

Fig. 1 10- storey highrise (murb)

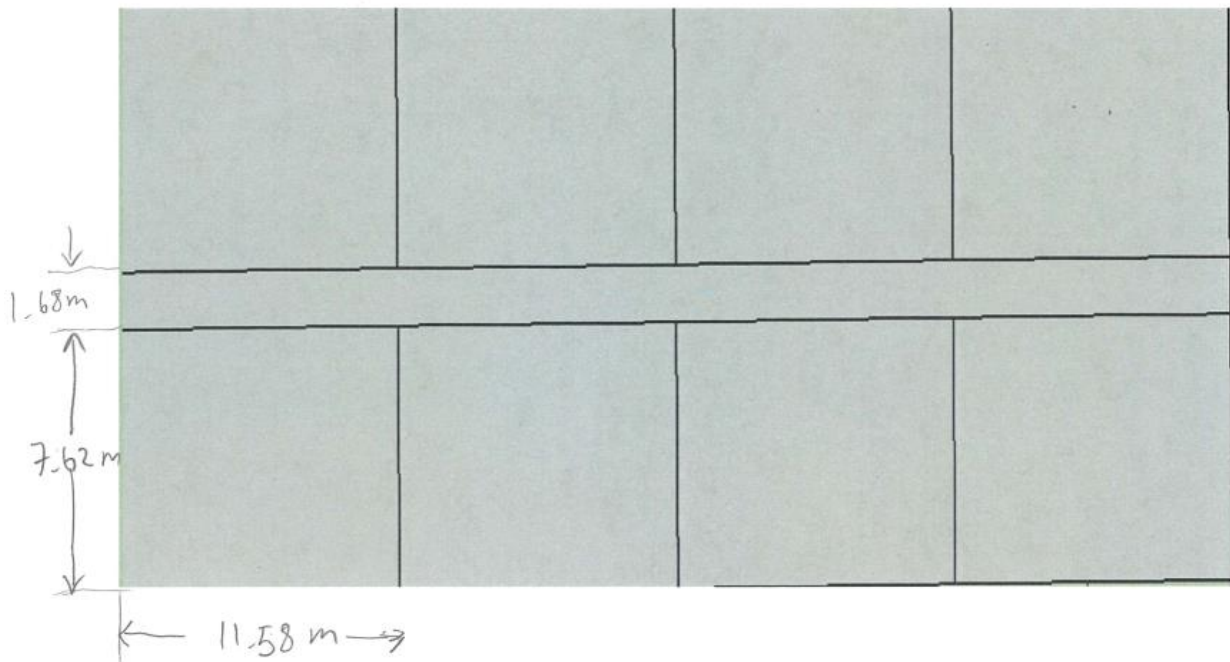


Fig. 2 Typical floor plan

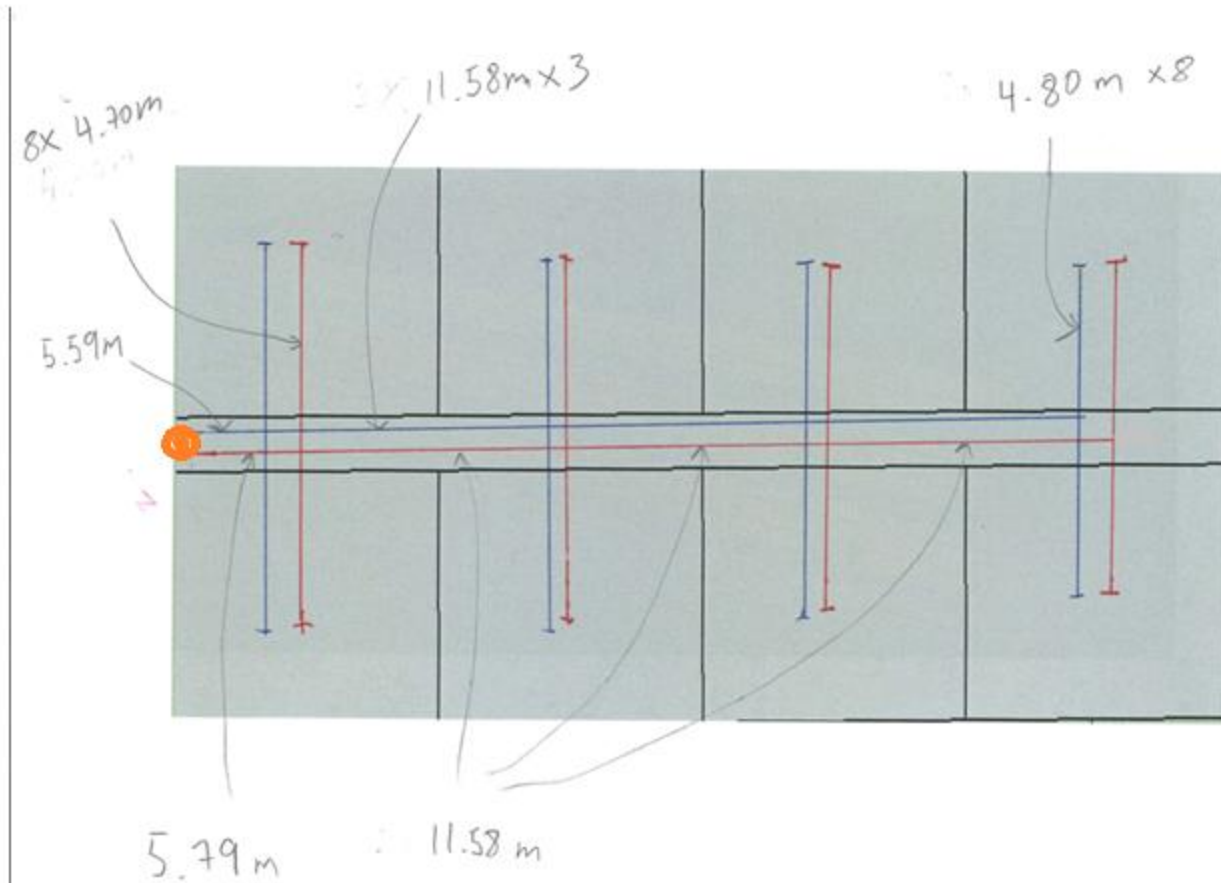


Fig 3. Piping layout

RED = Supply

Blue = Return

Orange = Vertical pipe (VRF outdoor unit rooftop)

Total supply pipe length = $5.79 + 3(11.58) + 8(4.7) = 78.13 \text{ m}$

Total Return pipe length = $5.59 + 3(11.58\text{m}) + 8(4.8) = 78.73$

Total vertical pipe length(assuming VRF outdoor unit on rooftop) $\sim 10 \text{ flrs} \times 3.1 \text{ m per flr} = 31 \text{ m}$