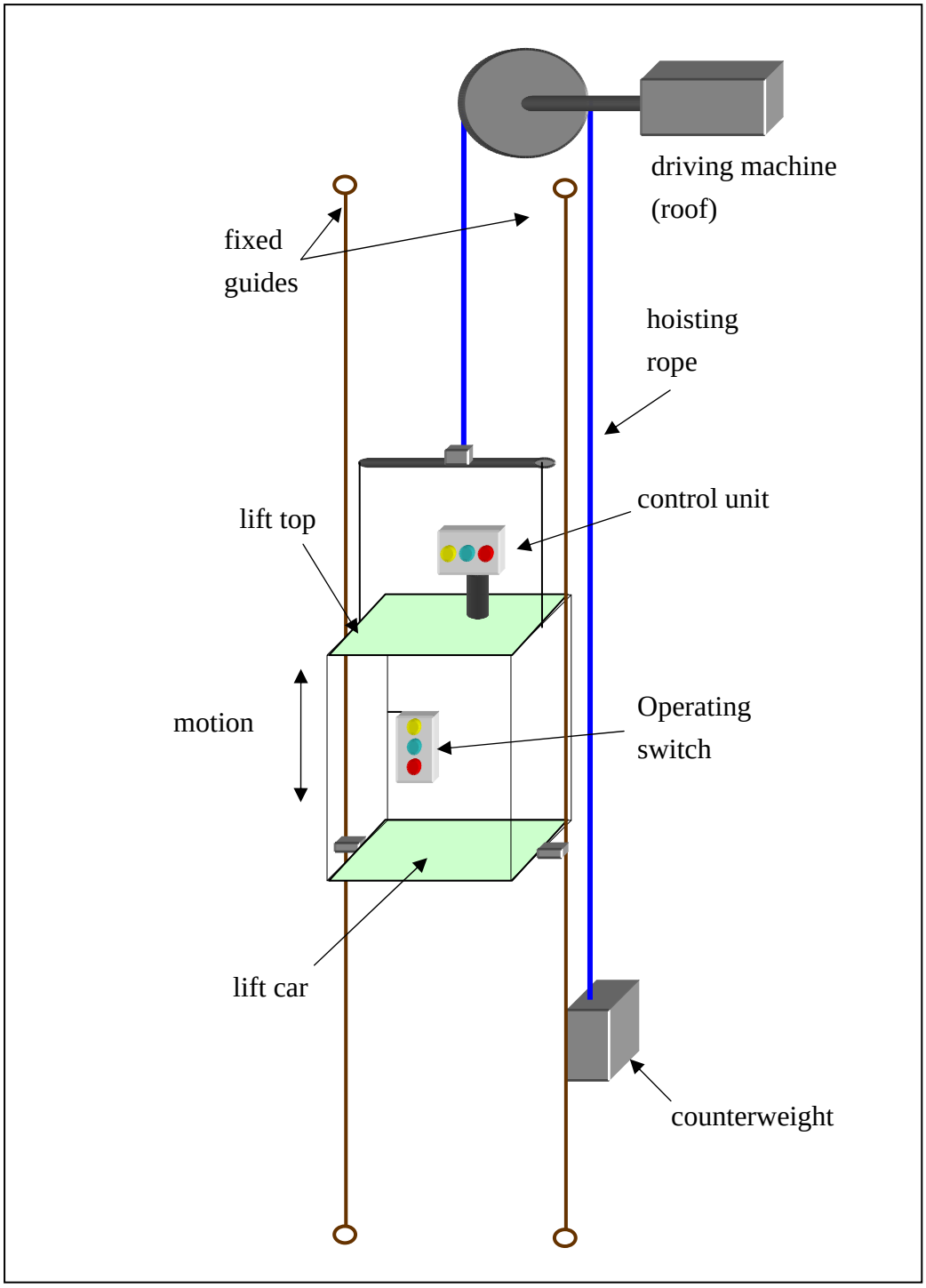
12.4 If temporary safety measures including fire protection/separation under TOP arrangement is to be altered resulting in amendment of the TOP boundary plan, AP should seek acceptance/approval from BA prior to the commencement of the alteration works. The Main Contractor should then carry out the alteration works in accordance with the latest accepted/approved TOP boundary plan before handing over to the Lift Installation Contractor.

12.5 Moreover, the fire protection/separation should not be penetrated by temporary supply of electricity, ventilation or the like. However, if unavoidable for high-rise or super high-rise buildings, where an opening is formed for ducts, pipes and wires or the like passing through the fire protection/ separation, the opening should be adequately protected in compliance with the corresponding fire resisting construction/fire barriers requirements stipulated in the relevant Codes issued by the BA. Also, prior to the commencement of such alteration works, advice on such alteration proposal from the AP must be sought. If the proposed works involve the amendment of the TOP boundary plan, prior acceptance/approval from BA on such proposal should be obtained.

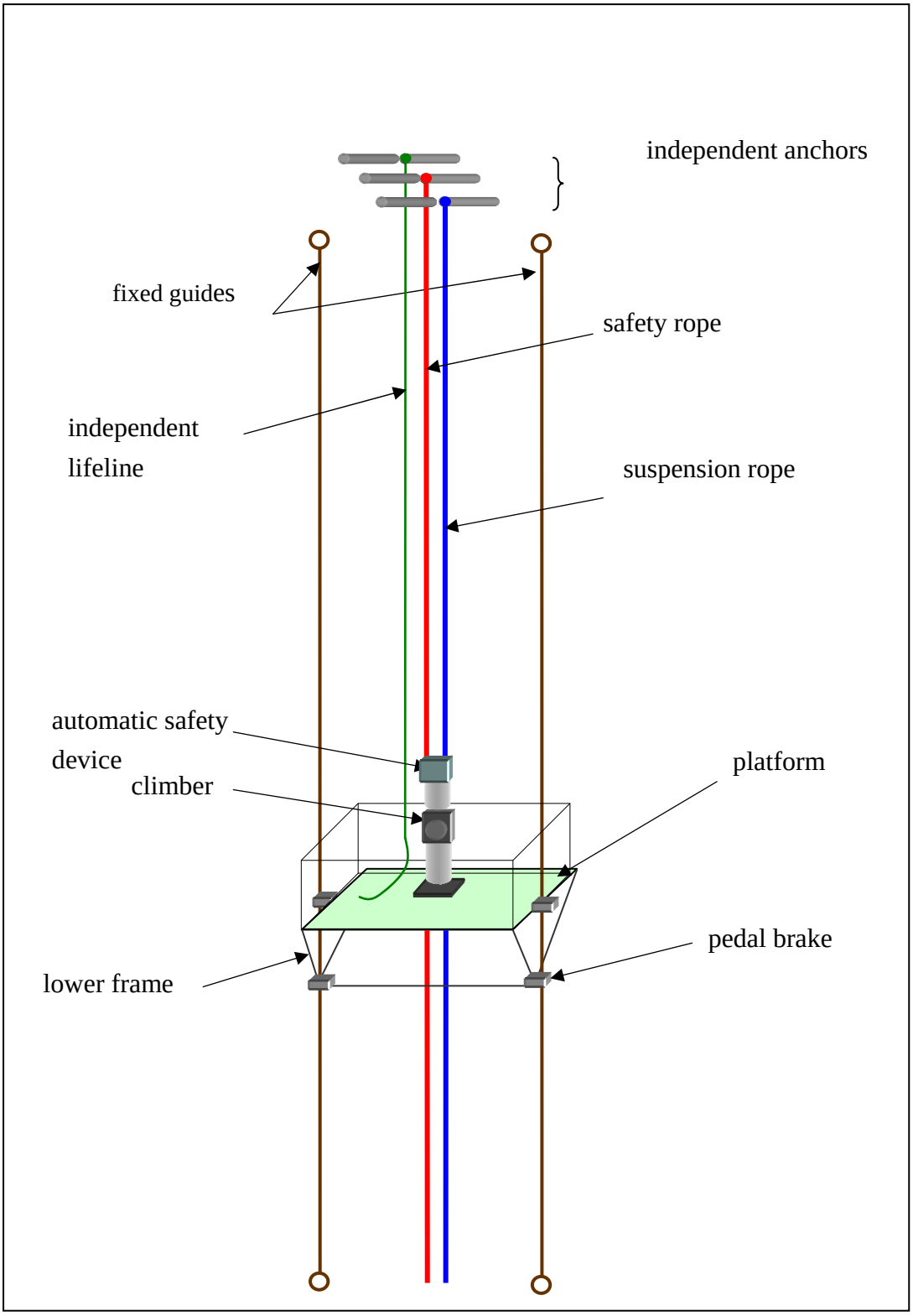
12.6 Throughout the lift installation works and with regard to the above, the Main Contractor, in coordination with the Lift Installation Contractor should continue to overall administer, manage and maintain the temporary safety measures including fire protection/separation under TOP arrangement as that shown in the latest accepted/approved TOP boundary plan.

Annex A

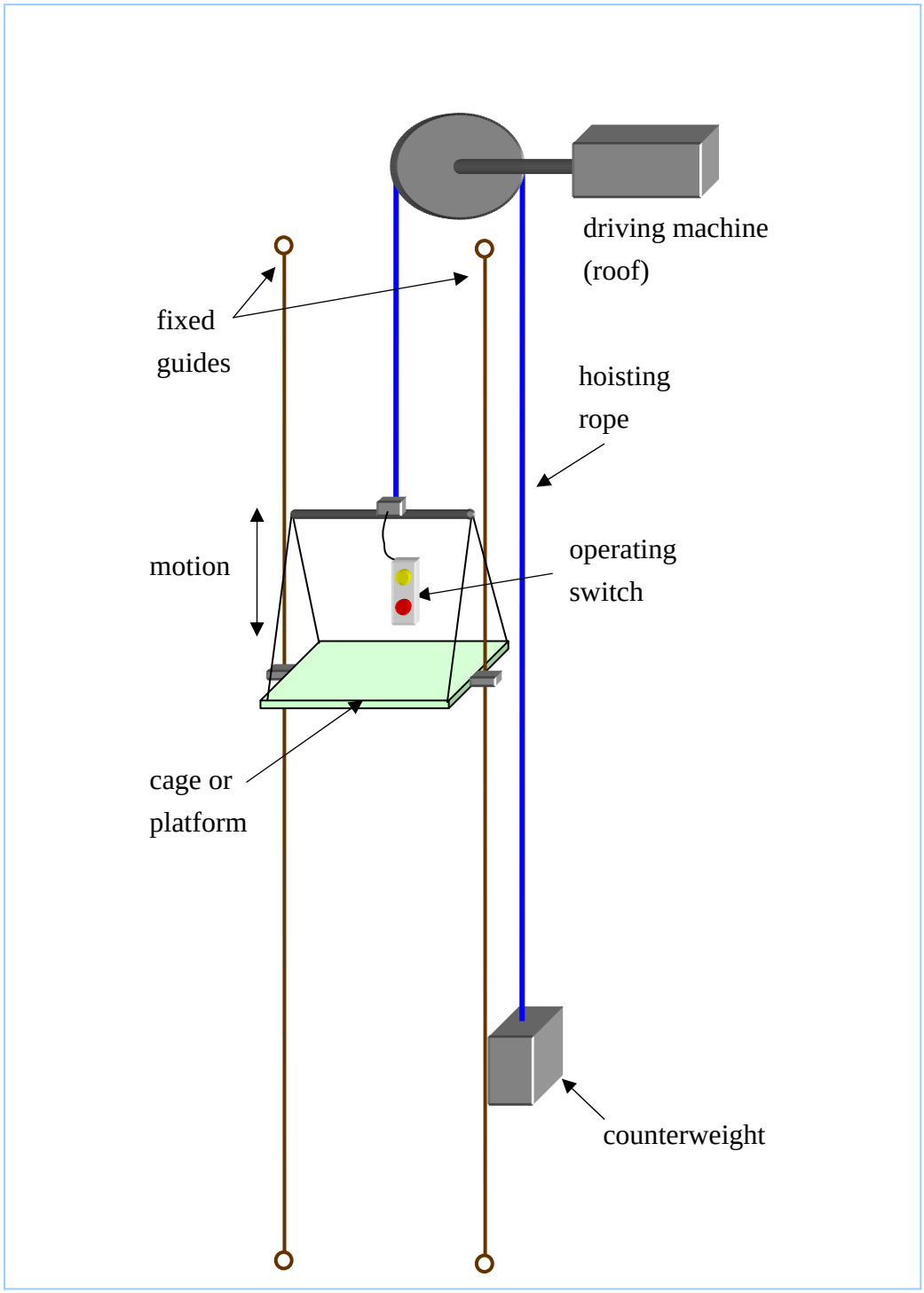
Sketch 1 – Basic configuration of a lift car of an assembled lift



Sketch 2 – Basic configuration of a Guided – SWP



Sketch 3 – Basic configuration of a Platform Lift



Annex B

List of Relevant Existing Ordinance(s)/ Regulation(s)/ Code(s) of Practice/ Practice Notes

1. Construction Sites (Safety) Regulations, Chapter 59I
2. Factories and Industrial Undertakings (Lifting Appliances and Lifting Gear) Regulations, Chapter 59J
3. Factories and Industrial Undertakings (Suspended Working Platforms) Regulation, Chapter 59AC
4. Builders' Lifts and Tower Working Platforms (Safety) Ordinance, Chapter 470
5. Lifts and Escalators (Safety) Ordinance, Chapter 327
6. Code of Practice on the Design and Construction of Lifts and Escalators, Electrical & Mechanical Services Department
7. Code of Practice for Lift Works and Escalator Works, Electrical & Mechanical Services Department
8. Code of Practice for Safety at Work (Lift and Escalator), Labour Department
9. Code of Practice for Safe Use and Operation of Suspended Working Platforms, Labour Department
10. Code of Practice for Bamboo Scaffolding Safety, Labour Department
11. Code of Practice for Metal Scaffolding Safety, Labour Department
12. Code of Practice for Safety and Health at Work for Gas Welding and Flame Cutting, Labour Department
13. Code of Practice for Safety and Health at Work for Manual Electric Arc Welding, Labour Department
14. Guidance Notes on Classification and Use of Safety Belts and their Anchorage Systems, Labour Department
15. Compliance Notes on Guided-SWP, Labour Department
16. Compliance Notes on Platform Lift, Labour Department
17. A Casebook of Fatal Accidents in Lift Installation, Maintenance and Repairing Work, Labour Department
18. Code of Practice on the Design and Construction of Buildings and Building Works for the Installation and Safe Use of Lifts and Escalators, Building Authority.
19. Code of Practice for Fire Safety in Building 2011, Building Authority
20. Code of Practice for The Provision of Means of Escape in Case of Fire 1996, Building Authority
21. Code of Practice for Fire Resisting Construction 1996, Building Authority
22. PNAP APP-29 (formerly PNAP 84) "Lift and Escalator Installations", Building Authority

Annex C

A Sample of Risk Assessment Report

C1 Frequency Classification:

Class	Frequency Categories Description
F1	Frequent – Once per month or more. More than 10 incidents per year (>10/yr).
F2	Common – Several times per year. 1 to 10 incidents per year (1/yr to 10/yr).
F3	Likely – Once every few years. 1 incident per year to once every 10 years (0.1/yr to 1/yr)
F4	Rare – Once or a few times within system lifetime. 1 incident per 10 year to once every 100 years (0.01yr to 0.1/yr)
F5	Unlikely – Do not expect to occur within system lifetime. 1 incident per 100 year to once every 1000 years (10^{-3}/yr to 0.01/yr)
F6	Improbable – Do not expect to occur beyond system lifetime. 1 incident per 1000 year to once every 10,000 years (10^{-4}/yr to 10^{-3}/yr)
F7	Incredible – Do not expect to occur. Less than once every 10,000 years ($<10^{-4}$/yr)

C2 Severity Classification:

Class	Safety Severity Categories Description
R	Service-Related – No direct effect on safety.
C1	Trivial – Any hazard that can lead to superficial injuries, which require first-aid treatment only.
C2	Minor – Any hazard that can lead to recoverable or soft tissue injuries, which are not Serious.
C3	Serious – Any hazard that can lead to amputation of a limb, a fracture or dislocation, internal injuries, loss of an eye, burns or any other injury of a kind which results in his being admitted to a hospital immediately following the accident for observation or treatment. This consequence Class also includes hazards that can lead to occupational disease with long term or unrecoverable injury to sensory or internal organ, loss of sight, loss of hearing, etc. This consequence Class should also be assigned to a hazard that can lead to more than 15 Minor injuries in a single incident.
C4	Critical – Any hazard that can lead to fatalities (<15 person/incident), multiple serious injuries in one incident (>15 injured persons/incident), or numerous Minor injuries in one incident (>200 injured persons /incident).
C5	Disastrous – Any hazard that can lead to multiple (>15) fatalities or numerous Serious injuries in one incident (>200 injured persons/incident).

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C3 Risk Matrix:

Risk Matrix						
Consequence Frequency	**R-Service Related**	**C1-Trivial**	**C2-Minor**	**C3-Serious**	**C4-Critical**	**C5-Disastrous**
F1-Frequent (>10/yr)	**R**	**B**	**A**	**A**	**A**	**A**
F2-Common (1yr to 10/yr)	**R**	**B**	**B**	**A**	**A**	**A**
F3-Likely (0.1/yr to 1/yr)	**R**	**C**	**B**	**A**	**A**	**A**
F4-Rare (0.01/r to 0.1/yr)	**R**	**C**	**C**	**B**	**A**	**A**
F5-Unlikely (10-3/yr to 0.01/yr)	**R**	**D**	**C**	**C**	**B**	**A**
F6-Improbable (10-4/yr to 10-3/yr)	**R**	**D**	**D**	**C**	**C**	**B**
F7 – Incredible (<10-4/yr)	**R**	**D**	**D**	**D**	**C**	**C**

C4 Risk Class Description:

Risk Class	Description
A	High Risk – Risk control measures should be implemented to mitigate the risk to a level that is as low as reasonably practicable (ALARP) with a top priority.
B	Medium Risk – Cost-effective risk control measures should be implemented to mitigate the risk to a level that is ALARP within a reasonable time.
C	Low Risk – Cost-effective risk control measures should be implemented to mitigate the risk to a level that is ALARP with a low priority.
D	Negligible Risk – Risk is considered acceptable; no additional risk control action is normally required. Cost-effective risk control measures may be implemented to further mitigate the risk with the lowest priority.
E	Hazard Eliminated – Hazard has been eliminated at source or no longer exists. For project-based hazard logs, this also includes hazards that do not exist within the project scope.

Annex C

C5 Priority of safety precautionary measure:

High (H) - Degree of Risk in Risk Class A

1. Review the work procedure immediately;
2. Formulate safety measures to reduce the risk to “Low” level;
3. Supervision by competent person.

Medium (M) - Degree of Risk in Risk Class B

1. Review the work procedures within reasonable time.
2. Formulate safety measures to reduce the risk to “Low” level.

Low (L) - Degree of Risk in Risk Class C to E

1. Follow in-house safety rules and statutory requirements.

Note: If the control measures are unable to reduce the risk to “Low” level:

1. The method statement shall be reviewed by the engineer;
2. Re-assess the risk according to the revised method statement and procedures.

Annex C

C6 Sample Risk Assessment Report

Index of Risk Assessment

Annex C

Project Name : Report No. :
Effective Date : Activity : Lift Installation Works
Date of Review : Prepared By :

1.0 Construction works carried out inside lift shaft before handover

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
1.1	**Construction of concrete plinth at lift pit** ●Clean up lift pit ●Delivery of construction material such as timber, steel bar, etc. to lift pit ●Timber formwork shuttering ●Steel bars fixing	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Provide proper access and working platform ● Fix metal gate at G/F lift shaft landing ● Regularly check and inspect metal gate to ensure it is maintained in good working order ● Provide three independent life-lines inside lift shaft ● Provide at least one anchorage point on landing wall at G/F ● Keep good housekeeping ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Green card training + Induction safety training + Trade Specific safety training	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Concrete pouring ●Waterproofing work at lift pit	Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft at 20 meter intervals ● Erect a 200mm toe-board at each lift shaft landing ● Properly store and stack construction material ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and	Foreman + Safety Supervisor	Respirator or dust mask	Tool-box training on the use of respirator and	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						debris ● Keep good housekeeping ● Supervise worker to properly wear respirator ● Conduct toll-box training on wearing of respirator / dust mask	+ Safety Representative		dust mask		
		Excessive noise	F3	C2	B	● Conduct noise assessment by a competent person ● Demarcate noise control zone ● Display noise control zone label ● Provide hearing protector and supervise worker to wear	Competent Person + Safety Supervisor + Safety Representative	Hearing protector	Tool-box training on the use of hearing protector	B	C
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type	Licensed electrical worker + Foreman + Safety Supervisor	-	Tool-box training on electric safety	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage system (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system	+ Safety Representative				
1.2	**Erection of scaffold inside lift shaft** ●Delivery and temporarily storing scaffold material and accessories in the vicinity of lift shaft ●Scaffold erection inside lift shaft	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor - failure to wear safety harness	F4	C3	B	● Employ trained worker to erect scaffold ● Oversee scaffold erection by a competent person ● Provide sufficient anchorage point (at least three independent life-lines) ● Provide working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		- lack of anchorage point to attach safety harness				● Supervise the works by a competent supervisor					
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
1.3	**Concrete remedial work**	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor - failure to wear safety belt - lack of	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide working platform on scaffold ● Provide sufficient anchorage point (at least three independent life-lines) ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		anchorage point to attach safety belt				● Supervise the works by a competent supervisor					
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects at 20m intervals inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C
		Eye injury - flying object / particles	F3	C3	A	● Provide suitable goggle ● Supervise worker to wear ● Remind worker to wear suitable PPE in morning briefing	Foreman + Safety Supervisor + Safety Representative	Goggle	Tool-box training on the use and maintenance of goggle	A	C

Annex C

2.0 Lift Installation Works

(Remark : If it is unavoidable that the carrying out of certain lift installation activity would necessitate alteration / realignment of lift shaft protection, temporary safety measures or fire separation as required under TOP arrangement, please refer to the requirements as stipulated in paragraph 12 of this volume. The Main Contractor should ensure no alteration to the safety measures unless prior acceptance/approval is obtained in accordance with paragraph 12.)

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
2.1	**Templates setting, plumping and alignment checking** ●Fix wooden frames on the lift shaft walls at lift shaft top and pit as templates for line plumping and alignment checking	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C
		Falling object - improperly store or	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each	Foreman + Safety Supervisor	Safety helmet with chin strap	-	A	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		stack material - improperly handle material - lack of toe-board				lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	+ Safety Representative				
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Excessive noise	F3	C2	B	● Conduct noise assessment by a competent person ● Demarcate noise control zone ● Display noise control zone label ● Supervise worker to wear hearing protector	Competent Person + Safety Supervisor + Safety Representative	Hearing protector	Tool-box training on the use of hearing protector	B	C
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on electric safety	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system					
2.2	**Fixing rail brackets and rails** ●Drill holes along the lift shaft for fixing guide rail brackets (counter weight and car cage) ●Install a winch for lifting operation ●Hoist and fix rail brackets and rails inside lift shaft by the	Fire hazard to occupant/ user and workers - drilling activity jeopardized the fire separation function of the lift shaft walls and/or fire separation under TOP arrangement - malpractice / misuse leading to	F4	C3	B	● Caution must be taken such that drilling activity would not jeopardize the fire separation function of the lift shaft walls and/or fire separation under TOP arrangement. ● Check and inspect that fire door and fire separation (including those under TOP arrangement) are maintained in good working order ● Provide training to enhance fire safety awareness of workers	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	winch ● Spot welding for rail bracket	jeopardy to proper functioning of or damage to temporary fire door / fire separation									
		Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C
		Falling object	F3	C4	A	● Fix safety nets against falling objects inside lift	Foreman +	Safety helmet with	-	A	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		- improperly store or stack material - improperly handle material - lack of toe-board				shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Safety Supervisor + Safety Representative	chin strap			
		Failure of winch	F4	C3	B	● Well prepare a method statement for installation of a winch ● Supervise winch installation by a competent supervisor ● Thoroughly examine and test a winch by a RPE before use ● Regularly check and inspect a winch by a competent person ● Verify statutory certificates are valid	Competent Person + Foreman + Safety Supervisor + Safety Representative	-	-	B	C
		Winch	F4	C3	B	● Prepare a lifting plan to	Safety	-	Rigging	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		overloading				define the rigging method applied to each material and equipment to be hoisted ● Display statutory certificates in the vicinity of the used winch ● Display a label to indicate the safe working load of the used winch ● Supervise lifting operation by a Lifting Supervisor	Officer + Lifting Supervisor + Foreman + Lifting Supervisor + Safety Representative		/banksman training + Tool-box training on lifting operation		
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove	Foreman + Safety	Respirator or dust mask	Tool-box training on the use of	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Supervisor + Safety Representative		respirator and dust mask		
		Excessive noise	F3	C2	B	● Conduct noise assessment by a competent person ● Demarcate noise control zone ● Display noise control zone label ● Supervise worker to wear hearing protector	Competent Person + Safety Supervisor + Safety Representative	Hearing protector	Tool-box training on the use of hearing protector	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on electric safety	B	C
		Fire hazards to workers working inside the lift shaft	F4	C3	B	● Refer to paragraphs 6.10 and 10.5(d) for the requirements on the prevention of fire hazards ● Develop and implement a hot-work-permit system	Foreman + Safety Supervisor + Safety	-	Tool-box training on fire prevention and fire fighting as well as safety measures	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						● Provide and maintain adequate fire fighting facilities on the site ● Keep at least one powder type fire extinguisher available on the spot when arc welding or flame cutting activity carried out ● Provide training on fire fighting and fire prevention ● Place suitable protective screens of fire retardant nature at the work spot	Representative		(including features and provisions) required or specified under the TOP arrangement		
2.3	**Electrical equipment, wiring and trunking installation** ●Drill holes for trunking installation ●Fix trunking inside lift shaft	Fire hazard to occupant/ user and workers - drilling activity jeopardized the fire separation function of the lift shaft walls and/or	F4	C3	B	● Caution must be taken such that drilling activity would not jeopardize the fire separation function of the lift shaft walls and/or fire separation under TOP arrangement. ● Check and inspect that fire door and fire separation (including those under TOP arrangement) are maintained in good working	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Lay and fix electric cable ●Install electrical equipment	fire separation under TOP arrangement - malpractice / misuse leading to jeopardy to proper functioning of or damage to temporary fire door / fire separation				order ● Provide training to enhance fire safety awareness of workers			arrangement		

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C
		Excessive noise	F3	C2	B	● Conduct noise assessment by a competent person ● Demarcate noise control zone ● Display noise control zone	Competent Person + Safety Supervisor	Hearing protector	Tool-box training on the use of hearing protector	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						label ● Supervise worker to wear hearing protector	+ Safety Representative				
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on electric safety	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Fire hazards to workers working inside the lift shaft	F4	C3	B	● Refer to paragraphs 6.10 and 10.5(d) for the requirements on the prevention of fire hazards ● Develop and implement a hot-work-permit system ● Provide and maintain adequate fire fighting facilities on the site ● Keep at least one powder type fire extinguisher available on the spot when arc welding or flame cutting activity carried out ● Provide training on fire fighting and fire prevention ● Place suitable protective screens of fire retardant nature at the work spot	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C
2.4	**Fixing landing accessories (header cases, architraves and doors, landing sills)**	Fire hazard to occupant/ user and workers - Drilling activity	F4	C3	B	● Caution must be taken such that drilling activity would not jeopardize the fire separation / function of the lift shaft walls. ● Please observe and follow	Foreman + Safety Supervisor + Safety	-	Tool-box training on fire prevention and fire fighting as well as safety measures	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Drill holes and fix header cases along lift shaft for each landing ●Drill holes on landing opening and insert metal bar (6-8 pieces) for architraves fixing (by spot weld) ●Drill holes below landing floor edge and insert metal bars (3-4 pieces), fix landing sills by spot weld and apply cements	jeopardized the fire separation function of lift shaft wall - Might affect fire separation / protection under TOP arrangement				the remark under 2.0 heading.	Representative		(including features and provisions) required or specified under the TOP arrangement		
		Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and	Foreman + Safety Supervisor	Respirator or dust mask	Tool-box training on the use of respirator and	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						debris ● Keep good housekeeping ● Supervise worker to wear respirator	+ Safety Representative		dust mask		
		Excessive noise	F3	C2	B	● Conduct noise assessment by a competent person ● Demarcate noise control zone ● Display noise control zone label ● Supervise worker to wear hearing protector	Competent Person + Safety Supervisor + Safety Representative	Hearing protector	Tool-box training on the use of hearing protector	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on electric safety	B	C
		Eye injury	F4	C3	B	● Provide suitable goggle ● Supervise worker to wear ● Remind worker to wear suitable PPE in morning briefing	Foreman + Safety Supervisor + Safety	Goggle	Tool-box training on the use and maintenance of goggle	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
							Representative				
		Fire hazards to workers working inside the lift shaft	F4	C3	B	● Refer to paragraphs 6.10 and 10.5(d) for the requirements on the prevention of fire hazards ● Develop and implement a hot-work-permit system ● Provide and maintain adequate fire fighting facilities on the site ● Keep at least one powder type fire extinguisher available on the spot when arc welding or flame cutting activity carried out ● Provide training on fire fighting and fire prevention ● Place suitable protective screens of fire retardant nature at the work spot	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C
2.5	**Installation of pit equipment**	Fire hazard to occupant/ user and workers	F4	C3	B	● Caution must be taken such that drilling activity would not jeopardize the	Foreman + Safety	-	Tool-box training on fire prevention and	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Drill holes for equipment installation ●Install pit equipment including governor, buffer, compensation rope or chain and electrical installations	- drilling activity jeopardized the fire separation function of the lift shaft walls and/or fire separation under TOP arrangement - malpractice / misuse leading to jeopardy to proper functioning of or damage to temporary fire door / fire separation				fire separation function of the lift shaft walls and/or fire separation under TOP arrangement. ● Check and inspect that fire door and fire separation (including those under TOP arrangement) are maintained in good working order ● Provide training to enhance fire safety awareness of workers	Supervisor + Safety Representative		fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement		

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C
		Excessive noise	F3	C2	B	● Conduct noise assessment by a competent person	Competent Person	Hearing protector	Tool-box training on the	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						● Demarcate noise control zone ● Display noise control zone label ● Supervise worker to wear hearing protector	+ Safety Supervisor + Safety Representative		use of hearing protector		
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on electric safety	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						system					
		Eye injury	F4	C3	B	● Provide suitable goggle ● Supervise worker to wear ● Remind worker to wear suitable PPE in morning briefing	Foreman + Safety Supervisor + Safety Representative	Goggle	Tool-box training on the use and maintenance of goggle	B	C
		Fire hazards to workers working inside the lift shaft	F4	C3	B	● Refer to paragraphs 6.10 and 10.5(d) for the requirements on the prevention of fire hazards ● Develop and implement a hot-work-permit system ● Provide and maintain adequate fire fighting facilities on the site ● Keep at least one powder type fire extinguisher available on the spot when arc welding or flame cutting activity carried out ● Provide training on fire	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						fighting and fire prevention ● Place suitable protective screens of fire retardant nature at the work spot					
2.6	**Installation of traction machine and control panel at M/C room** ●Hoist traction machines, control panels and machine room equipment onto roof floor by use of tower crane	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C
	●Use trolley to move equipment inside machine room	Falling object - improperly store or stack material	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack	Foreman + Safety Supervisor + Safety	Safety helmet with chin strap	-	A	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Hoist and move machine inside machine room by use of lifting appliances and lifting gears ●Carry out M/C wiring works	- improperly handle material - lack of toe-board				material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Representative				
		Failure of the used lifting gears	F3	C3	A	● Prepare a lifting plan to define the rigging method applied to each material and equipment to be hoisted ● Thoroughly examine and test the used lifting gears by a RPE before use ● Regularly check and inspect the used lifting gears to ensure no patent detects ● Properly store lifting gears after use ● Supervise lifting operation by a Lifting Supervisor	Safety Officer + Lifting Supervisor + Foreman + Safety Supervisor + Safety Representative	-	Too-box training on lifting operation	A	C
		Lifting gears overloading	F3	C3	A	● Prepare a lifting plan to define the rigging method applied to each material	Safety Officer +	-	Tool-box training on lifting operation	A	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						and equipment to be hoisted ● Check to ensure a distinguish mark is equipped on the used lifting gears ● Select a suitable lifting gears to hoist material ● Supervise lifting operation by a Lifting Supervisor	Lifting Supervisor + Foreman + Lifting Supervisor + Safety Representative				
		Improper rigging method	F3	C3	A	● Select a suitable lifting gears to hoist material ● Supervise lifting operation by a Lifting Supervisor	Lifting Supervisor + Lifting Supervisor + Safety Representative	-	Tool-box training on lifting operation	A	C
		Back injury - improper posture	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving	Competent Person + Safety	Protective glove	Tool-box training on manual handling	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		- insufficient mechanical aid - lack of training				material and equipment ● Supervise manual handling activity by a competent person	Representative				
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representati	-	Tool-box training on electric safety	B	C

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Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system	ve				
2.7	**Counter weight assembly** ●Modify the erected scaffold to suit for the works ●Assembly counter weight frame ●Hoist and fix counter weight frame by lifting appliances and lifting gears	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing - slippery floor	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage point (independent life-line)	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C
		Falling object	F3	C4	A	● Fix safety nets against falling objects inside lift	Foreman +	Safety helmet with		A	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Put counter-ballast onto the counter weight frame	- improperly store or stack material - improperly handle material - lack of toe-board				shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Safety Supervisor + Safety Representative	chin strap			
		Failure of the used lifting appliances and lifting gears	F3	C3	A	● Prepare a lifting plan to define the rigging method applied to each material and equipment to be hoisted ● Thoroughly examine and test the used lifting appliances and lifting gears by a RPE before use ● Regularly check and inspect the used lifting gears to ensure no patent detects ● Properly store lifting gears after use ● Supervise lifting operation	Safety Officer + Lifting Supervisor + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on lifting operation	A	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						by a Lifting Supervisor					
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and	Licensed electrical worker + Foreman		Tool-box training on electric safety	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the effectiveness of earthing system	+ Safety Supervisor + Safety Representative				
2.8	**Car cage assembly and roping** ●Modify the erected scaffold to suit for the works ●Erect a working platform below	Fall of person - lack of proper access / working platform - inadequate strength or insecure fencing	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in place when metal scaffold is used ● Implement a	Competent Person + Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap + Safety harness + Fall arresting device + Anchorage	Silver card training + Green card training + Induction safety training + Trade Specific safety training	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	the car cage ●Assembly car cage frame ●Hoist car cage frame with lifting appliances and lifting gears ●Fix car floor and ceiling on the frame ●Install car wall and car top equipment ●Fix suspension ropes on car top and counter weight frame	- slippery floor				permit-to-work system ● Supervise the works by a competent supervisor		point (independent life-line)			
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C
		Back injury - improper posture - insufficient mechanical aid - lack of training	F3	C2	B	● Carry out manual handling assessment ● Provide mechanical aid / trolley to assist in moving material and equipment ● Supervise manual handling activity by a competent person	Competent Person + Safety Representative	Protective glove	Tool-box training on manual handling	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Inhalation of dust	F3	C2	B	● Properly cover dusty material ● Regularly remove construction waste and debris ● Keep good housekeeping ● Supervise worker to wear respirator	Foreman + Safety Supervisor + Safety Representative	Respirator or dust mask	Tool-box training on the use of respirator and dust mask	B	C
		Electrocution	F4	C3	B	● Check and inspect electrical installations by a licensed electrical worker ● Check and inspect electrical tools and equipment is maintained in good working order ● Use water-proof type socket, plugs and couplers ● Provide temporary electric distribution board with a protection class of IP54 ● Adopt reduced voltage systems (110V) for portable and hand-held tools ● Provide and check the	Licensed electrical worker + Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on electric safety	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
						effectiveness of earthing system					
2.9	**Adjustment and tuning to the lift** ●Electric cable connection ●Landing plates adjustment ●Landing door locks adjustment ●Equipment testing in machine room ●Testing of governor ●Testing of brake system	Fire hazard to occupant/ user and workers - malpractice / misuse leading to jeopardy to proper functioning of or damage to temporary fire door / fire separation	F4	C3	B	● Check and inspect that fire door and fire separation (including those under TOP arrangement) are maintained in good working order ● Provide training to enhance fire safety awareness of workers	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C
		Fall of person - lack of proper access / working platform - inadequate	F4	C3	B	● Check and inspect the erected scaffold by a competent person ● Verify a valid Form 5 is in place ● Provide a working platform on scaffold ● Check earthing device is in	Competent Person + Foreman + Safety Supervisor +	Safety helmet with chin strap + Safety harness + Fall arresting	Silver card training + Green card training + Induction safety training	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
	●Testing of safety gear ●Testing of electrical safety devices	strength or insecure fencing - slippery floor - tripping hazard				place when metal scaffold is used ● Implement a permit-to-work system ● Supervise the works by a competent supervisor	Safety Representative	device + Anchorage point (independent life-line)	+ Trade Specific safety training		
	●Testing of electrical equipment	Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft ● Erect a toe-board at each lift shaft landing ● Properly store and stack material and tools ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C
		Electrocution - contact with live electrical parts in control panel or switch	F4	C3	B	● Supervise testing and commissioning by a qualified and licensed electrical worker ● Adopt appropriate insulating hand-held tools or equipment to conduct	Licensed electrical worker + Foreman + Safety	Electrical insulation glove + Electrical insulation blanket / mat	Tool-box training on electric safety	B	C

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		board				testing and commissioning ● Place electrical insulating blanket / mat to protect worker from electric shock ● Properly wear electrical insulation glove ● Check the effectiveness of earthing system	Supervisor + Safety Representative				

Annex C

Item	Activities / Locations	Hazard	Degree			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Fire hazards to workers working inside the lift shaft	F4	C3	B	● Refer to paragraphs 6.10 and 10.5(d) for the requirements on the prevention of fire hazards ● Develop and implement a hot-work-permit system ● Provide and maintain adequate fire fighting facilities on the site ● Keep at least one powder type fire extinguisher available on the spot when arc welding or flame cutting activity carried out ● Provide training on fire fighting and fire prevention ● Place suitable protective screens of fire retardant nature at the work spot	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C

Annex C

3.0 Handover of lift shaft under TOP arrangement

(Remark : If it is unavoidable that the carrying out of certain lift installation activity would necessitate alteration / realignment of lift shaft protection, temporary safety measures or fire separation as required under TOP arrangement, please refer to the requirements as stipulated in paragraph 12 of this volume. The Main Contractor should ensure no alteration to the safety measures unless prior acceptance/approval is obtained in accordance with paragraph 12.)

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
3.1	**Handing over of (or a portion of) lift shaft to the Main Contractor or the developer**	Fire hazard to occupant/ user and workers due to incurrence of jeopardy to the proper functioning of or damage to temporary fire door / fire separation under TOP arrangement	F4	C3	B	● Check and inspect that fire door and fire separation (including those under TOP arrangement) are maintained in good working order ● Main Contractor to ensure that the fire separation / protective measures with TOP arrangement are maintained in accordance with the last TOP boundary plans accepted / approved by the Building Authority. ● Provide training to enhance fire safety awareness of workers	Foreman + Safety Supervisor + Safety Representative	-	Tool-box training on fire prevention and fire fighting as well as safety measures (including features and provisions) required or specified under the TOP arrangement	B	C

Annex C

Item	Activities / Locations	Hazard	Risk Rating			Control Measures	Action	PPE	Training	Original risk	Residual Risk
			Likelihood	Consequence	Risk						
		Falling object - improperly store or stack material - improperly handle material - lack of toe-board	F3	C4	A	● Fix safety nets against falling objects inside lift shaft at 20 meter intervals ● Erect a 200mm toe-board at each lift shaft landing ● Properly store and stack construction material ● Keep good housekeeping ● Equip hand-held tool with hand strap	Foreman + Safety Supervisor + Safety Representative	Safety helmet with chin strap	-	A	C

Annex D

A Sample of Pre-work Check Table

The followings are the sample of some key safety measures should be checked and inspected to ensure full compliance prior to proceeding lift installation works further.

Training	Workers should attend the safety training summarized below: ● Mandatory safety training (Green Card) (Para. 11.4 (i)) ● Silver card training on Lift Machine Mechanic and Worker for Lift Installation (Installation and Maintenance) (Para. 11.4 (iii)) ● Induction safety training conducted by the Main Contractor in which the contents include use of PPE, working at height, prevention of falling objects, lifting safety, emergency procedures, electricity safety, manual handling and etc. ● Trade specific safety training for lift installation works conducted by the Lift Installation Contractor (Para. 11.4 (ii))
Pre-work Checking	Before works, check the followings ● Criteria and requirements as stipulated under TOP arrangement (Para. 12) ● Lift installation risk assessment and method statement (Para. 6.1) ● Lift installation safety plan (Para. 6.5) ● Lift shaft hand over checklist (Para. 6.7) ● Requirement on the prevention of fire hazard for carrying out hot works and electric arc process inside a lift shaft (Para. 6.10 and 7.31) ● Safety access to deep lift pit (Para. 6.14) ● Overall integrity of the erected scaffoldings and working platforms (Para. 7.5) ● Valid inspection report Form 5 (Para. 7.8) ● Safety nets provided to catch falling objects (intervals not more than 20M in height) (Volume 1 – Para. 7.5 (b)) ● Earthing device for metal scaffolding (Volume 1 – Para. 7.7) ● A log book to register the location of the landing gate key and the person who holds such key (Para. 7.17) ● Warning notice summarized the safety precautions when entering a lift shaft displayed at each lift shaft landing (Para. 7.18) ● Lighting and ventilation (Para. 7.26 and 7.29) ● Design and method statement for the construction of anchorages

	(Para. 9.8 and 9.9) ● Communication equipment such as walkie-talkie (Para. 11.2), and motion sensor and alarm generator in case the worker is required to work alone (Para. 6.16(b)) ● Adequate anchorage points provided to attach at least 3 sets of independent lifelines inside lift shaft (Para. 11.7) ● Independent life-line and fall arresting device (Para. 11.7 & 11.8) ● Full-height landing gates and toe boards ● Certificates of the used lifting appliances and lifting gears ● Electrical tools and appliances, electric power supply (110V) and etc. (Para. 7.25 & 7.26) ● Personal protective equipment such as safety helmet with chin strap, safety shoes and reflective garment (vest or equivalent) (Para. 11.6 & 11.9)  Full-height Landing Gate
Permit-to-work system	Implement permit-to-work system on the hazardous trade processes to avoid simultaneous working by different levels on daily basis (Para. 12) ● Conduct daily briefing, post the working permit on the G/F landing prominent place ● Carry out post works checking before cancellation of the permit
Access into lift pit	● Provide suitable anchorage or tailor-made cross beam (BSEN 795) with retractable device (Para. 9.2(a)) ● Metal landing gates, before opening the gates, workers shall fix lanyard on the nearest independent lifeline, open the gates, get on the working platform and close the gates ● Leave the working platform and get on the landing, close the gates and then detach the lanyard on the independent life-line

Annex E

Sample of Lift Shaft Handover Checklist

Site Location : _____ Lift No.: _____

Specify the boundary and the portion if incomplete lift shafts to be handed over:

_____

The following provisions and items shall be provided and checked before handover:
(Please fill "✓"in the blank)

1. **Machine Room：**	**Yes**	**No**	**N/A**	**Remark**
- Provide temporary / permanent lockable door and display warning notice at the entrance (including pulley room)	☐	☐	☐	_____
- Fill unnecessary holes	☐	☐	☐	_____
- Clean up machine room without debris	☐	☐	☐	_____
- Cover the openings on floor with warning notices	☐	☐	☐	_____
- Provide temporary electric power supply and lightings	☐	☐	☐	_____
- Provide safe means of access	☐	☐	☐	_____
- Provide access for machine platforms(not on same level)	☐	☐	☐	_____
- Provide guardrails for machine platforms(not on same level)	☐	☐	☐	_____
- Complete the supporting frame & mesh for top vent	☐	☐	☐	_____
- Provide hoisting equipment certificates with SWL notice	☐	☐	☐	_____

2. **Lift shaft：**	**Yes**	**No**	**N/A**	**Remark**
- Provide full height protective cages at entrances with warning notice	☐	☐	☐	_____
- Provide water proof platform (incomplete lift shaft)	☐	☐	☐	_____
- Provide protective platform (incomplete lift shaft)	☐	☐	☐	_____
- Made good lift shaft surface (e.g. fill up holes & clear protruded obstructions such as steel bars)	☐	☐	☐	_____
- Provide 3 independent lifelines with adequate length in each lift shaft	☐	☐	☐	_____
- Provide partition wall / net between lift shaft (partial shaft handover)	☐	☐	☐	_____
- Cover openings at blind hoist way rooms (inspection room)	☐	☐	☐	_____

- Provide temporary electric power supply and lightings	☐	☐	☐	_____

3.	**Lift Pit：**	**Yes**	**No**	**N/A**	**Remark**
	- Provide warning notices and notice board to display working permit	☐	☐	☐	_____
	- Clean lift pit without debris and water	☐	☐	☐	_____
	- Provide at least one fall protection anchor at ground floor landing	☐	☐	☐	_____

4.	**Scaffold：**	**Yes**	**No**	**N/A**	**Remark**
	- Provide bamboo / metal scaffolds as per agreed drawing	☐	☐	☐	_____
	- Post valid Form 5 at G/F entrance	☐	☐	☐	_____

Checked by Main Contractor Representative

Name :	**Title**	**Date**
Signature :		

Received by Lift Installation Contractor Representative	**Title**	**Date**
Name :		
Signature :		

Annex F

Major Considerations before and after handing over of Lift Shaft to the Lift Installation Contractor by the Main Contractor

Event	Main Contractor	Lift installation contractor
Completion of lift shaft construction works	- provide and maintain all safety provisions for lift shaft and all temporary safety measures and protection/fire separation as required if the building is under TOP arrangement. - manage and administer the permit-to-work systems on works inside a lift shaft by other trade workers	- finalize a lift installation safety plan - list the names of supervisory staff to join the planning team - define the role and responsibility of the supervisory staff - manage and administer permit-to-work systems on specified trade processes
Before handing over of lift shaft	- form a planning team for lift installation works - determine the boundary and extent of lift shaft to be handed over - prepare a checklist for handing over the lift shaft - appoint a staff to oversee the execution of permit-to-work systems	- form / join a planning team for lift installation works - determine the boundary and extent of lift shaft to be taken over - prepare to check and verify the items specified under the checklist
During handover of lift shaft	- explicitly address the lift shaft conditions and those safety provisions to be handed over	- properly acknowledge the safety provisions to be taken over
After handing over the lift shaft	- continue to maintain the safety provisions for lift shaft (except those handed over to the Lift Installation Contractor) and all temporary safety measures and protection/fire separation as required if the building is under TOP arrangement - continue to manage and administer permit-to-work system by other trade workers	- prepare method statement and conduct risk assessment for each lift installation process - initiate meeting of the planning team in case works deviates from the lift installation safety plan are needed - continue to manage and administer permit-to-work systems on specified trade processes

Annex G

A Sample of Examination Form for Registered Lift Engineer to examine the assembled lift

"Permit to Work" on a Car Top Before Its First Run

Lift No. : _____ Building / Address : _____

The items listed below have been confirmed in safe working condition. Please put a "√" in the box ☐ to confirm the item or delete if inappropriate:

☐ Emergency STOP switch on car top control box in normal condition

☐ The "INSPECTION" switch on car top control box in normal condition

☐ Car top railing (not applicable if no fall hazard on car top)

☐ Car top lighting in normal condition

☐ Brake operation in normal condition

***** The INSPECTION" switch on car top control box shall be shifted to inspection mode and be maintained in the locked position. *****

_____	_____	_____
Name of RLE	RLE No.	Inspection Date