The Evolution of Housing Authority’s Standard Block Designs and Procurement of Professional Services Provider for Public Housing Development

The Third Quarterly General Meeting (3rd QGM) of the Hong Kong Institute of Architects
15 September 2011
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I. Background

II. Design Evolution of Standard Block Design
   A. Block Design before 2000
   B. Site Specific Design
   C. Modular Flat Design

III. Procurement of Professional Services Provider (PSP)
   A. Involvement of PSP
   B. Integrated Contract
   C. Way Forward
Current Position

- 2.1 million people (approximately 30% of Hong Kong’s population) live in public rental housing.
- As at August 2011, total of 726,000 PRH flats in 162 estates under the HA.
- Anticipated new PRH production in the coming five years is about 15,000 flats per year in average.
- Maintaining the average waiting time for PRH at around three years.
Vision
● Adequate provision of affordable housing to cope with the need.

Mission
● Provision of quality housing and related services
● Cost-effective and rational use of public resources
● Maintenance of competent, performance-oriented team

Core Values – 4Cs
Background

To meet present social, economic and environmental needs in a sustainable manner.

Environmental
- Micro-climate Studies
- Biodiversity Assessment
- Air & Noise Control
- Greening
- Material Usage
- Energy
- Water & Waste Management
- Cost Effectiveness
- Community Engagement & Business Partnering
- Financial Performance
- Housing Rent Policy
- Resource Optimization
- Staff Engagement

Social
- Safety
- Estate Management
- Health and Hygiene
- Fostering Harmonious Family

Economic
- Cost Effectiveness
- Community Engagement & Business Partnering
- Financial Performance
- Housing Rent Policy
- Resource Optimization
- Staff Engagement
Design Evolution of Standard Block Design
A. Block Design in the 1950’s

Example:
- Wong Tai Sin Estate
- Shek Yip Mei Estate

Architects:
Public Works Department
A. Block Design in the 1960’s

Example:
- North Point Estate
- Choi Hung Estate
- So Uk Estate

Architects:
Eric Cumine Associates (So Uk Estate); and Palmer & Turner Architect & Engineer Ltd. (Choi Hung Estate)
A. Block Design in the 1970’s

Example:
- Wah Fu Estate (Twin Tower Block)
- Cheung Ching Estate (H-Block)
A. Block Design in the 1980’s

Example:
- Cheung Hong Estate (Trident 1)
- Pok Hong Estate (Trident 2)
- Chuk Yuen Estate (Trident 3)
- Wah Kwai Estate (Trident 4)
- Tai Ping Estate (Linear Blocks)

Architects:
Wong & Ouyang (HK) Ltd. (Kwong Tin Estate)
A. Block Design in the 1990’s

Example:
- Ho Man Tin Estate (H1)
- Pak Tin Estate (H1)
- Tin Fu Court (Concord 1)

Architects:
LWK & Partners Architects (Oi Tung Estate Ph. 1); and Design 2 (Pak Tin Estate Ph. 4)
A. Block Design in the 2000’s

- Prefabricated construction
- Pre-cast concrete facades, staircases and floor slabs.
- Factory produced components
- Modular flats
- Up to 20 flats per floor
- 40 domestic storeys
- Up to 800 flats per block

Example:

- Kwai Chung Estate (NH1)
- Kin Ming Estate (NH1)

Architects:
ARCA Ltd (formerly Wong & Tai Assoc. Ltd.);
MLA Architects (H.K.) Ltd.; and
Palmer & Turner Architect & Engineer Ltd.
(Kwai Chung Estate Ph. 3, 4, 5)
B. Site Specific Project Developments

- Housing Authority’s production strategy.
- Flexibility for concurrent use of any combination of site specific block designs.
- Addressing site constraints and optimize development potentials.

Upper Ngau Tau Kok Estate

Kwai Shing East Estate

Yau Lai Estate
C. Modular Flat Design

- A new library of “Modular Flat Design” was developed covering the full spectrum of 1-Person / 2-person, 2-Person / 3-Person, 1-Bedroom and 2-Bedroom modular flats.

- The principles on “Functional and Cost Effective” design.

- Quality Housing Initiatives.

- Best value and best practice in housing design and construction

Example:
- Lower Ngau Tau Kok Estate (Under Construction)
Sample – Kwai Chung 9H

Modular flat design to form building wings and block design in Building Information Modeling (BIM)
Building Information Modeling (BIM)

Better Healthy Living, Safety and Easy Maintenance Base on Environment Study
C. Modular Flat Design

Way Forward

• Exploring the use of another line of modular flats to address different site constraint such as severe noise abatement.

Special Acoustic Window Design
(San Po Kong Flatted Factory Site)

Innovative Arc Screen Design
To alleviate the traffic noise problem in Sai Chuen Road PRH Development.
(Dong Guan, PRC)
**Awards / Honours**

2004 **HKIA Special Architectural Award**
- Architectural Research
*Universal Accessibility – Best Practices and Guidelines*

2006 **HKIA Special Architectural Award**
- Architectural Research
*Micro-climate Research Studies for Sustainable Public Housing Development*

2008 & 2010 **Quality Building Award**
**Merit Award**
- *Kwai Chung Estate Phases 3, 4 & 5 Grand Award*  
- *Upper Ngau Tau Kok Estate Phases 2&3*

2009, 2010 & 2011 **Autodesk Hong Kong BIM Award**

- **Towards Customization with Standard Modular Flats in Mass Housing Design**
- **Transforming Business Practice in the Delivery of Public Housing as evinced by the project Tung Tau Cottage Area East**
Awards / Honours

2009 & 2011
Civil Service Outstanding Service Award Scheme
• Green Treatment of Marine Mud for Insitu Backfilling,
• Twin Tank System and Rainwater Harvesting System,
• Wage Payment Monitoring System and Record

2010 Green Building Award
Grand Award
• Sau Mau Ping South Estate

Merit Award
• Upper Ngau Tau Kok Estate Phases 2&3

2010 & 2011 BCI Green Design Award
Green Leadership Award
• Upper Ngau Tau Kok Estate Ph 2&3
• Sau Mau Ping South Estate
• Lam Tin Estate Phase 7

2010 & 2011
Safety Leadership Award
by Lighthouse Club - Champion

2011
Smart Card cum palm-shaped reader for site access control and workers’ attendances records

Marine Mud Layer
Twin Tank System
Lam Tin Estate
Sau Mau Ping South Estate

Railing
Procurement of Professional Services Provider (PSP)
A. Involvement of PSP

Involvement of PSP

- Project Design Stage
- Tender Documentation Stage

Commitment in Delivery PRH

- Functional and Cost-effective
- Environmental-sensitive
- Public Engagement
- Researches with Academia and Industry
Kai Tak Site 1B offers a unique opportunity for tenderers to innovate the delivery of about 8,000 public rental housing flats.
Integrated Contract

- Assess the tenders on their design and technical proposal, **innovation proposal** and price proposal.

- Enables **earlier and better integration of design and construction expertise** from employers, designers, builders and manufacturers with synergistic results so as to deliver better value and quality products with improved productivity.

- Procure **innovative housing design and construction solutions** which can be transferred for **general applications in future projects**.
B. Integrated Contract in Kai Tak Phase IB

Tenderer with the Highest Combined Score

Yau Lee-Hsin Chong Joint Venture

Tenderer X

Tenderer Y
Quality, Functional & Cost-effective Homes

- Site Safety
- Green Awareness
- Public Engagement
- Cost
Thank You