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A Glossary of Modular Integrated Construction

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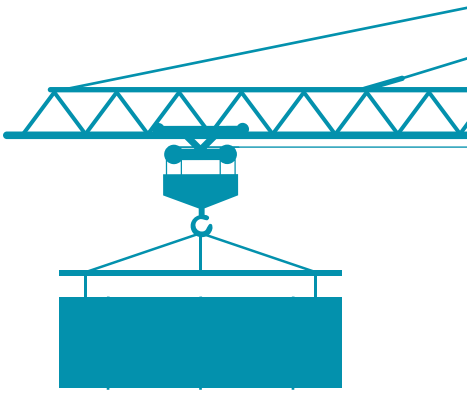

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CICID was established in 2002 and aims to achieve excellence and innovation in construction and infrastructure research. The research topics addressed include modular integrated construction, automation and robotics, industry development, zero carbon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

Foreword

The construction industry in Hong Kong has been facing severe challenges in recent years. High construction cost, declining construction productivity and shortage of construction workers have aroused concerns on the efficiency and cost-effectiveness of the industry. Albeit efforts made in the past decades have brought some improvements, the industry is still under immense pressure to perform better, safer and more cost-effective.

Against this background the Government announced in the 2018 Policy Address "Construction 2.0", a policy to lead changes in the industry, and more specifically to uplift its capacity and sustainability. It encompasses measures to increase productivity, enhance regulation and quality assurance, to improve site safety and reduce environmental impact. Modular Integrated Construction (MiC) has been advocated as a good example of innovative construction.

In May 2019, the Centre for Innovation in Construction and Infrastructure Development (CICID) of The University of Hong Kong with support from the Development Bureau of the Government published 'Modularisation for Modernisation: A Strategy Paper - Rethinking Hong Kong Construction". The paper marked a milestone of MiC development in Hong Kong.

Pursuant to the Strategy paper, the production of this MiC Glossary is a highly commendable effort of the CICID. Not only will it be a useful resource to strengthen the knowledge base for better informed practices, it will be highly beneficial to the industry for improved understanding and consistency in the terminology of the MiC technology.

The Glossary will serve to enhance the concerted effort of industry, academia and government. I am confident that it will help MiC to take root in Hong Kong and become an important means to modernise the Hong Kong construction industry.

Ir HON Chi Keung, GBS JP

Former Permanent Secretary for Development (Works)
The Government of Hong Kong Special Administrative Region

Preface

The construction industries of many developed economies are facing substantial challenges, such as labour shortages, ageing workforces and cost escalation. These challenges hamper increases in productivity and sustainability in the construction industry and in the built environment. To address these challenges and improve productivity and sustainability, modular construction approaches have been adopted worldwide.

In Hong Kong, the concept of 'Modular Integrated Construction (MiC)' arose from a collaboration between the Centre for Innovation in Construction and Infrastructure Development (CICID) of The University of Hong Kong and the Development Bureau of the Government of the Hong Kong Special Administrative Region (HKSAR). MiC builds on the modular construction approach by emphasising the integration of advanced manufacturing and production technologies into re-engineered building and construction processes. Modularisation is a key part of the MiC approach and has enormous potential to harness highly productive forces, shape the relationships of production and enhance construction productivity, quality, safety and sustainability, thereby supporting the modernisation of construction.

Accordingly, the concept of MiC was adopted in the Policy Address 2017 of the HKSAR Government as a means to promote innovative construction, and the Policy Address 2018 further promoted the wide adoption of MiC in Hong Kong. A number of MiC pilot projects have been initiated. The CICID published a paper entitled 'Modularisation for Modernisation: A Strategy Paper Rethinking Hong Kong Construction' in May 2019, which elaborates the concept of MiC in terms of its definition, evolution, principles and development strategies. This MiC strategy paper represented a milestone in the development of MiC in Hong Kong. Nevertheless, confusion remains about the concept of MiC and its relationship to other off-site construction terms.

This Glossary of MiC is a comprehensive list of defined and illustrated terms related to MiC and off-site construction. It has been compiled to improve the understanding of MiC within the construction industry and knowledge community and thus enable these core groups to advance their application of MiC based on a consistent set of information and principles. This Glossary would not be possible without support from many organisations and individuals which are acknowledged at the end of this booklet.

Ir Professor Wei Pan

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