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Modular Integrated Construction Supply Chain in the Greater Bay Area for Hong Kong Development: Drivers, Opportunities, Constraints, Concerns, Measures and Strategies

Greater Bay Area

Hong Kong



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Project title:

Enhancing Modular Integrated Construction (MiC) Supply Chain in the Greater Bay Area (GBA) for Hong Kong Development

Authors: Wei Pan, Jiewen Wu, Mingcheng Xie, Yidan Zhang, Mi Pan, Yi Yang

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Published by:

Department of Civil Engineering, The University of Hong Kong

Hong Kong

First issue December 2021

This revision April 2022

Contacts:

Centre for Innovation in Construction and Infrastructure Development (CICID)

Department of Civil Engineering

The University of Hong Kong

Pokfulam

Hong Kong

Tel: (+852) 2859 8024

Fax: (+852) 2559 5337

Email: wpan@hku.hk

ISBN: 978-962-8014-30-9

CICID was established in 2002 and aims to achieve excellence and innovation in construction and infrastructure research. The research topics addressed include modular integrated construction, automation and robotics, industry development, zero carbon building, life cycle assessment, building information modelling, procurement innovations and management, etc. It seeks to continuously drive

Foreword

Modular Integrated Construction (MiC) is widely regarded as the most advanced off-site construction approach, with demonstrated benefits in the areas of quality, productivity, safety and sustainability. In the 2017 Policy Address, and again in the 2018 Policy Address, the Hong Kong (HK) government pledged to promote MiC adoption. Since then, MiC has significantly enhanced the productivity and competitiveness of the construction industry and has helped to expedite the delivery of quarantine facilities during COVID-19 and ease the pressure of housing supply. The application of MiC has great potential to promote the long-term development of HK's economy and community.

There is a significantly increasing demand for MiC in HK, along with a set of MiC policies and incentives promulgated by the government since 2017. This trend highlights the urgent need to understand and strategise regarding the complex and dynamic supply chain of MiC within HK and beyond. This research project addresses the MiC supply chain in the Guangdong–Hong Kong–Macao Greater Bay Area (GBA) in the interests of HK's development.

I applaud Professor Wei Pan and his team for initiating this research project and making efforts to develop public policy strategies for identifying and enhancing the MiC supply chain in the GBA for HK's development. I also sincerely thank all of the supporters and participants in this research. This project is expected to further strengthen HK's established leadership and competitiveness in construction innovation and research.

This report is part of the team's research project, which focuses on drivers, opportunities, constraints, concerns, measures and strategies relating to the MiC supply chain in the GBA for HK's development. The findings offer insights for policymaking on the MiC supply chain and will help the construction industry to better understand and seize opportunities for MiC supply chain enhancement and development in the GBA. Through the combined efforts of academia, the government and industry, MiC will continue to advance and contribute to the long-term development of HK and the whole GBA.

Professor Max Z.J. Shen

Vice-President and Pro-Vice-Chancellor (Research)
Chair Professor in Logistics and Supply Chain Management
The University of Hong Kong

Preface

The Hong Kong Special Administrative Region (HKSAR) government has set ambitious development plans for various sectors, including public and private housing, elderly homes, hostels, hospitals and hotels. Realising these plans will strengthen Hong Kong's (HK) leadership in the Greater Bay Area (GBA), but also challenge the capacity of the HK construction industry. Modular Integrated Construction (MiC) has been adopted as a new policy initiative to promote innovative construction in the 2017 Policy Address that has the potential to help the government achieve its ambitious development plans. The GBA creates exciting synergies and opportunities for MiC development in HK, which largely relies on supply chains in the GBA. However, limited suppliers and cross-border logistics are obstacles for the MiC supply chain in the GBA for HK's development. Enhancing the MiC supply chain in the GBA is urgently necessary to implement MiC policy and help HK realise its ambitious development plans.

This report presents the research findings of the drivers, opportunities, constraints, concerns, measures and strategies for the MiC supply chain in the GBA for HK's development and provides recommendations for stakeholders to take strategic actions to facilitate MiC adoption. A GBA-wide questionnaire survey, follow-up interviews, and focus group meetings were used to gather perspectives and practices from construction industry stakeholders and practitioners on the MiC supply chain. Over 2,600 participants from the construction industry and community of HK and the Mainland (mostly in the GBA) were invited to participate in the research. The participants together covered five stakeholder groups – governments and developers, contractors, suppliers, consultants, and institutions.

The first part of this report (Chapters 1–3) reviews the current and future development of MiC in HK as well as the status quo of the supply chain. The analysis demonstrates the complexities and dynamics of the MiC supply chain and provides theoretical and methodological support for identifying and enhancing the MiC supply chain in the GBA for HK's development.

The second part of this report (Chapters 4–7) presents the results and analysis of a questionnaire survey, interviews and focus group meetings conducted with diverse participants from HK and the Mainland. This part examines participants' attitudes towards the MiC supply chain and explores their perceptions of drivers, opportunities, constraints, concerns, measures and strategies for enhancing the MiC supply chain in the GBA for HK's development.

The third part of this report (Chapter 8) summarises the important findings and provides recommendations for stakeholders on enhancing the MiC supply chain for HK. Recommendations for future research are also provided.

This research has several significant contributions. First, we engaged a wide range of stakeholders and practitioners in the construction industry and society of the GBA. This process substantially raised the awareness of the industry and society of MiC and improved communication on and discussion of relevant issues and strategies. Second, the findings will help various stakeholders to understand the MiC supply chain in the GBA for HK's development and develop business plans related to MiC adoption. Third, the identified measures and strategies provide a solid foundation for the government to better formulate and implement relevant policies to further promote MiC adoption and to collaborate with industry partners to establish an effective MiC supply chain in the GBA for HK's development.

Professor Wei Pan

Associate Vice-President (Research and GBA)
Executive Director of CICID
Director of MiC Lab
Department of Civil Engineering
The University of Hong Kong