

4 September 2024

Penta-Ocean Construction Co. Ltd.
Unit 601, K. Wah Centre,
191 Java Road,
North Point, Hong Kong
(Attn: YIM Pui-chuen)

Dear Mr YIM,

**Letter of In-principle Acceptance
(Acceptance Reference No.: MiC 14/2024)**

This letter is issued to **Penta-Ocean Construction Co. Ltd.** to confirm that the Modular Integrated Construction (MiC) system (**Model No. POC(MiC)-C01**) as submitted to the Buildings Department (BD) is acceptable in principle for use in private building projects in Hong Kong in respect of the performance aspects listed in Appendix I, subject to the following conditions:

- (i) The design and construction of any building project adopting the above MiC system shall comply with the provisions of the Buildings Ordinance (BO) and its subsidiary legislations;
- (ii) The conditions as set out in Appendix II and Appendix III shall be complied with;
- (iii) The modular units of the above MiC system shall be fabricated in the factories listed in Appendix IV with a valid ISO 9001 or equivalent quality assurance certification; and
- (iv) This in-principle acceptance (IPA) is valid for 5 years from the date of this letter.

General information of the MiC System (Model No. POC(MiC)-C01) submitted by Penta-Ocean Construction Co. Ltd. is available on BD's website.

/Upon ...

Upon expiry of the IPA, application for its renewal should be prepared by an Authorized Person (AP) and a Registered Structural Engineer (RSE) (as necessary). In case different AP and RSE are to be appointed, you are reminded to clarify any copyright issues.

This IPA shall not be construed as an exemption from obtaining prior approval and consent from the Building Authority under the BO before commencement of building works nor the granting of any exemption in gross floor area calculation.

This IPA does not give any warranties, explicit or implied, regarding their availability, efficacy, fitness for a particular purpose, title or non-infringement of copyright. The manufacturer/supplier/user must ensure that the above MiC system is safe for public use and complies with all relevant legislation and statutory requirements at all times.

Yours sincerely,



(CHAN Wai-tong, Victor)
Chief Officer/Technical Services
for Director of Buildings

c.c. LAM Wai-ho (Authorized Person)
c/o Thousand Concept Creative Studio Ltd.
2/F, On Tin Centre,
1 Sheung Hei Street,
San Po Kong, Kowloon, Hong Kong

CHAN Ngai-tung (Registered Structural Engineer)
c/o Mantus Design and Engineering Ltd.
2/F, On Tin Centre,
1 Sheung Hei Street,
San Po Kong, Kowloon, Hong Kong

BD/MiC/220702 (S)

**Applicable Performance Aspects
for In-principle Acceptance Reference No. MiC 14/2024**

The in-principle acceptance covers the following performance aspects of MiC system (Model No. POC(MIC)-C01) of Penta-Ocean Construction Co. Ltd. under the Buildings Ordinance (BO) and its subsidiary legislations:

- (a) Provisions of means of escape required under Part B of the Code of Practice for Fire Safety in Buildings 2011 (FS Code) and regulation 41(1) of Building (Planning) Regulations (B(P)R);
- (b) Provisions for fire resisting construction required under Parts C and E of the FS Code and section 35 of Building (Construction) Regulation (B(C)R);
- (c) Construction of external wall pursuant to section 27 of B(C)R;
- (d) Height of storeys and provisions of natural lighting and ventilation required under regulations 24, 30 and 36 of B(P)R;
- (e) Sanitary provisions and associated drainage works within the modular units pursuant to Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations;
- (f) Structural performance for loads required under the Code of Practice on Wind Effects in Hong Kong 2019, the Code of Practice for Dead and Imposed Loads 2011 and Part 3 of B(C)R; and
- (g) Provisions for structural performance required under the Code of Practice for Structural Use of Concrete 2013, the Code of Practice for Precast Concrete Construction 2016, the Code of Practice for the Structural Use of Steel 2011 and B(C)R.

2. For other performance aspects of the MiC system under the purview of the BO not listed above, compliance with the provisions of the BO and the subsidiary legislations shall be demonstrated when plans are submitted for approval under the BO.

**Acceptance Conditions (Building)
for In-principle Acceptance Reference No. MiC 14/2024**

The in-principle acceptance (IPA) of MiC system (Model No. POC(MiC)-C01) of Penta-Ocean Construction Co. Ltd. is subject to the following conditions:

- (a) This IPA is confined to adopting the MiC system for hostel use in a building not exceeding 6 storeys (maximum modular units of 5 storeys) as applied for;
- (b) The design and construction of the MiC system should follow the plans accepted by the Buildings Department (Accepted Plans) and tally with the testing criteria of the submitted test reports. If alternative designs, materials or construction methods different from that shown in the Accepted Plans are used, compliance with the relevant provisions under the Buildings Ordinance (BO) and the subsidiary legislations should be demonstrated when plans are submitted for approval under the BO;
- (c) Authorized Person of the development project adopting the MiC system (AP) should ensure valid test and/or assessment reports complying the requirements under Part E of the Code of Practice for Fire Safety in Buildings 2011 would be available before the actual production in the prefabricated factory;
- (d) Applicant and AP should observe the requirements under Practice Note for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers APP-13 on submission of Schedule of Building Materials and Products and certifying the compliance with the relevant provisions of the BO upon completion of works;
- (e) Access points for inspection and future maintenance and repair of building services and construction elements should be provided in accordance with the Accepted Plans; and
- (f) User manual with maintenance and building safety instructions for future fitting, decoration, alterations and additions of the modules as submitted with the application for IPA should be provided to the owners/occupants/users of the building adopting this MiC system.

- (g) The IPA is subject to the grant of exemption/modification under section 42 of the BO for the following which would be favorably considered when relevant plans are submitted for approval under the BO:

BO/Building Regulations	Description
Regulation 29(1) and 29(2) of Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations	To permit the provision of cleaning access to be other than cleaning eye
Regulation 44(4) of Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations	To permit protection of cast iron pipes to be other than asphaltic coating
Regulation 50(2) of Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations	To permit jointing of cast iron pipes to be other than lead caulking

**Acceptance Conditions (Structural)
for In-principle Acceptance Reference No. MiC 14/2024**

The in-principle acceptance (IPA) of MiC system (Model No. POC(MiC)-C01) of Penta-Ocean Construction Co. Ltd. is subject to the following conditions:

- (a) The design and construction of MiC system should follow the plans accepted by the Buildings Department (Accepted Plans) and tally with the testing criteria of the submitted test reports. If alternative designs, materials, proprietary products or construction methods different from that shown in the Accepted Plans are used, compliance with the relevant provisions under the Buildings Ordinance (BO) and the subsidiary legislations should be demonstrated when future plans are submitted for approval under the BO;
- (b) The MiC system is accepted based on the assumptions listed below. Overall stability, structural analysis, adequacy of structural member and/or structural connections, lateral deflection etc. should be checked when there are any deviations with future structural plans submitted for approval under the BO.
 - (i) Maximum building height from ground floor to main roof is 21.50m.
 - (ii) Maximum number of storeys of modular units is 5.
 - (iii) Maximum design wind pressure at main roof is 2.06kPa (unfactored).
 - (iv) The imposed loads, superimposed loads and assumed wall loads are as shown on drawing no.: E22012-MiC-L001. The imposed loads for vehicular traffic and parking are not considered.
 - (v) The lateral stability is provided by both MiC modules and casted in-situ reinforced concrete structure as shown on drawing no.: E22012-MiC-G002.
 - (vi) The fabrication and installation tolerances of modular units are as shown on drawing no.: E22012-MiC-G002.
 - (vii) Only one storey of modular units are allowed to be stacked above a completed level at each zone as shown on drawing no.: E22012-MiC-G001.

(c) A proposal for full-scale mockup of the following items should be submitted for acceptance to demonstrate and assure the quality of construction and justify the design assumptions prior to the future approval of submission of building development adopting the MiC system under this IPA:

- (i) The column connection using full height 70mm diameter circular hollow section (CHS) with grouting for lapping reinforcement specified on the drawing nos. E22012-MIC-G002 and E22012-MIC-D003.
- (ii) Testing to verify the assumed design bond strength of the lapping system with 70mm diameter CHS adopted in the column connection specified on the drawing no. E22012-MIC-G002.

Result of the above full-scale mockup and testing should be found satisfactory by the Building Authority prior to the commencement of the construction.

(d) Cast in-situ reinforced concrete structures, protective barriers and external walls are not included in this acceptance.

Manufacturer and Prefabrication Factory

Details of the accepted manufacturer and prefabrication factory for fabrication of the modular units under In-principle Acceptance reference no. **MiC 14/2024** for MiC system (Model No. POC(MiC)-C01) of Penta-Ocean Construction Co. Ltd. are as follows:

Manufacturer: Penta-Ocean Construction Co. Ltd.

<u>Prefabrication Factory</u>	<u>Address of Prefabrication Factory</u>	<u>Production</u>
Da Le Zhuang (Dongguan) Construction Technology Co., Ltd.	No. 2 Bianmin Road, Mayong Town, Dongguan City, Guangdong Province, China	Fabrication of modular units

Remarks:

- (a) *The above factory shall maintain a valid ISO 9001 or equivalent quality assurance certification at all times.*
- (b) *The following items in the Quality Assurance Scheme are for information only. Updated information should be submitted for future building projects with MiC.*
 - (i) *Frequency and extent of inspection by in-house staff and independent parties required in Appendix B of Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers (PNAP) ADV-36; and*
 - (ii) *Frequency and extent of audit by in-house staff and independent parties required in Appendix B of PNAP ADV-36.*