

Prefabrication is one of the key means of increasing buildability. As the industry strategises itself to build with less labour and shorter construction time, prefabrication of concrete structures has become a viable alternative to the traditional way of construction. Over the last few years, some industry players have effectively adopted the use of precast concrete components to their advantage by combining it with cast in-situ concrete elements. Different mix of precast and cast in-situ elements are used to meet different design requirements for better quality and cost effectiveness. Such combination enables their projects to achieve higher level of productivity than is possible with solely cast in-situ construction. By using precast concrete components predominantly, on-site operations are considerably reduced, providing a safer working environment.

However, it is important to have a good appreciation of its difference in management from the conventional construction. The benefits of using prefabrication would not be fully realised by merely adapting the traditional way of design and construction process. The keys to successful implementation lie in the planning and understanding of the close relationships between design, construction, detailing, execution and manufacturing of precast concrete components. In other words, it is vital to have a good cooperation between the architect, the engineer, the builder and the precaster.

### **Scope of Our Study**

Our study focuses on the salient issues involved in the use of precast concrete components; with specific mention of in-situ flat plate or precast floor slab with precast façade system as buildable solutions for high-rise residential development.

Drawing from the experiences of private practitioners, we had collated and outlined the planning and design process as well as practical considerations that one should be familiar with when dealing with precast concrete components. Good examples of local high-rise building projects were also documented for reference.

The guidelines presented are meant to provide a greater awareness and understanding on the use of precast concrete components. They should not, however, be deemed as restrictions to either design creativity or to potential alternatives raised.