

## **Legislative Council Panel on Housing**

### **Provisions for Green, Safe and Healthy Living in New Public Rental Housing Developments**

#### **PURPOSE**

This paper informs Members of the latest provisions for green, safe and healthy living in new Public Rental Housing (“PRH”) developments completed from 2008/09 onwards by the Housing Authority (“HA”).

#### **BACKGROUND**

2. HA has adopted the principle of environmental-friendliness, safety, healthiness, sustainability, customer-orientation and cost effectiveness in the planning and design of PRH flats.

#### **LATEST DEVELOPMENT**

3. The HA has adopted the “functional and cost effective” design approach since 2003. In recent years, we have incorporated into our “Model Client Brief” enhancement based on environmentally-friendly initiatives, Research & Development results in the component and system design and feedback from residents. These form the basic standard of provision in our new PRH developments. The new initiatives include green building design, safe and healthy living features, when implemented, would provide quality housing to our tenants and also improve the environment.

4. Amongst various green initiatives that HA has implemented, we would like to highlight four notable examples –

- i. “Twin Tanks” design in water supply system;
- ii. “Common W-Trap System” in waste water drainage;
- iii. Enhanced electrical supply system for lift services; and
- iv. Strengthened provisions for safer building maintenance.

## **“Twin Tanks” Design in Water Supply System**

5. We are aware that the temporary suspension of water supply will cause inconvenience to our tenants during periodic cleansing of water tanks. Since 2008, all new PRH building projects have incorporated the “twin tanks” design in their potable and flushing supply systems. The implementation of the new design involves minor design amendments of super-structure and building services installations before the construction of superstructure and prior approval from the Water Services Department. The innovative design by HA will help to reduce water wastage and allow continuous water supply to tenants during tank cleansing operations. The first project with “twin-tanks” design is Shek Mun Estate in Shatin due to be completed in May 2009. Details are shown in *Annex 1*.

## **“Common W-Trap System” in Waste Water Drainage**

6. The SARS crisis in Hong Kong in 2003 aroused public concern that possible transmission of virus or epidemic disease between bathrooms and kitchens of different domestic flats was attributable to the dried-up water seals in the waste water drainage system. HA had taken up the research and development work jointly with the Department of Building and Construction of City University of Hong Kong to improve the drainage system, and came up with an innovative design of the “Common W-Trap System” which collects waste water from both the basin and the shower, thus avoids the drying up of floor traps. This would prevent the spread of foul air, germs and epidemic diseases between floors. The first project with the “Common W-Trap system” was Eastern Harbour Crossing (Yau Lai Estate) Phase 3 completed in August 2008. We have since applied this new trap design to all new PRH developments. Details are given in *Annex 2*.

## **Enhanced Electrical Supply System for Lift Services**

7. We are also aware that the disruption of lift service will cause inconvenience to our tenants during major periodic testings of the electrical installations in our PRH blocks. Therefore, we have, since 2008, modified the electrical supply system so that basic lift services could be maintained during the periodic inspection, testing and certification on the switchboard cubicle for new estates. This would provide convenience to our tenants, in particular the elderly and people with disabilities. The first project with the new electrical supply system is Upper Wong Tai Sin Estate Phase 3 to complete in May 2009. Details are given in *Annex 3*.

## **Strengthened Provisions for Safer Building Maintenance**

8. To enable future building maintenance to be carried out more safely in new PRH estates, HA has strengthened the necessary structural and building services provisions in accordance with Buildings Department's Practice Note. Examples are adequate structural provision in the roof parapet wall of domestic block for future installation of gondola, lifeline and the provision of waterproofing power sockets at main roof level. The first project with strengthened provisions is Eastern Harbour Crossing (Yau Lai Estate) Phase 4 which is due to be completed in September 2009. Details are given in ----- *Annex 4*.

## **WAY FORWARD**

9. As a caring organization, we will continue our effort in ensuring that our tenants will benefit from a greener, safer and healthier living environment. As such, we will continue our research and development works along this objective.

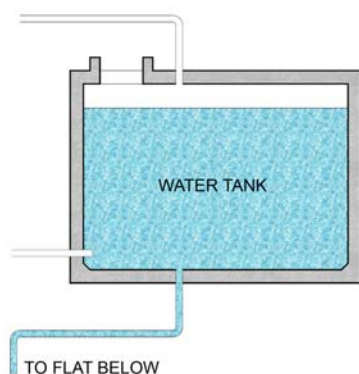
10. Members are invited to note the latest HA provisions for green, safe and healthy living in new PRH developments.

**Transport and Housing Bureau  
May 2009**



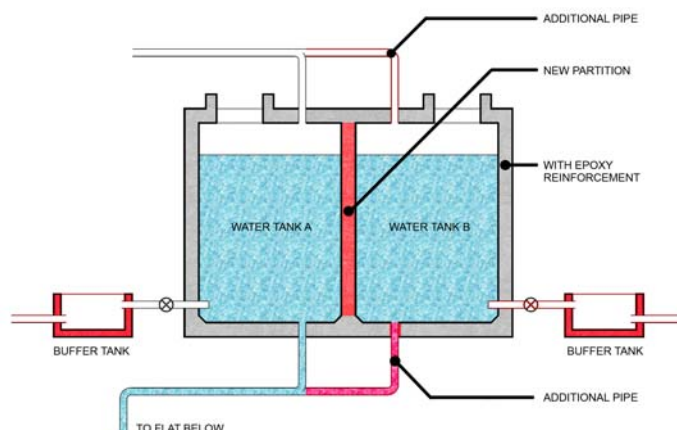
## “Twin Tanks” Design in Water Supply System

### Original Design



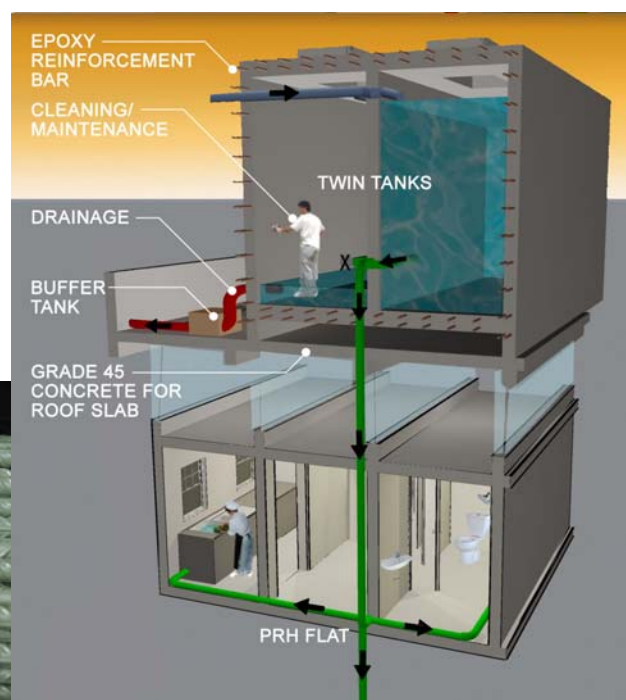
Original Single Tank System

### New Design



New Twin Tanks System

Epoxy Coated Reinforcement Bar



### Enhanced Provisions

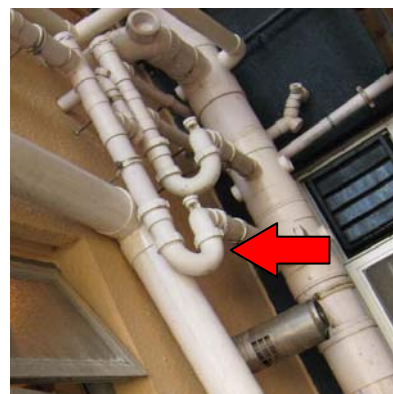
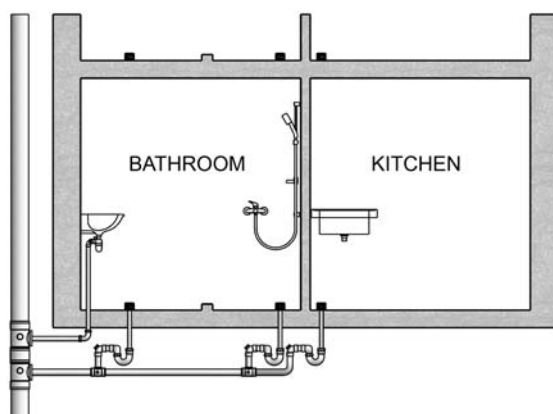
When compared with the original single water tank design, the following modifications to structural and building services installations have been implemented in “twin tanks system”-

- (1) Addition of partition wall and ancillary piping to roof water tanks.
- (2) As an effective operational arrangement, one of the twin tanks can be plugged off for cleansing (or repair) whilst the other one could continue to provide reliable and uninterrupted water supply to tenants at all times.
- (3) Use of epoxy coated reinforcement bars for water tanks and the use of Grade 45 concrete for roof slab and water tank to enhance durability.
- (4) All the wash out wastewater to be discharged through properly installed pipeworks via buffer tanks into the adjoining waste stacks.

**Effectiveness:** Allowing continuous water supply during cleansing of water tanks; reducing water wastage; enabling water tank and roof slab to be more durable.

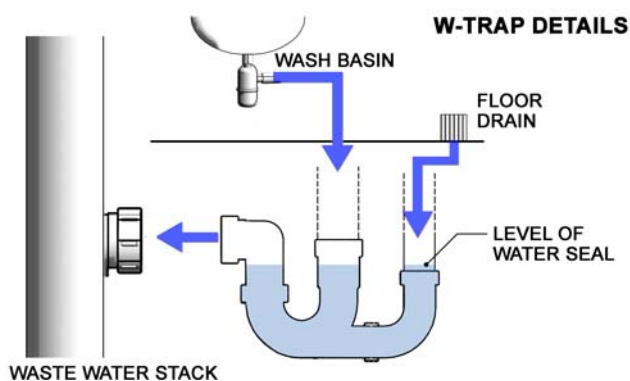
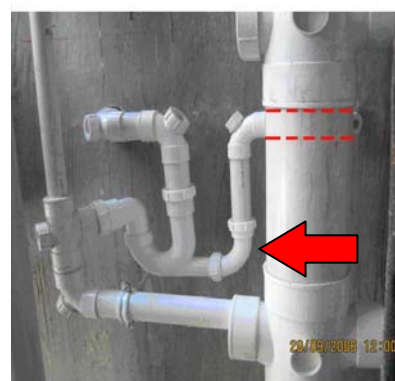
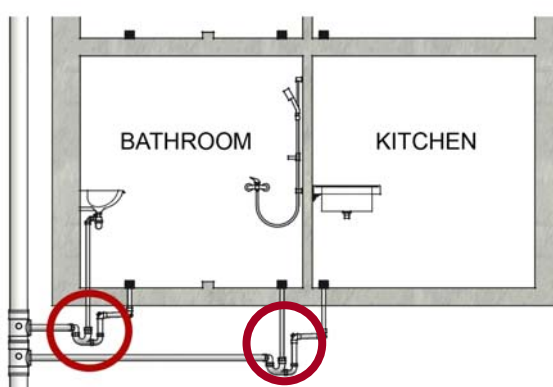
## “Common W-Trap System” in Waste Water Drainage

### Original Design



Original U-Trap System

### New Design



Common W-Trap System

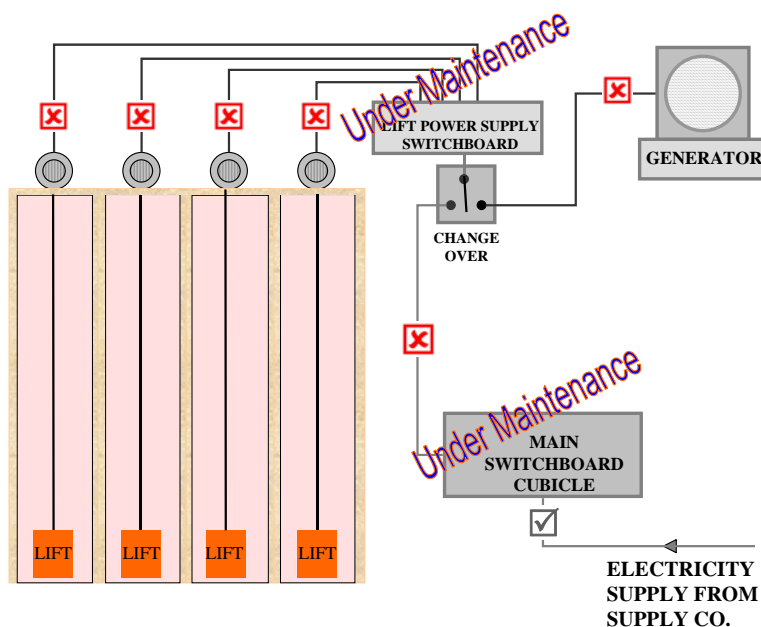
### Enhanced Provisions

HA took up the research and development works jointly with the Department of Building & Construction of City University of Hong Kong to improve the drainage system, and came up with an innovative design of the “Common W-Trap System” which collects waste water from both the basin and the shower. This would prevent the drying up of floor traps.

**Effectiveness:** Prevents drying up of floor traps as a defence against the spread of foul air, germs and epidemic diseases between floors.

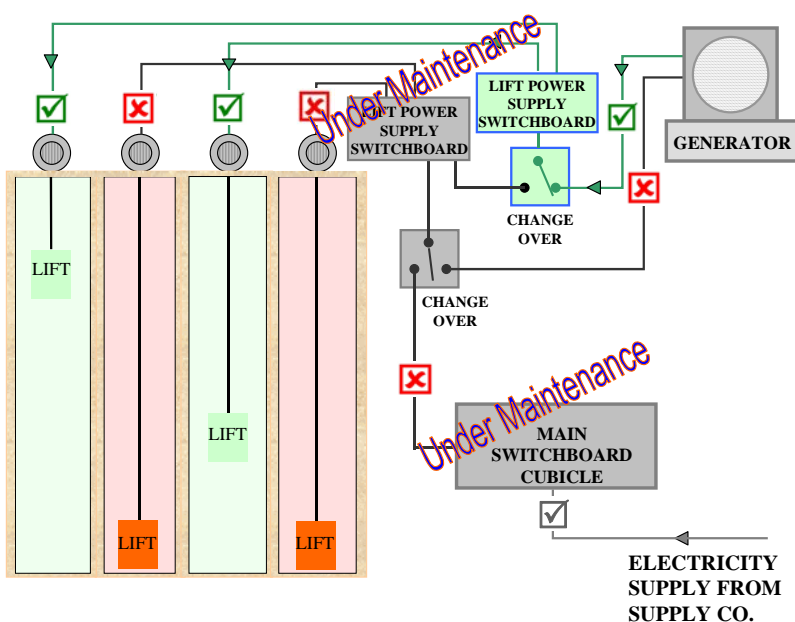
## Enhanced Electrical Supply for Lift Services

### Original Design



**Lift Power Supply Switchboard Maintenance Mode**

### New Design



**Lift Power Supply Switchboard Maintenance Mode**

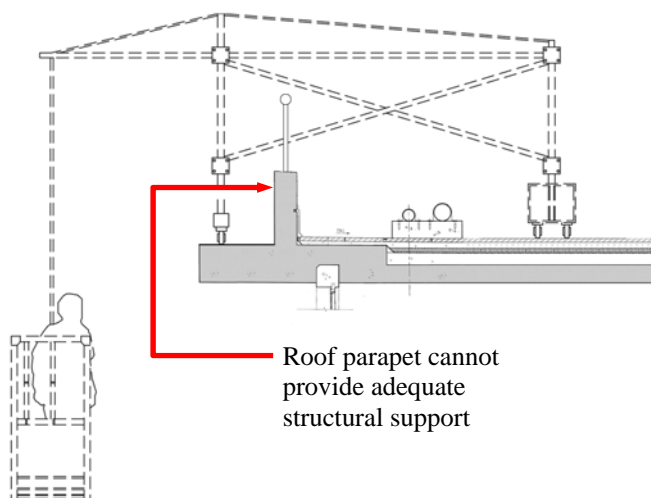
### Enhanced Provisions

- (1) It is necessary to suspend the electrical supply system inside the building for the periodic inspection, testing and certification. In the original design, all lift services will be suspended during this period of time.
- (2) In the new design, electricity for the lifts will be supplied from two separate supply boards, each of them is fed from both general supply and essential supply through automatic changeover contactors. The testing could then be carried out in turn on these two separate supply boards.

**Effectiveness:** Basic lift services can be maintained during periodic major testing of electrical installation thus providing convenience to users, particularly the elderly and people with disabilities.

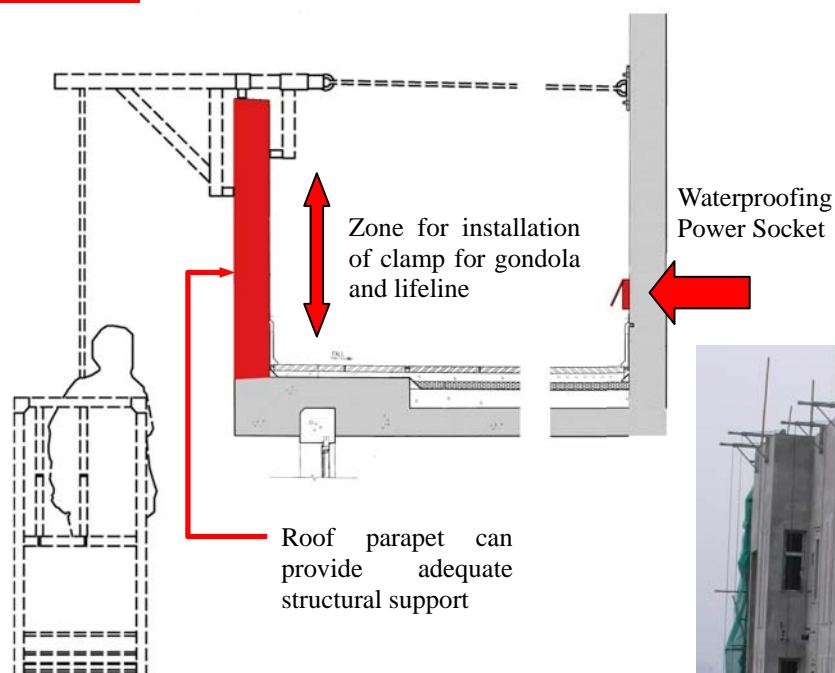
## Strengthened Provisions for Safer Building Maintenance

### Early Design



**Roof Beam System for Installation of Gondola and Lifeline in Early Days**

### New Design



**Parapet Clamp System for More Convenient Installation of Gondola and Lifeline**

### Enhanced Provisions

To enable building maintenance to be carried out more safely, the following structural and building services provisions have been strengthened -

- (1) Adequate structural provision in the roof parapet wall of domestic block for future installation of gondola and lifeline is allowed.
- (2) Waterproofing power socket is provided at roof top to facilitate gondola operation.

**Effectiveness:** Enables future building maintenance using gondola and lifeline to be carried out more safely and conveniently.