MiC (Modular Integrated Construction) is gaining attention in local construction industry, advocating better productivity, safety and sustainability. In this webinar, we will introduce an innovative hybrid steel-concrete MiC system by using high strength steel as structural frame and high strength lightweight concrete as wall panels, reducing the overall module weight by at least 30% compared with pure concrete MiC module. An innovative “Triple-proof” stitching system (waterproof, fireproof and smokeproof) specifically for MiC will also be presented.
**Structural Design Consideration in MiC: from Design to Implementation**

High strength steel frame provides good strength and stiffness to undertake gravity, wind and other loads during construction and service period. By using high strength steel, the size of structural elements can be reduced, releasing much needed usable floor areas. We will introduce the design criteria, joint connection and implementation, as well as the potential composite effects with experimental validation for the proposed lost-form structural design for concrete MiC.

**Applications of High Strength Lightweight Concrete for Hybrid MiC**

High strength lightweight concrete is 35% lighter than normal concrete and with uncompromised compressive strength and durability. This high performance concrete has excellent moisture and fungus resistance, suitable as wall panels in hybrid MiC under the humid environment like that of Hong Kong. We will briefly introduce the development and performance of this lightweight concrete. The thermal insulation of the high strength lightweight concrete with and without loading will be discussed.

**Triple-proof Stitching System for MiC**

We will introduce a “Triple-proof” stitching system for MiC, including a backer rod with superior thermal insulation, a sealant of sufficient bonding with steel and concrete, as well as a brushable coating as waterproof membrane. The thermal insulation of various solutions under fire test over the steel structures will be discussed.