

Figure 1.8 *Beam A isolated*

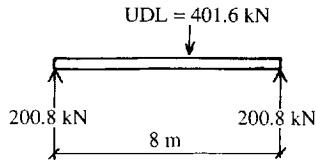


Figure 1.9 *Beam B isolated*

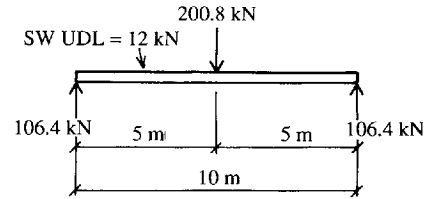


Figure 1.10 *Beam C isolated*

Beam A (Figure 1.8) supports a UDL from a 2.5 m width of simply supported slab together with its SW:

$$\begin{aligned} \text{Total UDL} &= \text{slab UDL} + \text{SW UDL} \\ &= (9.8 \times 8 \times 2.5) + (120/100) \times 8 = 196 + 9.6 = 205.6 \text{ kN} \\ \text{Reactions} &= 205.6/2 = 102.8 \text{ kN} \end{aligned}$$

Beam B (Figure 1.9) supports a UDL from a 5 m width of simply supported slab together with its SW:

$$\begin{aligned} \text{Total UDL} &= \text{slab UDL} + \text{SW UDL} \\ &= (9.8 \times 8 \times 5) + (120/100) \times 8 = 392 + 9.6 = 401.6 \text{ kN} \\ \text{Reactions} &= 401.6/2 = 200.8 \text{ kN} \end{aligned}$$

Beam C (Figure 1.10) supports a central point load from the beam B reaction together with a UDL due to its SW:

$$\begin{aligned} \text{SW UDL} &= (120/100) \times 10 = 12 \text{ kN} \\ \text{Reactions} &= (12 + 200.8)/2 = 212.8/2 = 106.4 \text{ kN} \end{aligned}$$

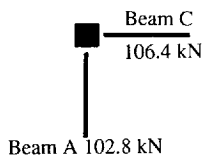


Figure 1.11 *Column 1 loads*

Column 1 (Figure 1.11) supports the reactions from beam A and C together with its SW:

Beam A reaction	102.8
Beam C reaction	106.4
SW = (100/100) × 2.4	2.4
Total column load	211.6 kN

Column 2 (Figure 1.12) supports the reactions from one beam B and two beams C together with its SW:

Beam B reaction	200.8
Beam C reaction	106.4
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SW = (100/100) × 2.4	2.4
	416.0 kN

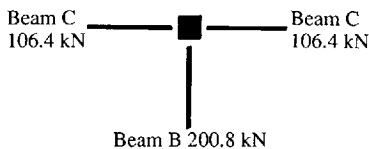


Figure 1.12 *Column 2 loads*