

Job Title	Job No.	Sheet No
CLIFPORT, 32A ORCHARD COTTAGE, EMSWORTH	440814	1

LOADINGS	DL (kN/sq.m.)	LL (kN/sq.m.)
PITCHED ROOF	0.85	0.60
FLAT ROOF	0.85	0.75
Ceiling / ROOF SPACE	0.30	0.25
SKELTING	0.35	
TIMBER FLOOR	0.50	1.50
WALLS		
102mm BRICK	2.00	} IN ELEVATION
100mm BLOCK	0.99	
PLASTER PER FACE	0.30	
STUDWORK (INTERNAL)	0.40	
STUDWORK (EXTERNAL)	0.90	

SUPERSTRUCTURE LOADS

$$\text{ROOF} = 1.8 \left[(5.61 + (2 \times 0.3)) \times (5.13 + (2 \times 0.3)) \right] = 69.1 \text{ kN}$$

$$\text{WALLS} = 0.9 \times 2.5 \times 2 \times 5.13 = 23.1 \text{ kN}$$

$$0.9 \times 3.5 \times 5.61 = 17.7 \text{ kN}$$

$$\text{FLOOR} = 2.0 \times 5.6 \times 5.1 = 57.5 \text{ kN}$$

$$162.1 \text{ kN}$$

$$\text{AREA OF FLOOR SLAB} = 5.61 \times 5.13 = 28.8 \text{ m}^2$$

$$\therefore \text{SUBSOIL PRESSURE CAUSING BENDING} = \frac{162.1}{28.8} = 5.63 \text{ kN/m}^2$$

$$\text{RATIO OF SPANS} = \frac{5.6}{5.1} = 1.1$$

$$\therefore \alpha_{sx} = 0.074 \quad \alpha_{sy} = 0.061$$

$$\therefore M_{sx} = 0.074 \times 5.63 \times 5.1^2 = 10.9 \text{ kNm/m}$$

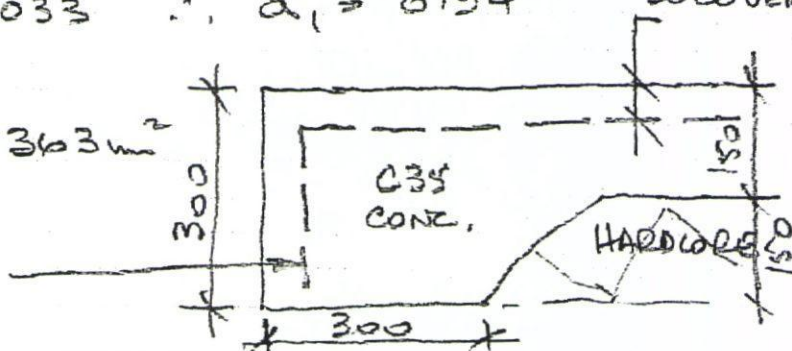
$$M_{sy} = 0.061 \times 5.63 \times 5.6^2 = 10.9 \text{ kNm/m}$$

Using 150mm thick (C35) conc slab. with 30mm top cover,

$$K = \frac{10.9 \times 1.5 \times 10^3}{120^2 \times 35} = 0.033 \quad \therefore a_1 = 0.94$$

$$\therefore A_{st} = \frac{10.9 \times 1.5 \times 10^3}{0.87 \times 460 \times 0.94 \times 120} = 363 \text{ mm}^2$$

\therefore USE A393 MESH



HAVANT BOROUGH
COUNCIL

09 SEP 2014

RECEIVED

LOADINGS

DL (kN/sq.m.)

LL (kN/sq.m.)

PITCHED ROOF	0.85	0.60
FLAT ROOF	0.80	0.75
CEILING / ROOF SPACE	0.30	0.25
SKELING	0.35	
TIMBER FLOOR	0.50	1.50

WALLS

102mm BRICK	2.00
100mm BLOCK	0.99
PLASTER PER FACE	0.30
STUDWORK (INTERNAL)	0.40
STUDWORK (EXTERNAL)	0.90

IN ELEVATION

HAVANT BOROUGH
COUNCIL

09 SEP 2014

RECEIVED

SUPERSTRUCTURE LOADS

$$\text{Roof} = 1.8 \left[(5.61 + (2 \times 0.3)) \times (5.13 + (2 \times 0.3)) \right] = 64.1 \text{ kN}$$

$$\text{WALLS} = 0.9 \times 2.5 \times 2 \times 5.13 = 23.1 \text{ kN}$$

$$0.9 \times 3.5 \times 5.61 = 17.7 \text{ kN}$$

$$\text{FLOOR} = 2.0 \times 5.6 \times 5.1 = 57.5 \text{ kN}$$

$$162.1 \text{ kN}$$

$$\text{AREA OF FLOOR SLAB} = 5.61 \times 5.13 = 28.8 \text{ m}^2$$

$$\therefore \text{SUBSOIL PRESSURE CAUSING BENDING} = \frac{162.1}{28.8} = 5.63 \text{ kN/m}^2$$

$$\text{RATIO OF SPANS} = \frac{5.6}{5.1} = 1.1$$

$$\therefore \alpha_{sx} = 0.074 \quad \alpha_{sy} = 0.061$$

$$\therefore M_{sx} = 0.074 \times 5.63 \times 5.1^2 = 10.9 \text{ kNm/m}$$

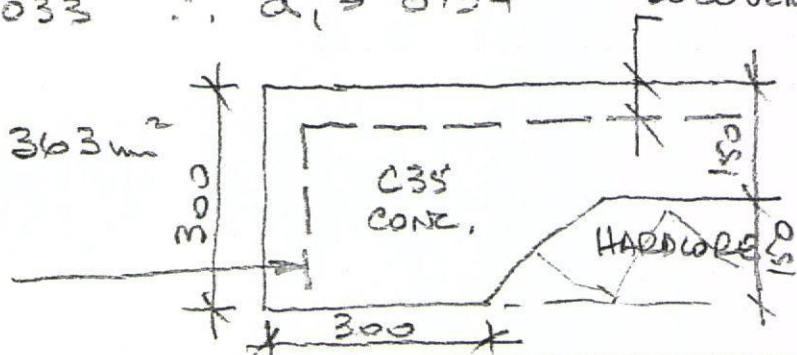
$$M_{sy} = 0.061 \times 5.63 \times 5.6^2 = 10.8 \text{ kNm/m}$$

Using 150mm thick (C35) conc slab. with 30mm top cover,

$$K = \frac{10.9 \times 1.5 \times 10^3}{120^2 \times 35} = 0.033 \quad \therefore \alpha_1 = 0.94 \quad 30 \text{ COVER}$$

$$\therefore A_{st} = \frac{10.9 \times 1.5 \times 10^3}{0.87 \times 460 \times 0.94 \times 120} = 363 \text{ mm}^2$$

\therefore USE A393 MESH



LOADINGS

DL (kN/sq.m.)

LL (kN/sq.m.)

PITCHED ROOF	0.85	0.60
FLAT ROOF	0.80	0.75
CEILING / ROOF SPACE	0.30	0.25
SKELTING	0.35	
TIMBER FLOOR	0.50	1.50

WALLS

102mm BRICK	2.00
100mm BLOCK	0.90
PLASTER PER FACE	0.30
STUDWORK (INTERNAL)	0.40
STUDWORK (EXTERNAL)	0.90

IN ELEVATION

HAVANT BOROUGH
COUNCIL

09 SEP 2014

RECEIVED

SUPERSTRUCTURE LOADS

$$\text{Roof} = 1.8 \left[(5.61 + (2 \times 0.3)) \times (5.13 + (2 \times 0.3)) \right] = 69.1 \text{ kN}$$

$$\text{WALLS} = 0.9 \times 2.5 \times 2 \times 5.13 = 23.1 \text{ kN}$$

$$0.9 \times 3.5 \times 5.61 = 17.7 \text{ kN}$$

$$\text{FLOOR} = 2.0 \times 5.6 \times 5.1 = 57.2 \text{ kN}$$

$$162.1 \text{ kN}$$

$$\text{AREA OF FLOOR SLAB} = 5.61 \times 5.13 = 28.8 \text{ m}^2$$

$$\therefore \text{SUBSOIL PRESSURE CAUSING BENDING} = \frac{162.1}{28.8} = 5.63 \text{ kN/m}^2$$

$$\text{RATIO OF SPANS} = \frac{5.6}{5.1} = 1.1$$

$$\therefore \alpha_{sx} = 0.074 \quad \alpha_{sy} = 0.061$$

$$\therefore M_{sx} = 0.074 \times 5.63 \times 5.1^2 = 10.9 \text{ kNm/m}$$

$$M_{sy} = 0.061 \times 5.63 \times 5.6^2 = 10.8 \text{ kNm/m}$$

Using 150mm thick (C35) conc slab. with 30mm top cover,

$$K = \frac{10.9 \times 1.5 \times 10^3}{120^2 \times 35} = 0.033 \quad \therefore a_1 = 0.94$$

$$\therefore A_{st} = \frac{10.9 \times 1.5 \times 10^3}{0.87 \times 460 \times 0.94 \times 120} = 363 \text{ mm}^2$$

USE A393 MESH

