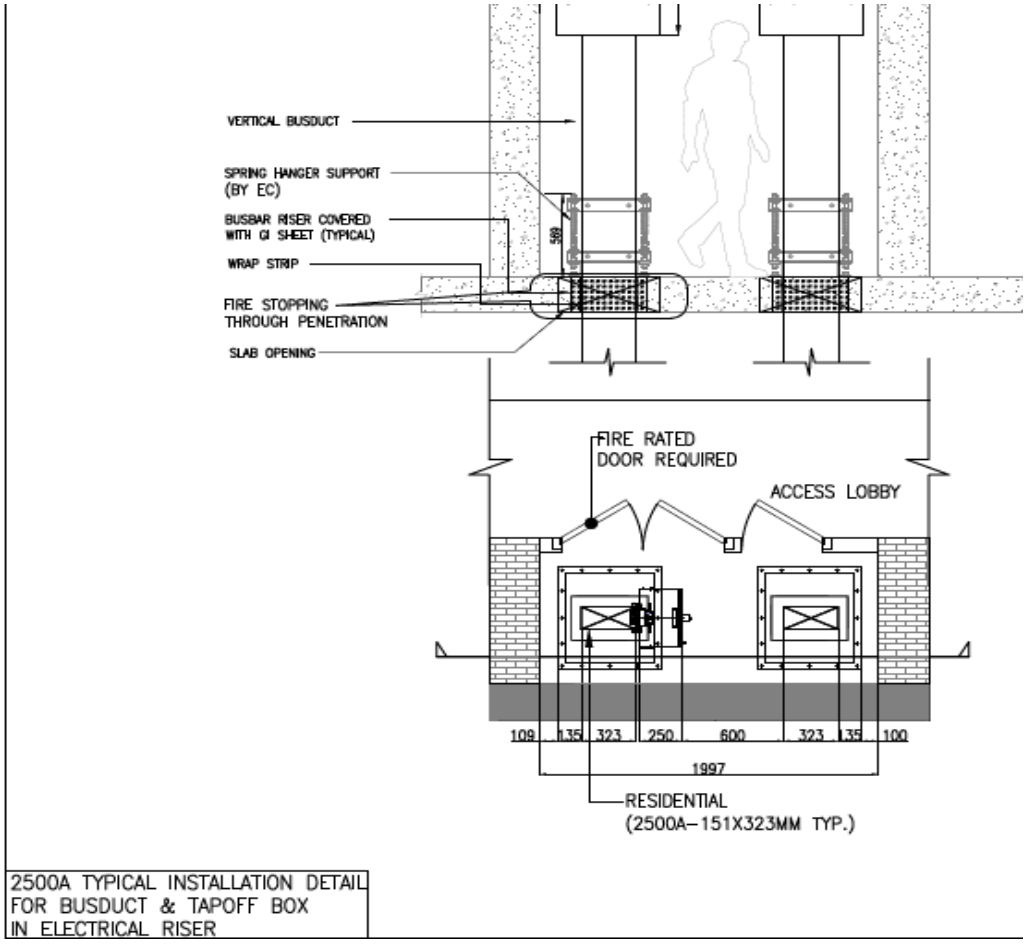
Guidelines for Service Ducts:

1. **General**
   a. Within MCGM limits, duct depth should be 600 mm (ideally 450 mm), except in case of duct abutting toilets which can be upto 2 m deep for building > 70 m and 1.2 m deep for buildings < 70 m. These limits do not apply outside MCGM limits.
   b. If there is a beam running outside the duct, the duct door should be installed on the inside (towards shaft) side of the beam so that the shaft size is seen as minimal.
   c. Side spacing around pipes (including distance from wall) shall be as per IEC (electrical) / UPC (Plumbing). Wrt depth, tolerance in should be max. 50 mm.
   d. It should be assumed that working space is required in the shaft only from the front of each pipe and there is no requirement for working space from the sides of the said pipe (except in case of horizontally installed bus bar where working space has to be provided appropriately on the side).
   e. As far as possible, the entire face of the duct should be accessible from the lobby / passage etc. and where this is provided, no working space is required inside the duct. In case any pipe is not accessible from the outside for > 300 mm, working space of 600 mm is required inside the duct (and hence, this is to be avoided in MCGM limits).

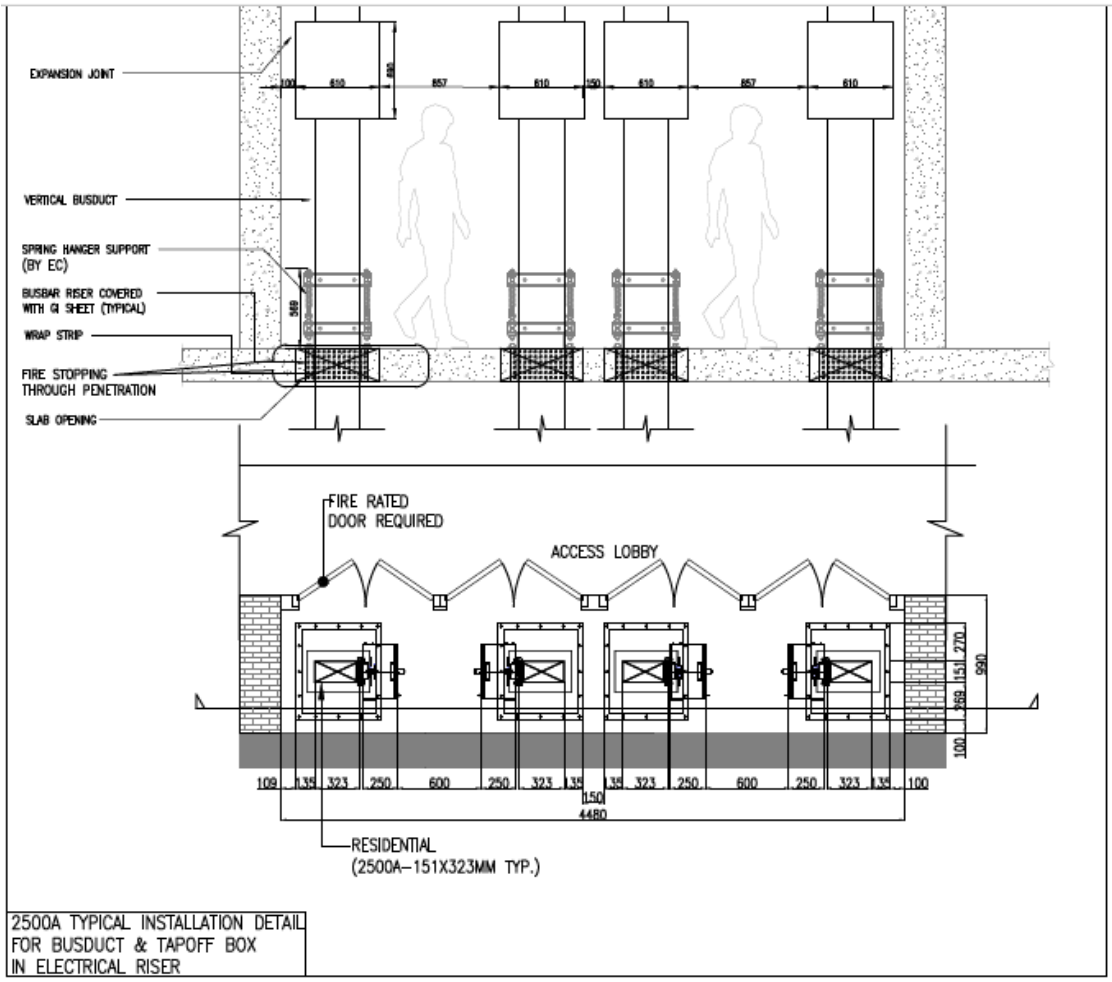
2. **Ducts in the building core area**
   a. Electrical - LV
      i. **Sub main cables:**
         1. Where the shaft is collinear to the service lobby & have direct access from service lobby:
            a. The depth of the shaft shall be maximum 450mm
            b. There shall be full height doors for the entire width of the shaft for accessibility
            c. Fire damper with grill/louvers to be provided at top & bottom of the shaft for natural ventilation.
         2. Where the shaft is enclosed in a room & can be accessed with in the room.
            a. The depth of the shaft shall be as per the wall surface length required.
            b. The service slab shall be required & width shall be as follows:
               i. 600mm for shaft depths upto 600mm
               ii. 750mm for shafts deeper than 600mm
            c. Preferably the cables shall be loaded on both sides of the service slab
            d. Cables shall not be laid in multiple layers due to accessibility issues in vertical shafts.
            e. Fire damper with grill/louvers to be provided at top & bottom of the shaft for natural ventilation.
      ii. Bus risers
         1. Where the shaft is enclosed in a room & can be accessed with in the room.

2. Where the shaft is deep (i.e. the shorter side of the shaft us opening in the common area, while the access being needed deep inside the shaft).
3. The depth of the shaft shall be maximum 990mm (refer option-2.)
4. The depth of the busriser shaft shall be governed by the no. of the busrisers required. Same to the verified with Tapoff unit requirement. Refer sketch -1 for one tapoff per floor (Residential building) & Sketch for two tapoff per floor(Commercial building)
5. The width of the busriser shaft shall be governed by a front access space of minimum 600mm in front of the tap off box.
6. Fire damper with grill/louvers to be provided at top & bottom of the shaft for natural ventilation.
7. Bus riser shaft closing details shall follow as below.

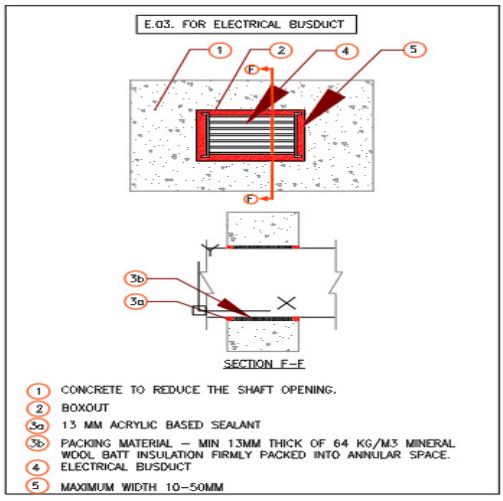
SKETCH-1



SKETCH-2



FIRE SEALANT DETAILS



b. Electrical - ELV

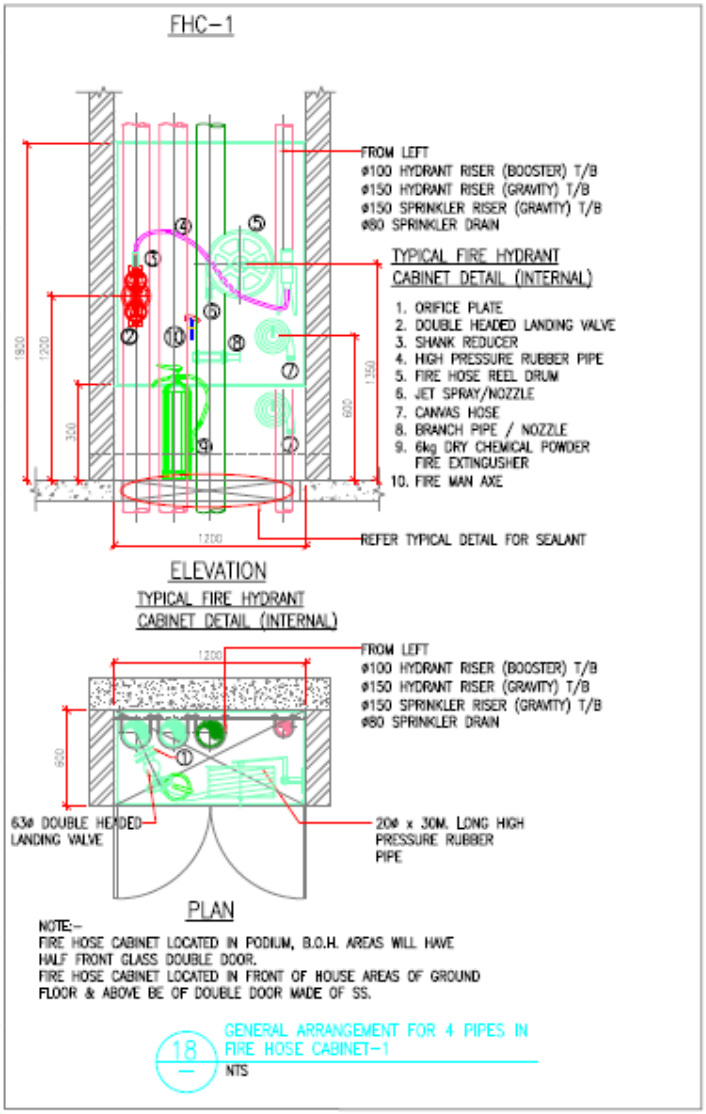
i. Shaft depths shall be maximum of:

1. 450mm deep where there are no FTTx racks to be installed inside the shaft.
2. 800mm deep where FTTx racks are installed inside the shaft.

c. Fire Fighting shaft

i. Shaft depths shall be maximum 600mm, and access shall always be from the common area. Width of the shaft shall be 1200mm for common sprinkler and hydrant shaft to accommodate FHC assembly.

ii. Fire hose reel to be arranged such a way that hose should be freely accessible from outside the shaft in any direction.



d. **Plumbing Ducts** –

i. Internal (inside apartments not accessible from common area)

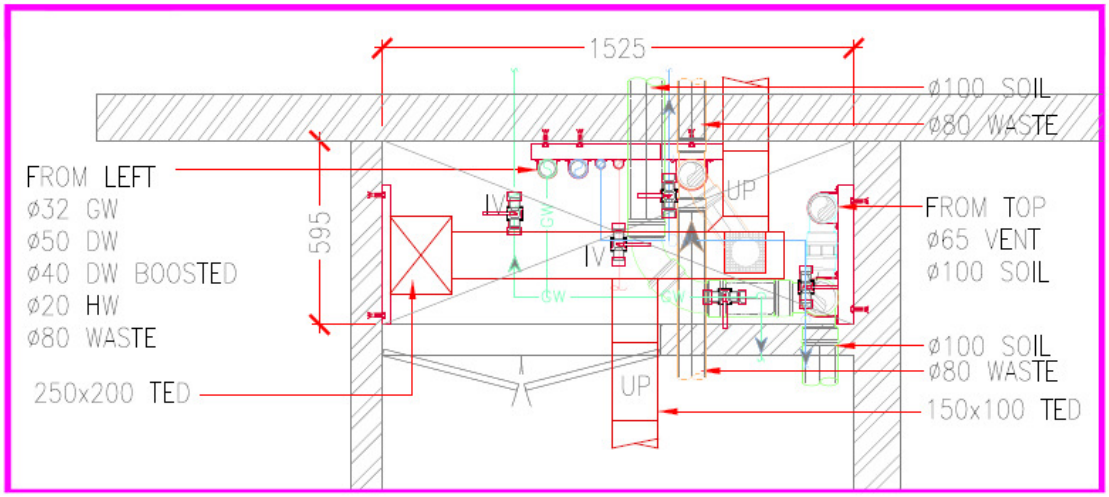
39. Following minimum shaft sizes shall be considered for central mechanically ventilated toilets

Type of service	Low-Rise (<=30 m) mm x mm	Mid-rise (30 m – 70 m) mm x mm	High-rise (70 m – 150 m) mm x mm	Very High Rise (150 m+)# mm x mm
Toilet shaft (includes central toilet extract duct +water supply & drainage pipes)	550 x1550* Clear	550 x1800* Clear	a) Single toilet 550 x1850* Clear b) Back to Back toilet 650x1850* Clear	a) Single toilet 550 x1850* Clear b) Back to Back toilet 650x1850* Clear

* service platform (RCC/M.S.) inside the shaft is required for maintenance.

considering intermediate mechanical floor within 120 metres height

In case there are regulatory min. or max. sizes for such shafts, same shall be taken into account while finalized design.



ii. Plumbing Ducts –

1. External – Without ODU
   a. Service slab widths shall not be more than 750mm.
   b. Services can be loaded on one or both sides of the service slab, with the cutout /sleeve of the service not being more than 250mm.
   c. PVC encapsulated rungs shall be provided inside the shaft to get down to the service slab for maintenance.

b. External – With ODU

i. Shafts which have AC ODUs installed in them shall have a dimension of minimum of 1250mm free width (i.e. the ODU shall be installed beyond the installation of the last pipe in shaft. Care should be taken to load both sides of the shaft equally to ensure minimum depth consumed by services.

ii. There shall be mandatory gap of 150mm from the face of the ODU to the facade perforations/louvers.

iii. Access door from toilet (when shutter is opened in the shaft), size to be agreed with architect considering free movement of ODUs for installation and maintenance.

iv. If there is an up stand beam at periphery of the shaft/duct then the ODU to be elevated to clear the beam obstruction.

3. Additional 50mm (or appropriate) tolerance for construction Plumb shall be considered by the architect with actual design.
4. Wherever a duct is created larger than necessary due to the architectural intent (negative area)/ Liaison requirement, same to be highlighted to architect through a drawing hatching the unused area shall be created for records at the close of the schematic stage of design.
5. For all core shafts it is preferable to have upstand beams for wide shafts which are accessed from the corridors
6. For all core shafts which are deep and only have an access from the corridor side the beams shall be downstand to allow easy escape/access to and from these shafts
7. All above dimensions are considered with no beams projecting on the walls on which the services are supported.

Note: - This policy updation (Rev15) shall be implemented as per Architectural policy no 122.