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STRUCTURAL DESIGN OF FOUNDATION AND CLOUMN DESIGN FOR THE PROPOSED MULTI DWELLING BUILDING (STILT + 5 FLOORS WITH 28 DWELLING UNITS) IN T.S.NO.169 , 170 , 171 , WARD-F , BLOCK - 5 AT COIMBATORE OLD TOWN AND VILLAGE, COIMBATORE SOUTH , COIMBATORE CORPORATION , COIMBATORE DISTRICT

Design

Foundation and shall be designed for the maximum span of 7.00m

Live Load	=	400 kg/m^2
Dead Load	=	(1.00x1.00x0.10x2400)
Self weight of slab	=	240kg/m^2
Floor Finish	=	100kg/m^2
Total dead load	=	340kg/m^2
Live Load + Dead Load	=	400 + 340 = 740kg/m^2
Load to be transferred to beam	=	1x3x740x1=2200kg/m^2
Load to be taken by Column	=	2200x7.00=15400kg

Since the proposed building will have Basement + 3 Upper Floors

The Column shall be designed for 4 floor i.e. 4x15400=61600kg (or) 70000kg (70 Tones)

Using RCC M_{20} mix and fe 550 Steel

Assuming area of Column = AC cm^2

Area of column main rod = 4% of AC

Pu = 0.4x2.00xAc+0.67xfyxAst

70000=0.4x200x(Ac-0.04Ac) + 0.67x5500x0.04Ac

70000=0.4x200x0.96Ac+147.4Ac

70000=224.2Ac

Ac=312.22cm^2

For Navaneetha Property Developers

Managing Partner

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Provide Column to the size of 23 cm x 38 cm

Hence Ac = 874 cm^2 > 312.22 cm^2

Ast required= 0.4 x 874 = 37.96 cm^2

Provide 10 Nos. of 25Φ i.e. 10x4091=49.10 cm^2 > 34.96 cm^2

Design of Foundation

From soil test report the safe bearing capacity of soil can be taken as 20T/m^2

Size of footing required = 70T/20T/m^2 = 3.5 m^2

Hence provide isolated footing to the size of 2.0mx2.0m=4m^2 > 3.5m^2

Hence safe.

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