

Fig 1. 3-storey Office

Fig 2. Typical floor zoning layout (4 perimeter + 1 core)

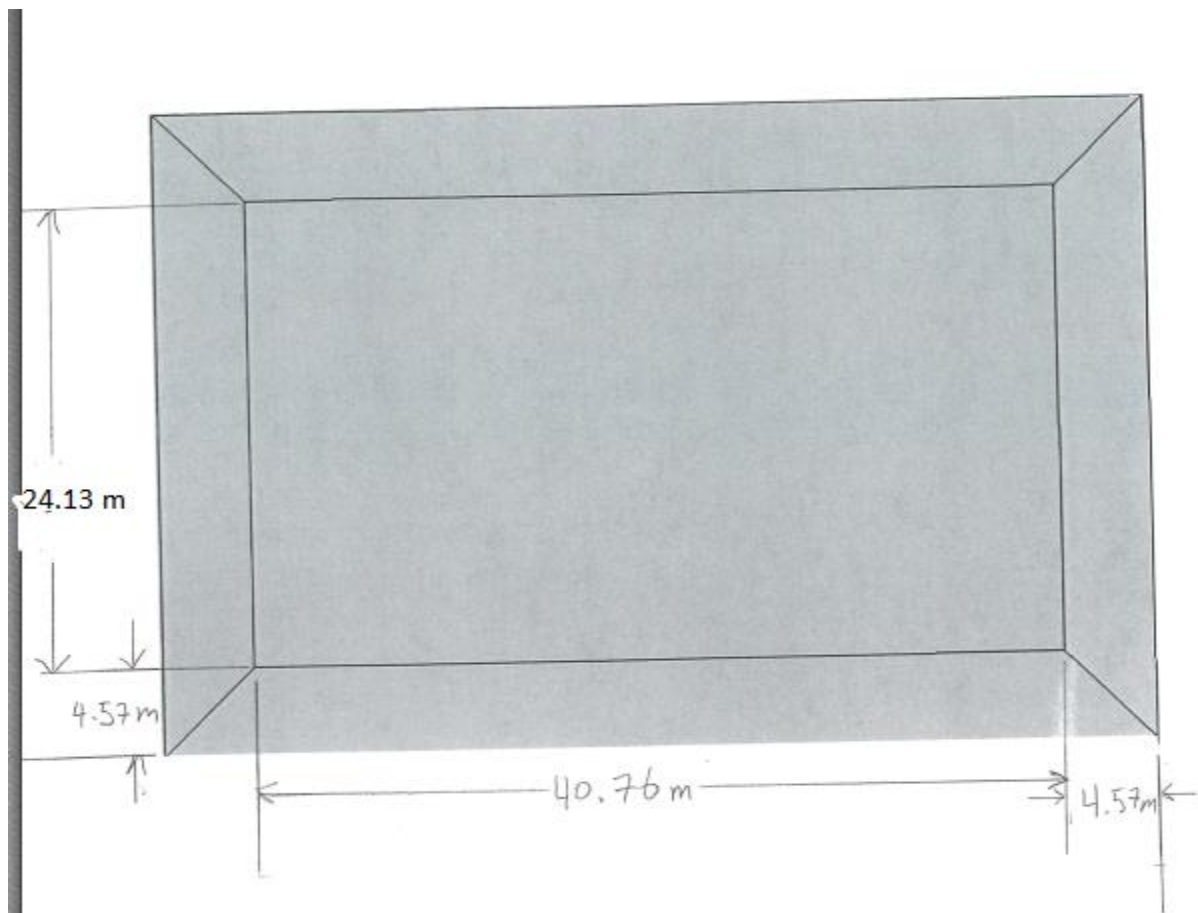
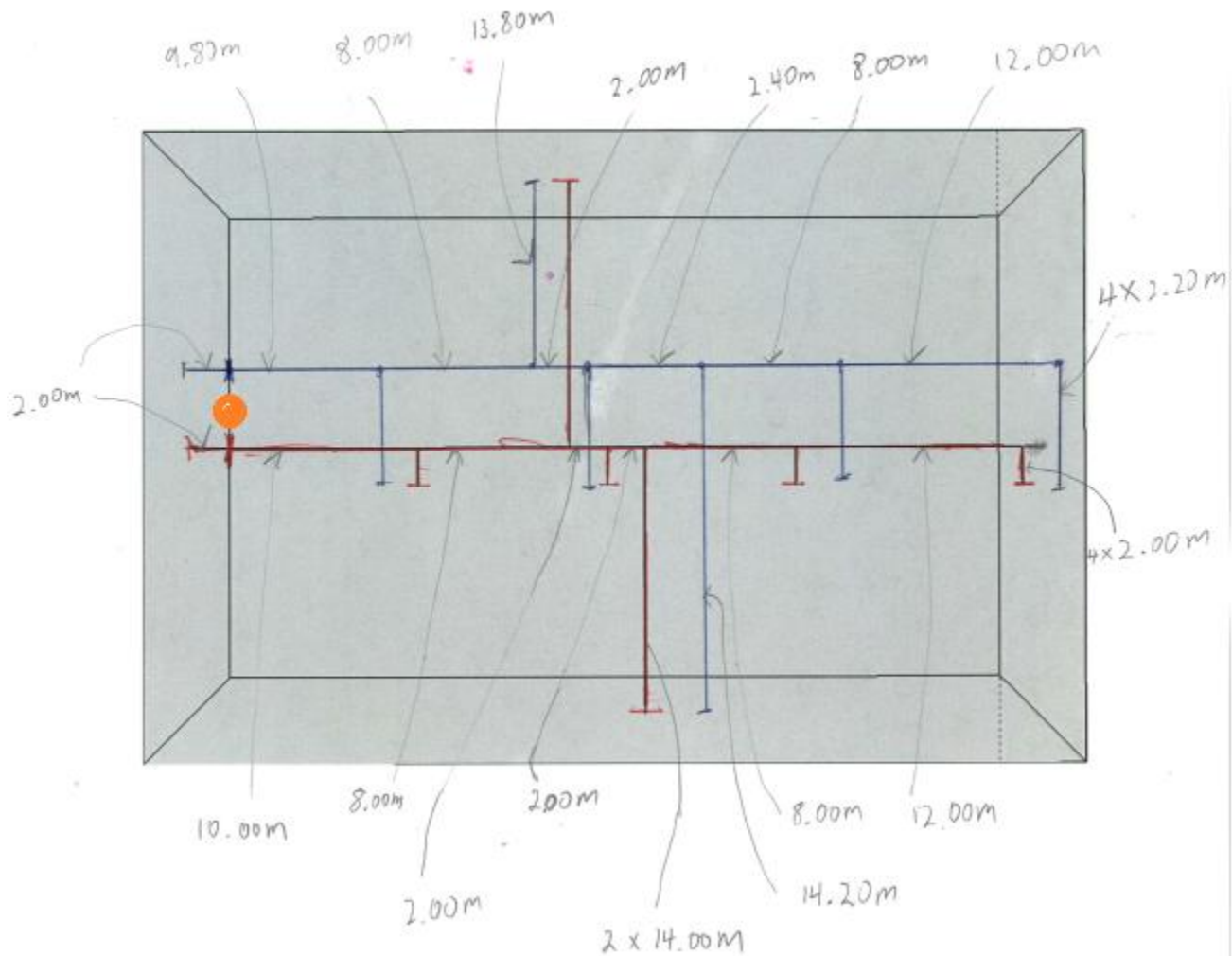


Fig 3. Piping layout



RED = Supply

Blue = Return

Orange = Vertical pipe (VRF outdoor unit rooftop)

Total supply pipe length = $2 + 10 + 8 + 2 + 2 + 8 + 12 + 4(2) + 2(14) = 80\text{m}$

Total Return pipe length = $2 + 9.8 + 8 + 2 + 2.4 + 8 + 12 + 4(2.2) + 14.2 + 13.8 = 81\text{m}$

Total vertical pipe length (assuming VRF outdoor unit on rooftop) $\sim 3 \text{ flrs} \times 4 \text{ m per flr} = 12 \text{ m}$