Engineering Forum
The Hong Kong Institution of Engineers
Seminar on "Engineering HK Housing Supply - Challenges, Changes, Continuity"

" Public Housing Production – How We Fight an Uphill Battle? "

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The Design for

Quality Public Housing Developments in Hong Kong

Quality = Fitness for Purpose

1. *Introduction*
2. *Challenges in Development*
3. *Smart & Green*
4. *Safe & Healthy*
5. *Our Journey will Continue*

1. Introduction

*The **Hong Kong Housing Authority (HA)** was established in 1973 under the Housing Ordinance.*

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Our Vision

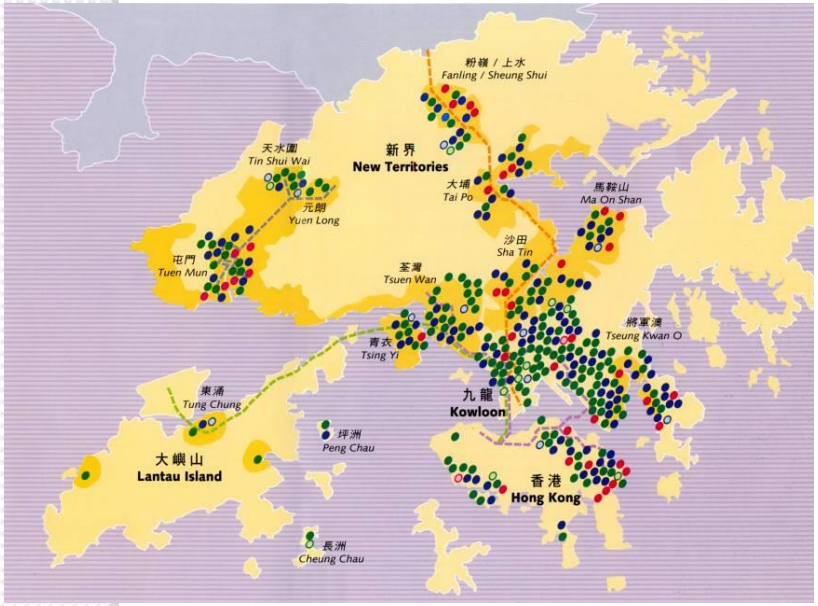
To help low-income families with housing need gain access to affordable housing.

Our Mission

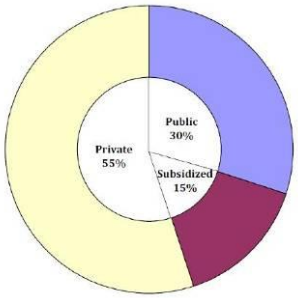
- To provide affordable **quality** housing, management, maintenance and other housing related services to meet the needs of our customers in a proactive and caring manner;
- To ensure cost-effective and **rational** use of public resources in service delivery and allocation of housing assistance in an open and equitable manner; and
- To maintain a competent, dedicated and performance-oriented **TEAM**.

1. Introduction

About 30% of Hong Kong's over 7 million people are residing in public rental housing



Housing Estates in Hong Kong



- *We have an existing stock of about 756,000 public rental flats*
- *Allocation standard is 7m² per person. Average living space is about 13 m² per person.*

Permitted Plot Ratio

- **Hong Kong Island : 8 to 10**
- **Kowloon : 6 to 7.5**
- **New Territories : < 5 to 6**

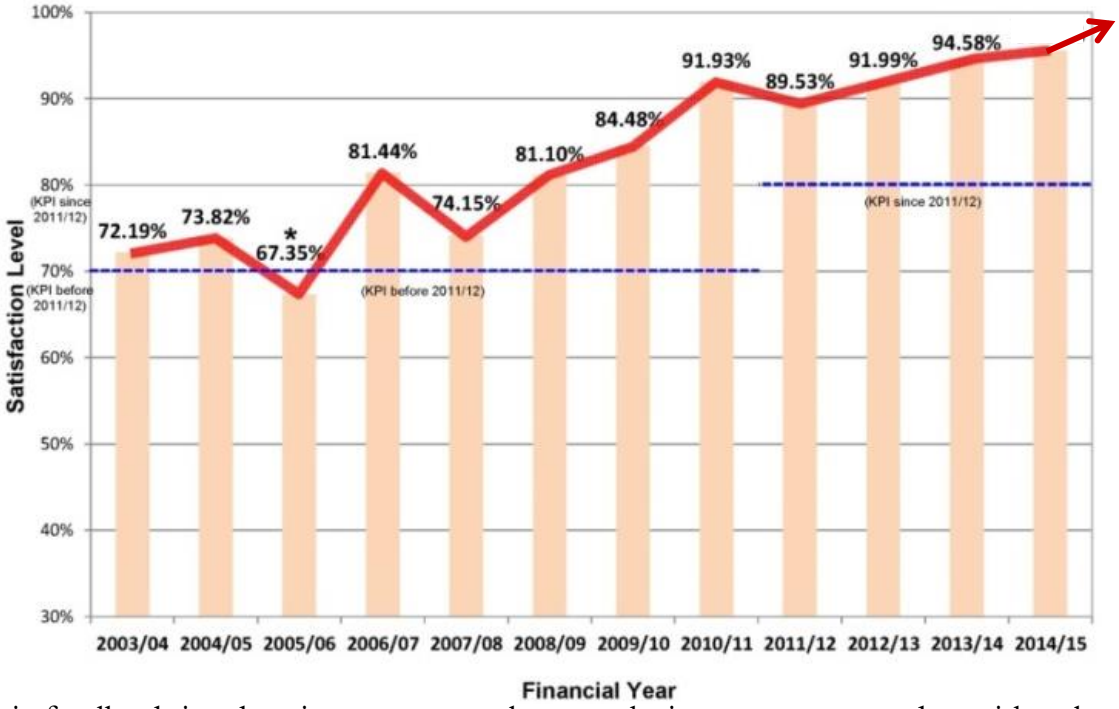
90,000+ new rental & subsidized sale flats from 2016/17 to 2020/21

1. Introduction

A starting point for all our planning, design and construction work is the **end-users** – the community and our future tenants.

Every project begins with community engagement initiatives that are designed to gauge community needs and take on board local views. These initiatives include, for example, community engagement workshops during the early stages of planning and design of our projects, and surveys of residents in newly completed estates, each of which is analysed and considered in our Post Completion Review Workshops. etc.

Customer satisfaction index rises, with max. of **98.1%**



Reaching 98% in 2014/15

→ Cheung Sha Wan Estate

This feedback is taken into account when we design new estates, alongside other important criteria such as safety and comfort, sustainability and environmental friendliness, and efficiency and cost-effectiveness.

1. Introduction

We deliver affordable quality public housing in a high-rise high density compact city -

1. Care for people with nature in mind;
2. Create quality living space to form the hub of a new urban community;
3. Triumph a higher standard of design for people-oriented, healthy living environment and sustainability :
   a. Maximize site potential;
   b. Adopt functional and cost-effective design; and
   c. Apply green, lean, safe and sustainable planning, design and construction.

Hung Fuk Estate

2. Challenges in Development

How to meet the Challenge ?

We rise to the CHALLENGES;
We design for PEOPLE.

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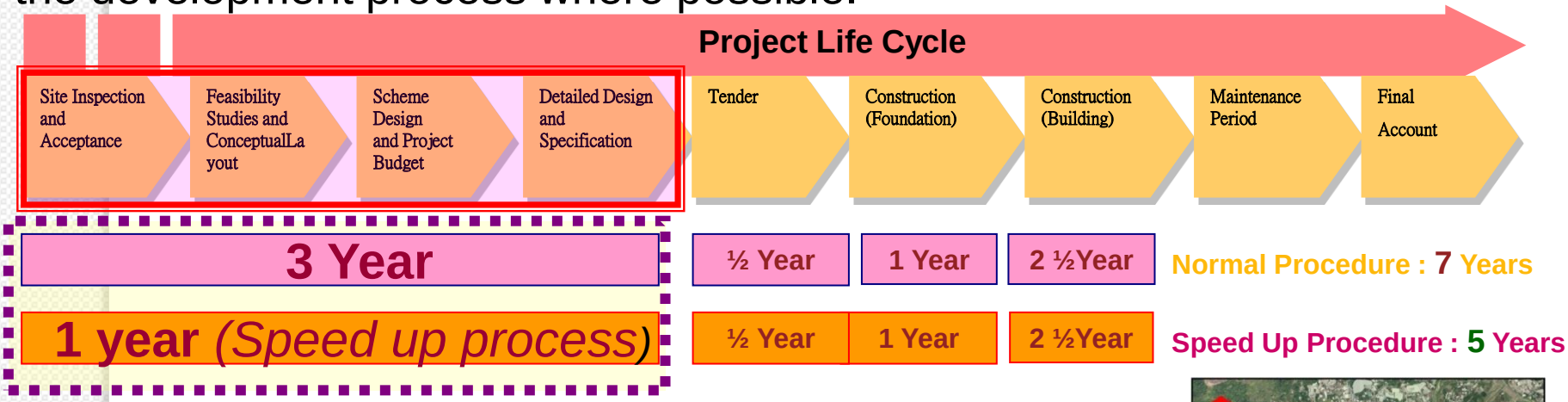
2. Challenges in Development

Hong Kong Housing Authority (HA) has been working hard to **fast-track** the development process where possible.



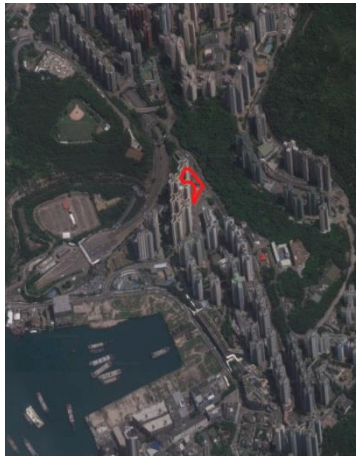
- **Successfully pushing forward the "spade-ready" sites:**
  - **the first batch of six newly-built Home Ownership Scheme projects; and**
  - **the Eastern Harbour Crossing Site Phase 7**
- **such "spade-ready" sites are rare.**
- **About 80% of the projects for which HA have consulted District Councils (DCs) in the past six years are non "spade ready"**
- **HA endeavoured to fast-track the development process with success in non "spade-ready" sites. For example, Queen's Hill Site 1.**
- **Longer lead time required for these non "spade-ready" site sites to require properly re-zoning, resumption, clearance, re-provisioning of existing facilities, site formation or provision of additional infrastructure.**

Queen's Hill Site 1

2. Challenges in Development

HA has been working on **variety of layout plans**, standalone or large scale, in different size of development where possible.

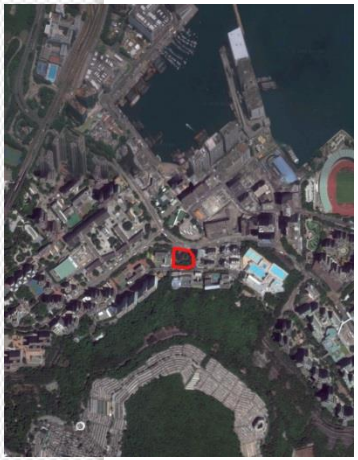
Tai Wo Hau Road
(~800Flats)



Eastern Harbour Crossing Site Phase 7
(~500 Flats)

Tung Chung Area 39
(~3800 Flats)

Queen's Hill
(~12000 Flats)



Chai Wan Road
(~700 Flats)

Small Sites

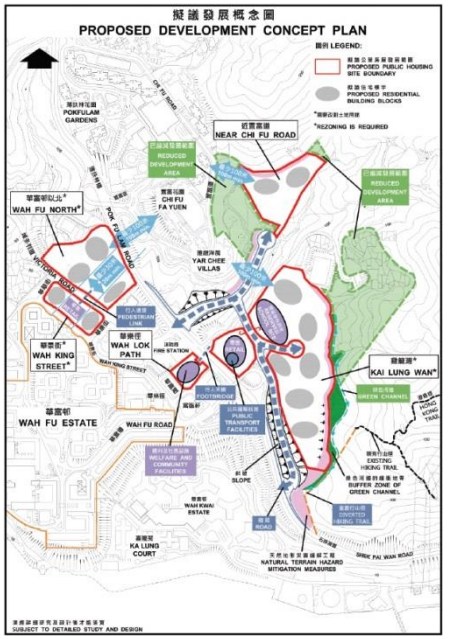
Shek Mun Phase 2
(~3000 Flats)

Large Sites

2. Challenges in Development

1. Planning and Consultations

- Conduct **technical studies** for **straight forward** cases taking about **12** months and **longer time for large-scale or complex** cases, for example, Pokfulam South.
- Conduct **consultations to gain acceptance by the local community** but time taken with generating further demand.



Pokfulam South.

2. Town Planning Board Procedures

- Seek TPB's approval for **rezoning** of non-residential land (about **11** months), **increasing plot ratio** etc.

3. Land Resumption and Clearance

4. Provisioning and Re-provisioning of Community Facilities

5. Site Formation and Infrastructure Provision

- Site requiring site formation and road works would add about **three years** to the development programme, for example, Wang Chau Phase 1 .

6. Sites Involving Government-funded Items

- The **timely funding approval** granted by the LegCo has an **impact on the lead time** for the completion of public housing developments.

Planning and Consultations

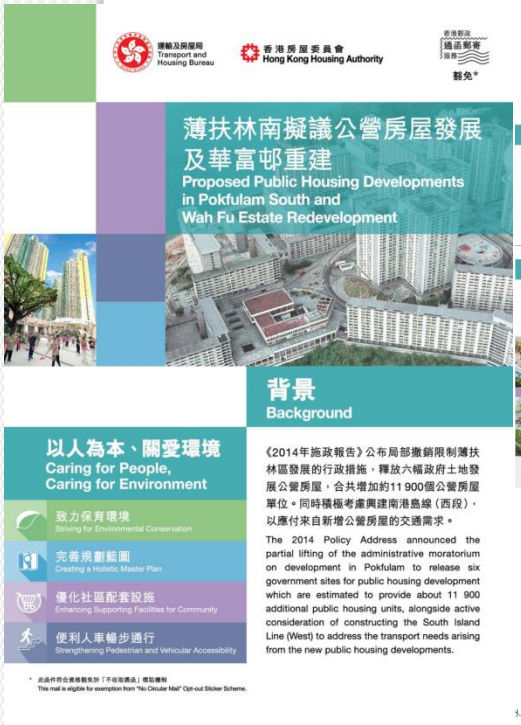
Conduct Technical Studies to collect data, explore options, and assess if and how impacts from the proposed development can be overcome.

25 nos. of Technical Studies carried out for Potential / New Housing Sites

1. Air Ventilation Assessment (AVA)
2. Microclimate Studies (MCS)
3. Retail Viability Study (RVS)
4. Project Feasibility Studies (PFS)
5. Architectural Feasibility Studies (AFS)
6. Site Potential Studies (SPS)
7. Visual Impact Assessment (VIA)
8. Heritage Impact Assessment (HIA)
9. Ecological Assessment (EA)
10. Land Use Studies (LUS)
11. Planning and Engineering Study (PES)
12. Environmental Assessment Study (EAS)
13. Air Quality Objectives (AQOs)
14. Odour Assessment (OA)
15. Chimney Emission Impact Assessment (CEIA)
16. Traffic Impact Assessment (TIA)
17. Drainage Impact Assessment (DIA)
18. Sewerage Impact Assessment (SIA)
19. Land Decontamination Study (LDS)
20. Ground Assessment (GA)
21. Natural Terrain Hazardous Study (NTHS)
22. Potentially Hazardous Installations Assessment (PHIA)
23. Tree Survey (TS)
24. Condition Survey for Existing Building
25. Land Surveying (LS)

Planning and Consultations in Pokfulam South

- **Consultations** are conducted in parallel with the technical study. They often start with **informal** consultations, followed by **formal** public consultations.
- **Information Leaflets** are also issued to introduce the background and development principles for soliciting local view. They also highlight the major opinions collected, proposed development parameter and development concept plan.



Meeting the Challenges

a) To **closely liaise with relevant government bureau/departments** to ensure timely availability of sites and supporting infrastructure;

b) To **communicate proactively with the local communities** to enlist their support for the proposed public housing projects, and address their concerns as far as practicable;

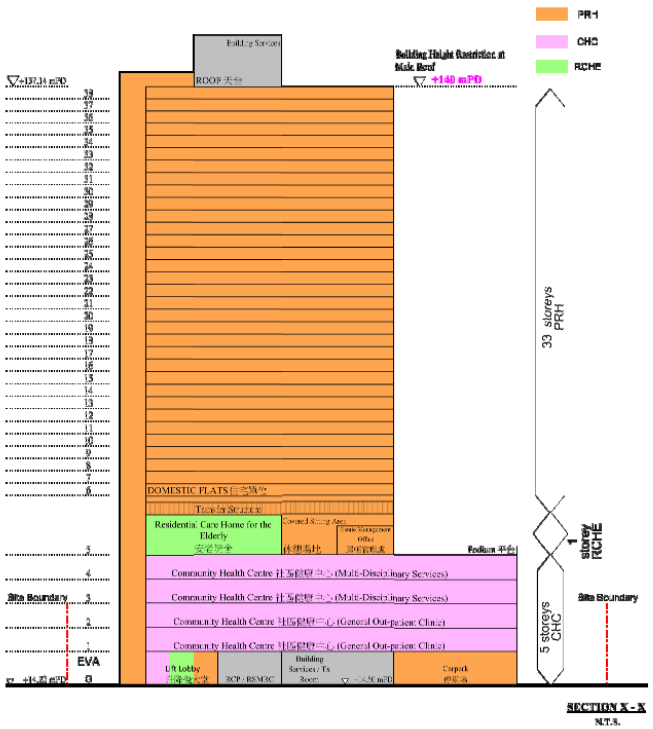
For Example:- Tuen Mun Area 29 West

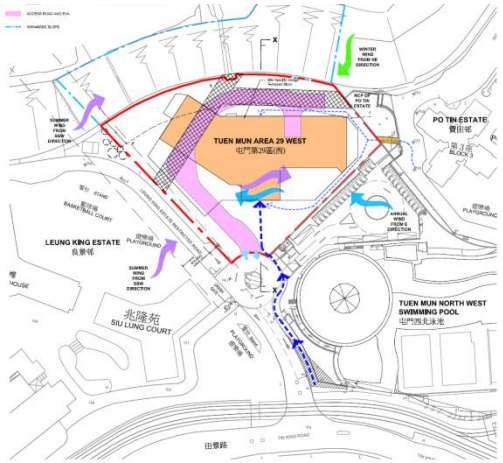
Meeting the Challenges -

(c) To maximise flat production of each public housing site through relaxation of development restrictions (e.g. plot ratio, building height) in an appropriate scale where planning condition permits; and to enlarge or amalgamate sites, or both, to create larger buildable platforms;

	Original	Relaxed
• Increase in plot ratio ratio	4.5 (760 flats) flats)	6 (990 flats)
• Increase building building height	31 Storey Storey (Domestic)	34 Storey (Domestic)
• Create larger buildable platforms platforms	N/A	6 Storey (Non-Domestic – Community Community Health Centre for Centre for Multi-Disciplinary Disciplinary Services and General Out-patient Clinic ; Clinic ; Residential Care Home

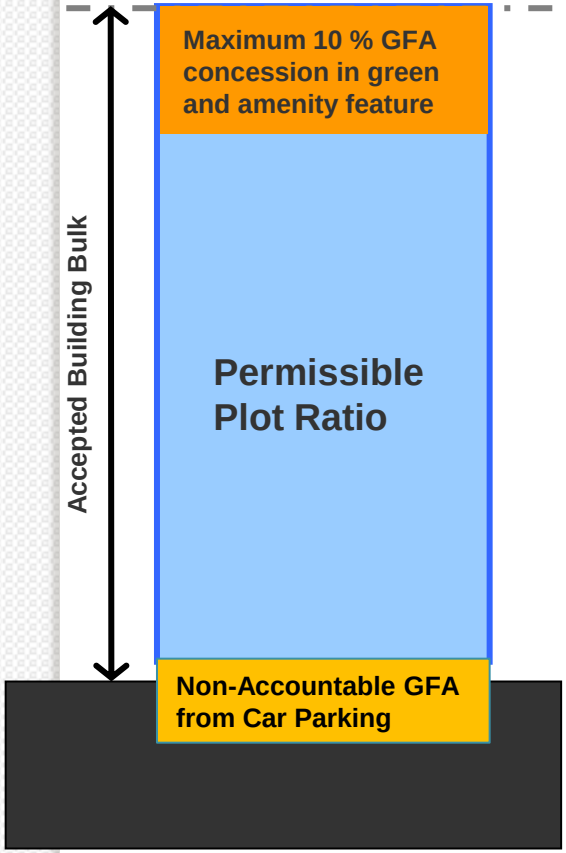
For Example -Tuen Mun Area 29 West





Meeting the Challenges -

- Under Sustainable Building Design Guidelines (APP-152) and other new / revised JPN's & revised JPN's & PNAP's, HA would obtain overall maximum 10% GFA Concession plus any Concession plus any additional Non-Accountable GFA from car parking depending on the depending on the compliance to the requirements. For Example -



- **Car Parking** — **Non-Accountable**
- Wider corridor & lift lobby
- Mail Delivery Rooms
- Non- structural prefabricated external wall
- Wing wall, Wind catchers and funnels, Noise barriers, Acoustic fins & Covered walkways
- Management facilities
- Larger lift shaft
- Pipe ducts
- Non- mandatory plant room and plant room for environmental friendly system *

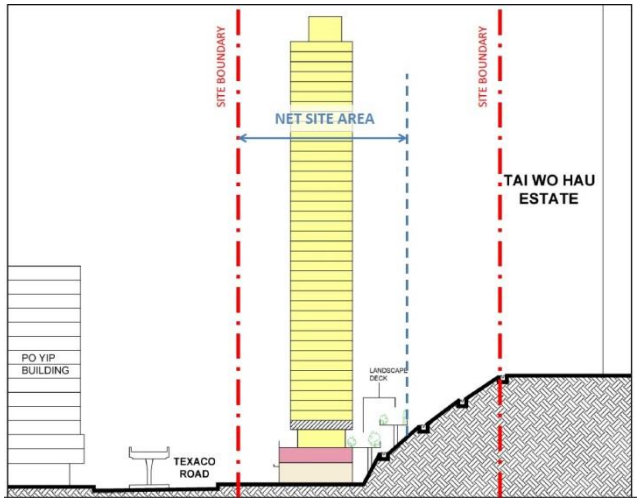
Overall capping at 10%

- Covered play area — **Non-Accountable**

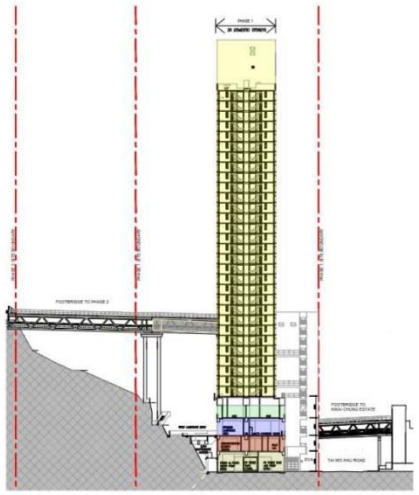
Meeting the Challenges

d) To work with industry stakeholders to **improve and implement labour training and procurement schemes**; and

e) To ***adopt site-specific design*** to capitalise the optimal development potential of each site. We will also continue to ***improve the construction process and built quality***, as well as expedite flat production by ***adopting the pre-cast building technology*** and ***lean construction*** at sites.



Texaco Road Site



Tai Wo Hau Road Site

Meeting the Challenges -

- *Integrate passive design elements holistically and refine the estate planning and building disposition*

Since 2000, we adopt Site-specific Design with a "People-centric approach".

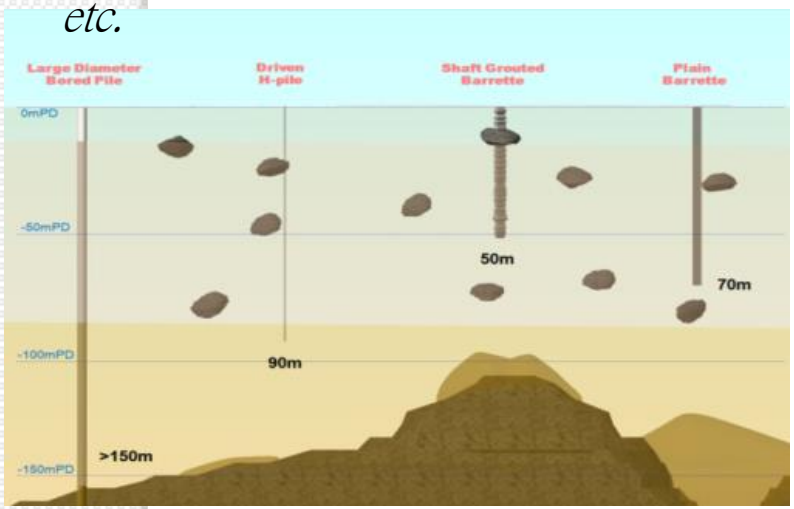
- ***Responding to land supply and site constraints***
- ***Optimizing development potentials***
- *Planning for people; enhancing social cohesion*
- *Addressing community needs*
- ***Enhancing quality***
- ***Further enhancing mechanized construction***

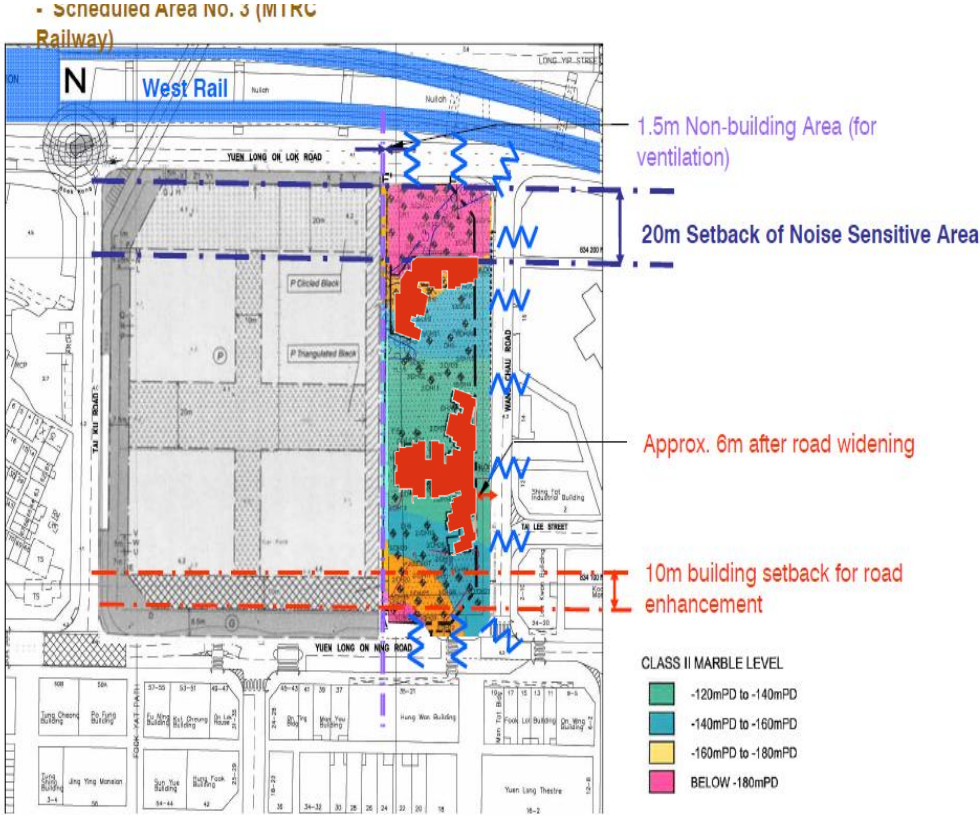
Meeting the Challenges

➢ *Improve the construction process and built quality*

The design and disposition of buildings need to be carefully adjusted and refined to –

- *minimize encroachment in deep cavities and complicate the foundation system*
- *minimize cut and fill*
- *Reduce special transfer structures, deep excavation*
- *retain existing trees on slopes using soil nail etc.*





*The **Ex-Yuen Long Estate site** applied a **special pile type "Shaft Grouted Barrette"** is adopted to underpin the two domestic blocks. Overall reduction of concrete volume in the foundation works is about **21,000 m^3**, and hence likewise the equal amount of excavated waste.*

The project was awarded the highest rating for the two local Green Building Assessment Systems, namely the Beam Plus version 1.2 for new development and the China Green Building Design Label (CGBL) in 2013.

Meeting the Challenges

➢ *Adopt the pre-cast building technology*

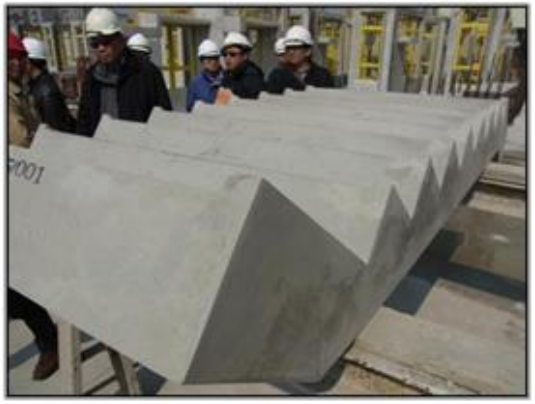
- Higher quality, greater efficiency and productivity with wider use of mechanized building process and prefabrication of structural elements

Volumetric Precast Bathroom

Fabric Reinforcement

Semi-precast Slab

Precast Façade



Precast Staircase

Meeting the Challenges with Estate Planning:

Caring with Comprehensive Planning & Design

Comprehensive Social Welfare and Recreational Facilities

- Integrated Children and Youth Services Centre
- Neighbourhood Elderly Centre
- Hostel for the Moderate Mentally Handicapped
- Integrated Vocational Rehabilitation Services Centre
- Kindergarten.

Active Recreation Facilities

- Basketball/ Badminton Courts
- Table Tennis
- Community Play Areas

Passive Recreation Facilities

- Community Farm & Lawn
- Mini-woodland
- Recycle garden
- Leisure & Cultural Activity Areas

Transport Facilities

- Public Transport Interchange
- Carpark
- Taxi & bus Lay-bys
- Signalized junction for pedestrian crossing

Other Facilities

- Wet markets
- Convenient Stores

Meeting the Challenges with Estate Planning:

Caring to Free Users from Noise Nuisance and Ventilation in Estate Facilities

- Secure comfortable environment, maintaining valuable natural ventilation & land resources.

A Weather-proof Open Air Public Transport Interchange (PTI) in Hung Shui Kiu Area 13 (Hung Fuk Estate)

2. Challenges in Development

Meeting the Challenges with Estate Planning: Caring for End Users

Fire Safety and Hygienic Condition in Market Design

Market Design in Hung Shui Kiu Area 13 Phase 2 (Hung Fuk Estate)

Traditional → **Present**

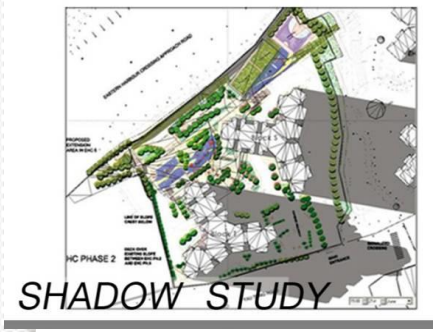
3. Smart & Green

How to provide a green focus for development ?

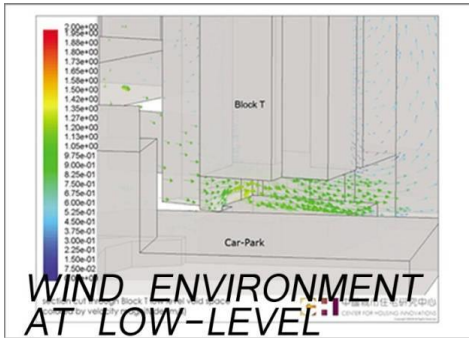
We care for PEOPLE;
We design for PEOPLE.

Estate Planning : Adapting Passive Design assisted by Micro-climate Studies

- Since 2004, apply micro-climate studies and air ventilation assessments to facilitate passive design at planning and design stages of all new projects.
- To create comfortable environment in breeze and daylighting. Neighborhood also benefits.

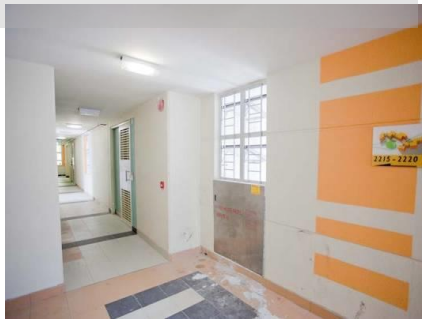


Sun Shadowing Analysis

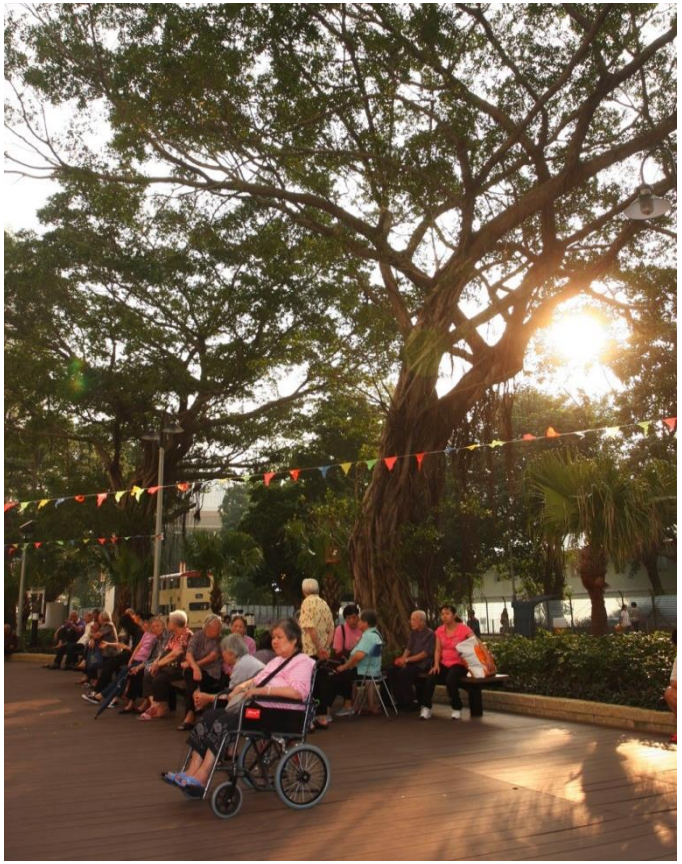


Wind Permeability

Ventilated corridors with natural daylight achieve energy saving up to **15%**



Vertical Daylight Factor / Indoor Environment Quality

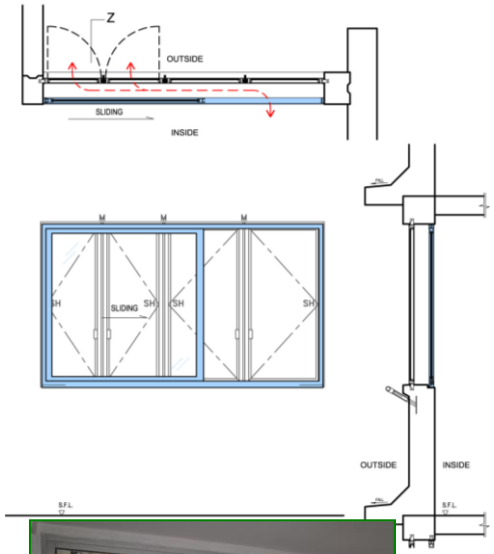


We provide breezeway for the community

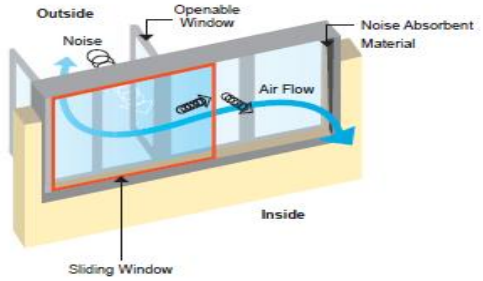
Estate Planning : Caring to Free Users from Noise Nuisance

Mitigating Noise : Acoustic Window/ Balcony

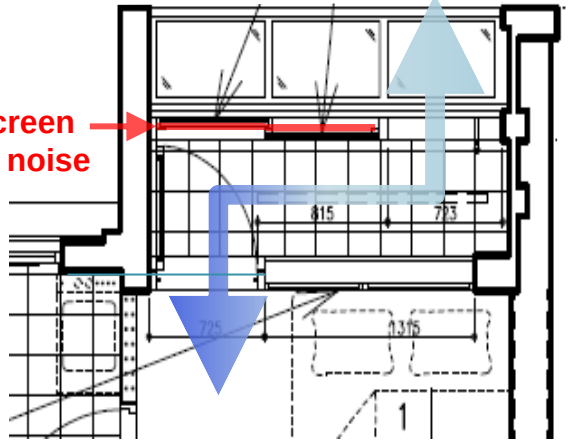
- Achieve noise attenuation ranging from 6 to 10 dB(A)
- Secure comfortable environment, maintaining valuable natural ventilation & land resources.



Acoustic Window (-6.4dBA)



1st Generation Acoustic Balcony (-8dBA)



2nd Generation Acoustic Balcony (-10dBA)

Estate Planning: Smart Living

G/F lobby with mail delivery room and mail boxes for easy accessible by postmen and tenants ….

….. free wifi and seating

(EV) charging facilities –

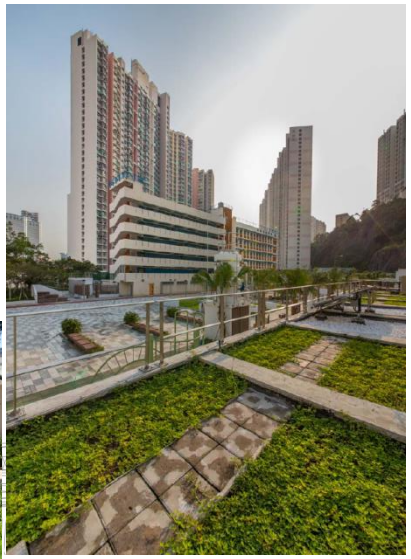
We provide conduit, cable containment and wiring

up to 30% of all of the car parking spaces in our developments.

Estate Planning : Caring for Smart Greening

***Provide better air quality** and **avoid urban heat island effect**, aside from ecological and amenity value. We*

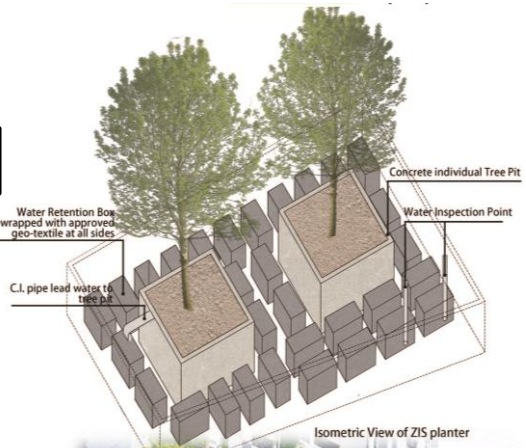
- ***maximize** greening in new estates*
- *planting at least **one tree for every 15 flats***
- *greening ratio: at least **20%** (up to 30% for larger sites)*
- *providing "Community Farm" in every new estate*



*The Kai Tak Development in Kowloon City has adopted the green and healthy environment as one of the key features in the design theme of "Homes in the Park" with an overall greening ratio over **30%.***

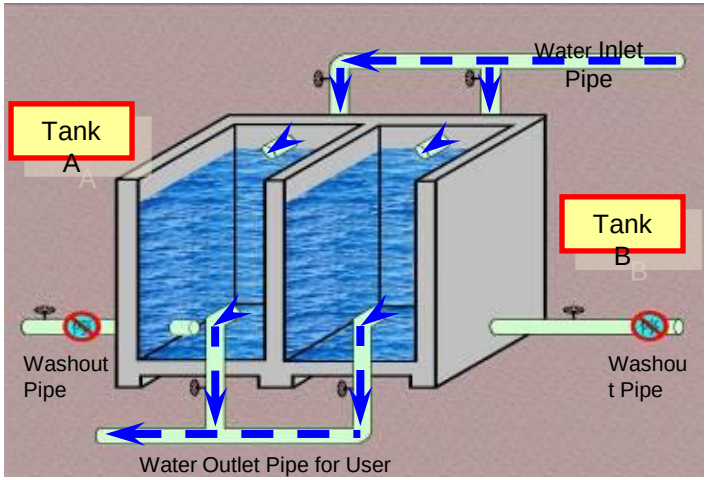
Zero Irrigation System

- Pioneered to apply sub-soil irrigation method to achieve 'zero irrigation' in residential projects
- No manual watering operation and portable water required for over 24 months of trial
- Self-sustained design to the vegetation and to minimize topsoil evaporation
- 100% saving of irrigation water

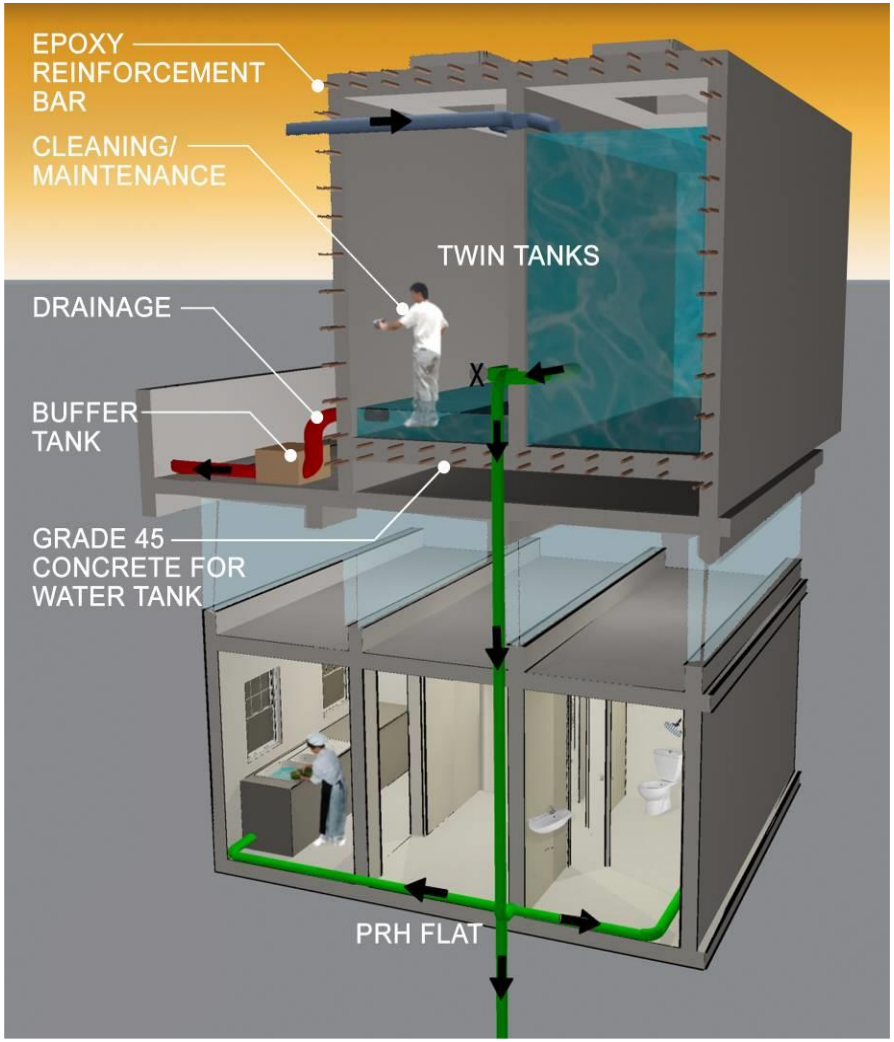


Estate Planning : Caring for the users to provide uninterrupted water supply to tenants at all times *with water saving design*

- First completed project is Shatin Shek Mun Estate in 2009; since then with full application in all housing projects
- Enables water tank and roof slab to be more Durable and Maintainable
- Reduces water wastage by about 5,300m³ per annum



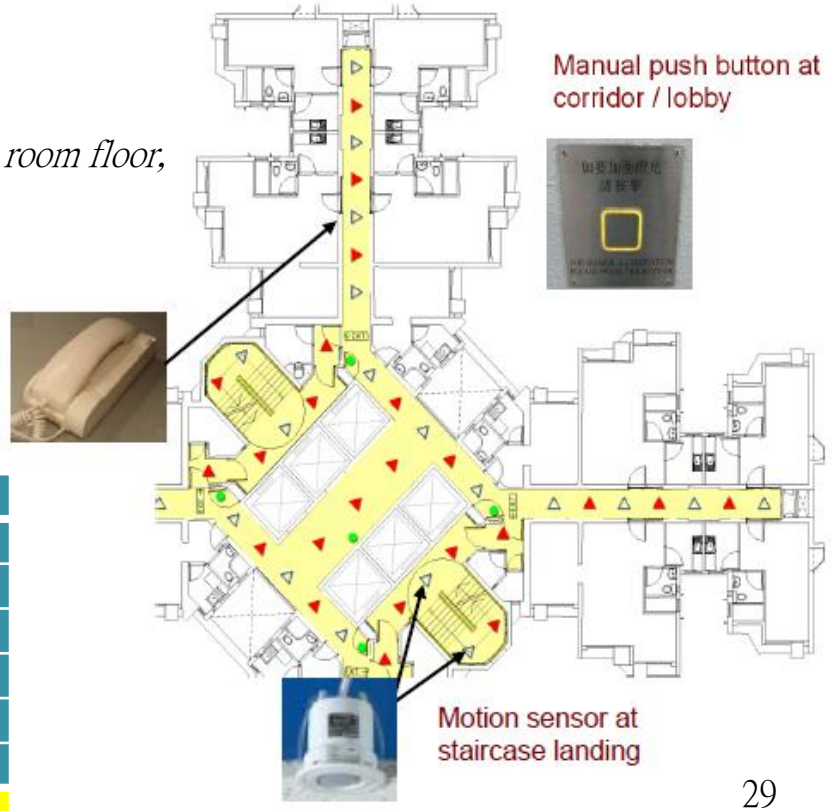
Twin Tank System



Estate Facilities : Caring for visually Impaired persons with energy saving design

Two level lighting design in Common Area

- *Enable high efficiency lighting and saving in electricity*
- *Implemented since 2008, **we maintain a minimum lighting level for safety and security**; while the manual switch integrated with the door phone handset in each domestic flat and the provision at strategic positions at the lift lobby and corridors **enable the required illumination level up to 85 lux***



Grid Connected Photovoltaic System

- *Where feasible, we Install at the upper roof and roof on lift machine room floor, **generating about 2.5% energy for the communal areas.***

Energy performance

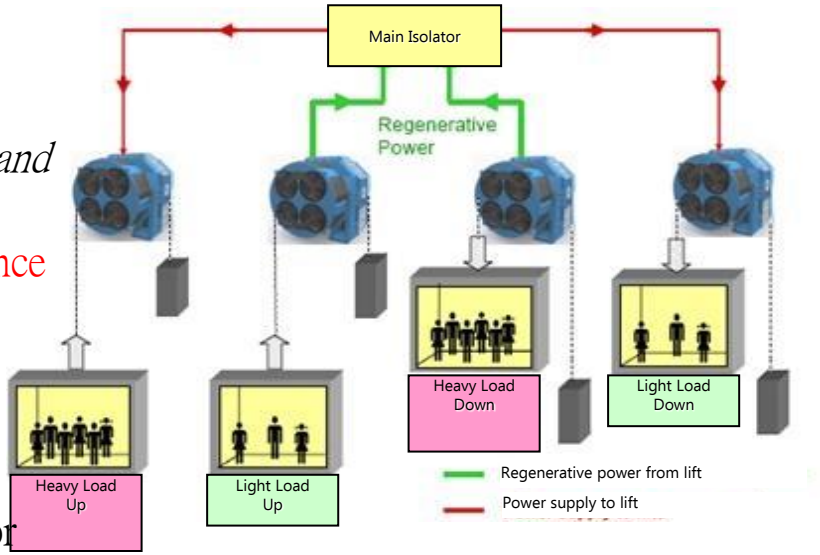
- *According to Green Peace's press release in June 2010, the annual electricity consumption of communal areas per domestic flat in public rental housing is much lower than some private domestic premises as follows –*

Private Estates	kWh per flat per year
Manhattan Hill	6,834
One Beacon Hill	6,725
The Pacifica	4,359
Aqua Marine	3,409
Central Park	3,294
Island Harbourview	3,127
Housing Authority PRH	807 (Green Peace's figure)

Estate Facilities : Caring for the users to allow for continuous usage with energy saving design

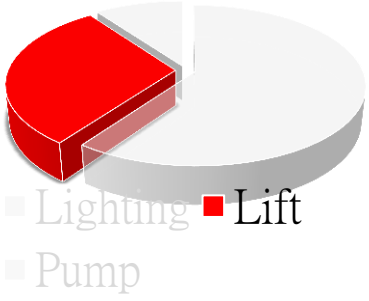
- *Lift design – to allow usage even during **5-years** electricity inspection and testing*
- variable voltage variable frequency since 1996
- Light weight lift design
- Gearless lift drive
  (save about **10%** energy)
- Permanent Magnet Synchronous motor
- Lift regenerative power systems
  (regenerate about **15 – 20%** energy)

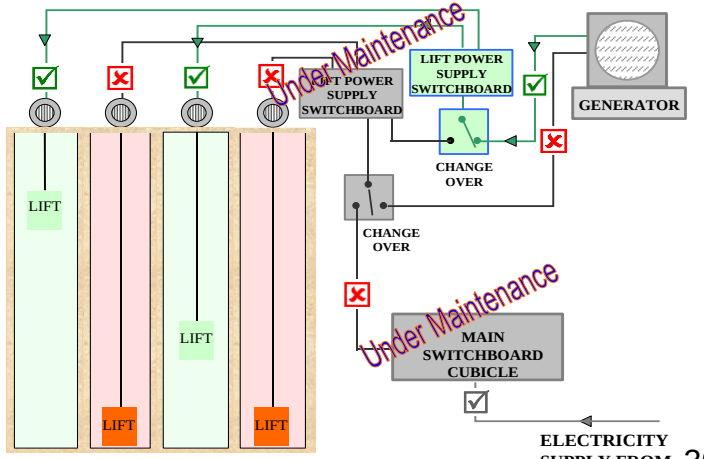
Utilization of Regenerative Power from Lift System



CSR consideration :

Since 2008, electrical supply system enhanced for **Uninterrupted Lift Services**, providing convenience to users, particularly the elderly and people with disabilities





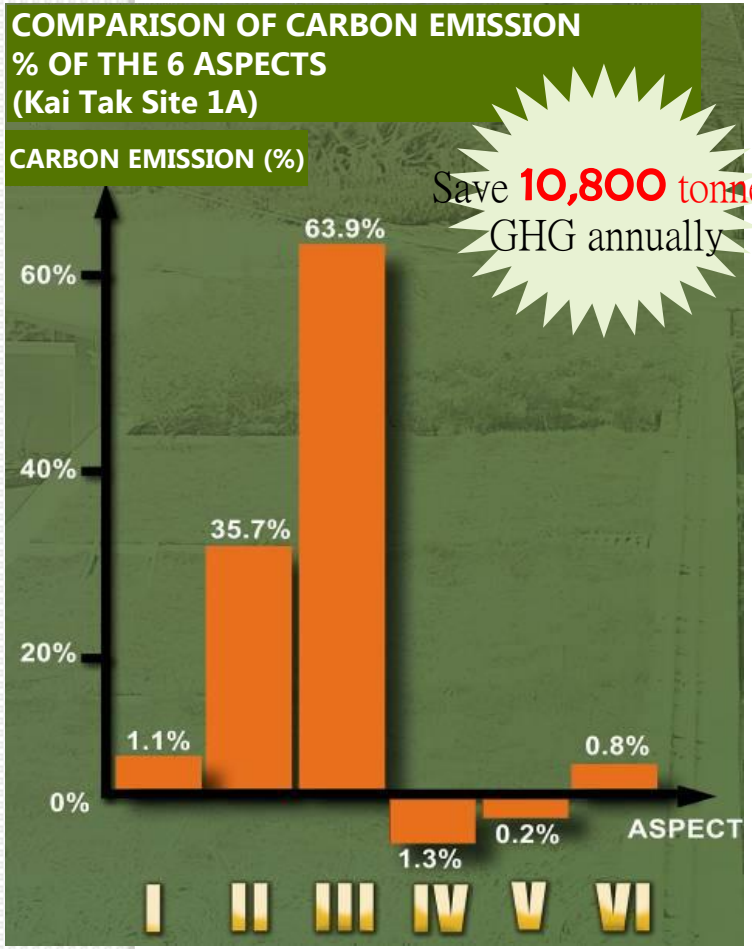
Uninterrupted Lift Services

Sustainability : Reducing in Carbon Emission

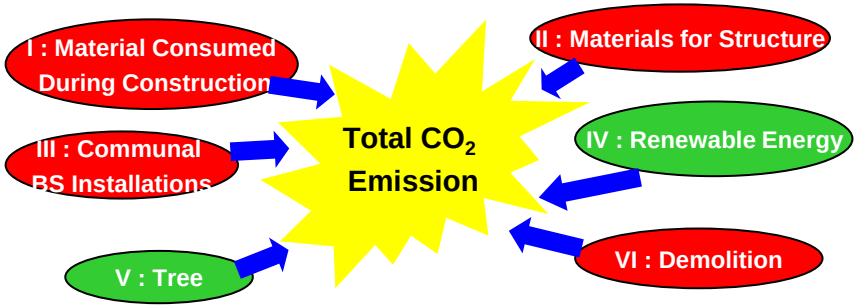
Carbon Emission Estimation (CEE) Model

- Every new project would check its CEE against benchmark performance
- Provide a design verification tool with an indication of the holistic carbon emission

Our buildings are designed to last **100** years



- Estimated a reduction in carbon emission of around 12% for the whole life cycle of a building, since 2011
- An Energy Management System (EnMS) to ensure the energy efficiency of communal building services installations
- In 2014, further reduce 10% energy consumption by lowering the Energy performance Indicator from the original 30 kWh/m² to 27 kWh/m²



I + II + III – IV – V + VI = **Total CO_2 Emission**

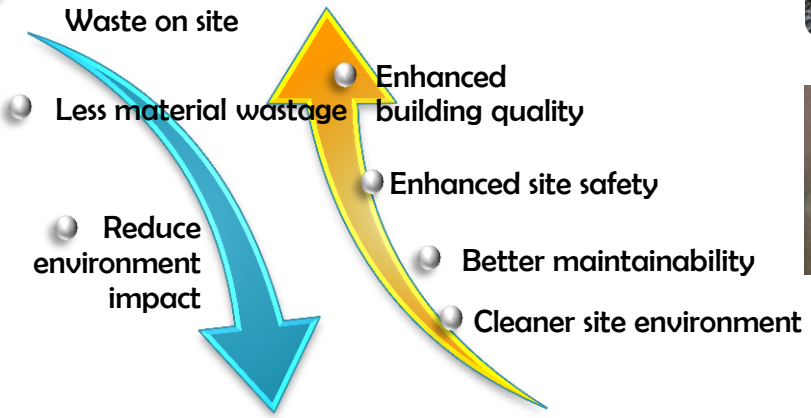
3. Smart & Green

Sustainability : Lean Construction on Site

Extensive precast & prefabrication

- Volumetric precast bathrooms/ kitchen (over 35% precasting by volume)
- Semi-precast slab
- Precast manhole

We score full marks in Ma3 of BEAM Plus with over 40% of listed prefabricated building elements has been off-site



Caring for the Natural Resources

Transfer of C&D Waste Materials

Established an inventory on quantities of C&D materials available from each site.

Facilitate bulk transfer between HA's contracts.

Over 80,000 tonnes of C&D waste have since been reduced.

Use of Recycle Materials

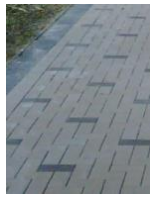
Marine mud

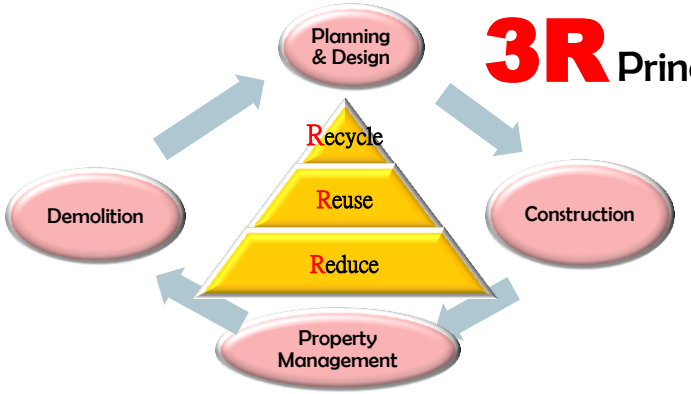
recycled glass & aggregates

bore-logs

GGBS

recycled excavation rock materials





3R Principle

Sustainability : Caring for Labour and Natural Resources

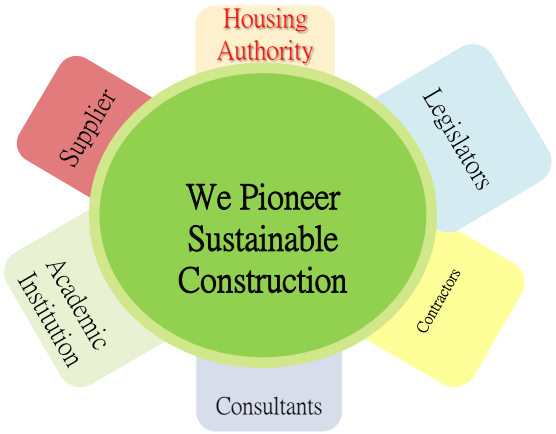
Selective Demolition

Sustainable Construction

- Hydraulic Concrete Crusher to reduce noise.
- Furniture/equipment from the demolition site at Lower Ngau Tau Kok Phases 2, 3 and 5 in 2009/10 for NGO's reuse.
- Waste Management

Sustainable Construction : Large Panel Formwork & Metal Hoarding

Save over 15000 tonnes of timber per year

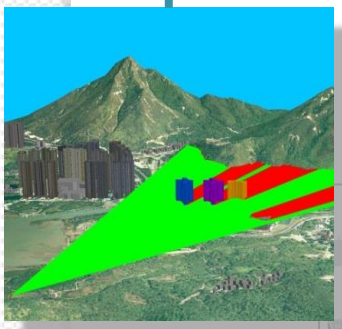


Collaboration with Stakeholders

Sustainability : Applying Appropriate Design Tools -
Building Information Modeling (BIM) - Saving Resources; Optimization

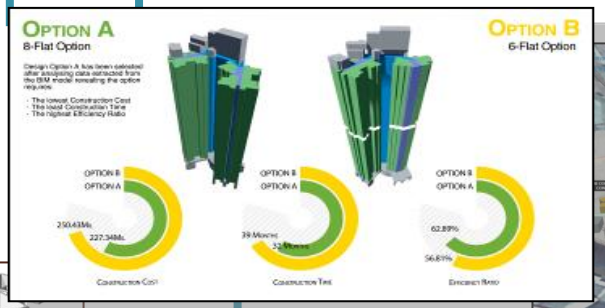
- First project for obtaining detailed quantities data from a BIM model (5D BIM) – generates data far more quickly than traditional QS methods.
- First in the World to integrate use of BIM and GIS for Potential Site Assessment and Feasibility Studies

Feasibility Studies | Scheme Design | Detail Design | Tender | Construction | Completion

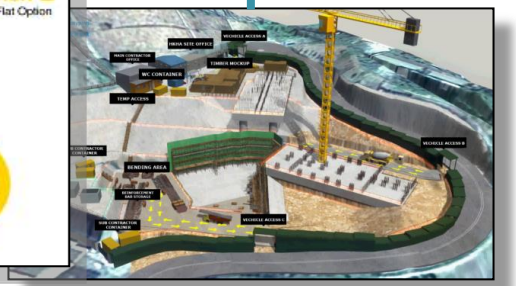


Visual impact analysis

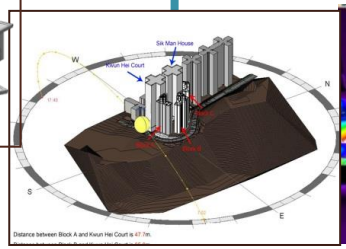
Standardization

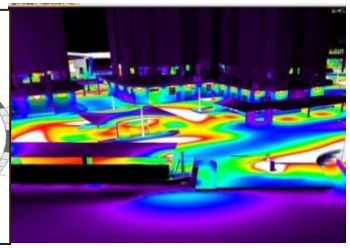


Value Management

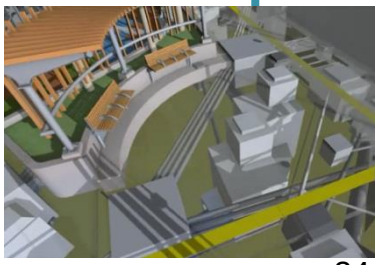


Construction & safety planning





Performance analyses



Facility Management

BIM Applications

Sustainability : BEAM Plus Ready

- Setting a green building benchmark
- Since 2011, BEAM Plus Gold ready (all new projects with standard at least Gold rating)
- 7 & 13 BEAM Plus Provisional Platinum & Gold new projects

PA PLATINUM (NB)

1st Residential

PA GOLD (NB)

1st EB Final Platinum

1st Neighborhood Platinum

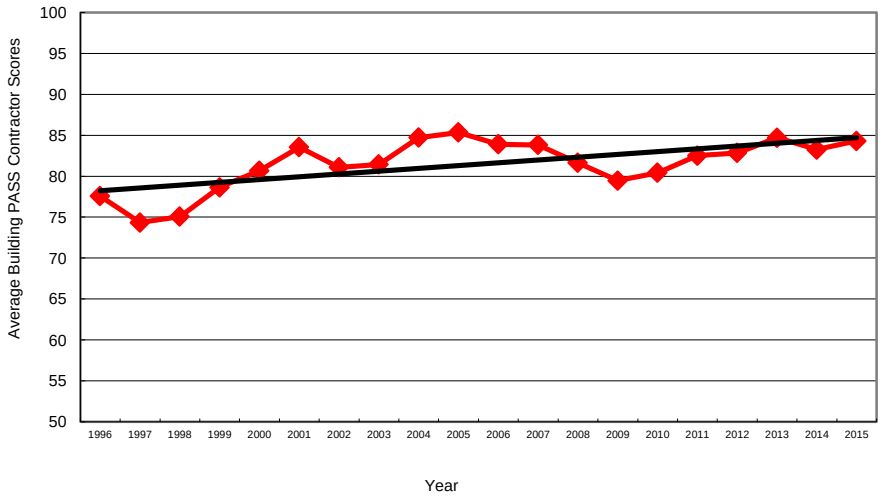
Most Platinum

Green Leadership 2016

Sustainability - Green Procurement & Supply Chain

- ***Certification – ISO 14001*** *required for works contractors & suppliers for major building products*
- ***Performance Assessment Scoring System (PASS)*** *– Contractors' environmental performance will affect their future tender score*

Performance Assessment Scoring System (PASS)
Average Building PASS Contractor Score Trend (1996-2015)



- ***Integrated Pay for Safety, Environment & Hygiene***
- ***Environmental training*** *for contractors & service providers*
- ***Partnership with tertiary institutions, NGO etc.*** *for environmental research & development*

4. Safe & Healthy

How to provide a safe and healthy design for development ?

We care for PEOPLE;
We design for PEOPLE.

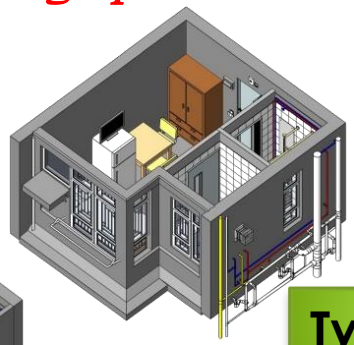
Domestic Flat Design : Caring for a Green and Healthy Living Space

< After 2008 >

Modular Flat Design

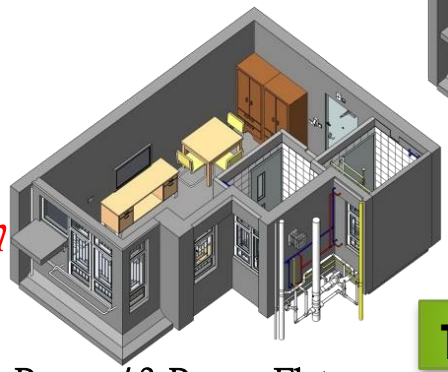
Functional and Cost Effective Design

Small flats



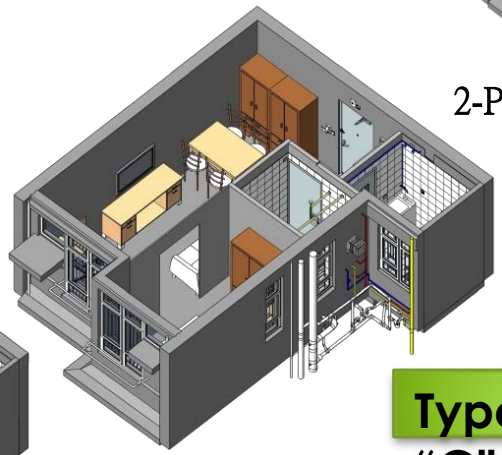
Type "A"

1-Person / 2-Person Flat
IFA: 14.1 - 14.5m²



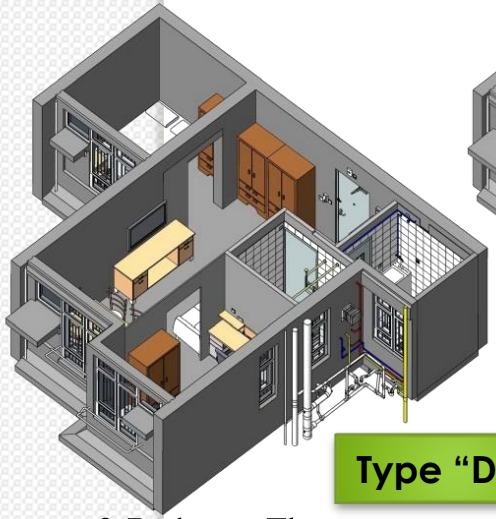
Type "B"

2-Person / 3-Person Flat
IFA: 21.6 - 22.0m²



Type "C"

1-Bedroom Flat
IFA: 30.2 - 31.0m²



Type "D"

2-Bedroom Flat
IFA: 35.0 – 36.1m²

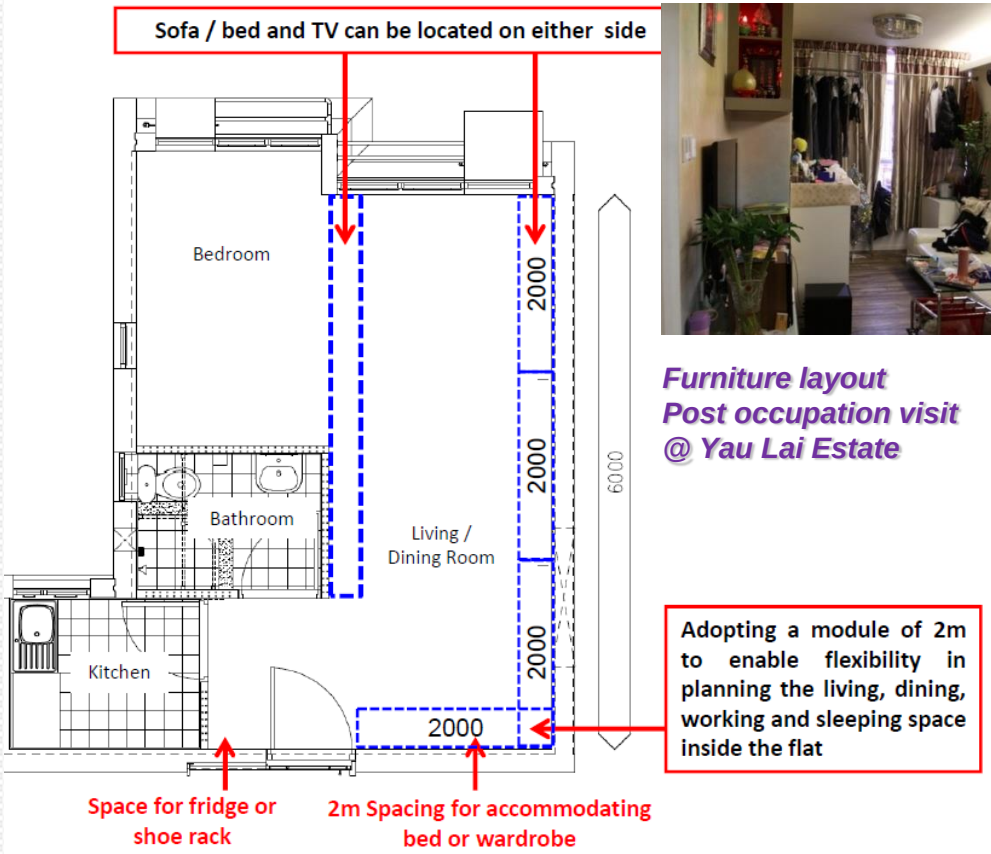
Family flats

Quality Housing Initiatives -

1. *Enhancing Buildability, Consistency and Economy of Scale*
2. *Better Healthy Living, Safety and Easy Maintenance*
3. *Focusing on Customers' Needs*
4. *Reinforcing Universal Design*

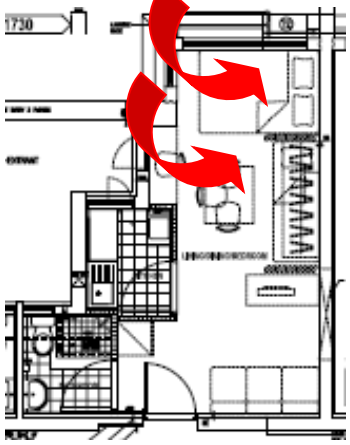
Domestic Flat Design : Caring for Users' Convenience & Comfort

Internal layout arrangement



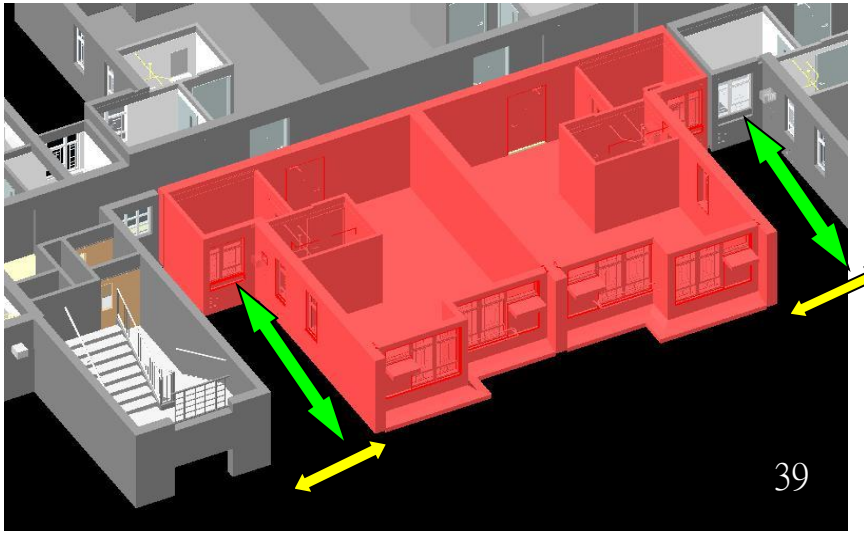
Furniture layout Post occupation visit @ Yau Lai Estate

Adopting a module of 2m to enable flexibility in planning the living, dining, working and sleeping space inside the flat



Promote better healthy living –

Maintain a ratio of ***not less than 1:3*** *for minimizing stagnant ef and achieving natural ventilation and better living*

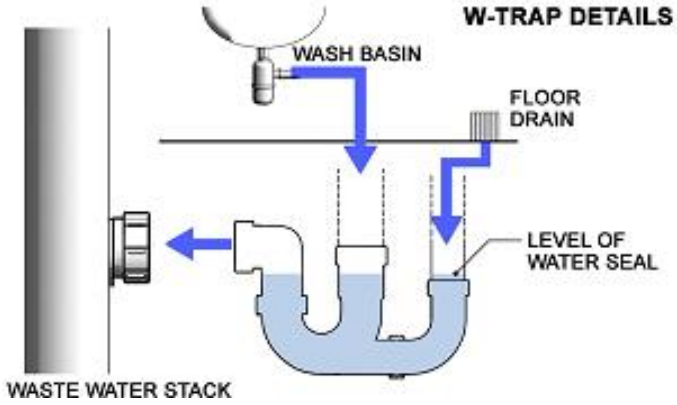


- **Open plan in domestic unit allowing flexibility for tenant's use.**

Healthy Design ： Caring for Preventing the spread of disease

Common W-trap System

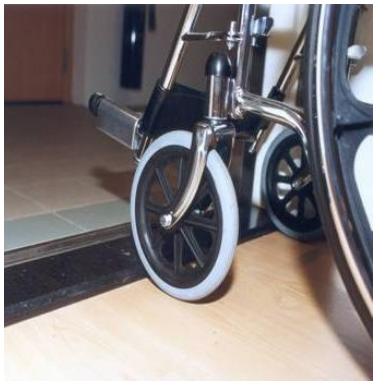
- Since the SARS outbreak, we pioneered the use of W-trap
- Waste water from wash basin/shower now directed to replenish the common W-trap connected to the floor drain
- Avoid drying up of water seal to prevent the spread of foul air, germs and epidemic disease between floors
- Ensure healthy living



Caring for Enjoying Life at Home : Universal Design & Ageing in Place

Home Safety

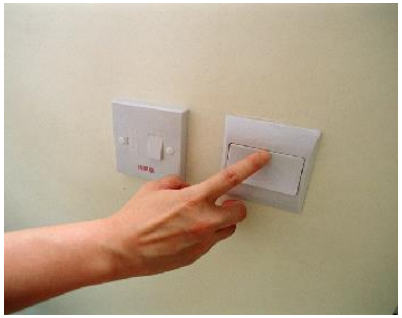
- Non-slip flooring
- Allow space provision for grab bars
- Vision panels for kitchen doors



Barrier Free Access

- Clear door width : 800mm (main entrance); 750mm (kitchen and bathroom)
- Shallow door threshold with bevelled edges
- Lever type or D-shaped door handle

Convenient for Use

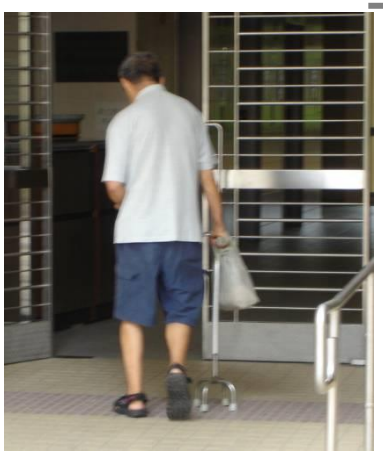


- Light switches, door bell push button, door phones, socket at convenient height

Caring for Convenient to Access

Common Areas

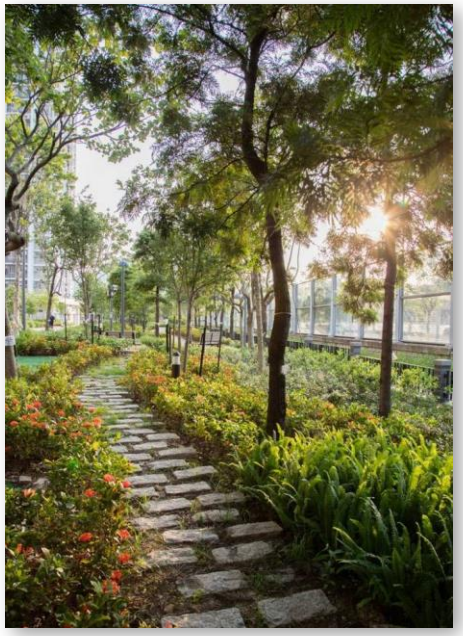
- Part of security counter at 750mm high
- Tactile warning strip, high colour contrast for staircase
- Spare letter boxes at low level for wheelchair users
- 2-Level Lighting System



External Works - Designated Barrier Free Access Routes

- connect domestic blocks to major estate facilities
- Nosing tiles with contrasting colour is preferred to painting
- Multi-sensory map

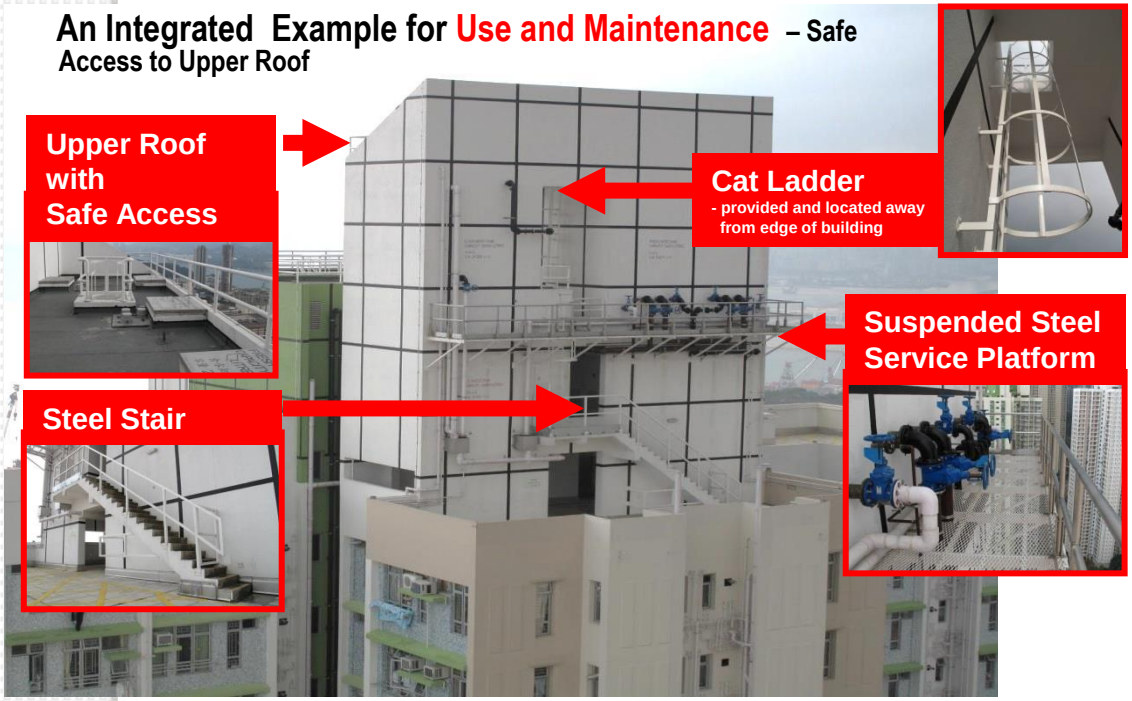
Caring for A Sense of Place



The impressive wall mural next to its entrance – a feature of the new estate.

Community Hall of Lung Yat Estate at the heart of local and neighbourhood connectivity.

A Sense of Safety : Caring for Workers & End Users



Permanent anchorage to access lift pit

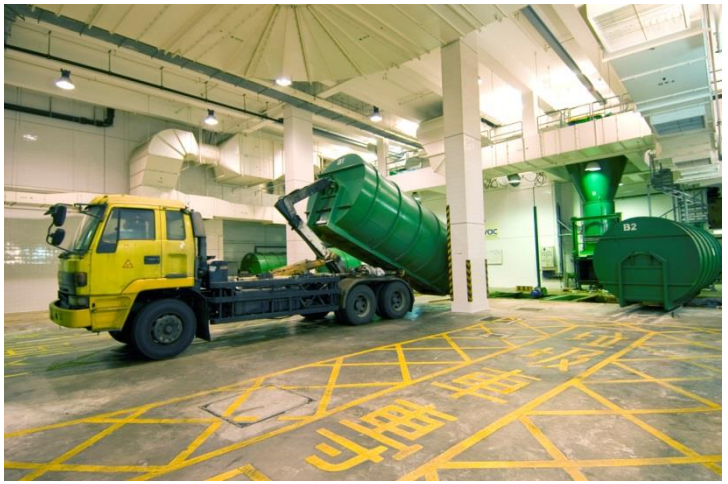
Strengthened Parapets to fix gondola

Easy maintenance for A/C

Provide railing to all roof

Space for BS maintenance

Estate Planning: Caring for A Sense of Hygiene

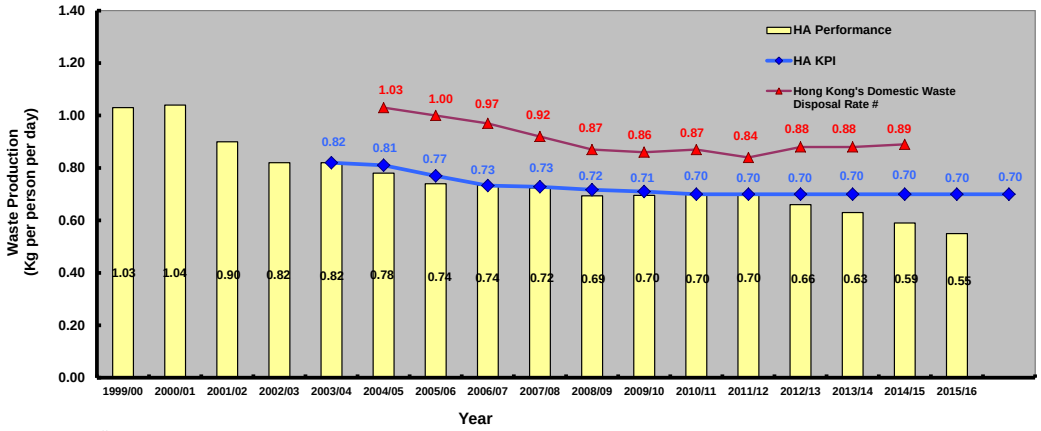


We provide -

- ventilation and filter system for refuse room on each floor, with space allowed for waste separation and material recovery
- refuse handling systems with or without Central Compactor for cleanliness and hygiene

- Our RCP equipped with smart odour control & in harmony with welfare facilities and roof garden on top

(5) Average Domestic Waste Production



Source : Environmental Protection Department (2015). *Monitoring of Solid Waste in Hong Kong - Waste Staitistics for 2014.*

- Our residents generate 30% less domestic waste than HK average

5. Our Journey will Continue

5. Our Journey will Continue

To meet PRH production targets, HA and government departments will continue to:

(a) liaise closely to secure sites which are suitable for public housing;

(b) consider the best use of the identified sites;

(c) endeavour to streamline the required planning and land procedures;

(d) shorten the land resumption and clearance process; and

(e) carry out reclamation on an appropriate scale.

Where planning and infrastructure permit and where environmental quality will not be compromised to an unacceptable extent, HA will seek to optimise the development potential of each and every site to increase public housing production.

5. Our Journey will Continue

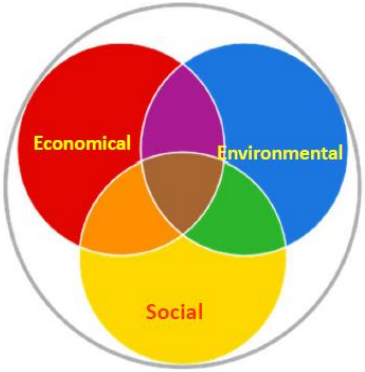
We are also committed to achieving "better public housing design in the 21st Century" as we truly believe "Living in Harmony" and a people-centric approach.

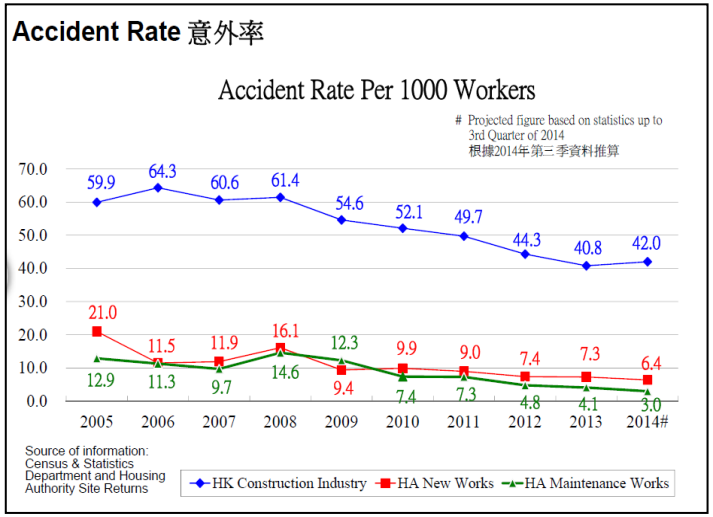
Benchmarking our sustainability targets, HA is –

(a) building 40% less costly in comparison with similar buildings in the private sector of Hong Kong;*

(b) generating 30% less construction waste in our construction process; and

(c) having 75% lower accident rates than the norm in Hong Kong.





*And our yearly customer satisfaction index has continued to rise, reaching **98% (Cheung Sha Wan Estate)***

* *42% less for PRH and 38% less for SSF*

Planning, Design, Construction and Delivery of Quality Public Housing

- *Assures **better quality, the best value, the best practice, and user-friendliness** to address tenants' concern;*
- *Continue to monitor the **effectiveness** of our planning and design;*
- *Meet the **housing supply target**; and*

We do rise to the Challenges and are Committed to "designing for people we Care"

Thank You