

FOUNDATIONS

Strip loadings are proposed, in accordance with G&P BM report, taken down thro' fill and poor natural ground, assumed allowable bearing pressure 110 kN/m² nett. Suspended precast ground floors are proposed.

Unit loadings are as Sheet 1. Ground floor dead loading will be as for first floor, super/ptn load provision is as follows:

Store Room (delivery, Boiler Rm): 5.0 kN/m²

$$\therefore E w/m^2 = 8.1 - 3.5 + 5.0 = \underline{9.6 kN/m^2}$$

Shop/Retail and Corridors:

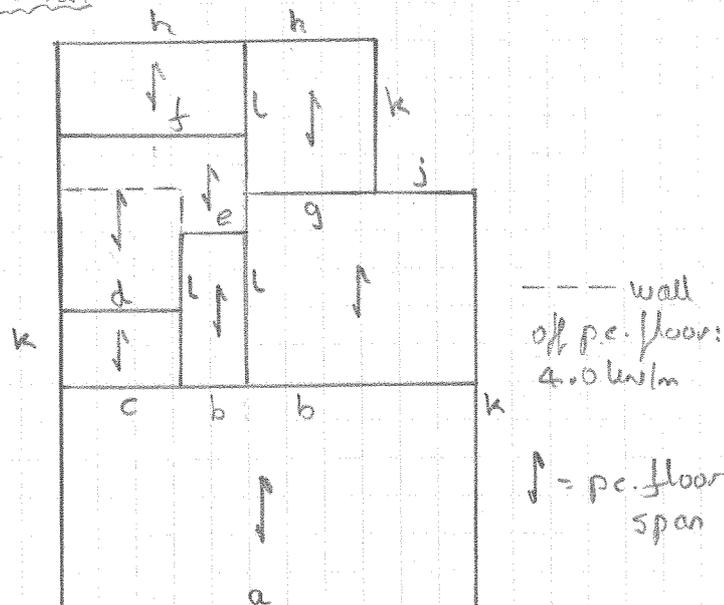
$$\therefore E w/m^2 = 8.1 - 3.5 + 4.0 = \underline{8.6 kN/m^2}$$

WC's: 2.0 LC + 0.5 ptns = 2.5 kN/m²

$$\therefore E w/m^2 = 8.1 - 3.5 + 2.5 = \underline{7.1 kN/m^2}$$

Stall/room/Kitchen: 3.0 kN/m²

$$\therefore E w/m^2 = 8.1 - 3.5 + 3.0 = \underline{7.6 kN/m^2}$$

Key Plan

a - $Ld/m = 4.0 \times 7m \text{ av. wall}$
 $+ (8.1 + 8.6) 7.5m/2 \sqrt{1/2} = 91 \text{ kw/m}$
 Fdn. width req'd = $\frac{91}{110} = .827m$
 (ie. 900) 900 wide

b - $Ld/m = 3.0 \times 3m \text{ wall} + 8.1 \times 13.4/2 \text{ lsf}$
 $+ (8.6 \times 7.4/2 + 9.6 \times 6/2) \text{ grd} = 118 \text{ kw/m}$
 $w = 1.07m$ (ie 1200) 1200 wide

c - $Ld/m = 118 \text{ (as b)} - 9.6 (6/2 - 2.3/2) \text{ grd}$
 $= 100 \text{ kw/m}, w = .9m$ (ie 900) 900 wide

d - $Ld/m = 9.0 \text{ wall} + 8.1 \times 7.8m/2 \text{ lsf}$
 $+ (9.6 \times 2.4/2 + 7.55 \text{ say} \times 5.3/2) \text{ grd}$
 $+ 4.0 \times \frac{1.7}{5.3} \text{ wall via pcus}$
 $= 74 \text{ kw/m}, w = .67m$ (ie 750) 750 wide

e - $Ld/m = (8.1 \times 7.8m/2) \text{ lsf} + (8.6 \times 7.8/2) \text{ grd}$
 $+ \text{nom wall} = 70 \text{ kw/m}$
 $w = .64m$ (ie 750) 750 wide

f - $Ld/m = (8.1 \text{ lsf} + \text{say } 8.1 \text{ grd}) 8.3m/2$
 $+ 4 \times \frac{3.6}{5.3} \text{ wall via pcus}$
 $+ 3.0 \times 3m \text{ wall} = 79 \text{ kw/m}$
 $w = .72m$ (ie 750) 750 wide

g - $Ld/m = (3.0 \times 3m + 1.6 \times 2.5m) \text{ wall}$
 $+ (9.6 \times 6m/2 + 7.6 \times 4.0/2) \text{ grd}$
 $+ (8.1 \times 10.8/2) \text{ lsf} = 104 \text{ kw/m}$
 $w = .95m$ (ie 1050) 1050 wide

- h - $Ld/m = 4.0 \times 7m$ av. wall
 $+ (8.1 + 7.6) 4.0/2 \sqrt{1/2} = 66kw/m$
 $w = 0.6m$ (i.e. 750) 750 wide

- j - $Ld/m = 4.0 \times 7m$ av. wall
 $+ (8.1 + 9.6) 6m/2 \sqrt{1/2} = 81kw/m$
 $w = .74m$ (i.e 750) 750 wide

- k - $Ld/m = 4.0 \times 5.8m$ wall $+ 1.81 \times 12.5m$ roof
 $= 37kw/m$, $w = .34m$ (ie 750) 750 wide

- l - by inspection - 450 wide 450 wide