

Job 12. Rose Joan Mews - London. N.W. 6.	By T.M.	Date May. 09	Sheet 01.
Item Balcony Extension Slab.	Checked	Date	Job No.

Design Data

Live loads are in accordance with
B.S. Code of Practice B.S. 6399, Part I; 1984.

Concrete to be of a min. cube crushing
strength of 35 N/mm^2 at 28 days, using a min.
O.P.C. content of 330 kg/m^3 , and max. free
water/Cement Ratio of 0.55.
Max. aggregate size 20 mm.

Reinforced concrete design to be in accordance
with B.S. Code of Practice C.P. 8110.

Proposed Balcony Extension Slab:---

Loading:--

Asphalt finish = 0.45 kN/m^2

Battens & boarding = 0.15 "

Wt. of Conc slab :
Say 170 mm. thick $\times 24 \text{ kN/m}^3 = 4.10 \text{ "}$

	4.7 kN/m^2 - Dead.
Super	3.0 " -- Live.
	<u>7.7 kN/m^2 D+L.</u>

Slab span 3.3 eff.

$\therefore$ Assumed B.M. = $\frac{W \ell^2}{8} = \frac{7.7 \times 3.3^2}{8} = 10.5 \text{ kNm}$

$\therefore$ Ultimate B.M. = $10.5 \times 1.5^F = \underline{\underline{15.75 \text{ kNm}}}$ Ult. B.M.

Try Slab 160 - 150 mm thick.

$\therefore$ average o/a depth $D = 155$.

$\therefore d = 155 - 50 = 105 \text{ mm.} - b = 1000$.

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Balcony R.C. slab design cont'd:-

slab $D = 155 \text{ mm} \therefore d = 105 \text{ mm}$, $b = 1000$

Using Design charts:

$$\frac{M}{bd^2} = \frac{10.75 \times 10^6}{1000 \times 105^2} = 1.43$$

$$\therefore \frac{100 A_s}{bd} = 0.4 \quad \therefore A_s = 420 \text{ mm}^2 \rightarrow \text{provide T.10 @ } 150 \text{ mm} - \text{bottom. (523 mm}^2\text{)}$$

distribution steel $\rightarrow$ T.10 @ 200 mm - bottom. (393 mm²)