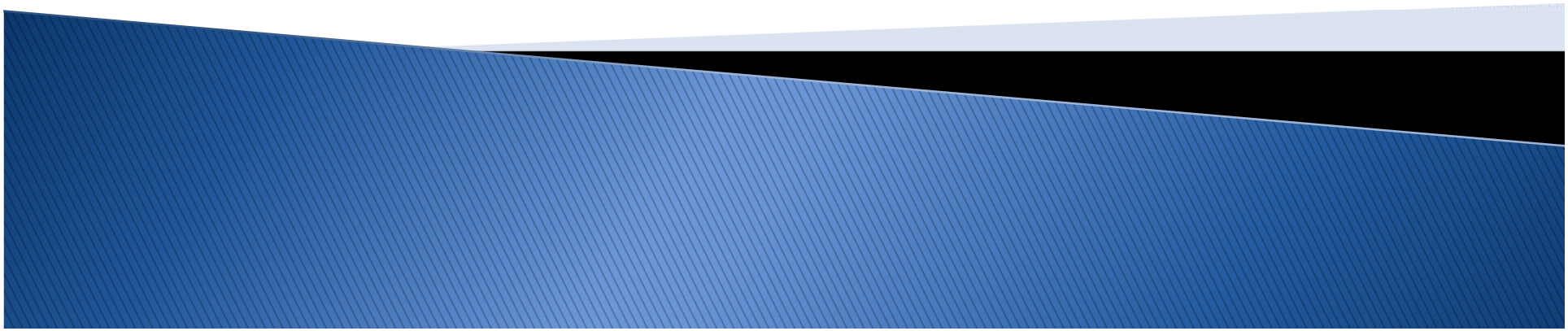
Mechanical Requirements & Design Issues

By PE Denis Wong
Development & Construction
Productivity Section 3 (M&E)

Concealed water pipes for 2-Room Flexi Flats OCS



2-Rm Flexi Flats OCS

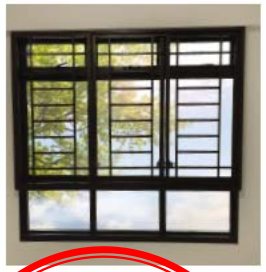
- From Nov 2015 BTO Launch
- Water heater is optional
- Concealed water pipe configuration follows
  2-rm flats with mixers & hot water pipes



· #**Built-in kitchen cabinets** with gas hob and cooker hood, kitchen sink, tap and dish drying rack



· **Lighting** *(whole unit)*



· **Window grilles** *(whole unit)*



· **Built-in wardrobe**



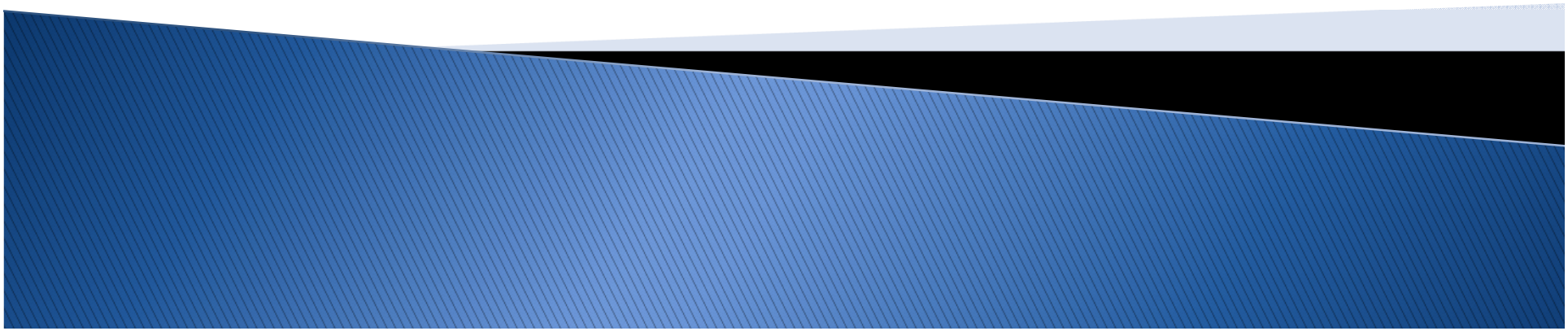
· **Mirror and toilet roll holder** in the bathroom



Water heater

^ Buyers who opt for (c) must also opt for (a) as the flooring has to be laid before the installation of built-in kitchen cabinets and wardrobe.
# Buyers who are wheelchair bound may choose to have a lower kitchen counter-top.

Isolation Valves



Isolation valves

- Isolation valves should be provided for direct supply to units after the tee-off to each riser.
- They should be as close to the tee-off as possible.

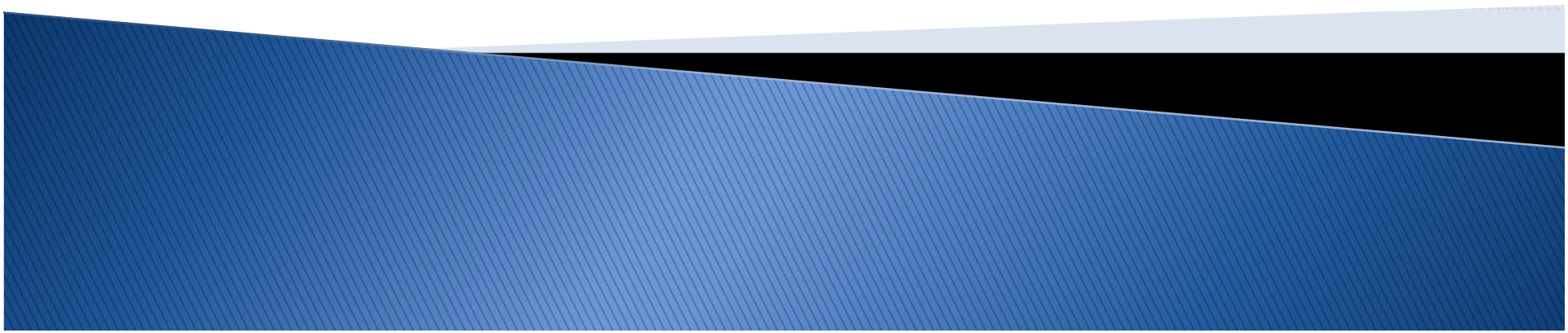




Isolation valves

- Tee-off to tap points at wash area & bulky refuse room should be equipped with isolation valve
- Other long branch pipe to tap point to facilitate maintenance

SS Press-fit Joints



SS press fit joints

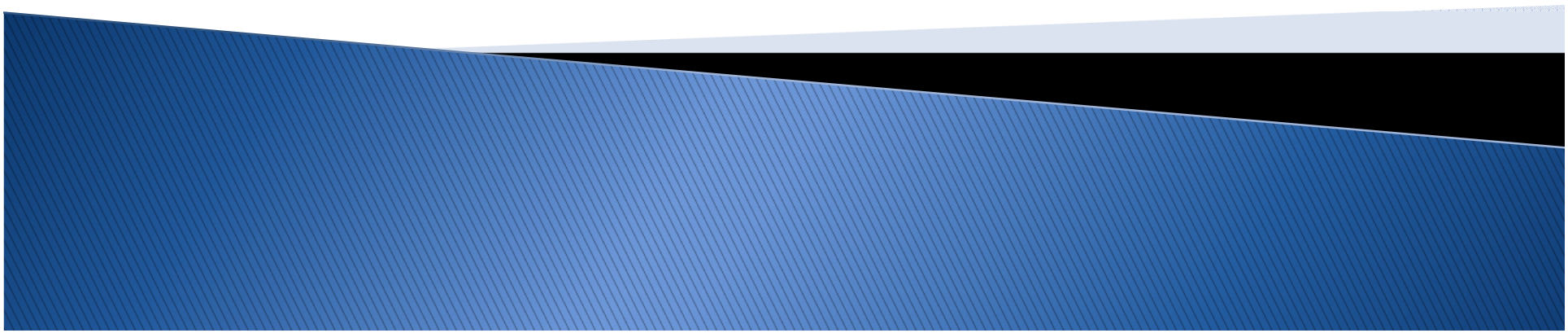
- HDB standard specs clause 38.2.2 - The stainless steel pipe fittings shall be of compression fittings of copper alloy or stainless steel press fitting joints.
- At present, compression fittings are still widely used. But, stainless steel press fitting joints are getting more competitive & are also used in some HDB projects.



SS press fit joints

- Stainless steel press fitting joints shall conform with Japanese Waterworks Association (JWWA) G116 "Stainless Steel Pipe Fittings For Water Works".
- At present, SS press fit joints are not listed in HDB Material List.
- Consultants have to check if the products used meet HDB’s specs.

Sampling taps

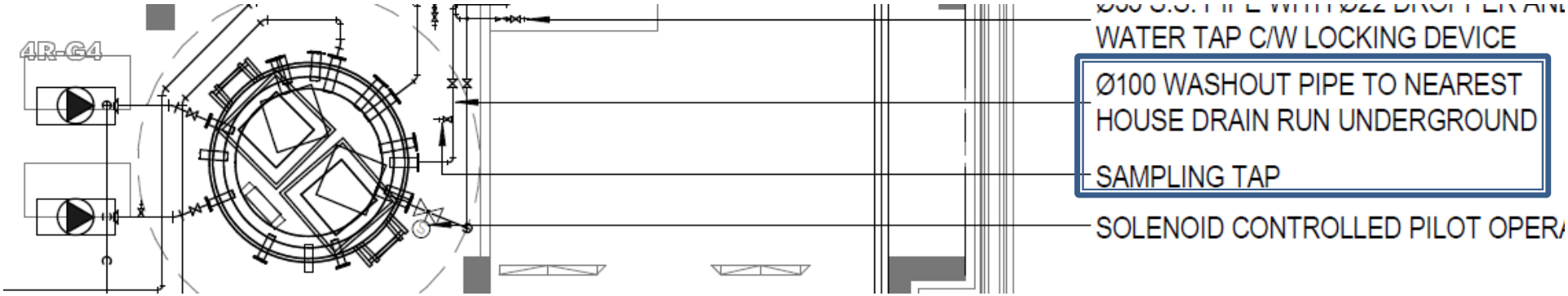


CP48 – Cl 3.1.17 Sampling taps

- Every wash-out pipe from the bottom of the storage tank shall be fitted with a tap for sampling purposes and such a tap shall be under lock and key and accessible only to authorised persons.

HDB provision

- Every wash-out pipe fitted with a sampling tap.



CP48 – Cl 3.1.14 Sampling taps

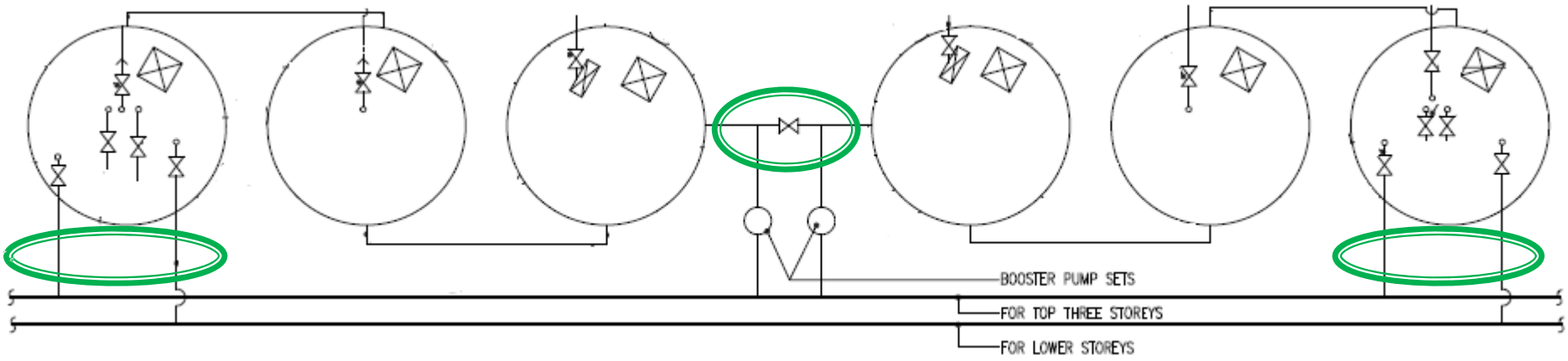
- Every isolated compartment of a storage tank shall be fitted with a tap for sampling purposes located midway between the top operating water level and the floor of the tank or on the outlet pipe from the compartment of the storage tank.
- Such a tap shall be under lock and key and accessible only to authorised persons.

Transfer tank

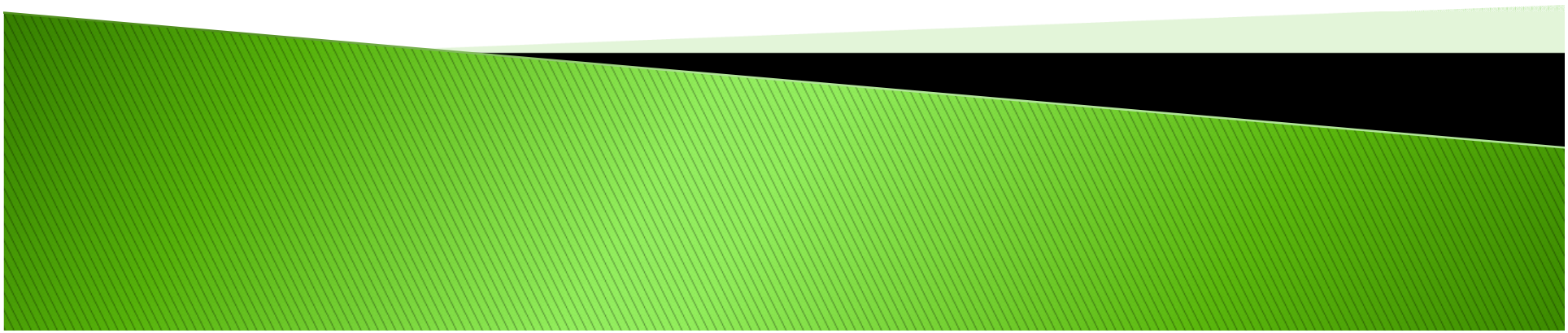
- For the low level tank at the transfer pump room, a sampling tap is required at the washout pipe and another at the suction (outlet) pipe before the transfer pump.

Roof tanks

Sampling tap is provided at each washout pipe. It is also required at every outlet pipe of each group of tanks. The location of this tap would be at the outlet pipe of the Booster & End tanks (circled in green).

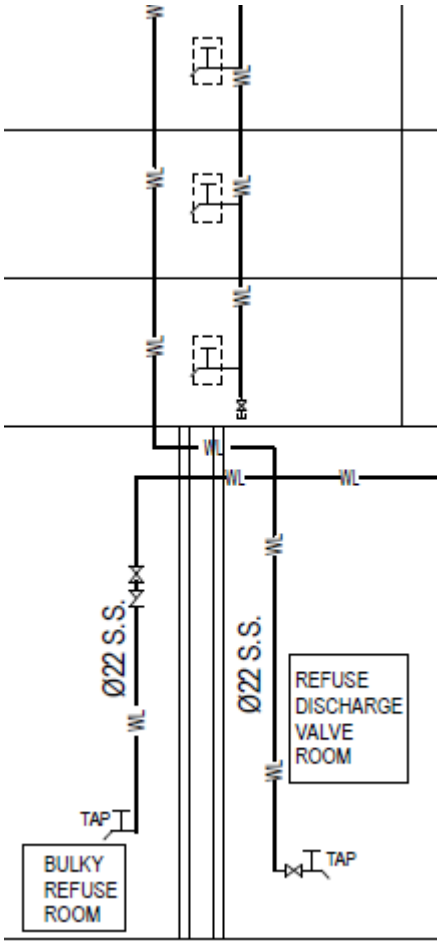


PWCS



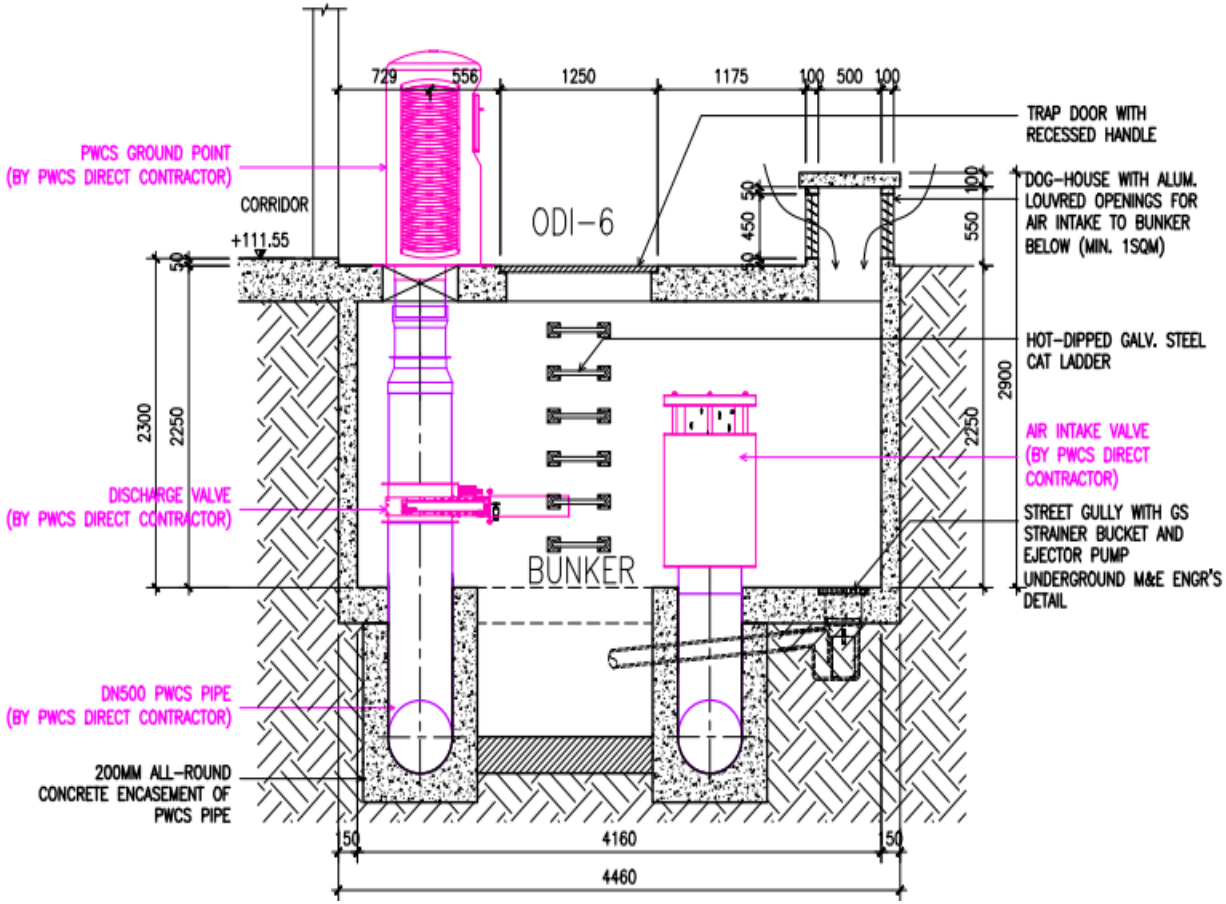
Discharge valve room

- Fire protection inside discharge valve to be from refuse chute flushing system
- Water supply may share with other taps at common areas
- For direct supply, it may share with bulk refuse room taps etc
- For indirect supply, it may share with taps at hopper areas

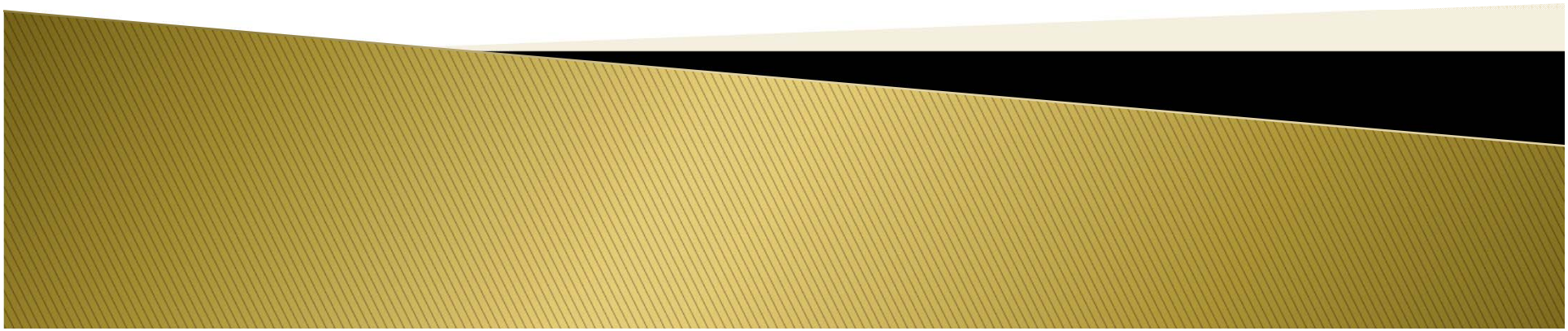


ODI

- Check with specialist if drainage is required
- Check platform level if pumps are required

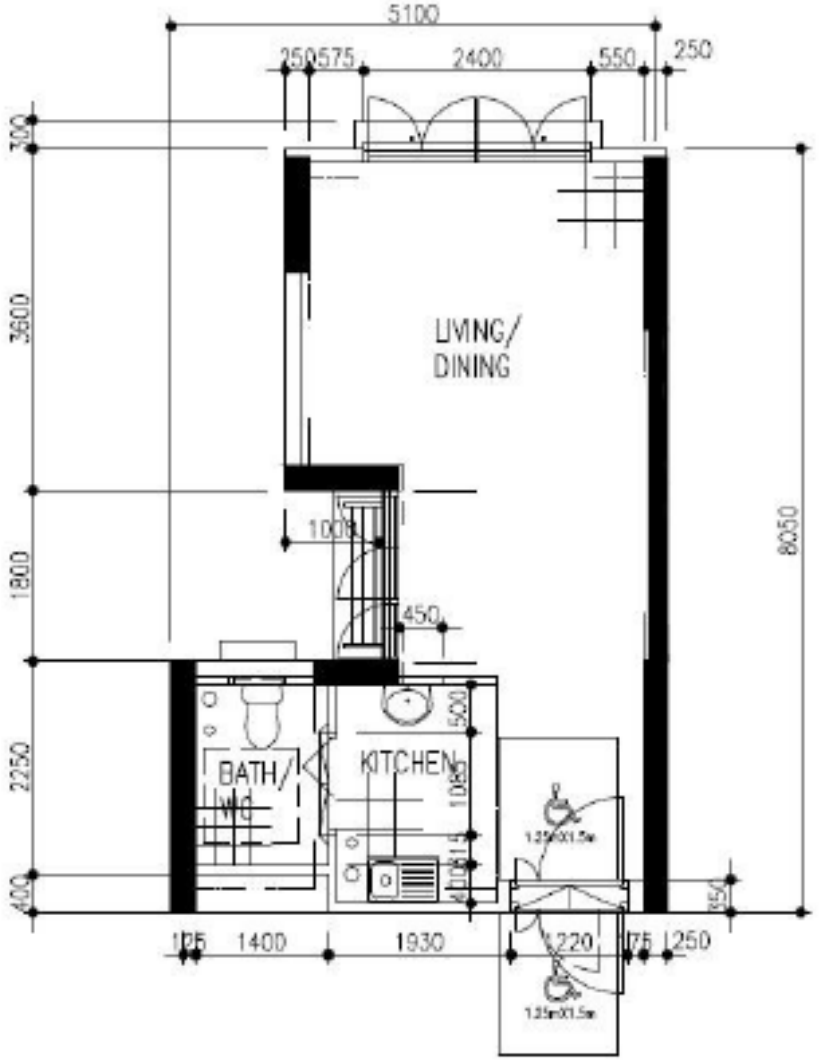


Gas supply to rental flats



Sample rental flat layout (1)

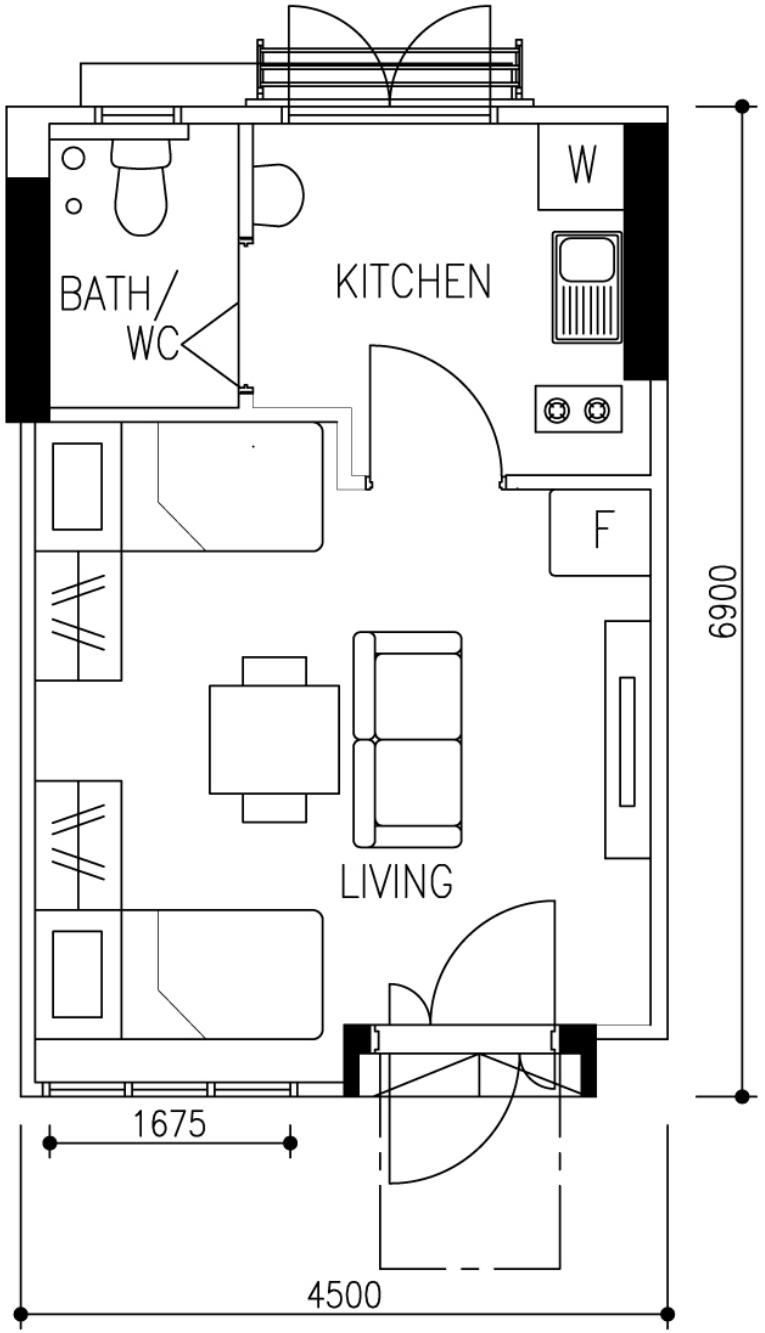
- Kitchen is near the corridor



1 Rm Layout

Sample rental flat layout (2)

- Kitchen is away the corridor



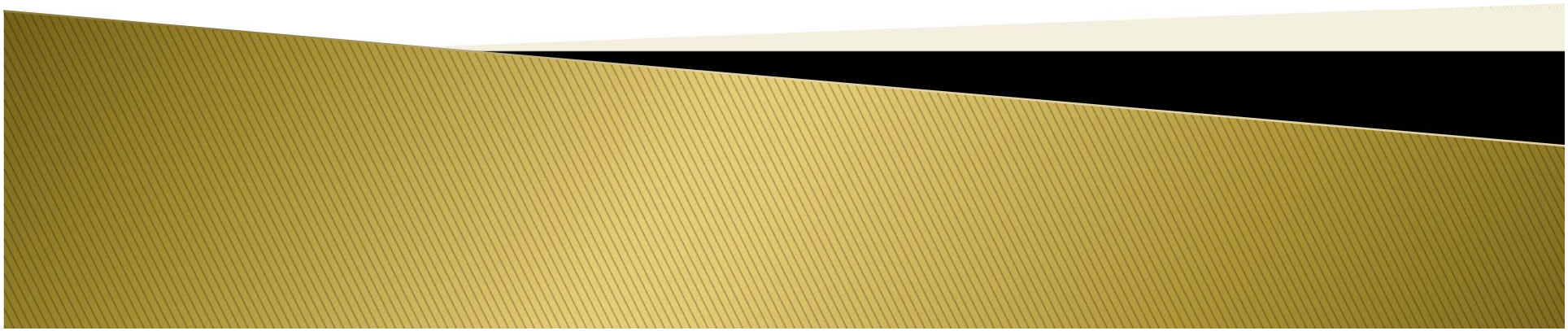
Gas supply to rental blocks

- For pipe passing through sleeping area (bedroom), based on SS 608:2015 clause 5.5.1, copper pipe with no joint, or API pipe, is to be used
- The pipes shall be housed in metal sleeves with both ends of the sleeves protruding beyond the external faces of the bedroom walls

Gas supply to rental blocks

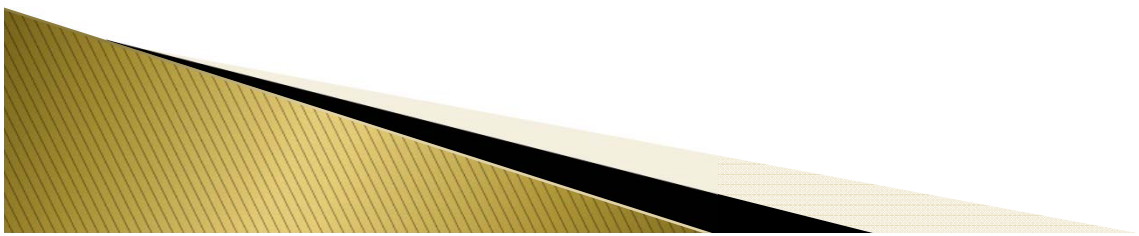
- G&W ducts are required
- Work with Arch for space required

Marking of gas pipes

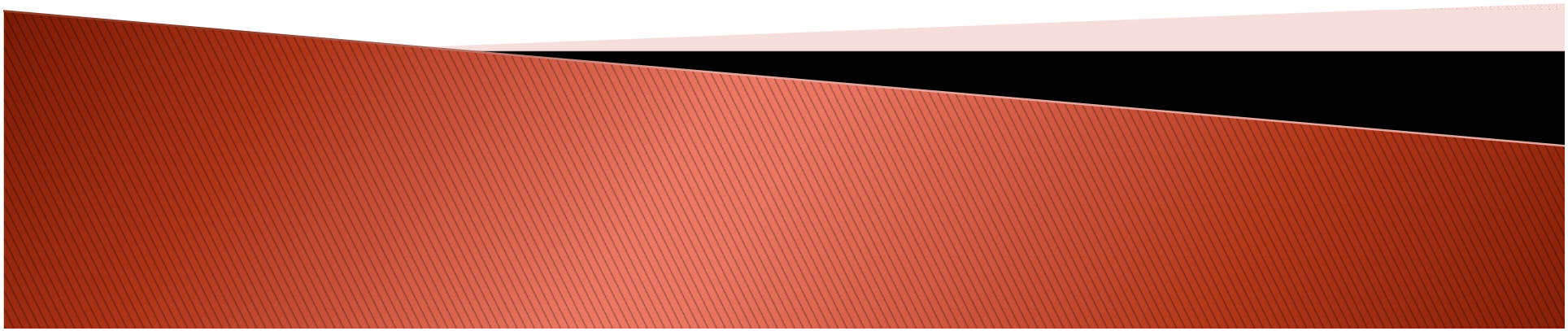


SS608:2015 Clause 7 (j)

- The new Code of Practice for gas installation shall take effect from 1 Jul 2016.
- All gas pipes except those within dwelling units shall be painted canary yellow to colour code BS 381C colour number 309 or identified by yellow bands in conspicuous locations.
- The word "GAS" together with an arrow signage showing the direction of the flow of gas shall be indicated on the gas pipe at the intervals of not more than 3 m.



HR system for residential block



HR on the roof top

- For projects launched in May 16 or later, one HR shall be provided on the roof top.
- It shall be sheltered at the access staircase.

HR on the roof top

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CP 48 Amendment 4 Item 8 – 3.1.19

- The room/enclosure housing the water tanks and their ancillary equipment shall be segregated from other services such as services for telecommunications, lifts or fire-fighting.

Impact on roof top HR pump system

- The HR pumping system have to be segregated from the potable water tanks.

HDB's preferred design for roof top HR pump system

- 1 no. of SS tank is to be provided.
- The HR tank & pumping system have to be segregated from the potable water tanks.
- Water supply from boostered distribution main.

Thank you