

Job Title: "Sarnum Chase," 23 West Heath Road, London NN3

Beams Supporting New Stair

$$\text{Span} = 5.85 \text{ m}$$

$$\text{Load Lay. } 4.75 \text{ kN} \times 2.3 \text{ m} = 10.925 \text{ kN/m}$$

$$\text{Savg} = 11 \text{ kN allowing for s/ast.}$$

$$\text{Ult. Savg } 11 \text{ kN} \times 1.5 = 16.50 \text{ kN/m.}$$

$$\therefore \text{Ult. Mf} = 16.50 \text{ kN} \times 5.85 \text{ m}^2 / 8 = 70.60 \text{ kNm.}$$

$$\text{Plastic Modulus} = 70.60 \times 10^3 / 275 = 257 \text{ cm}^3$$

Use a 203 x 203 x 46 UC which is a elastic section

$$\therefore \text{S. Load Mf} = 11 \text{ kN} \times 5.85 \text{ m}^2 / 8 = 47 \text{ kNm}$$

$$D/f: 18.50$$

$$f_{ty} = 585 / 513 = 114$$

$$P_{bc} = 13000 \text{ N/cm}^2$$

$$z = 47 \times 10^3 / 13000 = 362 \text{ cm}^3 < 420 \text{ cm}^3$$

$$\text{Allowable } \sigma = 585 / 360 = 1.625 \text{ cm.}$$

$$I_{NA} \text{ Req'd} = \frac{5 \times 11 \text{ kN} \times 5.85 \times 585^3}{380 \times 20500 \times 1.625} = 5036 \text{ cm}^4$$

\therefore \text{value req'd, is greater than that provided}

\therefore \text{Use a } 203 \times 203 \times 52 \text{ UC instead.}

$$\text{Padstone Area} = 11 \text{ kN} \times 5.85 \text{ m} / 2 \times 10^3 / 0.45 = 71,500 \text{ Sq mm}$$

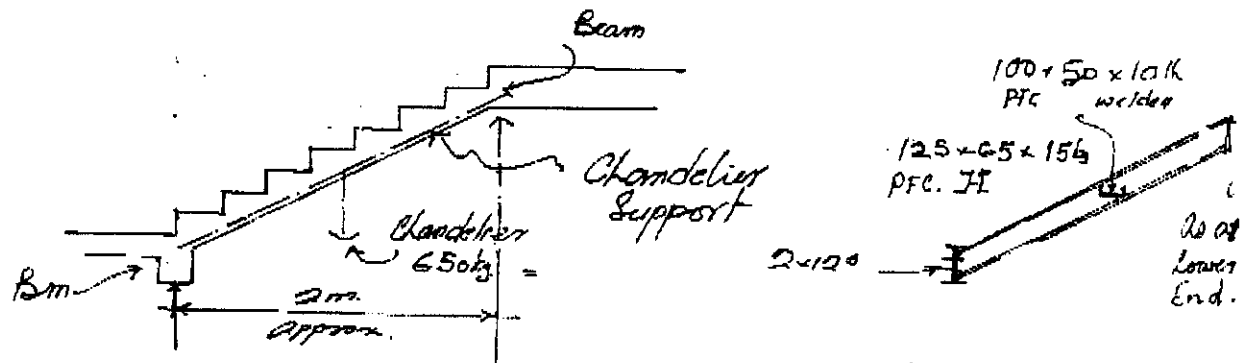
Say, use a 400 long x 200 wide x 200 th. mass concrete.

Use the same section at both levels

Job Title: Sarum Chase "23 West Heath Road, NW3.

Support for Chandelier at New Stair

It is proposed to instal a chandelier at the ups of the new extended staircase



Chandelier S.Wt = 650 kg.

allow for 25% increase - due to lowering & raising the chandelier

∴ Total load = 812.50 kg Say 813 kg = 8 kN

M_T = 8 kN × 2m/4 = 4 kNm.

Using 1.5 as limit state factor

Ult. M_T = 4 kNm × 1.5 = 6.00 kNm.

Try 2 No. 125 × 65 × 15 kg u.ch. back to back. - Plastic Section

Note Plastic Modulus redy = $6 \times 10^3 / 275 = 22 \text{ cm}^3$

and $275 \times 89.9 \text{ cm}^3 / 10^3 = 24.72 \text{ kNm}$

and $1.2 \times 275 \times 77.3 / 10^3 = 25.51 \text{ kNm} > 24.72 \text{ kNm}$. Sect. ok

Note Using 2 sections back to back with connector at chandelier pt.

and 10k. end plts, 9 Bolt to upper & lower beams with

4 No. 12^o bolts at each location

TRISTRAN

TRISTANNO P.L. (14/07/09)

SERVICES LTD

FAX 05001164070

To: Michael Peters

Fax Number:

Date: 14th July 2009


From: Oscar Menezes

Number of pages including cover: 1

Regarding: Brown Chase.

Re. Garden Wall. Piles may be 14 in number as previously however compression on Piles 1 to 7 incl - Working load = 7.5kN
Piles 8 to 14 incl. - Compression 40kN, Tension 15kN each

Main Stair - Extended Section

Support for Chandeler at mid-flight - 2 No 125 x 75 x 24 kg PFC sections. back to back  10th. end plt. bolted to main

supporting bms. with 12th grade s.s, 4 no. each end. 

Supporting cross bms - 260 x 75 x 28 kg PFC.

Pavilion.

The posts proposed are 90 x 90 with 5th wall. welded top & bottom - 10th. end plt., & bolted with 4 x 2 x 12th resin anchored bolts. - Posts to be treated with 2 coats of bitumastic paint, prior to installation - Post at approx 2m. c/s.

All above are advance information - Cote's & details if reqd, will follow.

Please ask Richard to call me when he has a moment.