



STRUCTURAL CALCULATIONS

Client: St Mary, East Barkwith PCC

Project : Proposed Extension

Job No. : 24_1206

Revision :

Date : 30th December 2022

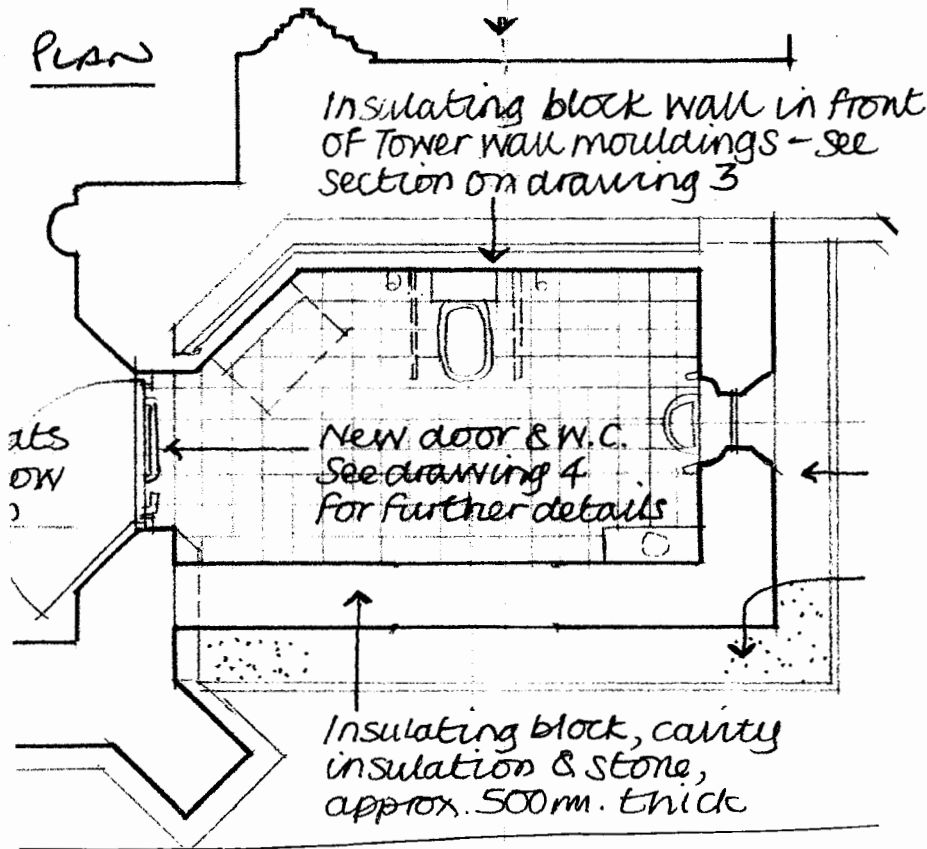
Engineer : Adrian Dempster

WARD ■ ■ **COLE**
consulting engineers

c/o Adrian Dempster
105 Nottingham Road
Selston
Nottingham
NG16B 6BU
Tel 07971 142829

DETAILS

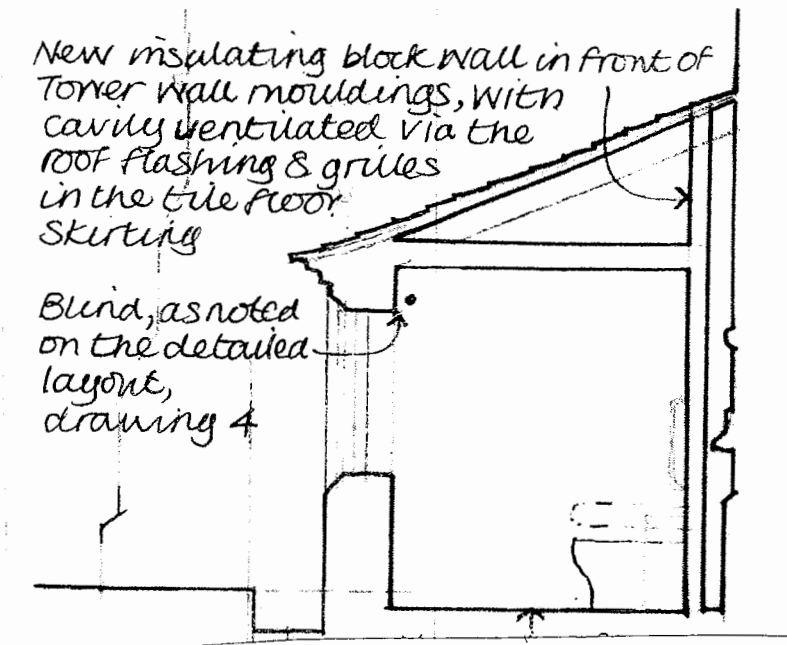
PLAN



SECTION

New insulating block wall in front of Tower wall mouldings, with cavity ventilated via the roof flashing & grilles in the tile floor skirting

Blind, as noted on the detailed layout, drawing 4



Job Title
ST. MARY EAST BARKWITH

Checked

Date

Calculation Title
PROPOSED EXTENSIONS

Revised

Date

LOADING SCHEDULE

Roof: DL (SLATES, RAFTERS ETC) = 0.7 kN/m² (low Perm)
UL (BS6399) = 0.6 kN/m²
Floor: DL (SCROED. RAFT ETC) = 7.0 kN/m²
UL (BS 6399) = 2.0 kN/m²
CEILING: DL (P.B., JOISTS ETC) = 0.5 kN/m²
UL (BS6399) = 0.25 kN/m²
WALLS: DL (STONES) = 11.0 kN/m²

Roof support STRUCTURE

SPAN of RAFTERS = 2.2m

PITCH = 25°

From EUROCODE 5

PROVIDE GRADE C16 47x125 TIMBER

RAFTERS @ 400 c/c.

CEILING support STRUCTURE

SPAN of JOISTS = 2.2m

AS RAFTERS, PROVIDE GRADE C16

47x125 TIMBER JOISTS @ 400 c/c

RAFT FOUNDATION

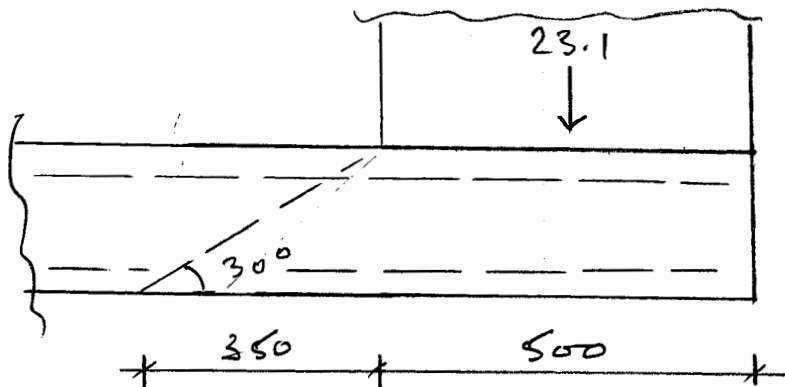
LOADING ON WALL (MAX.)

$$\text{Roof} = 1.3 \times \frac{2.2}{2} = 1.4 \text{ kN/m}$$

$$\text{COURSE} = 0.75 \times \frac{2.2}{2} = 0.3 \text{ kN/m}$$

$$\text{WALL} = 11.0 \times 2.4 = 26.4 \text{ kN/m}$$

CONSIDER EDGE STRIP OF RAFT



$$\text{S.W. RAFT} = 7.0 \times 0.85 = 6.0 \text{ kN}$$

$$\begin{aligned} \text{TOTAL LOAD ON EDGE STRIP} &= 6.0 + 23.1 \\ &= 29.1 \text{ kN} \end{aligned}$$

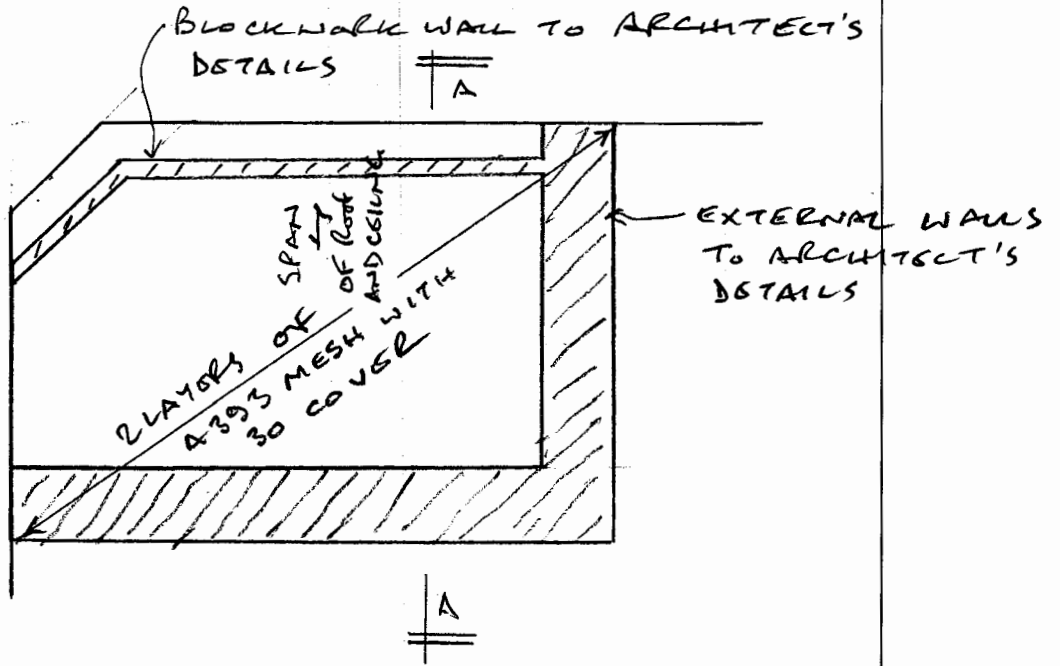
$$\therefore \text{Bearing Pressure} = \frac{29.1}{0.85} = 34.2 \text{ kN/m}^2$$

THIS IS ACCEPTABLE

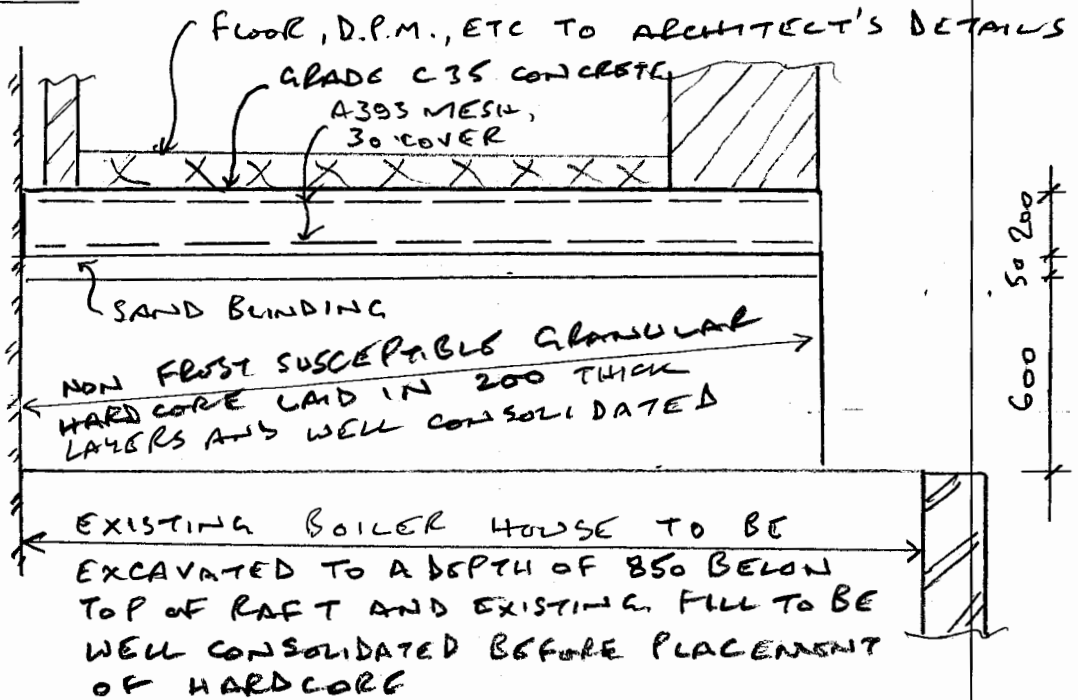
\therefore PROVIDE 200 THICK GRADE C35 CONCRETE RAFT WITH 2 LAYERS OF A393 MESH

PROPOSED RAFT DETAILS

(N.B. DIMENSIONS TO ARCHITECT'S DETAILS)



PLAN



SECTION AA