

**Project Final Report for
Professional Services Advancement Support Scheme (“PASS”)**

1. Project Details

1.1 Project Reference No.	:	<u>PS174005</u>
1.2 Project Title	:	<u>Improving and Exporting Hong Kong Industrialised Construction Services under the Belt and Road Initiative</u>
1.3 Grantee	:	<u>The Hong Kong Polytechnic University (PolyU)</u>
1.4 Collaborating Organisation(s)	:	<u>(i) Hong Kong Construction Association (HKCA)</u>
1.5 Implementation Agent(s)	:	<u>(i) Nil</u>
1.6 Sponsoring Organisation(s)	:	<u>(i) HKCA</u>
1.7 Consultant(s)	:	<u>(i) Nil</u>
1.8 Project Co-ordinator	:	<u>(Name) Prof. Geoffrey Qiping SHEN (Post title) Chair Professor of Construction Management</u>
1.9 Deputy Project Co-ordinator	:	<u>(Name) Dr. Justina, Hoi Wing Yung (Post title) Manager of Belt and Road Liaison Unit</u>
1.10 Project Period (duration)	:	<u>from 01/10/2018 to 31/03/2021 (30 months)</u>
1.11 Major Beneficiary Sector(s)	:	<u>Building and construction-related services</u>
1.12 Approved PASS Grant (HK\$)	:	<u>547,000</u>

2. Project Implementation

2.1 Project Summary

(Please give a summary of the project including objectives, deliverables and target professional service sectors within 100 words.)

The project was a capacity building mission, aimed at improving and exporting Hong Kong industrialized construction services under the belt and road initiative. It had three specific objectives to: (i) enhance the core competitiveness of construction sectors in Hong Kong by sharing successful stories of exporting construction services under the Belt and Road Initiative; (ii) upgrade the service standards of Hong Kong construction professionals to integrate new technologies in industrialised construction; and (iii) encourage collaboration among construction sectors in Mainland of China and Hong Kong to jointly export industrialised construction services to the Belt and Road countries. The project delivered: (i) sixteen 2-hour workshops on exporting Hong Kong construction services to Belt and Road countries; (ii) an online training course on industrialised construction; and (iii) an international forum on industrialized construction under the Belt and Road Initiative. The project deliverables target Hong Kong construction professionals such as project managers, architects, and consulting engineers.

2.2 Project Deliverables

(Please compare the actual results achieved with the agreed targets for each item.)

Agreed Targets		Actual Results Achieved <i>(Please submit copies of all relevant supporting materials, e.g. proceedings, attendance records.)</i>	
<i>Date / Deliverables (with quantity)</i>	<i>Beneficiaries (estimated no. of local / non-local participants)</i>	<i>Date / Deliverables (with actual quantity)</i>	<i>Beneficiaries (actual no. of local / non-local participants)</i>
01/01/2019 to 30/06/2019 Ten 2-hour workshops in Hong Kong	1 600 Hong Kong construction professionals such as architects, project managers and consulting engineers (On average 160 participants per workshop)	<u>Completed:</u> <u>Physical workshop:</u> 1. 26/01/2019 2. 26/02/2019 3. 09/03/2019 4. 19/03/2019 5. 04/05/2019 6. 14/05/2019 <u>Online workshop:</u> 7. 02/04/2020 8. 07/05/2020 9. 11/05/2020 10.30/05/2020 11.13/06/2020 12.27/06/2020 13.25/07/2020 14.19/09/2020 15.31/10/2020 16.19/12/2020 17.16/01/2021	1 544 Hong Kong construction professionals such as architects, project managers, and consulting engineers (For Hong Kong professionals: 97% of the target met)

Agreed Targets		Actual Results Achieved (Please submit copies of all relevant supporting materials, e.g. proceedings, attendance records.)	
<i>Date / Deliverables (with quantity)</i>	<i>Beneficiaries (estimated no. of local / non-local participants)</i>	<i>Date / Deliverables (with actual quantity)</i>	<i>Beneficiaries (actual no. of local / non-local participants)</i>
01/07/2019 to 31/03/2020 An online training course	Browsers on internet; more than 6 000 Hong Kong construction professionals, including project managers, architects, and consulting engineers	<u>Completed</u> Developed an online training course in 2019 and 2020 entitled “Integrating BIM and RFID in Industrialized Construction”	Browsers on internet; currently a record of 1 800 people have already attended the training course so far. More to be expected in the coming years.
01/01/2020 to 31/01/2020 One international forum in Hong Kong	300 Hong Kong construction professionals, such as project managers, architects and consulting engineers	<u>Completed</u> 27/02/2021 One international forum in Hong Kong	357 Hong Kong construction professionals such as project managers, architects, and consulting engineers (For Hong Kong professionals: 119% of the target met)
01/02/2020 to 31/03/2020 One final report on the project outcome	Browsers on internet	<u>Completed</u> 31/03/2021 One final report on project outcome	Browsers on internet

2.3 Project Promotion and Dissemination

(Please compare the actual means used / outcomes with the agreed activities for each item.)

Agreed Activities	Actual Means Used / Outcomes (Please submit copies of all relevant supporting materials, e.g. posters, leaflets, invitation letters, publications, website printouts, dissemination e-mails, newsletters, feedback surveys and analysis.)
(a) For Project Promotion:	
1. Design posters for the workshops	Posters were designed for each of the 17 workshops
2. Send invitations with posters to the target construction professionals through professional organisations and their member companies, including HKCA, CIC, HKIA, HKIE, HKICM, and ACEHK	Invitation emails with posters were sent to the target construction professional organizations and their members, including ARCHSD list of organizations, EACSB list of organizations, AACSB list of organizations, and registered HKIS, HKIE, HKICM, HKIBM, HKIA, HKCA, and ACEHK professionals. Email invitations were also sent to all BRE staff and students (via Ms. Chloe) and all previous workshop attendees' list
3. Send invitations with posters to the approved contractor list on the Housing Authority website. These contractors are from the construction engineering sector and mainly specialise in industrialised housing projects.	Sent invitation emails with posters to the approved contractors list on the Housing Authority website.
4. Promote the workshops on the university website	Promoted the workshops on PolyU website, BRE website, FCE website, and several social media platforms, including LinkedIn, Twitter, WhatsApp Groups, and Facebook.
1. Promote the online training course through presentations by the project team in professional organisations including HKCA, CIC, HKICM, HKIA, ACEHK, and HKIE.	Promotion among professional organisations, including HKCA, CIC, HKICM, HKIA, ACEHK, and HKIE, has been made.
2. Promote the online training course through social media including WeChat, Weibo, Facebook, and Twitter	Promotion has been made through social media including WeChat, Weibo, Facebook, and Twitter.
3. Promote the online training course in the international forum by posters, presentation, and demo play	Promoted the online training course during the international forum by presentation.
4. Promote the online training course on the university website	Promotion has been conducted on the university website.
1. Upload the information for the proposed international forum on the university website for further promotion.	Promoted the international forum by sending emails to the faculty of construction and environment (FCE) of PolyU staff distribution list
2. Promote the international forum through sending email invitations to construction professionals	Promoted the international forum through sending personalized email invitations to construction professionals in Hong Kong

Agreed Activities	Actual Means Used / Outcomes <i>(Please submit copies of all relevant supporting materials, e.g. posters, leaflets, invitation letters, publications, website printouts, dissemination e-mails, newsletters, feedback surveys and analysis.)</i>
	Personalized emails were sent to over 4,000 Hong Kong construction professionals and organisations, including ARCHSD list of organisations, EACSB list of organisations, AACSB list of organisations, and registered HKIS, HKIE, HKICM, HKIBM, HKIA, HKCA, and ACEHK professionals. Email invitations were also sent to all BRE staff and students (via Ms. Chloe) and all previous workshop attendees list
3. Promote the forum by industry collaborators in their registered companies and members	Promoted the forum by industry collaborators in their registered companies and members.
4. Promote the forum by public media including WeChat, Weibo, Facebook, and Twitter	The promotion strategy was not implemented to ensure that the participants were mainly Hong Kong construction professionals.
(b) For Dissemination of Project Deliverables:	
1. Upload the online training course to the free access platform KEEP, to ensure it can be freely and easily accessed by the target professionals.	Uploaded the online training course to the free KEEP Open edX platform for easy access by the target professionals https://edx.keep.edu.hk/courses/course-v1:PolyU+PASS+2020/about
2. Disseminate the platform along with the promotion process	Promoted the online course and disseminated the KEEP Open edX platform during the international forum
3. Disseminate the online training course by the email and posters to the registered companies under HKCA, the company list on housing authority website, as well as to the registered professionals in HKICM, HKIA, ACEHK, and HKIE.	Disseminated by emails and posters to the registered companies under HKCA, the companies listed on the Housing Authority website, as well as the registered professionals in HKICM, HKIA, ACEHK, and HKIE.
4. The online-training course will be further disseminated through uploading the link and descriptions to the university website.	The online training course has been disseminated through links and descriptions to the university website.
1. Disseminate hard copies and e- version of the project report to the construction professionals through professional organisations including HKICM, HKIA, ACEHK, and HKIE	Disseminated the project report to the construction professionals through professional organisations of HKICM, HKIA, ACEHK, and HKIE.
2. Present the content of the project report in the forum and future conferences	Presented the context of the project report in the international forum
3. Promote the report together with the online	Promoted through online orientation by uploading

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orientation by uploading the link and descriptions on the university website.	the link and descriptions on the university website.
1. To upload the video recordings and all materials developed from the events conducted under this project on the university website to widely disseminate the project deliverables to the sector by different stages	Video recordings of the 17 workshops have been uploaded on the PolyU website and YouTube for wider dissemination. However, the video recording of the 1-day international forum was not uploaded to these platforms because of confidentiality of the materials presented by the keynote speakers
2. After uploading, to issue electronic notices free-of-charge to the participants, related faculties of local universities and institutions, PolyU members and all relevant professional organisation	Follow-up emails were sent to all attendees of the 17 workshops and international forum to notify them after uploading the video recording and all materials developed from the workshops.

3. Achievements and Grantee's Evaluation of the Project

3.1 Number of participants and eligible beneficiaries

Project Deliverables	Eligible Number of Beneficiaries (if known)
(i) Seventeen 2-hour workshops	1 544 Hong Kong construction professionals
(ii) International forum	357 Hong Kong construction professionals
(iii) Online training course	Around 1 800 professionals have already attended the training course and more to be expected in the coming years.

3.2 Feedback from participants / users / professional services sectors

Seventeen 2-hour Workshops A total of 582 of the 1 544 attendees provided feedback on workshops. After each workshop, the attendees were asked to evaluate the extent to which the workshop: (i) was valuable, (ii) presentation was consistent with the workshop description, (iii) will likely help in their job/research, (iv) inspires them to attend similar events in future, and (v) their overall satisfaction with the workshop using online platform, using a 5-point Likert scale of 1(Minimum) and 5 (Maximum). The attendees generally found the workshops valuable, the presentation was consistent with the workshop description, the workshop will likely help in their job or research, it inspired them to attend similar events in the future, and the attendees were satisfied with the workshop using the online platform. The following are some open comments provided by the attendees. <i>“This workshop was wonderful and informative”, “It was a great experience. It saved a lot of time by joining online to such a valuable workshop”, “The speaker presented well and workshop was organized nicely”, “Thank you for your interesting presentation”, “Thank you for a great presentation”</i>
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3.3 Dissemination of project deliverables to relevant professionals

The project consisted of three deliverables, including 17 2-hour workshops, one international forum on industrialized construction, and one online training course.

The 17 2-hour workshops were conducted and disseminated to 1 544 Hong Kong construction professionals such as architects, project managers, and consulting engineers. The video recordings of each workshop were uploaded to the PASS PolyU website and notifications sent to all the participating professionals to easy access.

The international forum on industrialized construction was conducted online to 357 Hong Kong construction professionals such as project managers, architects, and consulting engineers. Eight keynote speakers from Belt and Road countries, including Hong Kong, Mainland China, Australia, Canada, Malaysia, and Sri Lanka shared international best practices, risks, opportunities, and innovative tools for industrialized construction with the 357 Hong Kong construction professionals such as project managers, architects, and consulting engineers during the 1-day event.

The online training course entitled “Integrating BIM and RFID in Industrialized Construction” has been disseminated to the relevant professionals. During the Workshop #7, the project leader demonstrated excellent example of a practical case of integrating BIM and RFID in industrialized construction in Hong Kong and introduced the workshop participants to the online course. The project leader also introduced the online training course and its content to the participants of the international forum. Additional arrangements are underway to further disseminate the online training course.

3.4 PASS and other objectives reached (May choose more than one)

- ☒ Increasing the exchanges and co-operation of Hong Kong’s professional services with their counterparts in external markets
- ☒ Promoting relevant publicity activities
- ☒ Enhancing the standards and external competitiveness of Hong Kong’s professional services
- ☐ Others

Please elaborate on how the objective(s) was/were met:

Objective 1: To enhance the core competitiveness of construction sectors in Hong Kong by sharing successful stories of exporting construction services under the Belt and Road Initiative

The project achieved objective 1 through the 17 2-hour workshops on exporting Hong Kong construction services to Belt and Road countries and the international forum on industrialized construction under the Belt and Road Initiative. The workshops were used to share successful stories of industrialized construction (e.g., MiC, prefabrication) in Hong Kong with construction professionals in countries under the Belt and Road Initiative. Similarly, during the international forum, leading industry practitioners in Hong Kong shared experiences, challenges encountered, innovative solutions, and best practices used in implementing high-profile MiC projects in Hong Kong. These opportunities were leveraged to demonstrate the competitiveness of the Hong Kong as an emerging leader in industrialized construction innovation.

Objective 2: To upgrade the service standards of Hong Kong construction professionals to integrate new technologies in industrialised construction

Objective 2 was achieved through the 17 2-hour workshops, international forum, and online course on industrialized construction. During the workshops, experts from Belt and Road countries shared and trained construction professionals on the latest technologies in industrialized construction to upgrade the service standards of Hong Kong construction professionals. The international forum witnessed the participation of leading academic experts and industry leaders from Hong Kong, Mainland China, Australia, Canada, Malaysia, and Sri Lanka. They shared the latest technologies for improving industrialized construction in Hong Kong. Particularly, two local industry leaders (i.e., Yau Lee Construction Ltd and Hip Hing Construction Group) shared the latest innovative technologies (e.g., robotics, BIM) used in constructing two high-profile MiC projects in Hong Kong. The online course entitled “integrating BIM and RFID in industrialized construction” embody useful content and knowledge of how BIM and RFID can be used to improve supply chain visibility, interoperability, coordination, and management in industrialized construction. These activities provided tools and opportunities to upgrade the service standards of Hong Kong construction professionals to integrated new technologies in industrialized construction.

Objective 3: To encourage collaboration among construction sectors in Mainland of China and Hong Kong to jointly export industrialised construction services to the Belt and Road countries.

The project realized objective 3 through the international forum on industrialized construction. Hong Kong is an emerging leader in industrialized construction, but the city has incomplete supply chain and relies on offsite factories in Mainland of China and elsewhere. In contrast, Mainland of China is a manufacturing powerhouse with several offsite manufacturing yards and a leader in precast construction. The international forum provided the opportunity for academic and industry leaders in Mainland of China and Hong Kong to discuss synergies and encourage professionals to leverage those complimentary capabilities and synergies to jointly export industrialized construction services to the Belt and Road countries.

3.5 Overall achievements of the project

The project objectives were well achieved.

The Project Final Report is prepared by the Grantee.