



**CREATIVE DESIGN
&
STRUCTURE LTD**

Consulting Structural Engineers

Unit 1, Ground Floor
Henson House, Newtown Road
Henley-on-Thames, RG9 1HG
01491 411922

Project

2 BUSSET CLARE
EMMA GREEN

Job Ref.

04025

Sheet no./rev.

F 1

Calculation by

AR

Date

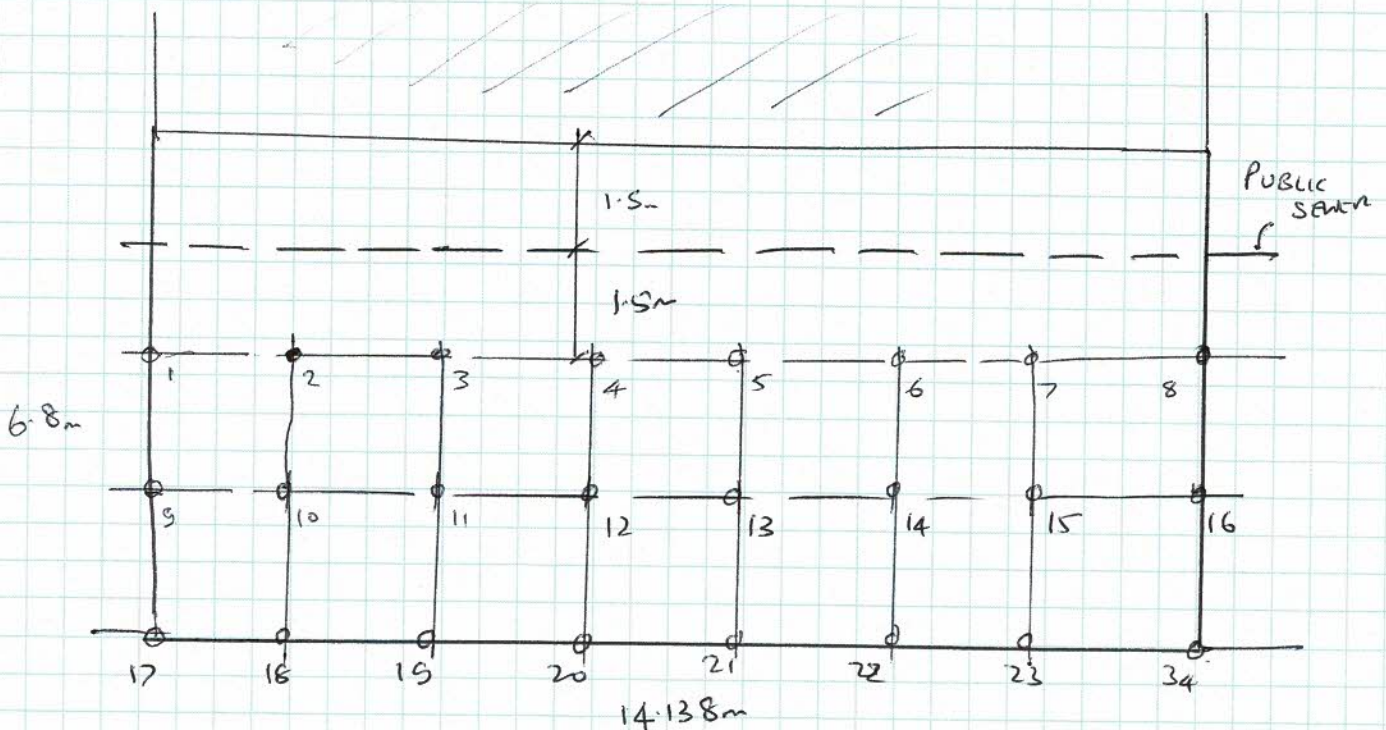
May
2025

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Pile pitel 2m

LOADING — Roof:

Tik	0.7
Tile	0.15
	<u>0.85</u>

DL on pl - $\frac{0.85}{\cos 35} = 1.04$

LL on pl 0.60

Ceiling w/o DL 0.25
" " 0.25 } 0.50

T.L 2.14 kN/m

Dead load = $1.04 + 0.25 = 1.29 \text{ kN/m}$

Impo load = $0.6 + 0.25 = 0.85 \text{ kN/m}$



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2 Russet CLADE
EMMER CREW

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F 2

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LOADING

$$\begin{array}{rcl} \text{Exter walls} & 0.102 \times 20 & = 2.04 \\ & 0.1 \times 8 & = 0.8 \\ & 0.3 & = 0.3 \\ & \hline & & 3.14 \text{ kN/m} \end{array}$$

$$\text{Inter walls } (0.8 + 0.3) \times 2.5 = 2.75 \text{ kN/m}$$

Flow slab max sp 3.0m.

Thickness = 200mm.

$$\text{Conc flr } 0.2 \times 24 = 4.8 \text{ kN/m}^2$$

$$\text{Load} = 0.56 \text{ kN/m}^2$$

Allowance for pbs

$$\begin{array}{r} 2.5 \text{ kN/m}^2 \\ \hline 7.86 \text{ kN/m}^2 \end{array}$$

Imp lo

$$\underline{1.5 \text{ kN/m}^2}$$



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Emmer Green

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Max int pile l

$$= (1.5 + 7.86) \frac{5}{2} \times 2.0 = \underline{46.8 \text{ kN}}$$

Max pile l w ~ ch

from

$$= (3.14 \times 3.5) \frac{5}{2} + 1.12 \times 3 \frac{1}{2} \times \frac{5}{2} +$$

$$+ (1.5 + 7.86) \frac{5}{2} \times \frac{2}{2} = 27.48 + 4.2 + 23.4$$

$$= \underline{55.08 \text{ kN}} \quad [\text{side wall l w}]$$



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EMMER VERDEN

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09025

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F 4

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Beam Pile 17-34

AUE LOAD (gaw)
(slee)

$$= \left[(7.86 + 1.5) \frac{1.5}{2} + 3.14 \times 3.0 \right] 2.0$$

$$= [7.02 + 9.42] 2.0 = 32.88 \text{ kN}$$

Beam (R) Pile

17.89 kN (sh 5)

Beam (E) Pile

39.35 (sh 6)

} shared between two piles

57.24 kN

$$\text{Add pile load} = \frac{57.24}{2} = 28.62 \text{ kN}$$

Total pile load

$$= 28.6 + 32.88 = 61.48 \text{ kN}$$

Max Pile load ~ 65 kN



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2 Russet CLAD
Gunner Gran

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F 5

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$$\text{End lag} = 9 \times 100 \times \pi (0.1)^2 = \frac{101}{28.27}$$

$$\text{Skin frict} \sim 6 \text{ m lag} = 0.45 \times 100 \times \pi (0.2) \times 6 = \frac{169.65}{197.9}$$

$$F.O.S = \frac{197.9}{65.0} = 3.04.$$

200m Arrows piles 8m lag
sleeve top 3m



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2 Russet Glade
Summer Green

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Calculation by

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Floor slab

Max sp 3m.

$$\begin{aligned} w_{load} &= (7.86 \times 1.4) + (1.5 \times 1.6) \\ &= 11.0 + 2.4 \\ &= 13.4 \text{ kN/m} \end{aligned}$$

$$M = 13.4 \times \frac{3^2}{8} = 15.08 \text{ kNm}$$

$$d = 200 - 50 - 10 = 140 \text{ mm}$$

$$\frac{M}{bd^2} = \frac{15.08 \times 10^6}{10^3 \times 140^2} = 0.77$$

$$0.22 \times 10^3 \times \frac{140}{100} = 308 \text{ mm}^2$$

$$\text{Min } \% \text{ Ref} = 0.13 \times 200 \times \frac{10^3}{100} = 260 \text{ mm}^2$$

200mm thick slab

A393 mesh (Bk or 50mm)

Max sp = 1.5m

$$M = 13.4 \times \frac{1.5^2}{8} = 3.76 \text{ kNm}$$

$$\frac{M}{bd^2} = \frac{3.76 \times 10^6}{10^3 \times 140^2} = 0.19$$

$$\text{Min } \% \text{ Ref} = 0.13 \times 200 \times \frac{10^3}{100} = 260 \text{ mm}^2$$

A393 mesh (Bk or 50mm)

/ NOMINAL BARS/MESH A252 IN TOP