

Legislative Council Panel on Housing

**Modular Flat Design for public housing development
of the Hong Kong Housing Authority**

PURPOSE

This paper briefs Members on the Modular Flat Design (MFD) for public housing developments by the Hong Kong Housing Authority (HA).

BACKGROUND

2. In the past decades, HA has been providing affordable public housing through standard block design. This proved to be an optimum design solution at that time. However, with limited land resources and more complex sites being used for public rental housing (PRH) developments, the HA has gradually changed from standard block designs to site specific block design since 2000.

Public Rental Housing (PRH)

(a) Site Specific Design with Non-modular Flat Design

In 2000, HA adopted the site-specific design approach as the development strategy of PRH to enable better response to site constraints and to allow full optimization of site development potential;

(b) Site Specific Design with Small Flats Design

In 2006, HA explored and piloted 1-Person / 2-Person (1P/2P) and 2-Person / 3-Person (2P/3P) “small flats design”. The first batch of projects adopting the “small flats design” were Kwai Luen Estate, Sin Ming Estate and Yau Lai Estate. They were the predecessors of MFD; and

(c) Site Specific Design with Modular Flat Design

In 2008, making reference to a series of non-standard flat designs evolved over the years and in line with the principles on “Functional and Cost Effective” design, HA developed a library of MFD as a production strategy for PRH. Since October 2008, HA

has adopted MFD to all public housing domestic blocks specifically designed to maximize development potentials.

3. The last project adopting standard block design was Sau Mau Ping (South) Estate completed in October 2009. The last site specific block with non-MFD was Shatin Pass Estate completed in March 2011. The chronological development of the shift from standard block design to MFD is shown in **Annex 1**.

Home Ownership Scheme (HOS)

4. In line with the resumption of HOS announced by the former term of the Government in the 2011/12 Policy Address and HA's objective in providing quality homes, HA developed another line of modular flats for new HOS developments in late 2011.

MODULAR FLAT DESIGN

5. We have developed four types of MFD comprising 1P/2P, 2P/3P, 1-Bedroom (1B) and 2-Bedroom (2B) flats (**Annex 2** refers). To cater for the variance of the structural envelope at higher zones, we have rationalized the IFA range¹ for modular flats. The modular flats have been enhanced and further refined to strike a better balance amongst several factors, including the optimum use of valuable land resources, building efficiency, cost effectiveness, as well as the needs and views of PRH tenants as disclosed in the findings of the Residents Surveys. Under the Quality Housing Initiatives, the use of MFD is cost-effective and could achieve greater efficiency and productivity in housing design and construction through wider use of mechanized building process.

6. For some PRH sites which are severely affected by noise, a number of noise abatement measures have been explored to address the issue. With a view to reduce noise by about 2 to 3 dBA, we have also introduced a new family flat type with side windows under the library of MFD (**Annex 2** refers). This type of window design was first piloted in Cheung Sha Wan Estate.

¹ IFA ranges for MFD are 1P/2P (14.1 – 14.5m²), 2P/3P (21.4 – 22.0m²), 1B (30.2 – 31.0m²) and 2B (35.0 – 36.1m²).

DETAILED DESIGN ENHANCEMENTS

7. HA has been refining the MFD and exploring new potential flat designs and provisions for inclusion in the library of MFD, so as to address new statutory requirements, tenants' needs and specific site conditions. Major enhancements and features over the years include -

(a) Facilitating residents' decoration with Notional Partition Layout

We have prepared a complete range of notional partition layouts for the family flats to facilitate PRH tenants and HOS owners to install block wall partitions and laying floor screeds under the Building (Minor Works) (Amendment) Regulation 2012. We would inform tenants of relevant requirements and restrictions after they move-in.

(b) Reinforcing Universal Design for better living environment and convenience

Although the requirements stipulated in the Design Manual: Barrier Free Access 2008 only cover non-domestic flat area, we make reference to the manual and have increased the clear width of flat entrance from 750 mm to 800 mm to enhance the living environment and convenience of residents. Other enhancements measures include the provision of a sunken shower design and more power sockets at one metre above floor level to make them more easily accessible by the elderly and disabled.

(c) Enhancing design of plumbing, drainage and electrical installations for healthy living and easy maintenance

We have adopted a new design of a Common W-trap System in all domestic flats to prevent transmission of disease through dried-up floor traps. Furthermore, we have relocated the electrical consumer unit from kitchen to the living area for better access for maintenance; we have also provided more twin sockets to address users' needs.

WAY FORWARD

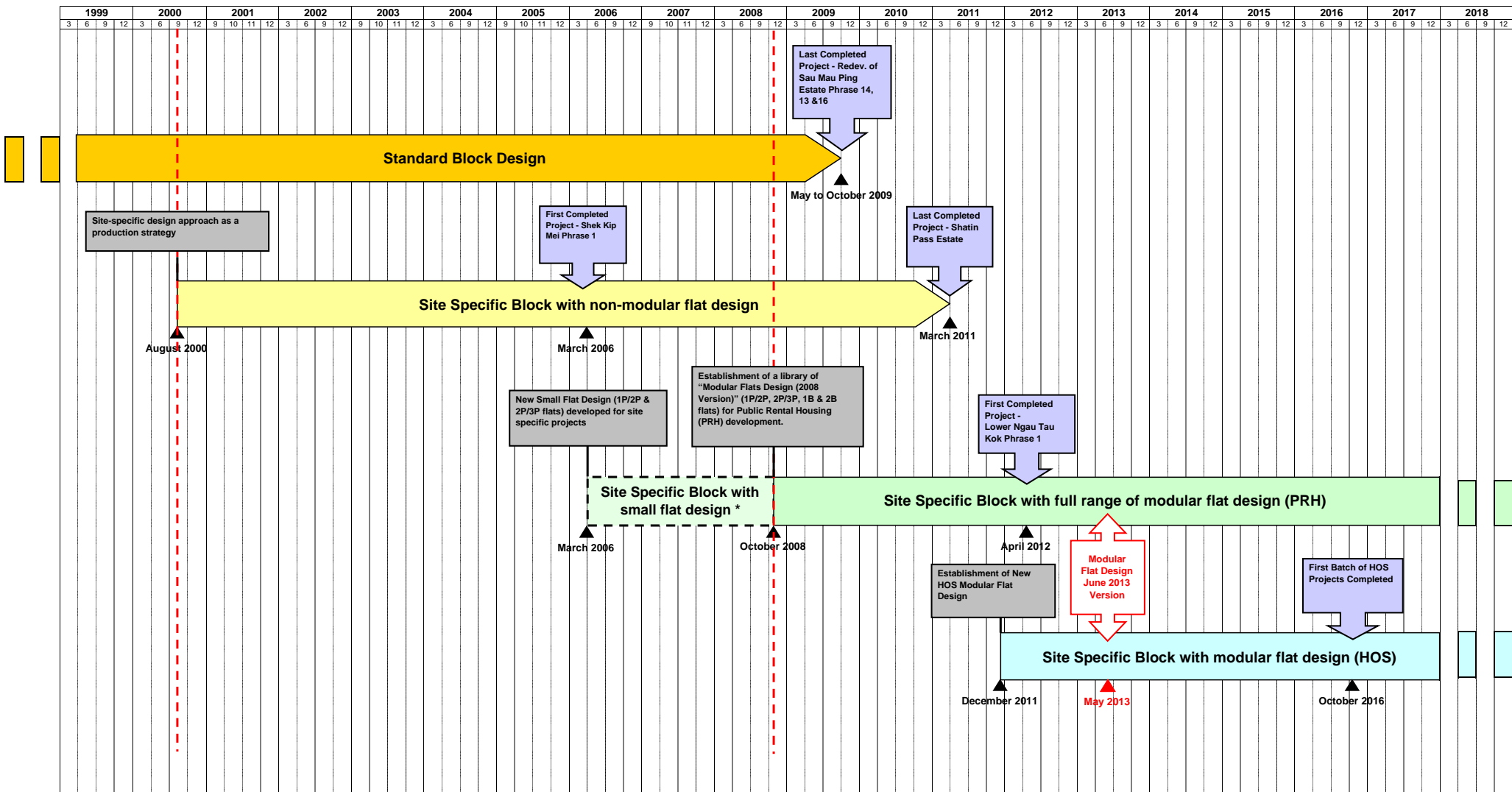
8. Given the resulting enhancement in living space and quality, the use of the modular flats is widely welcomed by PRH tenants. We will continue to collect feedback through Residents Surveys, so as to facilitate continuous improvement in the design of MFD. We also welcome views from the stakeholders in the construction industry in relation to the standardization and modularization in achieving better building efficiency and management on site.

ADVICE SOUGHT

9. Members are invited to note the content of this paper.

**Transport and Housing Bureau
June 2013**

Change in Hong Kong Public Housing Developments from Standard Block to Modular Flat Design



* **Small Flat Design**

The first batch - Kwai Luen Road (Kwai Luen Estate), TKO 73B (Sin Ming Estate) and East Harbour Crossing Phase 5 (Yau Lai Estate)

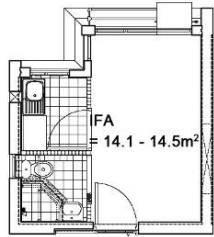
Modular Flat Design

1-Person/2-Person

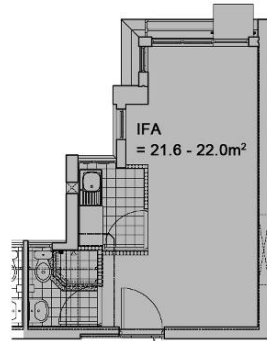
2-Person/3-Person

1-Bedroom Flat

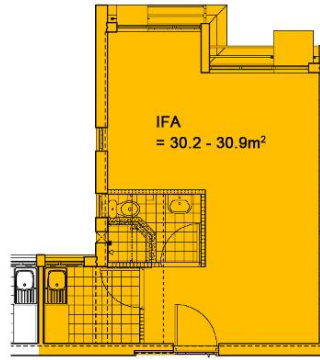
2-Bedroom Flat



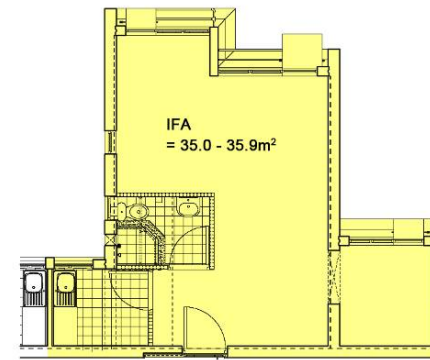
1/2P FLAT TYPE 1a



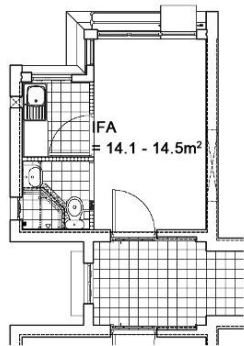
2/3P FLAT TYPE 1



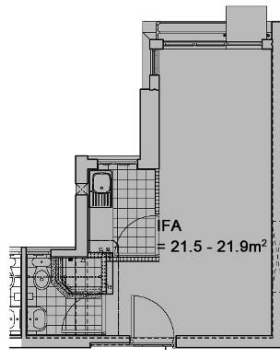
1B FLAT TYPE 1



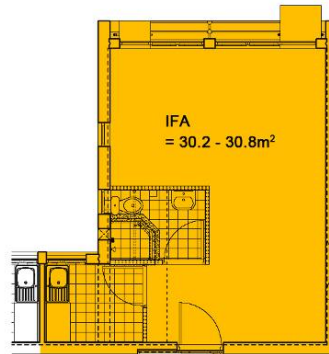
2B FLAT TYPE 1



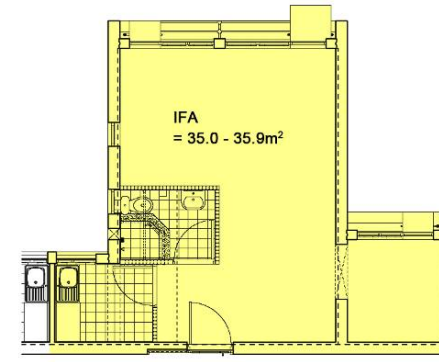
1/2P FLAT TYPE 1b



2/3P FLAT TYPE 2

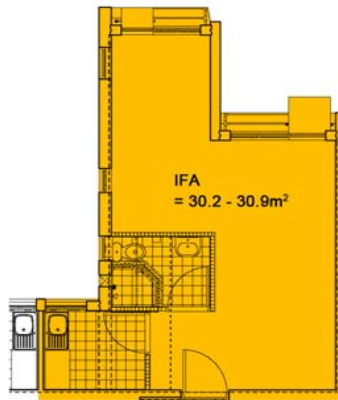


1B FLAT TYPE 2

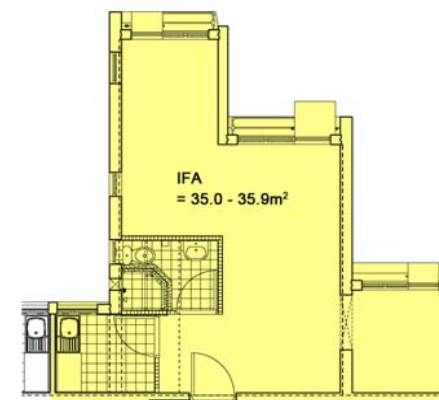


2B FLAT TYPE 2

To address severe noise abatement requirements in some public rental housing (PRH) sites, we have introduced a new family flat type with side window under the library of Modular Flat Design to reduce the noise by about 2 to 3 dBA.



1B FLAT TYPE 3



2B FLAT TYPE 3