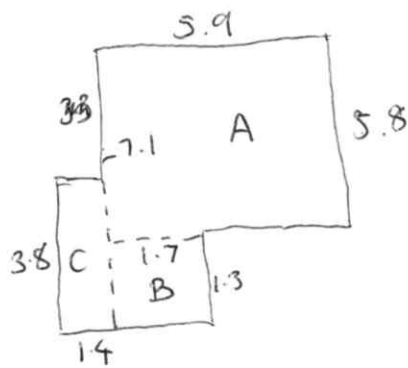


NorthCot Existing Volume



Total height = 2.8m

Volume = $l \times w \times h$

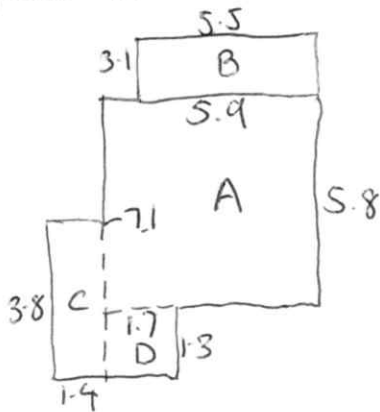
$$A = 5.8 \times 5.9 \times 2.8 = 95.8 \text{ m}^3$$

$$B = 1.7 \times 1.3 \times 2.8 = 6.18 \text{ m}^3$$

$$C = 3.8 \times 1.4 \times 2.8 = 14.89 \text{ m}^3$$

$$\text{Total} = \underline{116.87 \text{ m}^3}$$

Proposed volume...



height up to eaves = 2.6m

$$A = 5.8 \times 5.9 \times 2.6 = 88.9 \text{ m}^3$$

$$B = 5.5 \times 3.1 \times 2.6 = 44.3 \text{ m}^3$$

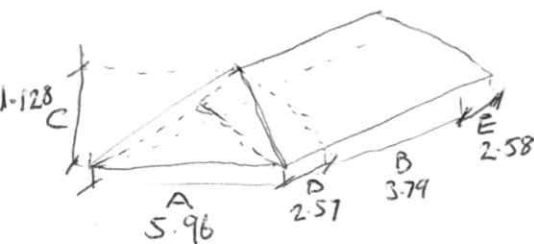
$$C = 3.8 \times 1.4 \times 2.6 = 13.8 \text{ m}^3$$

$$D = 1.7 \times 1.3 \times 2.6 = 5.74 \text{ m}^3$$

$$\text{Total} = \underline{152.74 \text{ m}^3}$$

Proposed volume of hipped Roof...

Hipped Roof Volume Formula = $A \times B \times C / 2 = \dots \text{ m}^3$
 $A \times (D + E) \times C / 3 = \dots \text{ m}^3 +$



$$5.96 \times 3.79 \times 1.128 \div 2 = 12.52 \text{ m}^3$$

$$5.96 \times \frac{(2.57 + 2.58) \times 1.128}{3} = 11.54 \text{ m}^3$$

$$\text{Total} = 12.52 + 11.54$$

$$= \underline{24.06 \text{ m}^3}$$

$$\text{Total volume of Proposed} = 152.74 + 24.06$$

$$= \boxed{176.8 \text{ m}^3}$$

Volume Increase = 51%