CONSTRUCTION INDUSTRY COUNCIL
RESEARCH POLICY
DECEMBER 2018
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1. INTRODUCTION

One of the prime functions of the Construction Industry Council (CIC), which was formed on 1 February 2007 in accordance with the CIC Ordinance (Cap. 587), is to encourage research activities and the use of innovative techniques, and to establish or promote the establishment of standards for the construction industry.

The CIC believes that research and innovation are of fundamental importance to the sustainable development of the Hong Kong construction industry. Hence, the CIC is committed to working closely with industry stakeholders to drive innovation and initiate practical research projects.

The CIC Research and Technology Development Fund (CIC R&D Fund) has been set up to provide financial support for research projects which can benefit the Hong Kong construction industry through practical application of the research outcomes, covering the areas of (i) Building Information Modelling (BIM); (ii) Construction Procurement; (iii) Construction Productivity; (iv) Construction Safety and Health; and (v) Environment and Sustainability.

This Research Policy provides a framework for governance of the CIC R&D Fund in line with CIC’s vision to drive for excellence in the construction industry.
2. CIC R&D FUNDING SCHEMES

Three R&D funding schemes are administered by the CIC, as illustrated in the Figure below:

(i) Explorative Project Scheme and the associated Site Trial Scheme;
(ii) Collaborative Project Scheme; and
(iii) Key Performance Indicator (KPI) Improvement Project Scheme.

The Applicant may apply for funds under the various schemes, in a sequential manner, to take forward a major project which requires progressive research and development work in order to achieve practical implementation in construction practice. Each case will be considered by the CIC on its own merits.
2.1 Explorative Project Scheme and the Associated Site Trial Scheme

The Explorative Project Scheme (EPS) funds research projects to explore innovative ideas proposed by local research institutes. While the research products generated from these projects may not have immediate practical application in industry, they are expected to provide essential groundwork for further development of the innovative ideas for practical use.

The Site Trial Scheme (STS) supplements the EPS, by providing additional funding support for the research institute to carry out site trials to verify the research findings and further develop the research products generated from the EPS. Capped at 50% of the actual cost of the project funded under the EPS, the STS aims to facilitate the realisation and commercialisation of the research products from the explorative phase of the project. Intellectual property (IP) generated from the EPS / STS projects will be owned by the CIC.

2.2 Collaborative Project Scheme

Under the Collaborative Project Scheme (CPS), a local research institute (Lead Applicant) is required to collaborate with an industry organisation (the Co-applicant or industry partner) to address a specific need. The CPS deliverables or research products should have industry-wide applicability. The Co-applicant will be responsible for funding not less than 25% of the project cost and steering the project direction with the CIC to achieve the desired project objectives. Two options with different contributions and ownership of IP rights are available under the CPS:

<table>
<thead>
<tr>
<th>Option</th>
<th>CIC Contribution</th>
<th>Industry Co-applicant Contribution</th>
<th>Intellectual Property (IP) Right</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP75</td>
<td>75%</td>
<td>25%</td>
<td>Owned by CIC, the Co-applicant will be granted exclusive use of the research products for 4 years</td>
</tr>
<tr>
<td>CP50</td>
<td>50%</td>
<td>50%</td>
<td>Owned by the Co-applicant</td>
</tr>
</tbody>
</table>

2.3 KPI Improvement Project Scheme

The KPI Improvement Project Scheme (KPIIS) encourages research institutes/industry organisations (the Applicant) to undertake research to develop new design methods, devices, processes, systems or applications for practical adoption in the construction industry. The main research objective is to achieve
significant improvement in site safety (e.g. by eliminating potential hazards, enhancing safety performance, reducing risk exposure, etc.), site productivity (e.g. reducing cycle time/manpower/cost, providing higher yield, etc.) or sustainability (e.g. reducing carbon emissions or construction and demolition waste, etc.).

As an example, developing innovative offsite prefabrication systems that can eliminate or reduce the use of external scaffolding and on-site manpower, or reduce crane usage and minimise damage to the prefabricated components during site installation, can lead to significant improvement in construction safety, productivity and quality. Another example is the development of innovative processes to optimise the logistics in order to minimise the cost and increase the reliability of delivery of MiC modules to different types of construction sites in the urban areas of Hong Kong. Under the KPIS, the Applicant should propose measurable KPI(s) for the assessment of the improvement. The CIC will contribute up to 70% of the project cost. The IP of the research products will be owned by the Applicant.

2.4 Joint Funding

The CPS is also applicable to research proposals which seek joint funding support from both the CIC and other research funding schemes initiated by the HKSAR Government (e.g. the Innovation and Technology Fund under the Innovation and Technology Commission). In such cases, the Applicant/Co-applicant should inform the CIC about their application for joint funding under the other research funding scheme, and the CIC could play the role as an industry partner. Ownership of the IP of the research products as well as all the associated terms and conditions will be subject to negotiation with relevant parties on a case-by-case basis.

2.5 Benefit Sharing

Applicants under the CPS and the KPIS are encouraged to offer sharing of the benefits generated from the use of the research products by the industry. The CIC will take benefit sharing into account in assessing the application. Benefit sharing may be in the form of waiving of license and/or royalty fees in using the research products, and incentives to encourage use of the research products such as offering a discounted price to local industry stakeholders, etc. The CIC expects site trials to be carried out under these two schemes.
2.6 Promotion of Research Outcomes

In order to promote the use of the research products for enhancing the performance of the construction industry, researchers are required to submit written reports for dissemination to the industry, and are invited to submit research papers for publication in the CIC Research Journal. They are also required to collaborate with CIC to showcase the research products, e.g. at CIC’s Construction Innovation and Technology Application Centre (CITAC), make videos about the research project and/or the research products, and to present the research data and findings in seminars/conferences organised by the CIC for the industry, as deemed appropriate. They may also be asked to assist in the development of measures which could benefit the industry as a whole, such as to devise means to create market demand and to identify the supply chain for the research products. In undertaking the various means of promotion, researchers are expected to resolve any issues regarding permissions that may be required for the release of data provided by others.
3. APPLICATION AND ASSESSMENT

3.1 Eligibility for Application

EPS and STS: All research institutes\(^1\) established or registered under the laws of the Hong Kong SAR are eligible to apply for funding from CIC for conducting construction-related research under the EPS. Under the STS, the applicant must be the research institute undertaking the project funded under the EPS, and the project should be close to substantial completion with useful findings prior to application.

CPS: The Lead Applicant must be a research institute, collaborating with an industry organisation\(^2\) (the Co-applicant or industry partner). The Lead Applicant should obtain the prior consent of the collaborating industry partner if the latter is referred to in the application form. If the application is successful, the Lead Applicant, the Co-applicant and the CIC will enter into an Agreement prepared by CIC. There could be more than one collaborating industry organisation under the CPS.

KPIS: The Applicant must be a research institute or an industry organisation registered under the laws of the Hong Kong SAR.

3.2 Application Procedures

The CIC will invite research proposals from research institutes and industry organisations. The CIC will send an acknowledgement to the Applicant within five working days of receipt of an application. The Applicant shall provide the following documents to the CIC:

- A completed application form duly signed by the Applicant and the Co-applicant, if applicable. This form can be downloaded from [http://www.cic.hk/eng/main/research_data_analytics_/research_fund_application/](http://www.cic.hk/eng/main/research_data_analytics_/research_fund_application/).

- A research proposal of no more than five A4-sized pages (Times Roman, font 12 or larger), containing the scope and objectives of the project, key research team members (Principal Investigator/Author of reports and supporting specialists), methodology, data sources, equipment required, expected deliverables/research products, estimated project cost and programme, funding

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\(^1\) Research institutes are the research centres under the ITC and local universities (including all University Grants Committee (UGC)-funded institutions), and self-financing degree-awarding institutions registered under the Post-Secondary Colleges Ordinance (Cap. 320) or Vocational Training Council Ordinance (Cap. 1130).

\(^2\) An industry organisation under the CIC R&D Fund is defined as a construction-related organisation registered under the laws of Hong Kong. It can be a public body, statutory body, private company, non-governmental organisation, trade association, or professional body which has legal authority to enter into a contract.
from other sources obtained or being sought, if applicable, and expected benefits to the construction industry;

- Letter(s) of support from the collaborating organisation(s), if applicable;

- Letter(s) from the sponsoring organisation(s), if any; and

- One-page Curriculum Vitae (CV) for each key research team member, which should include the member’s qualifications, track record in the relevant research fields, and a signed declaration of any potential/actual conflicts of interests.

### 3.3 Assessment Procedures

The CIC will follow the steps below in assessing the research proposals (see also Annex A):

(i) The CIC Secretariat will evaluate the research proposals and compile a shortlist, and may seek clarification or supplementary information from the Applicant.

(ii) The shortlisted research proposals will be submitted to the relevant CIC Committees for review and approval. The Applicant is required to present the research proposal to the Committee(s), and may also be requested to revise the proposal.

(iii) The CIC will notify the Applicant in writing of the assessment results. If successful, an Agreement will be signed between the Applicant and the CIC. The approved research proposal will form part of the Agreement. If unsuccessful, the reason will be given to the Applicant.

As regards IP rights, benefit sharing and related arrangements, these will be subject to negotiation among the parties concerned and must be agreed before the commencement of the project and set out in the Agreement.
3.4 Assessment Criteria

The key assessment criteria are as follows:

Value of Research

Whether

(i) the research products will be of practical use to a wide spectrum of construction projects in Hong Kong;
(ii) the research products can benefit the construction industry in the areas of construction safety and health; construction productivity; environment and sustainability; construction procurement and Building Information Modelling (BIM);
(iii) manufacturers and supply chains will need to be found or established for practical use of the research products.

Cost-effectiveness

Whether

(i) the research products can be readily applied by the industry in a cost-effective manner as compared with traditional methods, including whether there is an economic incentive for adopting the research products in construction projects and whether there is a business case for supply of the products;
(ii) the cost of the research project is justified by the benefits expected to be derived from use of the research products;
(iii) there is/will be any duplication of work by other institutions/organisations.

Research Implementation

Whether

(i) the capabilities of the research team are strong, taking into account the research team’s research and management experience, track record, and staff resources adequacy and availability during the proposed programme;
(ii) the research scope, methodology, available data sources and equipment, and the expected deliverables or research products are likely to meet the research objectives;
(iii) site trials and practical tests are needed to validate the research findings and to prove the feasibility of practice use of the research products in construction projects;
(iv) an industry organisation is needed to collaborate with the research institute to achieve practical use of the research products;

(v) the estimated project cost and programme are reasonable and realistic.

3.5 Research Budget

The research budget should be clearly stated, with a detailed breakdown of the estimated expenditure that will be incurred between commencement and completion of the research project, for the following items:

**Manpower:** The approved project funding can be used to cover the salary and general fringe benefits of the staff who are specifically employed for the project.

**Equipment:** Justification for any equipment proposed to be purchased or hired should be provided for the CIC’s approval. The Applicant is required to submit to CIC a list of equipment to be purchased or hired for the project, together with the costs to be charged during project implementation. The CIC may require the Applicant to transfer any equipment purchased under the project to the CIC or another party on completion of the project. Otherwise, the Applicant is required to keep all the equipment purchased for at least two years after completion of the project or termination of the Agreement.

**Conferences/Seminars:** The Applicant is allowed to present the interim/final research findings at relevant conferences/seminars on obtaining prior permission from the CIC.

**Administrative Overheads:** For research institutes, the administrative overheads, including the audit cost, can be included in the project budget.

The CIC will pay actual costs incurred up to the CIC approved funding. The following expenses shall not be included in the funding application and research budget: general office and IT equipment; the costs of buying, setting up, renting or renovating an office; the formation or establishment of a limited company or organisation; depreciation/amortisation or provisions not representing actual expenses incurred; entertainment expenses; meals; local travelling expenses within Hong Kong; cash prizes for competitions; capital financing expenses (e.g. mortgage and interest on loans/overdrafts); and other costs not directly related to the project.
3.6 Approved Funding

The approved funding for a proposed project may be less than that requested if the CIC considers that any of the expenses are excessive or do not fall within the scope of CIC R&D funding scheme. Any record of mishandling of approved funds or lack of discipline in financial management is a factor which the CIC will take into account in considering future requests from the same Applicant or the same research team. The CIC reserves the right to claim against the Applicant for any loss, damages, costs, expenses and liabilities suffered or incurred by the CIC in connection with or by reason of the Applicant’s failure to handle the approved funds properly.
4. RESEARCH IMPLEMENTATION

4.1 Project Monitoring

4.1.1 Reporting

The effectiveness of an approved research project will be assessed by the CIC, by comparing the research products obtained against the project’s original objectives and the target deliverables as set out in the research proposal. The Applicant is required to submit three types of reports as mentioned below. Where appropriate, these reports will be submitted to relevant Committee(s), Sub-committee(s), Task Force(s) and/or Working Group(s) of the CIC for review and endorsement. The CIC may witness any field trials and field or laboratory tests during the project implementation. In order to benefit the industry, the information and data in the reports may be made public and disseminated to relevant stakeholders as deemed appropriate by the CIC.

**Progress Reports:** The Applicant is required to submit to the CIC a progress report in the first month and additional progress reports every three months. The format of the progress reports will be specified by the CIC. The progress report should cover but not be limited to the consultations made, progress of key activities, purchases, expenditures, achievement of deliverables, and the work to be carried out in the remaining stages of the project.

**Interim Reports:** Interim reports may also be required by the CIC or submitted by the Applicant under the research proposal, to report significant interim findings.

**Final Report and Executive Summary:** The Applicant is required to submit to the CIC a final report with an executive summary, in a format specified by the CIC by the time specified in the Research Agreement. The report should cover, inter alia,

(i) a review of relevant literature,
(ii) a description of the work done,
(iii) the methodology and data sources,
(iv) views from relevant stakeholders,
(v) the raw data and quantifiable results (where applicable),
(vi) any other related research products such as new design methods, devices, equipment processes, systems, applications, etc.,
(vii) an evaluation of the deliverables against the original objectives in the research proposal, and
conclusions and recommendations for implementation in future construction projects.

4.1.2 Presentations

In addition to the reporting requirements, the Principal Investigator is required to present the interim/final reports and research products to the relevant Committee(s), Sub-committee(s), Task Force(s) and/or Working Group(s) of CIC and other parties as deemed appropriate by the CIC. The presentation materials may be required to be bilingual if deemed appropriate by the CIC.

The CIC will evaluate the quality of the research products and reports, and will take the result of such evaluations into account in considering future funding applications by the same Applicant.

4.2 Payment and Accounting Arrangement

Subject to the terms and conditions of the Agreement, the CIC will pay the actual project cost (capped by the approved budget) according to a payment schedule agreed with the Applicant. Unless otherwise agreed, payments will normally be made quarterly. Under the CPS, the CIC will make payments when the contribution from the Co-applicant is made. Under the KPIS, the CIC will make interim payments of up to a total of 70% of the actual project cost (capped by the approved budget). The CIC will make the remaining payment when the proposed KPI(s) is achieved and accepted by the relevant Committees.

The CIC reserves the right to withhold any payment if there is any delay in the submission of progress reports or other reports, or the reports are not prepared to the satisfaction of the CIC, or the milestones set out in the research proposal are not achieved. The last payment will only be made upon acceptance of the final report and deliverables/research products by the relevant Committees. Subject to the final audited accounts, the Applicant may be required to return to the CIC any residual funds remaining in the project account upon completion or termination of the project.

4.3 Financial Records and Auditing

The Applicant is required to keep proper and separate books and records for the approved project, in accordance with the prevailing accounting standards and practice, for at least seven years after completion of the approved project unless otherwise agreed by the CIC. In this connection, financial audit and inspection of such books and records may be conducted by the CIC or its agent at any time during the project period and for up to seven years after the completion of the project.

On completion of the project, the Applicant is required to submit a statement of project accounts within a time to be specified by the CIC. The project accounts should be audited by an independent auditor who must be a Certified Public Accountant holding a practising certificate registered under the
Professional Accountants Ordinance (Cap. 50) and complying with the Hong Kong Standard on Assurance Engagement 3000 (Revised) “Assurance Engagement Other Than Audits or Reviews of Historical Financial Information”. The Applicant should make available to the auditors all information, documents and explanations relating to the project.
5. OTHER ADMINISTRATIVE DETAILS

5.1 Contractual Requirements

The Applicant shall enter into a binding Agreement with CIC for conducting an approved research project, following terms and conditions of the CIC.

5.2 Prior Approval Requirements

The approved research project should be carried out strictly in accordance with the Agreement. Any significant amendment or addition, such as a change in project scope or programme, or replacement of the Principal Investigator or key research team member, will require the prior written approval of the CIC. Prior written approval of the CIC is also required if the Applicant intends to assign or transfer or subcontract all or part of the project to another party.

5.3 Suspension or Termination of Funding Support

The CIC reserves the right to suspend or terminate funding support to an approved research project if, for example, the progress of the project is unsatisfactory, or the chance of completion of the project is slim, or there is a breach of the terms and conditions of the Agreement, or if the CIC sees it fit to suspend or terminate the project due to changed circumstances.

Upon suspension or termination of a project, the Applicant may have to return all or part of the CIC funding within a time to be specified by the CIC. The CIC reserves the right to claim and recover from the Applicant all or part of the CIC funding that has been paid to or used by the Applicant.

5.4 IP and Publication Rights

Ownership of the IP rights of the research products under the different CIC R&D funding schemes is stated in Section 2. If the IP right is partly derived from the Applicant’s previous work not funded by the CIC, ownership of the IP should be discussed and agreed between the CIC and the Applicant on a case-by-case basis prior to commencement of the project.

Under the EPS, the CIC shall have the right to freely use or publish the data and results obtained from the research project, with suitable acknowledgement of the Applicant included in the publication. Subject to notifying the CIC, the Applicant may also use the data and results obtained from the research project for educational or non-profit-making purposes.
Prior written permission of the CIC is required if the Applicant wishes to publish the data or results. This requirement, however, does not apply if the information is already in the public domain. For the CPS and KPIS projects, the data and results obtained should only be published with the prior written permission of the interested parties, including the industry partner, data owners, the CIC and the other funding organisation (if any).

5.5 Acknowledgment of Support and Disclaimer

The following acknowledgment and disclaimer statement should appear in all publications of the Applicant related to the projects funded by the CIC:

“The Construction Industry Council (CIC) of Hong Kong has funded the work described in this paper/document. While this paper/document is published with the prior permission of the Executive Director of the CIC, its contents are solely the responsibility of the authors and do not necessarily represent the views of the CIC.”

5.6 Handling of Personal Data

All personal data submitted to the CIC are handled in accordance with the relevant provisions of the Personal Data (Privacy) Ordinance. In this regard, the personal data provided in relation to applications for CIC funding will be used by the CIC or its authorised agents only for activities related to (i) processing and authentication of the applications, (ii) payment of personal expenses within the approved budget and any refunds thereof, and (iii) statistics and research purposes.

The personal data provided by the Applicant in their applications will be kept in confidence. The data may, however, be disclosed to third parties in Hong Kong or elsewhere, if such disclosure is necessary for the purposes mentioned above, is authorised or required by law, or if explicit written consent to such disclosure is given by the Applicant.

If necessary, the CIC will contact Government departments and other relevant parties to verify the personal data provided in the applications for the purposes mentioned above.

The Applicant may at any time request access to its personal data held by the CIC under the Personal Data (Privacy) Ordinance. A charge will be made to cover the cost of any photocopying of the data supplied. If the data subject considers that the data held by the CIC is inaccurate, any request for correction of the personal data should be made in writing.
5.7 Prevention of Bribery

The offer of an advantage to any officers or representatives or members of CIC, with a view to influencing the approval of an application, is an offence under the Prevention of Bribery Ordinance. Any such offer by the Applicant or its employee(s) or agent(s) will render the application null and void. The CIC may also withdraw its funding approval and hold the Applicant liable for any loss or damages which the CIC may sustain.

5.8 Indemnity

The Applicant shall indemnify the CIC against all loss, claims, demands, damages, costs, expenses and liabilities suffered or incurred by the CIC or which may be brought or established against the CIC arising out of the breach of any of the terms and conditions of the Agreement by the Applicant. The Applicant, whether successful in obtaining funding support or otherwise, or any employees, agents, servants or associates of the Applicant shall not seek or claim any compensation, reimbursement, damages, indemnity or waiver from the CIC in relation to the preparation, submission and presentation of its research proposal.
ANNEX A
OPERATIONAL FRAMEWORK OF THE CIC R&D FUND

(a) Invitation

CIC Committees to propose research agenda on a yearly basis

CIC Secretariat to invite research institutes/industry organisations to submit research proposals based on the research agenda

Applicants to submit proposals

(b) Assessment & Approval

CIC Secretariat to screen and shortlist proposals

CIC Committees to assess shortlisted proposals

Is the proposal accepted by the Committee?

No

CIC Secretariat to invite research institutes/industry organisations to submit research proposals based on the research agenda

CIC Committees to propose research agenda on a yearly basis

Applicants to submit proposals

Yes

CIC Secretariat to execute Agreement with the Applicant

Presentation by the Applicants

(c) Monitoring

CIC Secretariat to monitor the approved projects

CIC Committee to oversee the approved projects

CIC Committee to review and endorse the interim/final report/deliverables

Applicants to make presentations and submit reports

(d) Implementation

CIC Secretariat to promulgate the research findings to the industry through various means

CIC Committee to drive the adoption of research products in the industry

Applicant to prepare presentation materials on the research findings