

**INNOVATIVE ENGINEERING AWARD (DESIGN)** **TO-BE-BUILT HOUSING**

# Tampines GreenJade

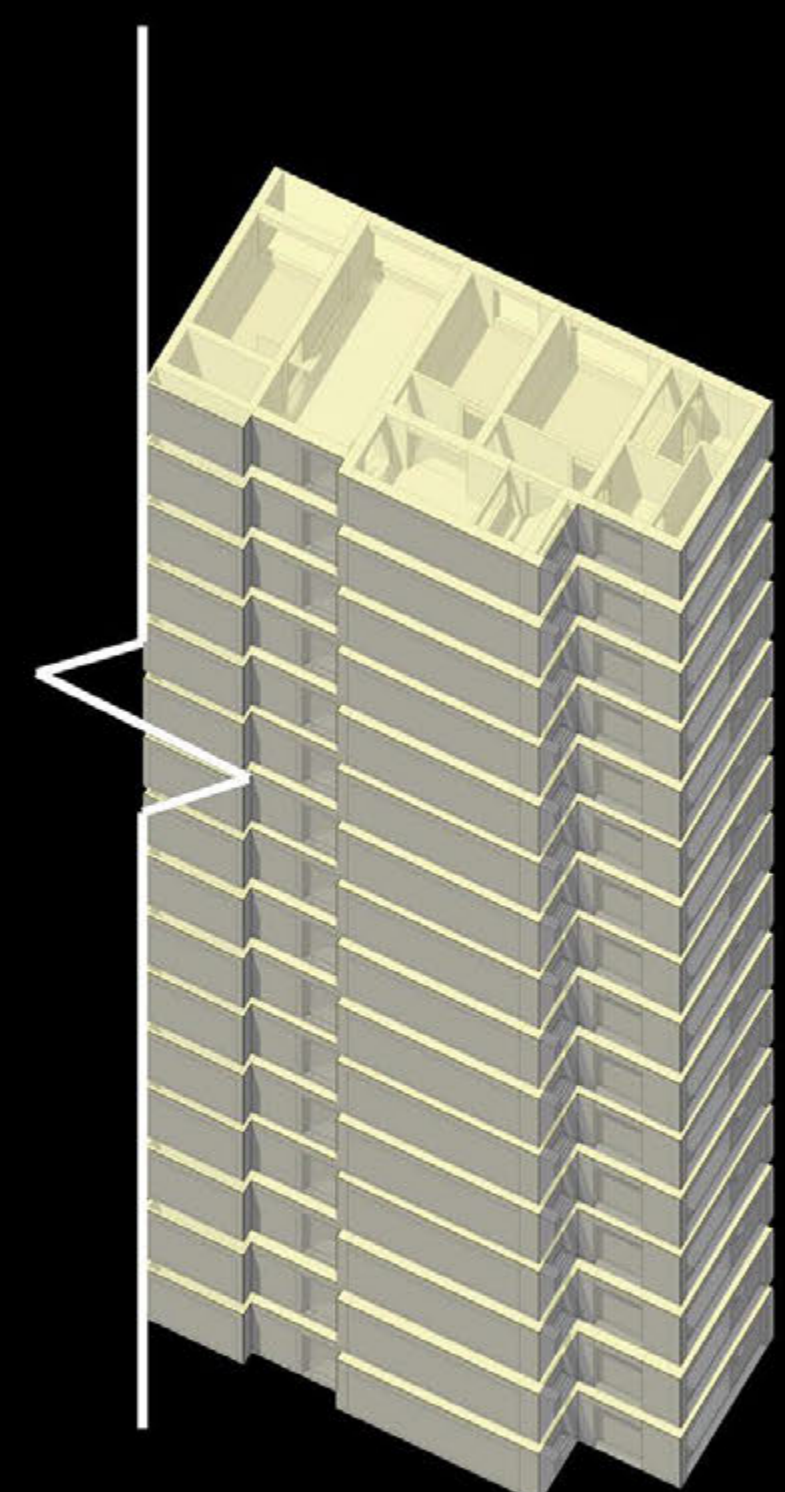
## Project Overview

Tampines GreenJade comprises 6 residential blocks of 15 to 17 storeys with a total of 546 units, located at Tampines Street 96. The project also includes a multi-storey car park with a roof garden, dedicated block for social communal facilities and a precinct pavilion.

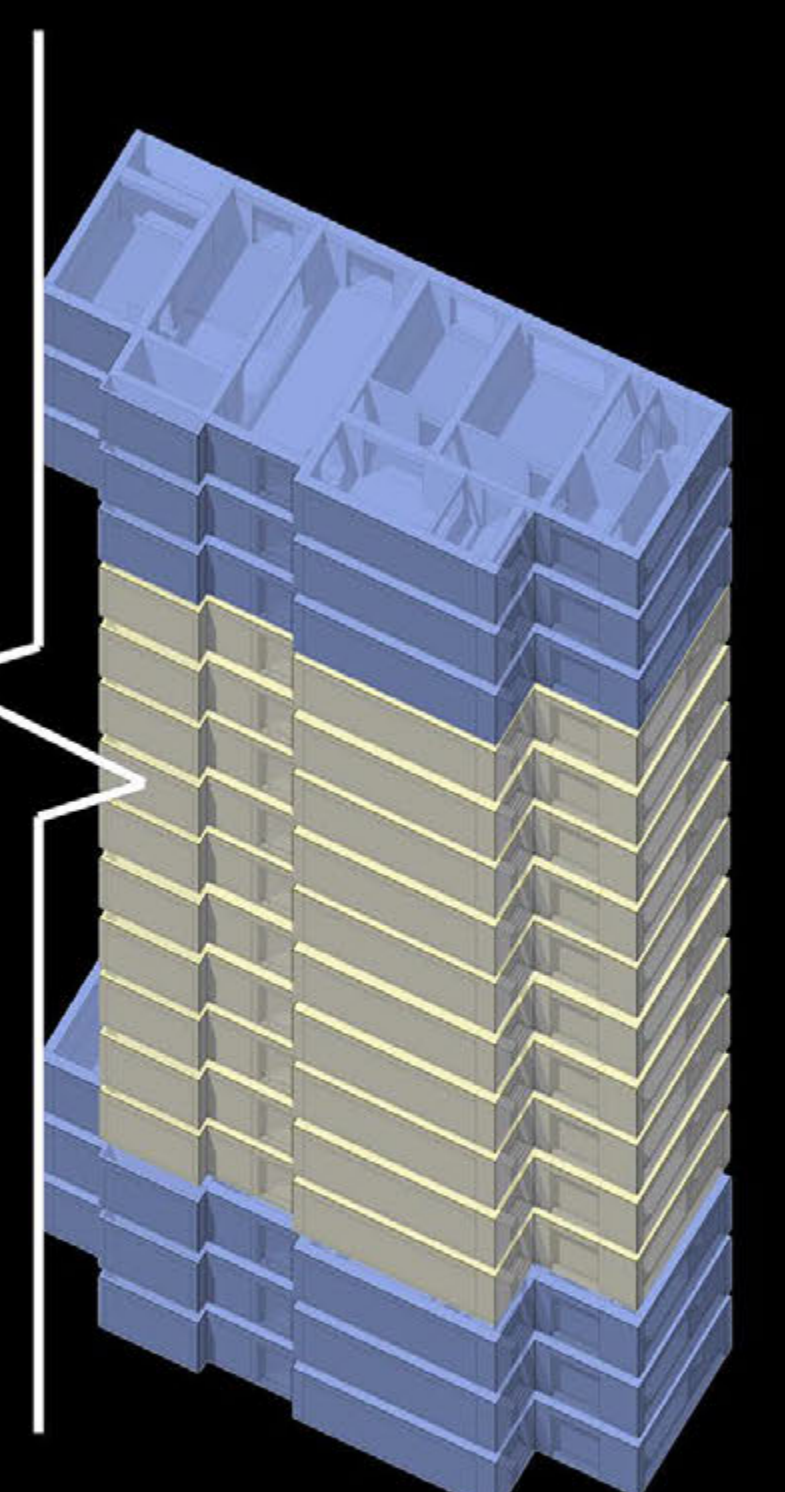
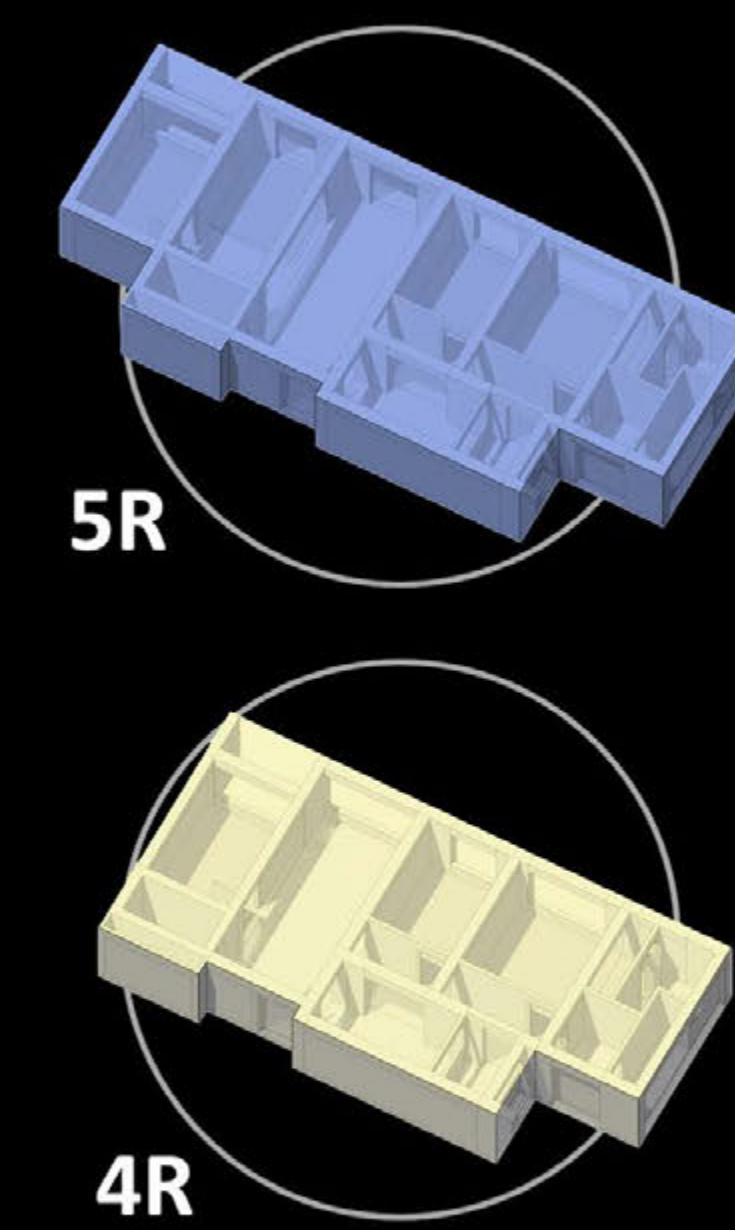
## Project Achievements

- **Optimised Prefabricated Prefinished Volumetric Construction (PPVC) modules** - 6 out of the 8 PPVC modules used to construct a 5-room unit are also used for a 4-room unit. High repeatability across unit-types reduces PPVC mould types required, hence reducing costs of producing steel moulds
- **Innovative PPVC module design to enhance safety and flexibility for reconfiguration**
  - Design for Flexibility: Columns are placed at the edges of the units, providing flexibility for future reconfiguration needs of residents
  - Design for Safety: PPVC modules incorporate non-structural partition walls, which provides stability for hoisting and transportation of the modules
  - Design for Constructability: PPVC modules incorporate a "nib" for safer stacking of modules during construction
- **"Variegated stacking" of different unit types** - This allows architects to experiment with different building layout typologies upfront without losing units across the 6 residential blocks

## "Variegated stacking" of different unit types

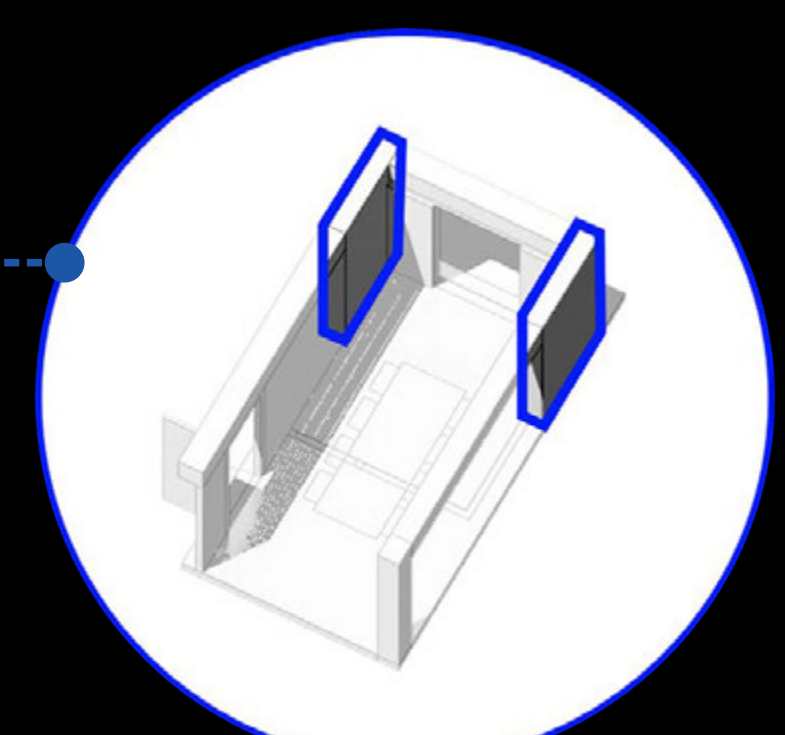


**Conventional Stacking**  
Stacking of same unit type in building stack



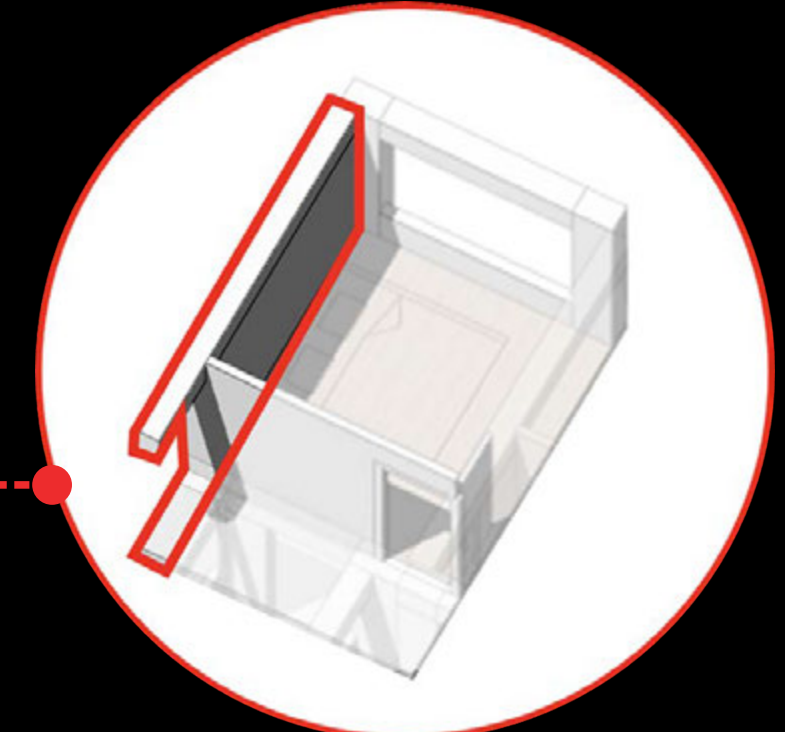
**Variegated Stacking**  
Stacking of different unit types in building stack

## Innovative PPVC Module Design



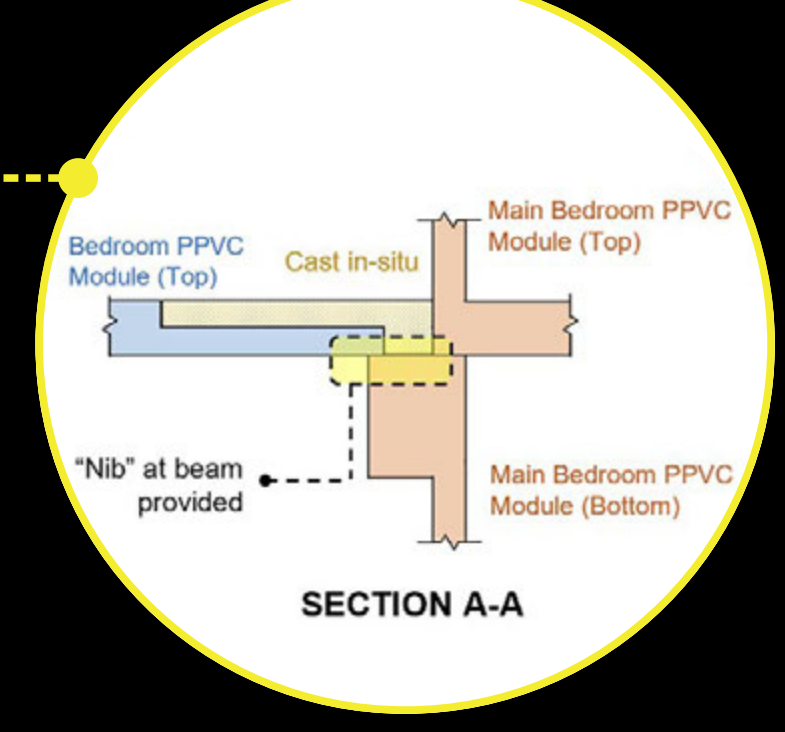
### Design for Flexibility

Columns are placed at the edges of the units, providing flexibility for future reconfiguration needs of residents



### Design for Safety

PPVC modules incorporate non-structural partition walls, which provides stability for hoisting and transportation of the modules



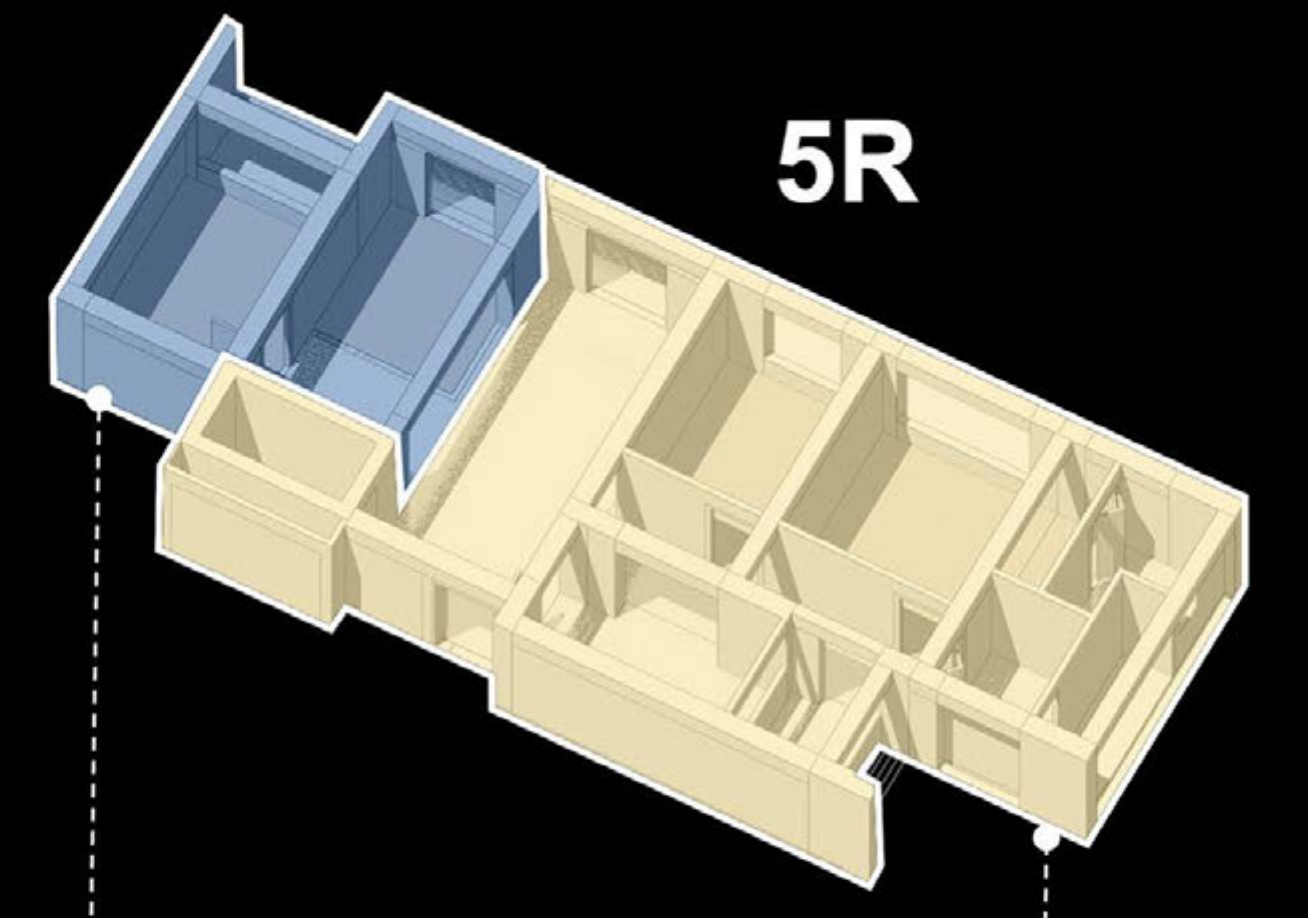
### Design for Constructability

PPVC modules incorporate a "nib" for safer stacking of modules during construction



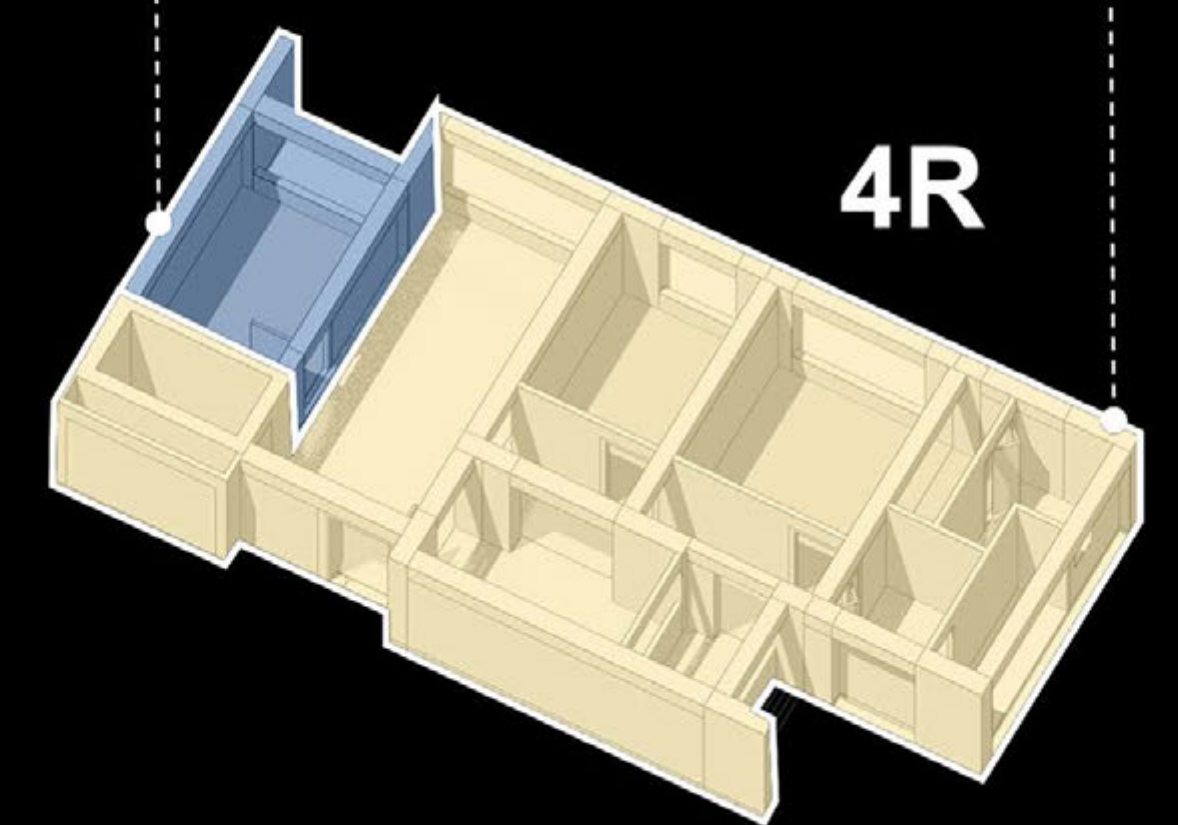
Innovative PPVC module design to enhance safety and flexibility for reconfiguration

## Optimisation of PPVC Modules



Replaced PPVC modules (2 nos.) to form 5R from 4R

Similar PPVC modules (6 nos.) between 4R & 5R



Optimising PPVC modules to ensure high repeatability across unit types. This reduces PPVC mould types required, hence reducing costs of producing steel moulds