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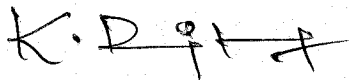


PROPOSED RESIDENTIAL DEVELOPMENT OF (1BASEMENT + STILT+ FLOORS (BLOCK B, C, D & E) & STILT + 5 FLOORS (BLOCK A) AT AMBATTUR, CHENNAI

STRUCTURAL DESIGN CALCULATIONS

**STRUCTURAL
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16-02-2024

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1. INTRODUCTION:

The structure is a “Proposed Residential Development” consisting of 1Basement + Stilt + 5 floors (Block B, C, D & E) and Stilt + 5 floors (Block A) at Old S.No: 132 Part & 139/1, T.S No: 15/2-2, 15/4-2/2, 15/4-1, Block No-22, Ward-G, of Athipattu Village, Vanagaram-Ambattur Road, Chennai-600058, Ambattur Taluk, Thiruvallur – District, Zone-7& Division-86, Greater Chennai Corporation.. It is designed as a Reinforced Concrete Framed Structure which is supported on Individual Footings & Combined Rafts.

Building size

Length (X-direction) – 62.84m
Width (Y-direction) – 18.85m

Height

Stilt floor – 3.0m
First floor – 3.0m
Second floor – 3.0m
Third floor – 3.0m
Fourth floor – 3.0m
Fifth floor – 3.0m

2. MATERIALS USED:

Following materials are generally used in the design of the various components of the structure.

1. M30 for all Reinforced concrete part of the structure.
2. Fe 500 grade reinforcement steel for all diameters.

The self-weight of the various elements are computed based on the unit weight of materials as given below:

3. Materials	Unit weight kN/m³
4. Steel	78.50
5. Plain Cement Concrete	24.00
Reinforced Cement Concrete	25.00
Soil Fill (Landscape)	20.00 (Saturated)
Water	10.00
Cement Concrete screed	24.00
CLSM (Controlled low strength material)	20.00
Light weight Block (AAC)	8.00
Solid block wall (Concrete)	22.00

Normal weight aggregates shall be considered for arriving at self-weight of all Concrete works.

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3. DESIGN STANDARDS

The relevant Indian Standard Codes, as given below, shall be followed for structural design:

Sl.No.	Code	Description
1.	IS-875 (Part 1) – 1987	Code of Practice for Design Loads (other than earthquake) for buildings and structures – Unit weights of buildings materials and stored material.
2.	IS-875 (Part 2) – 1987	Code of Practice for Design Loads (other than earthquake) for buildings and structures – Imposed loads.
3.	IS-875 (Part 3) – 1987	Code of Practice for Design Loads (other than earthquake) for buildings and structures – Wind loads.
4.	IS-875 (Part 4) – 1987	Code of Practice for Design Loads (other than earthquake) for buildings and structures – Snow loads.
5.	IS-875 (Part 5) – 1987	Code of Practice for Design Loads (other than earthquake) for buildings and structures – Special loads and load combinations.
6.	IS: 456 – 2000	Code of Practice for Plain and Reinforced Concrete.
7.	IS: 1786 – 2008	High Strength Deformed Steel Bars and Wires for Concrete Reinforcement - Specification.
8.	IS: 13920 – 1993	Ductile detailing of reinforced concrete structures subjected to seismic forces - Code of practice
9.	IS: 800 – 1984/2007	Code of Practice for General Construction in Steel.
10.	IS: 1893 – 2002	Criteria for Earthquake resistant design of structures.
11.	IS3370-(PART I & II)-2009	Code of Practice for Concrete structures for the storage of liquids – Reinforced concrete structures
12.	IS 2950 (Part I) -1981	Code of Practice for Design and construction of Raft foundation


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4. **DESIGN DATA:**

- | | |
|--|--|
| 1. No. Of floors | = Basement + Stilt + 5 upper floors |
| 2. Height of floors | = 3m+3m+3m+3m+3m+3m |
| 3. Safe Bearing Capacity | = 140kN/sq.m @ 3 m depth |
| 4. Density of Concrete | =25kN/m ³ |
| 5. D.L. due to partitions
(Light Partition as per IS 875) | =1.25 kN/m ² |
| 6. D.L. due to flooring | =1.20 kN/m ² |
| 7. Live Load in lobby & corridors | =3.00 kN/m ² |
| 8. Live Load in Floor | =2.00 kN/m ² |
| 9. Live Load in stairs | =3.00 kN/m ² |
| 10. Live Load in Toilets & Bathrooms | =2.00 kN/m ² |
| 11. Basic wind speed | =50 m/sec |
| 12. Seismic Zone | = III |
| 13. Design mix | = M25 for Beam & Slab
M30 for Column & Footings |

5. **ANALYSIS OF STRUCTURE:**

The structure is analyzed using STAAD PRO V8i software. All beams & slabs are designed as conventional beam & slabs.

6. **DESIGN CONCEPT**

Limit State concept of design will be used as per IS: 456-2000 & SP - 16. The detailing of reinforcement shall be done satisfying the requirements of IS: 456, SP-16, IS: 13920, IS: 4326 and SP-34.

The Slabs and beams are checked for deflection as per IS 456. Cover for Reinforcement is considered as per Table 16A of NBC, for a Fire resistance of **2 hrs.**

7. **LOAD CASES:**

7.1. **Primary Load:**

1. Dead Load (DL)
2. Live Load (LL)
3. Earthquake Load (EL)
4. Wind Load (WL)

7.2. **Load Combinations:**

The following combinations of Loads as per IS 1893 is considered in the staad Analysis

1. 1.5(DL +LL)
2. 1.2(DL +LL ± EL)
3. 1.2(DL +LL ± WL)
4. 1.5(DL ± EL)
5. 0.9DL ± 1.5E
6. DL + LL

8. SEISMIC ZONE:

The Proposed residential building is at Chennai & it falls in Seismic Zone III as per the IS Code. Response spectrum method shall be used for seismic analysis of R.C.C. Frames as recommended by **IS: 1893**.

Seismic Zone	=III
Zone Factor 'Z'	=0.16
Response Reduction Factor 'R' (for SMRF)	=5.00
Importance Factor 'I'	=1.0
Type of Structure	=1.00
Type of Soil	= II (Medium)

SEISMIC ANALYSIS:

8.1. STATIC ANALYSIS:

As per IS 1893:2002, the total design lateral force or seismic design base shear (V_b) is determined by the following expression.

$$V_b = A_h W$$

Where A_h is Design acceleration spectrum value using fundamental natural period and W is seismic weight of the building.

The seismic weight is estimated based on full dead load + % of live load (live load up to 3 kN/m² 75% reduction, above 3 kN/m² 50% reduction)

The fundamental natural period of vibration (T_a) in seconds of a RC building is estimated by using the following formula

$$T_a = 0.075 h^{0.75} \text{ (moment resisting building without brick infill panel)}$$

$$T_a = 0.09 h/\sqrt{d} \text{ (moment resisting building with brick infill panel)}$$

Where h is the height of building in meters.

" d " is the base dimension of the building at the plinth level in m.

From IS 1893:2002 clause 6.4.2, Design horizontal seismic coefficient

$$A_h = \frac{Z I S_a}{2 R g}$$

Where, Z for Zone III	= 0.16
I for Residential Building	= 1.0
R for SMRF	= 5.0

8.2. DYNAMIC ANALYSIS:

As per IS 1893 : 2002 clause 7.8.1, dynamic analysis shall be carried out to study the structural behavior of the building and to design the structural elements like columns and RC walls including floor elements etc .

Dynamic analysis shall be carried out using response spectrum method. The design base shear (V_b) from the analysis shall be compared with a base shear (V_b) calculated manually using a fundamental period Table as per 10.1 or same as static analysis.

9. COVER FOR REINFORCEMENT:

Cover for Reinforcement is considered as per Table 16A of NBC, for a Fire resistance of **2 hrs.**

1. Footing	= 50mm
2. Columns	= 40mm
3. Beams	= 30mm
4. Slabs	= 25mm

10. FLOOR LOADS ON RESIDENTIAL:

The Typical floor slab and beams are designed as a conventional R.C.C beam & slab for floor loads as mentioned below. Thickness of slab is 125mm. The load considered on the floor slab is 7.5 kN/m².

Self-Weight of 125 thk. Slab	= 3.125 kN/m ²
Load due to Floor Finish	= 1.20 kN/m ²
Load due to Partition	= 1.1 kN/m ² (Light weight)
Live load	= 2.00 kN/m
Total load taken	= <u>7.5 kN/m²</u>

11. FOUNDATION SYSTEM:

Safe Bearing Capacity of soil is good at (-) 3.5 m depth onwards from existing ground level as per the Soil Investigation Report. It is proposed to have Raft Foundation on Basement area and Isolated footing on Non-Basement area.

The support condition for columns in STAAD model is considered as simply support.

The following is a summary of recommendations for the suitable type of foundations for the Geotechnical Investigation Report For The Proposed Construction Of Residential Building (Basement+G+5) At Old S.No: 132 Part & 139/1, T.S.No: 15/2-2, 15/4-2/2, 15/4-1, Block No-22, Ward-G, Of Athipattu Village, Vanagaram-Ambattur Road, Chennai -600 058.

Depth of Foundation (m)	Type of Foundation	Safe Bearing Capacity (tons/m ²)
3.0	Isolated	14.0

12.1 Typical Design of Column:

Results from the STAAD analysis are taken out and using Excel work sheet format, three worst forces from all load combinations are considered for the design of the Columns. Percentage of steel required for the most required case is considered as the final reinforcement. A typical Design calculation is furnished below for portion-03 of S+5 floors Column C106.

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C106 - Columns: (for maximum axial load case)

Total load on column = 1654 kN

Moment in Y-Direction = 26 kNm

Moment in Z-Direction = 54 kNm

Column Size = 300X800mm

A_{st} = 2364 mm²

p_t = 2.43 %

p/f_{ck} = 0.10

$P_u / f_{ck} bd$ = 0.35

$M_u / f_{ck} b^2 d$ = 0.135

$M_u / f_{ck} bd^2$ = 0.153

M_{uy1} = 228 KN.m

M_{uz1} = 643 KN.m

P_{uz}/A_g = 21 N/mm²

M_{uy}/M_{uy1} = 0.123

M_{uz}/M_{uz1} = 0.085

ω_n = 1.29

$(M_{uy}/M_{uy1})^{\omega_n} + (M_{uz}/M_{uz1})^{\omega_n} = 0.109$ Hence safe.

Provide 300X750 columns with 6 Nos 25mm + 8 Nos 20mm (2.43%) up to Stilt floor Roof.

12.2 TYPICAL DESIGN OF ROOF SLAB:

Typical Floor Slab, S4:

Size of the Slab = 4.96m X 4.08m

Thickness of Slab = 150mm

Dead load on the Slab

Due to Self Weight (0.150x25) = 3.75 kN/m²

Due to Partitions = 1.25 kN/m²

Due to Floor Finish = 1.0 kN/m²

Live load on Slab = 3.0 kN/m²

TOTAL LOAD ON THE SLAB = 9.0 kN/m²

l_y / l_x = 1.21

Short span B.M = 9 kN/m² x 4.08² / 12 = 12.48 kN.m

Provide 125 mm thick slab.

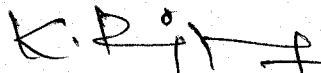
$M_u / bd^2 = 0.93$, $p_t = 0.23\%$, $A_{st} = 281$ mm²

Y10 @ 275mm c/c required

PROVIDE:

Y10 @ 100mm c/c

Y10 @ 150mm c/c


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12.3 DESIGN OF BASEMENT FLOOR ROOF BEAM:

Design of beam "B1": 300 x 650 mm

Results from STAAD

Mu (+)	= 432 kN.m
Mu (-)	= 486 kN.m
Shear	= 321 kN
Beam size	= 300 X 650mm
bf	= 500 mm
Effective depth	= 610 mm
Grade of Concrete	= M25
Grade of Steel	= Fe500

Tension Reinforcement Details:

$$\begin{aligned} \text{Mu (+) / (bf * d}^2\text{)} &= (432 \times 10^6) / (500 * 610 * 610) \\ &= 2.29 \text{ N/mm}^2 \\ \text{For } 2.29 \text{ N/mm}^2; p_t &= 0.599\% \\ \text{Then Ast} &= 0.599 * 500 * 610 / 100 \\ &= 1838 \text{ mm}^2 \\ \text{No of bars} &= 1838 / ((\pi * 25^2) / 4) \\ &= 3 \text{ Nos.} \end{aligned}$$

Provide 3-Y25 (throughout) + 2-Y20 extra @ middle in bottom

$$\begin{aligned} \text{Mu (-) / (B * d}^2\text{)} &= (486 * 10^6) / (300 * 610 * 610) \\ &= 4.30 \text{ N/mm}^2 \end{aligned}$$

$$\begin{aligned} \text{For } 4.3 \text{ N/mm}^2; \text{ From SP16, } p_t &= 1.18 \% \\ \text{Then Ast} &= 1.18 * 300 * 610 / 100 \\ &= 2177 \text{ mm}^2 \end{aligned}$$

Provide 3-Y16 throughout + 2-Y25 extra @ support in top.

Shear Reinforcement Details:

$$\begin{aligned} \tau_v &= V_u / (B * d) \\ \tau_v &= 321 * 10^3 / (300 * 610) \\ &= 2.01 \\ \tau_c &= 0.27 \end{aligned}$$

Hence $\tau_v > \tau_c$

Provide 10mm dia stirrup- 2 legged

$$\begin{aligned} V_{us} &= (\tau_v - \tau_c) * B * d \\ S_v &= (2.10 * f_y * d * A_{sv}) / (V_{us}) \\ S_v &= 133 \text{ mm} \end{aligned}$$

Reinforcement Details:

Provide 3-Y25 (throughout) + 2-Y20 extra @ middle in bottom

Provide 3-Y16 throughout + 2-Y25 extra @ support in top.

Provide 10mm dia rod 2 legged with 100C/C @ supports & 150 C/C in mid span


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12.4 STAAD EDITOR

STAAD SPACE

START JOB INFORMATION

ENGINEER DATE 14-Oct-22

END JOB INFORMATION

INPUT WIDTH 79

UNIT METER KN

JOINT COORDINATES

2 0 0 0.6; 3 3.3 0 0.6; 4 6.55 0 0.6; 9 9.85 0 0.6; 10 9.85 0 1.8;
12 12.95 0 1.8; 14 15.95 0 1.8; 24 22.25 0 4.35; 25 18.95 0 4.35; 26 0 0 4.35;
27 3.3 0 4.35; 28 6.55 0 4.35; 29 9.85 0 4.35; 30 18.95 0 0.91;
31 22.25 0 0.91; 32 12.95 0 4.35; 33 15.95 0 4.35; 34 9.85 0 4; 35 12.95 0 4;
38 20.15 0 4.35; 39 22.25 0 7.4; 40 20.15 0 7.4; 44 0 0 7.4; 47 0 0 9.1;
48 0 0 12.5; 51 6.25 0 9.1; 52 6.25 0 12.5; 57 9.85 0 11.25; 58 12.95 0 11.25;
59 16.65 0 11.25; 60 9.85 0 10.65; 64 6.25 0 7.6; 65 9.85 0 7.6;
66 12.95 0 7.7; 67 16.65 0 7.7; 68 16.65 0 12.5; 70 16.65 0 9.1;
72 22.25 0 9.1; 73 22.25 0 12.5; 79 0 -3 0.6; 80 3.3 -3 0.6; 81 6.55 -3 0.6;
82 9.85 -3 0.6; 83 12.95 -3 1.8; 84 15.95 -3 1.8; 85 22.25 -3 4.35;
500 18.85 6 12.5; 501 18.85 6 9.1; 502 16.65 6 10.5; 503 18.85 6 10.5;
504 6.55 6 7.6; 505 20.15 6 7.7; 506 9.85 6 7; 507 12.95 6 7; 508 15 6 11.25;
509 20.15 6 6.54; 510 15.825 6 11.25; 511 16.65 6 11.875; 512 15.825 6 12.5;
513 21.2 6 7.4; 514 3.9 9 12.5; 515 3.3 9 0; 516 6.55 9 0; 517 3.3 9 1.4;
518 6.55 9 1.4; 519 9.85 9 1.8; 520 12.95 9 0.6; 521 15.95 9 0.6;
522 15.95 9 0; 523 15.95 9 1.47; 524 18.95 9 0; 525 18.95 9 1.47;
526 12.95 9 4.35; 527 9.85 9 4; 528 10.75 9 1.8; 529 10.75 9 4;
530 20.15 9 4.35; 531 22.25 9 6.54; 532 0.4 9 4.35; 533 2.1 9 4.35;
736 12.95 15 7.7; 737 16.65 15 7.7; 738 16.65 15 12.5; 739 22.25 15 12.5;
822 12.95 21 5.6; 823 9.85 21 5.6; 825 12.95 21 8.1; 826 9.85 21 8.1;
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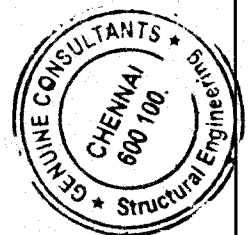
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ELEMENT INCIDENCES SHELL

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710 129 224 131 130; 711 203 204 206 205; 712 205 206 120 119; 713 405 120 392;
714 406 405 135; 715 406 221 405; 716 406 226 221; 717 405 221 120;
718 407 135 405; 719 407 392 135; 720 407 405 392; 721 406 225 226;
722 406 135 225; 723 112 113 121 120; 724 224 225 228 227; 725 227 228 132 131;
726 120 121 136 392; 727 135 136 232 233; 728 233 232 230 229;
729 215 125 409 408; 730 208 209 115 114; 731 114 115 124 214;

ELEMENT PROPERTY

707 710 TO 724 726 TO 737 741 1293 1296 1298 TO 1310 1312 1313 1315 1317 1319 -
1320 TO 1324 1327 1334 1337 1339 TO 1351 1353 1354 1356 1358 1360 TO 1365 -
1368 1375 1378 1380 TO 1392 1394 1395 1397 1399 1401 TO 1406 1409 1416 1419 -
1421 TO 1433 1435 1436 1440 1442 TO 1447 1450 1605 1608 1610 TO 1622 1624 -
1625 1627 1629 1631 TO 1636 1639 1649 1668 TO 1672 THICKNESS 0.125
708 709 725 738 TO 740 1288 TO 1292 1294 1295 1297 1311 1314 1316 1318 1325 -
1326 1335 1336 1338 1352 1355 1357 1359 1366 1367 1376 1377 1379 1393 1396 -
1398 1400 1407 1408 1417 1418 1420 1434 1437 1439 1441 1448 1449 1606 1607 -
1609 1623 1626 1628 1630 1637 1638 THICKNESS 0.15
1328 TO 1333 1369 TO 1374 1410 TO 1415 1451 TO 1456 1640 TO 1644 -
1645 THICKNESS 0.125

DEFINE MATERIAL START

ISOTROPIC CONCRETE

E 2.17185e+007

POISSON 0.17

DENSITY 25

ALPHA 1e-005

DAMP 0.05

ISOTROPIC SLAB

E 2.17185e+007

POISSON 0.17

DENSITY 0.005

ALPHA 1e-005

DAMP 0.05

END DEFINE MATERIAL

MEMBER PROPERTY INDIAN

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171 PRIS YD 0.6 ZD 0.3

122 153 PRIS YD 0.7 ZD 0.3

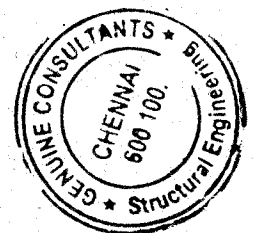
132 139 163 170 PRIS YD 0.75 ZD 0.3

767 804 PRIS YD 0.3 ZD 0.3

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 71 77 80 85 89 TO 91 93 TO 95 97 100 TO 103 637 638 640 691 743 745 TO 751 -
 753 754 756 TO 766 803 PRIS YD 0.45 ZD 0.3
 13 43 48 79 81 82 92 689 690 768 TO 770 1251 TO 1258 PRIS YD 0.6 ZD 0.2
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 607 TO 617 619 TO 626 629 TO 634 636 771 TO 782 784 TO 791 794 TO 799 801 -
 1467 TO 1478 1480 TO 1487 1489 TO 1494 1496 PRIS YD 0.6 ZD 0.2
 839 858 859 861 870 TO 873 876 896 TO 907 909 916 922 924 925 947 966 967 -
 969 978 TO 981 984 1004 TO 1015 1017 1024 1030 1032 1033 1055 1074 1075 1077 -
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 1271 1272 1274 TO 1276 1278 TO 1287 1517 1536 1537 1539 1548 TO 1551 1554 -
 1574 TO 1585 1587 1594 1600 1602 1603 PRIS YD 0.6 ZD 0.2
 236 237 239 240 243 TO 253 259 261 265 266 268 TO 272 274 275 279 TO 284 289 -
 290 292 TO 294 296 297 299 TO 303 305 TO 310 317 323 325 326 645 647 648 -
 706 805 808 816 819 TO 838 840 TO 857 860 862 TO 869 874 875 877 TO 895 908 -
 910 TO 915 917 TO 921 923 926 TO 946 948 TO 965 968 970 TO 977 982 983 985 -
 986 TO 1003 1016 1018 TO 1023 1025 TO 1029 1031 1034 TO 1054 1056 TO 1073 -
 1076 1078 TO 1085 1090 1091 1093 TO 1111 1124 1126 TO 1131 1133 TO 1137 1139 -
 1142 TO 1162 1164 TO 1181 1184 1186 TO 1193 1198 1199 1201 TO 1219 1232 1234 -
 1235 TO 1239 1241 1245 1247 1250 1466 1497 TO 1516 1518 TO 1535 1538 1540 -
 1541 TO 1547 1552 1553 1555 TO 1573 1586 1588 TO 1593 1595 TO 1599 1601 1604 -
 1646 TO 1648 1650 1651 1657 TO 1665 PRIS YD 0.45 ZD 0.2

MEMBER PROPERTY

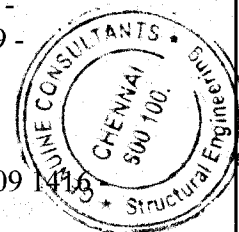
285 TO 288 291 315 316 318 TO 322 PRIS YD 0.2 ZD 0.53
 234 235 238 241 242 254 TO 258 260 262 TO 264 267 273 277 278 304 643 644 -
 646 705 1652 TO 1656 1666 1667 PRIS YD 0.45 ZD 0.3
 311 312 314 324 811 PRIS YD 0.53 ZD 0.3

CONSTANTS

BETA 90 MEMB 110 TO 116 118 119 121 TO 126 129 130 132 TO 134 136 137 139 -
 140 TO 147 149 150 152 TO 157 160 161 163 TO 165 167 168 170 TO 178 180 181 -
 183 TO 188 191 192 194 TO 196 198 199 201 TO 209 211 212 214 TO 219 222 223 -
 225 TO 227 229 230 232 233 606 TO 612 614 615 617 TO 622 625 626 628 TO 630 -
 632 633 635 636 771 TO 777 779 780 782 TO 787 790 791 793 TO 795 797 798 -
 800 801 1251 TO 1258 1467 TO 1473 1475 1476 1478 TO 1483 1486 TO 1490 1492 -
 1493 1495 1496

MATERIAL CONCRETE MEMB 2 7 8 10 11 13 16 20 29 TO 31 34 37 39 40 42 43 45 -
 46 TO 48 52 54 55 64 65 67 TO 69 71 77 79 TO 82 85 89 TO 95 97 100 TO 103 -
 110 TO 130 132 TO 161 163 TO 192 194 TO 223 225 TO 275 277 TO 294 296 297 -
 299 TO 312 314 TO 326 606 TO 626 628 TO 638 640 643 TO 648 689 TO 691 705 -
 706 743 745 TO 751 753 754 756 TO 791 793 TO 801 803 TO 805 808 811 816 819 -
 820 TO 1241 1245 TO 1267 1269 1271 1272 1274 TO 1276 1278 TO 1287 -
 1328 TO 1333 1369 TO 1374 1410 TO 1415 1451 TO 1456 1466 TO 1604 -
 1640 TO 1648 1650 TO 1667

MATERIAL SLAB MEMB 707 TO 741 1288 TO 1327 1334 TO 1368 1375 TO 1409 1416
 1417 TO 1437 1439 TO 1450 1605 TO 1639 1649 1668 TO 1672



MEMBER RELEASE

13 42 48 54 79 237 240 243 245 250 252 264 269 272 274 279 280 289 297 303 -
315 325 326 691 751 753 756 757 770 805 822 825 828 830 835 837 849 854 857 -
859 864 865 874 880 882 888 900 910 911 920 930 933 936 938 943 945 957 962 -
965 967 972 973 982 988 990 996 1008 1018 1019 1028 1038 1041 1044 1046 1051 -
1053 1065 1070 1073 1075 1080 1081 1090 1096 1098 1104 1116 1126 1127 1136 -
1146 1149 1152 1154 1159 1161 1173 1178 1181 1183 1188 1189 1198 1204 1206 -
1212 1224 1234 1235 1271 1274 TO 1276 1280 1284 1287 1500 1503 1506 1508 -
1513 1515 1527 1532 1535 1537 1542 1543 1552 1558 1560 1566 1578 1588 1589 -
1598 START MX MY MZ

80 237 240 245 250 252 272 279 282 287 292 293 303 316 323 326 646 TO 648 -
691 749 758 761 763 TO 765 770 805 822 825 830 835 837 857 864 867 872 877 -
878 880 888 901 908 911 915 TO 917 920 923 930 933 938 943 945 965 972 975 -
980 985 986 988 996 1009 1016 1019 1023 TO 1025 1028 1031 1038 1041 1046 -
1051 1053 1073 1080 1083 1088 1093 1094 1096 1104 1117 1124 1127 -
1131 TO 1133 1136 1139 1146 1149 1154 1159 1161 1181 1188 1191 1196 1201 -
1202 1204 1212 1225 1232 1235 1239 TO 1241 1247 1275 1279 1281 1284 1287 -
1500 1503 1508 1513 1515 1535 1542 1545 1550 1555 1556 1558 1566 1579 1586 -
1589 1593 TO 1595 1598 1601 END MX MY MZ

SUPPORTS

79 TO 99 101 TO 109 419 454 PINNED

DEFINE 1893 ACCIDENTAL LOAD

***EARTHQUAKE ZONE III =0.16

***IMPORTANCE FACTOR=1

***RESPONSE REDUCTION FACTOR=5(SMRF)

***TYPE OF SOIL=2(MEDIUM)

***TYPE OF STRUCTURE=1(RCC STRUCTURE)

ZONE 0.16 RF 5 I 1 SS 2 ST 1 DM 0.05 DT 2

JOINT WEIGHT

2 WEIGHT 39.725

3 WEIGHT 54.506

4 WEIGHT 55.999

9 WEIGHT 28.057

10 WEIGHT 16.978

12 WEIGHT 52.901

14 WEIGHT 38.18

24 WEIGHT 47.816

25 WEIGHT 59.279

26 WEIGHT 53.269

27 WEIGHT 68.827

137 138 WEIGHT 66.099

138 WEIGHT 97.443

139 WEIGHT 37.653

140 WEIGHT 67.874

141 WEIGHT 67.475

142 WEIGHT 29.003

143 WEIGHT 30.475

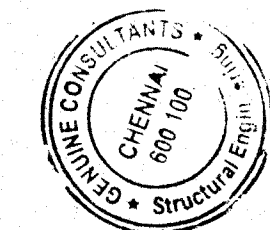
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145 WEIGHT 85.95

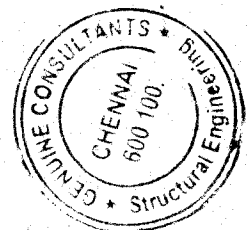
146 WEIGHT 66.672

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571 WEIGHT 22.955
572 WEIGHT 19.058
573 WEIGHT 38.054
574 WEIGHT 21.216
575 WEIGHT 98.938
576 WEIGHT 72.095
577 WEIGHT 23.611
578 WEIGHT 26.896
579 WEIGHT 46.803
580 WEIGHT 49.607
581 WEIGHT 5.769
582 WEIGHT 54.849
583 WEIGHT 53.975
584 WEIGHT 58.026
585 WEIGHT 90.769
586 WEIGHT 52.646
587 WEIGHT 38.737
588 WEIGHT 40.439
589 WEIGHT 56.881
590 WEIGHT 26.395
591 WEIGHT 35.598
592 WEIGHT 65.5
593 WEIGHT 15.39
594 WEIGHT 70.073
595 WEIGHT 46.101
596 WEIGHT 4.978
597 WEIGHT 39.806
598 WEIGHT 44.728
599 WEIGHT 65.551
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610 WEIGHT 13.359
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612 WEIGHT 10.667
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619 WEIGHT 35.626

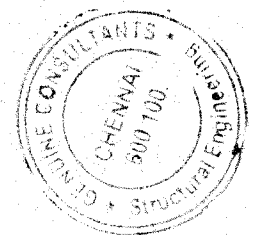


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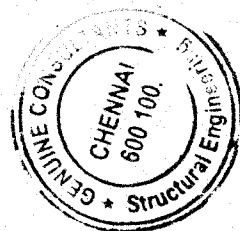
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622 WEIGHT 16.759
623 WEIGHT 12.061
624 WEIGHT 18.141
625 WEIGHT 56.685
626 WEIGHT 43.943
627 WEIGHT 24.937
628 WEIGHT 30.328
629 WEIGHT 47.794
630 WEIGHT 33.15
631 WEIGHT 3.519
632 WEIGHT 35.935
633 WEIGHT 22.989
634 WEIGHT 32.497
635 WEIGHT 50.432
636 WEIGHT 40.344
637 WEIGHT 28.309
638 WEIGHT 29.072
639 WEIGHT 36.19
640 WEIGHT 12.16
641 WEIGHT 23.537
642 WEIGHT 60.551
643 WEIGHT 9.286
644 WEIGHT 55.154
645 WEIGHT 21.836
646 WEIGHT 2.211
647 WEIGHT 28.136
648 WEIGHT 29.586
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655 WEIGHT 24.778
658 WEIGHT 20.424
659 WEIGHT 33.054
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661 WEIGHT 9.441
662 WEIGHT 4.444
663 WEIGHT 16.983
664 WEIGHT 5.34
665 WEIGHT 24.466
666 WEIGHT 2.103
667 WEIGHT 33.778
668 WEIGHT 25.043
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670 WEIGHT 29.854
671 WEIGHT 31.404



CUT OFF MODE SHAPE 12
LOAD 1 SEISMIC X-DIRECTION
JOINT LOAD

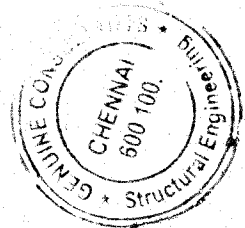
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12 FX 52.901 FY 52.901 FZ 52.901
14 FX 38.18 FY 38.18 FZ 38.18
24 FX 47.816 FY 47.816 FZ 47.816
25 FX 59.279 FY 59.279 FZ 59.279
26 FX 53.269 FY 53.269 FZ 53.269
27 FX 68.827 FY 68.827 FZ 68.827
28 FX 41.095 FY 41.095 FZ 41.095
29 FX 34.608 FY 34.608 FZ 34.608
30 FX 56.698 FY 56.698 FZ 56.698
31 FX 38.313 FY 38.313 FZ 38.313
32 FX 13.193 FY 13.193 FZ 13.193
33 FX 67.763 FY 67.763 FZ 67.763
34 FX 14.334 FY 14.334 FZ 14.334
35 FX 41.228 FY 41.228 FZ 41.228
38 FX 23.636 FY 23.636 FZ 23.636
39 FX 37.147 FY 37.147 FZ 37.147
40 FX 57.589 FY 57.589 FZ 57.589
44 FX 48.285 FY 48.285 FZ 48.285
47 FX 44.591 FY 44.591 FZ 44.591
48 FX 39.207 FY 39.207 FZ 39.207
51 FX 16.805 FY 16.805 FZ 16.805
52 FX 34.131 FY 34.131 FZ 34.131
57 FX 10.604 FY 10.604 FZ 10.604
58 FX 75.797 FY 75.797 FZ 75.797
59 FX 25.973 FY 25.973 FZ 25.973
60 FX 58.556 FY 58.556 FZ 58.556
64 FX 52.882 FY 52.882 FZ 52.882
65 FX 49.187 FY 49.187 FZ 49.187
66 FX 55.375 FY 55.375 FZ 55.375
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485 FX 90.779 FY 90.779 FZ 90.779
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490 FX 26.388 FY 26.388 FZ 26.388
491 FX 35.638 FY 35.638 FZ 35.638
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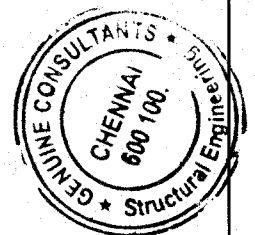
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 SPECTRUM SRSS 1893 TOR X 0.016 ACC SCALE 1 DAMP 0.05
 SOIL TYPE 2
 LOAD 2 SEISMIC Z-DIRECTION
 SPECTRUM SRSS 1893 TOR Z 0.016 ACC SCALE 1 DAMP 0.05
 SOIL TYPE 2
 LOAD 3 SW
 SELFWEIGHT Y -1 LIST ALL
 LOAD 4 LOADTYPE Dead TITLE DL
 *STILT FLOOR ROOF
 FLOOR LOAD

YRANGE 3 3 FLOAD -5.825 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY
 YRANGE 3 3 FLOAD -9.5 X RANGE 3.9 6.25 Z RANGE 9.1 12.5 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 9.85 12.95 Z RANGE 4 7 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 3 3 FLOAD -5.825 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 3 3 FLOAD -9.5 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 3 3 FLOAD -9.5 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 3 3 FLOAD -9.5 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 3 3 FLOAD -9.5 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 3 3 FLOAD -7 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 3 3 FLOAD -7 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY



YRANGE 3 3 FLOAD -7 XRANGE 12.95 15.95 ZRANGE 0.6 1.8 GY
YRANGE 3 3 FLOAD -7 XRANGE 15.95 18.95 ZRANGE 0 1.47 GY
YRANGE 3 3 FLOAD -9.5 XRANGE 16.65 18.85 ZRANGE 10.5 12.5 GY
YRANGE 3 3 FLOAD -9.5 XRANGE 20.15 22.25 ZRANGE 7.4 9.1 GY

***FIRST FLOOR ROOF**

FLOOR LOAD

YRANGE 6 6 FLOAD -5.825 XRANGE 0 3.3 ZRANGE 0.6 4.35 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 0 3.9 ZRANGE 9.1 12.5 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 3.9 6.25 ZRANGE 9.1 10.5 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 2.1 6.55 ZRANGE 4.35 9.1 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 3.3 6.55 ZRANGE 1.4 4.35 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 6.55 9.85 ZRANGE 0.6 7.6 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 6.25 9.85 ZRANGE 7.6 10.05 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 9.85 12.95 ZRANGE 4 7 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 12.95 15.95 ZRANGE 1.8 4.35 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 15.95 18.95 ZRANGE 1.47 4.35 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 18.95 22.25 ZRANGE 0.91 4.35 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 12.95 20.15 ZRANGE 4.35 7.7 GY
YRANGE 6 6 FLOAD -5.825 XRANGE 12.95 16.65 ZRANGE 7.7 11.25 GY
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YRANGE 6 6 FLOAD -5.825 XRANGE 18.85 22.25 ZRANGE 9.1 12.5 GY
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YRANGE 6 6 FLOAD -9.5 XRANGE 0.4 2.1 ZRANGE 4.35 7.4 GY
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YRANGE 6 6 FLOAD -9.5 XRANGE 3.9 6.25 ZRANGE 10.5 12.5 GY
YRANGE 6 6 FLOAD -9.5 XRANGE 6.25 9.85 ZRANGE 10.05 11.25 GY
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YRANGE 6 6 FLOAD -9.5 XRANGE 12.95 15.95 ZRANGE 0.6 1.8 GY
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YRANGE 6 6 FLOAD -9.5 XRANGE 16.65 18.85 ZRANGE 10.5 12.5 GY
YRANGE 6 6 FLOAD -9.5 XRANGE 20.15 22.25 ZRANGE 7.4 9.1 GY

***SECOND FLOOR ROOF**

FLOOR LOAD

YRANGE 9 9 FLOAD -5.825 XRANGE 0 3.3 ZRANGE 0.6 4.35 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 0 3.9 ZRANGE 9.1 12.5 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 3.9 6.25 ZRANGE 9.1 10.5 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 2.1 6.55 ZRANGE 4.35 9.1 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 3.3 6.55 ZRANGE 1.4 4.35 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 6.55 9.85 ZRANGE 0.6 7.6 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 6.25 9.85 ZRANGE 7.6 10.05 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 9.85 12.95 ZRANGE 4 7 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 12.95 15.95 ZRANGE 1.8 4.35 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 15.95 18.95 ZRANGE 1.47 4.35 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 18.95 22.25 ZRANGE 0.91 4.35 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 12.95 20.15 ZRANGE 4.35 7.7 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 12.95 16.65 ZRANGE 7.7 11.25 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 16.65 20.15 ZRANGE 7.7 9.1 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 18.85 22.25 ZRANGE 9.1 12.5 GY
YRANGE 9 9 FLOAD -5.825 XRANGE 16.65 18.85 ZRANGE 9.1 10.5 GY
YRANGE 9 9 FLOAD -9.5 XRANGE 0.4 2.1 ZRANGE 4.35 7.4 GY

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YRANGE 9 9 FLOAD -9.5 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
YRANGE 9 9 FLOAD -9.5 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

*THIRD FLOOR ROOF

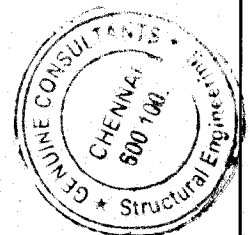
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YRANGE 12 12 FLOAD -5.825 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 3.9 6.25 Z RANGE 9.1 10.5 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 9.85 12.95 Z RANGE 4 7 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
YRANGE 12 12 FLOAD -5.825 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
YRANGE 12 12 FLOAD -9.5 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

*FOURTH FLOOR ROOF

FLOOR LOAD

YRANGE 15 15 FLOAD -5.825 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 3.9 6.25 Z RANGE 9.1 10.5 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 9.85 12.95 Z RANGE 4 7 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
YRANGE 15 15 FLOAD -5.825 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY



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YRANGE 15 15 FLOAD -5.825 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 15 15 FLOAD -5.825 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 15 15 FLOAD -5.825 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
 YRANGE 15 15 FLOAD -9.5 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

***FIFTH FLOOR ROOF**

FLOOR LOAD

YRANGE 18 18 FLOAD -5.825 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 3.9 6.25 Z RANGE 9.1 10.5 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 9.85 12.95 Z RANGE 4 7 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
 YRANGE 18 18 FLOAD -5.825 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

***OHT&LMR**

FLOOR LOAD

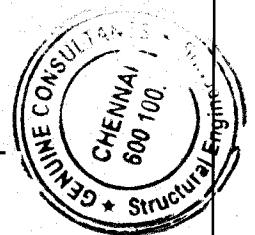
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 YRANGE 21 21 FLOAD -12 X RANGE 10.75 12.95 Z RANGE 1.8 5.6 GY
 YRANGE 21 21 FLOAD -6.5 X RANGE 9.85 10.75 Z RANGE 4 5.6 GY

MEMBER LOAD

13 43 48 79 81 82 92 234 238 TO 244 246 247 249 252 TO 256 258 TO 263 265 -
 267 TO 275 277 278 280 TO 284 286 288 294 296 299 TO 305 308 309 312 318 -
 319 TO 321 689 690 705 706 768 TO 770 808 811 816 819 823 TO 829 831 832 834 -
 837 TO 841 843 TO 848 850 852 TO 863 865 TO 869 871 873 879 881 884 TO 890 -
 893 894 897 898 903 TO 906 918 919 921 TO 927 931 TO 937 939 940 942 945 -

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946 TO 949 951 TO 956 958 960 TO 971 973 TO 977 979 981 987 989 992 TO 998 -
1001 1002 1005 1006 1011 TO 1014 1026 1027 1029 TO 1035 1039 TO 1045 1047 -
1048 1050 1053 TO 1057 1059 TO 1064 1066 1068 TO 1079 1081 TO 1085 1087 1089 -
1095 1097 1100 TO 1106 1109 1110 1113 1114 1119 TO 1122 1134 1135 -
1137 TO 1142 1152 1169 1174 1178 TO 1181 1209 1210 1214 1218 1466 1497 1501 -
1502 TO 1507 1509 1510 1512 1515 TO 1519 1521 TO 1526 1528 1530 TO 1541 1543 -
1544 TO 1547 1549 1551 1557 1559 1562 TO 1568 1571 1572 1575 1576 -
1581 TO 1584 1596 1597 1599 TO 1604 1646 1647 1653 1656 1660 1663 1664 1666 -
1667 UNI GY -9

691 805 883 920 991 1028 1099 1136 1207 1561 1598 1648 UNI GY -20

ELEMENT LOAD

1328 TO 1333 1369 TO 1374 1410 TO 1415 1451 TO 1456 1640 TO 1645 PR 2.7

1451 TO 1456 PR 2.7

MEMBER LOAD

2 7 8 10 11 16 20 29 TO 31 34 37 39 40 42 45 46 52 54 55 64 65 67 TO 69 71 -
77 80 85 89 90 93 TO 95 97 100 TO 103 235 TO 237 248 250 251 257 264 266 -
279 285 287 289 TO 293 297 306 307 310 311 314 TO 317 322 TO 326 637 638 -
640 644 645 647 743 745 TO 751 753 754 756 TO 766 803 820 TO 822 833 835 -
836 842 849 851 864 870 872 874 TO 878 880 882 891 892 895 896 899 TO 902 -
907 TO 911 913 914 916 928 TO 930 941 943 944 950 957 959 972 978 980 982 -
983 TO 986 988 990 999 1000 1003 1004 1007 TO 1010 1015 TO 1019 1021 1022 -
1024 1036 TO 1038 1049 1051 1052 1058 1065 1067 1080 1086 1088 1090 TO 1094 -
1096 1098 1107 1108 1111 1112 1115 TO 1118 1123 TO 1127 1129 1130 1132 1143 -
1144 TO 1146 1150 1151 1153 1154 1157 1159 1160 1164 1165 1171 1172 -
1182 TO 1184 1188 1190 1192 1193 1195 1197 1205 1206 1208 1221 1227 TO 1230 -
1245 TO 1248 1250 1498 TO 1500 1511 1513 1514 1520 1527 1529 1542 1548 1550 -
1552 TO 1556 1558 1560 1569 1570 1573 1574 1577 TO 1580 1585 TO 1589 1591 -
1592 1594 1652 UNI GY -4.5

FLOOR LOAD

YRANGE 3 3 FLOAD -5.825 X RANGE -0.9 0 Z RANGE 0.6 2.6 GY

YRANGE 3 3 FLOAD -5.825 X RANGE -0.73 0 Z RANGE 2.6 4.35 GY

YRANGE 3 3 FLOAD -5.825 X RANGE -0.73 0 Z RANGE 9.1 10.9 GY

YRANGE 3 3 FLOAD -5.825 X RANGE -0.9 0 Z RANGE 10.9 12.5 GY

YRANGE 3 3 FLOAD -7 X RANGE 12.95 16.65 Z RANGE 11.25 12.5 GY

LOAD 5 LOADTYPE Live REDUCIBLE TITLE LL

*STILT FLOOR ROOF

FLOOR LOAD

YRANGE 3 3 FLOAD -2 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY

YRANGE 3 3 FLOAD -2 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY

YRANGE 3 3 FLOAD -2 X RANGE 3.9 6.25 Z RANGE 9.1 12.5 GY

YRANGE 3 3 FLOAD -2 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY

YRANGE 3 3 FLOAD -2 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY

YRANGE 3 3 FLOAD -2 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY

YRANGE 3 3 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY

YRANGE 3 3 FLOAD -2 X RANGE 9.85 12.95 Z RANGE 4 7 GY

YRANGE 3 3 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY

YRANGE 3 3 FLOAD -2 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY

YRANGE 3 3 FLOAD -2 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY

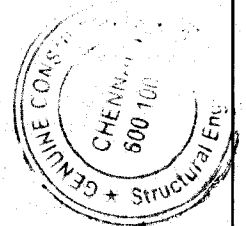
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YRANGE 3 3 FLOAD -2 X RANGE 12.95 16.65 Z RANGE 7.7 12.5 GY

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YRANGE 3 3 FLOAD -2 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 3 3 FLOAD -2 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 3 3 FLOAD -2 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 3 3 FLOAD -2 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 3 3 FLOAD -2 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 3 3 FLOAD -2 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 3 3 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 3 3 FLOAD -2 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
 YRANGE 3 3 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
 YRANGE 3 3 FLOAD -2 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
 YRANGE 3 3 FLOAD -2 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
 YRANGE 3 3 FLOAD -2 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

***FIRST FLOOR ROOF**

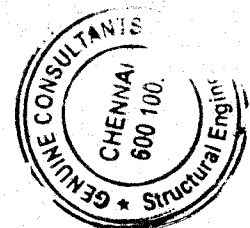
FLOOR LOAD

YRANGE 6 6 FLOAD -2 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY
 YRANGE 6 6 FLOAD -2 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
 YRANGE 6 6 FLOAD -2 X RANGE 3.9 6.25 Z RANGE 9.1 10.5 GY
 YRANGE 6 6 FLOAD -2 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
 YRANGE 6 6 FLOAD -2 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
 YRANGE 6 6 FLOAD -2 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
 YRANGE 6 6 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
 YRANGE 6 6 FLOAD -2 X RANGE 9.85 12.95 Z RANGE 4 7 GY
 YRANGE 6 6 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
 YRANGE 6 6 FLOAD -2 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
 YRANGE 6 6 FLOAD -2 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
 YRANGE 6 6 FLOAD -2 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
 YRANGE 6 6 FLOAD -2 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY
 YRANGE 6 6 FLOAD -2 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 6 6 FLOAD -2 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 6 6 FLOAD -2 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 6 6 FLOAD -2 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 6 6 FLOAD -2 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 6 6 FLOAD -2 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 6 6 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 6 6 FLOAD -2 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
 YRANGE 6 6 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
 YRANGE 6 6 FLOAD -2 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
 YRANGE 6 6 FLOAD -2 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
 YRANGE 6 6 FLOAD -2 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

***SECOND FLOOR ROOF**

FLOOR LOAD

YRANGE 9 9 FLOAD -2 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY
 YRANGE 9 9 FLOAD -2 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
 YRANGE 9 9 FLOAD -2 X RANGE 3.9 6.25 Z RANGE 9.1 10.5 GY
 YRANGE 9 9 FLOAD -2 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
 YRANGE 9 9 FLOAD -2 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
 YRANGE 9 9 FLOAD -2 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
 YRANGE 9 9 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
 YRANGE 9 9 FLOAD -2 X RANGE 9.85 12.95 Z RANGE 4 7 GY
 YRANGE 9 9 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY



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YRANGE 9 9 FLOAD -2 XRANGE 15.95 18.95 ZRANGE 1.47 4.35 GY
 YRANGE 9 9 FLOAD -2 XRANGE 18.95 22.25 ZRANGE 0.91 4.35 GY
 YRANGE 9 9 FLOAD -2 XRANGE 12.95 20.15 ZRANGE 4.35 7.7 GY
 YRANGE 9 9 FLOAD -2 XRANGE 12.95 16.65 ZRANGE 7.7 11.25 GY
 YRANGE 9 9 FLOAD -2 XRANGE 16.65 20.15 ZRANGE 7.7 9.1 GY
 YRANGE 9 9 FLOAD -2 XRANGE 18.85 22.25 ZRANGE 9.1 12.5 GY
 YRANGE 9 9 FLOAD -2 XRANGE 16.65 18.85 ZRANGE 9.1 10.5 GY
 YRANGE 9 9 FLOAD -2 XRANGE 0.4 2.1 ZRANGE 4.35 7.4 GY
 YRANGE 9 9 FLOAD -2 XRANGE 0 2.1 ZRANGE 7.4 9.1 GY
 YRANGE 9 9 FLOAD -2 XRANGE 3.9 6.25 ZRANGE 10.5 12.5 GY
 YRANGE 9 9 FLOAD -2 XRANGE 6.25 9.85 ZRANGE 10.05 11.25 GY
 YRANGE 9 9 FLOAD -2 XRANGE 3.3 6.55 ZRANGE 0 1.4 GY
 YRANGE 9 9 FLOAD -2 XRANGE 12.95 15.95 ZRANGE 0.6 1.8 GY
 YRANGE 9 9 FLOAD -2 XRANGE 15.95 18.95 ZRANGE 0 1.47 GY
 YRANGE 9 9 FLOAD -2 XRANGE 16.65 18.85 ZRANGE 10.5 12.5 GY
 YRANGE 9 9 FLOAD -2 XRANGE 20.15 22.25 ZRANGE 7.4 9.1 GY

***THIRD FLOOR ROOF**

FLOOR LOAD

YRANGE 12 12 FLOAD -2 XRANGE 0 3.3 ZRANGE 0.6 4.35 GY
 YRANGE 12 12 FLOAD -2 XRANGE 0 3.9 ZRANGE 9.1 12.5 GY
 YRANGE 12 12 FLOAD -2 XRANGE 3.9 6.25 ZRANGE 9.1 10.5 GY
 YRANGE 12 12 FLOAD -2 XRANGE 2.1 6.55 ZRANGE 4.35 9.1 GY
 YRANGE 12 12 FLOAD -2 XRANGE 3.3 6.55 ZRANGE 1.4 4.35 GY
 YRANGE 12 12 FLOAD -2 XRANGE 6.55 9.85 ZRANGE 0.6 7.6 GY
 YRANGE 12 12 FLOAD -2 XRANGE 6.25 9.85 ZRANGE 7.6 10.05 GY
 YRANGE 12 12 FLOAD -2 XRANGE 9.85 12.95 ZRANGE 4 7 GY
 YRANGE 12 12 FLOAD -2 XRANGE 12.95 15.95 ZRANGE 1.8 4.35 GY
 YRANGE 12 12 FLOAD -2 XRANGE 15.95 18.95 ZRANGE 1.47 4.35 GY
 YRANGE 12 12 FLOAD -2 XRANGE 18.95 22.25 ZRANGE 0.91 4.35 GY
 YRANGE 12 12 FLOAD -2 XRANGE 12.95 20.15 ZRANGE 4.35 7.7 GY
 YRANGE 12 12 FLOAD -2 XRANGE 12.95 16.65 ZRANGE 7.7 11.25 GY
 YRANGE 12 12 FLOAD -2 XRANGE 16.65 20.15 ZRANGE 7.7 9.1 GY
 YRANGE 12 12 FLOAD -2 XRANGE 18.85 22.25 ZRANGE 9.1 12.5 GY
 YRANGE 12 12 FLOAD -2 XRANGE 16.65 18.85 ZRANGE 9.1 10.5 GY
 YRANGE 12 12 FLOAD -2 XRANGE 0.4 2.1 ZRANGE 4.35 7.4 GY
 YRANGE 12 12 FLOAD -2 XRANGE 0 2.1 ZRANGE 7.4 9.1 GY
 YRANGE 12 12 FLOAD -2 XRANGE 3.9 6.25 ZRANGE 10.5 12.5 GY
 YRANGE 12 12 FLOAD -2 XRANGE 6.25 9.85 ZRANGE 10.05 11.25 GY
 YRANGE 12 12 FLOAD -2 XRANGE 3.3 6.55 ZRANGE 0 1.4 GY
 YRANGE 12 12 FLOAD -2 XRANGE 12.95 15.95 ZRANGE 0.6 1.8 GY
 YRANGE 12 12 FLOAD -2 XRANGE 15.95 18.95 ZRANGE 0 1.47 GY
 YRANGE 12 12 FLOAD -2 XRANGE 16.65 18.85 ZRANGE 10.5 12.5 GY
 YRANGE 12 12 FLOAD -2 XRANGE 20.15 22.25 ZRANGE 7.4 9.1 GY

***FOURTH FLOOR ROOF**

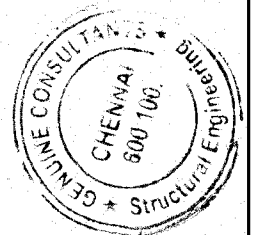
FLOOR LOAD

YRANGE 15 15 FLOAD -2 XRANGE 0 3.3 ZRANGE 0.6 4.35 GY
 YRANGE 15 15 FLOAD -2 XRANGE 0 3.9 ZRANGE 9.1 12.5 GY
 YRANGE 15 15 FLOAD -2 XRANGE 3.9 6.25 ZRANGE 9.1 10.5 GY
 YRANGE 15 15 FLOAD -2 XRANGE 2.1 6.55 ZRANGE 4.35 9.1 GY
 YRANGE 15 15 FLOAD -2 XRANGE 3.3 6.55 ZRANGE 1.4 4.35 GY

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YRANGE 15 15 FLOAD -2 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
 YRANGE 15 15 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
 YRANGE 15 15 FLOAD -2 X RANGE 9.85 12.95 Z RANGE 4 7 GY
 YRANGE 15 15 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
 YRANGE 15 15 FLOAD -2 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
 YRANGE 15 15 FLOAD -2 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
 YRANGE 15 15 FLOAD -2 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
 YRANGE 15 15 FLOAD -2 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY
 YRANGE 15 15 FLOAD -2 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 15 15 FLOAD -2 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 15 15 FLOAD -2 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 15 15 FLOAD -2 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 15 15 FLOAD -2 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 15 15 FLOAD -2 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 15 15 FLOAD -2 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 15 15 FLOAD -2 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
 YRANGE 15 15 FLOAD -2 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
 YRANGE 15 15 FLOAD -2 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
 YRANGE 15 15 FLOAD -2 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
 YRANGE 15 15 FLOAD -2 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

*FIFTH FLOOR ROOF
FLOOR LOAD

YRANGE 18 18 FLOAD -1.5 X RANGE 0 3.3 Z RANGE 0.6 4.35 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 0 3.9 Z RANGE 9.1 12.5 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 3.9 6.25 Z RANGE 9.1 10.5 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 2.1 6.55 Z RANGE 4.35 9.1 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 3.3 6.55 Z RANGE 1.4 4.35 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 6.55 9.85 Z RANGE 0.6 7.6 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 6.25 9.85 Z RANGE 7.6 10.05 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 9.85 12.95 Z RANGE 4 7 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 12.95 15.95 Z RANGE 1.8 4.35 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 15.95 18.95 Z RANGE 1.47 4.35 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 18.95 22.25 Z RANGE 0.91 4.35 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 12.95 20.15 Z RANGE 4.35 7.7 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 12.95 16.65 Z RANGE 7.7 11.25 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 16.65 20.15 Z RANGE 7.7 9.1 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 18.85 22.25 Z RANGE 9.1 12.5 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 16.65 18.85 Z RANGE 9.1 10.5 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 0.4 2.1 Z RANGE 4.35 7.4 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 0 2.1 Z RANGE 7.4 9.1 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 3.9 6.25 Z RANGE 10.5 12.5 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 6.25 9.85 Z RANGE 10.05 11.25 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 3.3 6.55 Z RANGE 0 1.4 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 12.95 15.95 Z RANGE 0.6 1.8 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 15.95 18.95 Z RANGE 0 1.47 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 16.65 18.85 Z RANGE 10.5 12.5 GY
 YRANGE 18 18 FLOAD -1.5 X RANGE 20.15 22.25 Z RANGE 7.4 9.1 GY

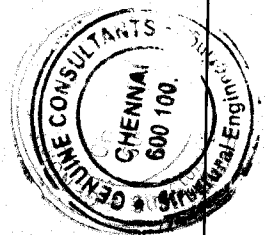
*OHT&LMR

FLOOR LOAD

YRANGE 21 21 FLOAD -1.5 X RANGE 9.85 12.95 Z RANGE 5.6 11.25 GY

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YRANGE 21 21 FLOAD -1.5 X RANGE 10.75 12.95 Z RANGE 1.8 5.6 GY
YRANGE 21 21 FLOAD -1.5 X RANGE 9.85 10.75 Z RANGE 4 5.6 GY
ELEMENT LOAD

1328 TO 1333 1369 TO 1374 1410 TO 1415 1640 TO 1645 PR 2
1451 TO 1456 PR 1.5

FLOOR LOAD

YRANGE 3 3 FLOAD -2 X RANGE -0.9 0 Z RANGE 0.6 2.6 GY
YRANGE 3 3 FLOAD -2 X RANGE -0.73 0 Z RANGE 0.6 4.35 GY
YRANGE 3 3 FLOAD -2 X RANGE -0.73 0 Z RANGE 9.1 10.9 GY
YRANGE 3 3 FLOAD -2 X RANGE -0.9 0 Z RANGE 10.9 12.5 GY

* 1.2(D.L+L.L+E.X)

LOAD COMB 6 1.2(DL+LL+EX)

1 1.2 3 1.2 4 1.2 5 1.2

* 1.2(D.L+L.L-E.X)

LOAD COMB 7 1.2(DL+LL-EX)

1 -1.2 3 1.2 4 1.2 5 1.2

* 1.2(D.L+L.L+E.Z)

LOAD COMB 8 1.2(DL+LL+EZ)

2 1.2 3 1.2 4 1.2 5 1.2

* 1.2(D.L+L.L-E.Z)

LOAD COMB 9 1.2(DL+LL-EZ)

2 -1.2 3 1.2 4 1.2 5 1.2

* WITH 1.5 LOAD FACTORS

* 1.5(D.L+L.L)

LOAD COMB 10 1.5(DL+LL)

3 1.5 4 1.5 5 1.5

* 1.5(D.L+E.X)

LOAD COMB 11 1.5(DL+EX)

1 1.5 3 1.5 4 1.5

* 1.5(D.L-E.X)

LOAD COMB 12 1.5(DL-EX)

1 -1.5 3 1.5 4 1.5

* 1.5(D.L+E.Z)

LOAD COMB 13 1.5(DL+EZ)

2 1.5 3 1.5 4 1.5

* 1.5(D.L-E.Z)

LOAD COMB 14 1.5(DL-EZ)

2 -1.5 3 1.5 4 1.5

* .9D.L+1.5EX

LOAD COMB 15 0.9DL + 1.5EX

1 1.5 3 0.9 4 0.9

* .9D.L-1.5EX

LOAD COMB 16 0.9DL - 1.5EX

1 -1.5 3 0.9 4 0.9

* .9D.L+1.5EZ

LOAD COMB 17 0.9DL + 1.5EZ

2 1.5 3 0.9 4 0.9

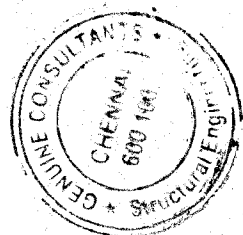
* .9D.L-1.5EZ

LOAD COMB 18 0.9DL - 1.5EZ

2 -1.5 3 0.9 4 0.9

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*LOAD COMBINATIONS WITHOUT FACTOR.

LOAD COMB 19 1.0(DL+LL)

3 1.0 4 1.0 5 1.0

* (DL+LL+EX)

LOAD COMB 20 1.0(DL+LL+EX)

1 1.0 3 1.0 4 1.0 5 1.0

* (DL+LL-EX)

LOAD COMB 21 1.0(DL+LL-EX)

1 -1.0 3 1.0 4 1.0 5 1.0

* (DL+LL+EZ)

LOAD COMB 22 1.0(DL+LL+EZ)

2 1.0 3 1.0 4 1.0 5 1.0

* (DL+LL-EZ)

LOAD COMB 23 1.0(DL+LL-EZ)

2 -1.0 3 1.0 4 1.0 5 1.0

* (DL+EX)

LOAD COMB 24 1.0(DL+EX)

1 1.0 3 1.0 4 1.0

* (DL-EX)

LOAD COMB 25 1.0(DL-EX)

1 -1.0 3 1.0 4 1.0

* (DL+EZ)

LOAD COMB 26 1.0(DL+EZ)

2 1.0 3 1.0 4 1.0

* (DL-EZ)

LOAD COMB 27 1.0(DL-EZ)

2 -1.0 3 1.0 4 1.0

* (0.9DL + 1.0EX)

LOAD COMB 28 0.9DL + 1.0EX

1 1.0 3 0.9 4 0.9

* (0.9DL - 1.0EX)

LOAD COMB 29 0.9DL - 1.0EX

1 -1.0 3 0.9 4 0.9

* (0.9DL + 1.0EZ)

LOAD COMB 30 0.9DL + 1.0EZ

2 1.0 3 0.9 4 0.9

* (0.9DL - 1.0EZ)

LOAD COMB 31 0.9DL - 1.0EZ

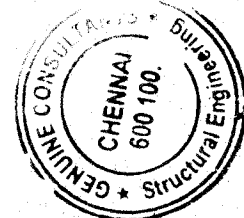
2 -1.0 3 0.9 4 0.9

PERFORM ANALYSIS PRINT ALL

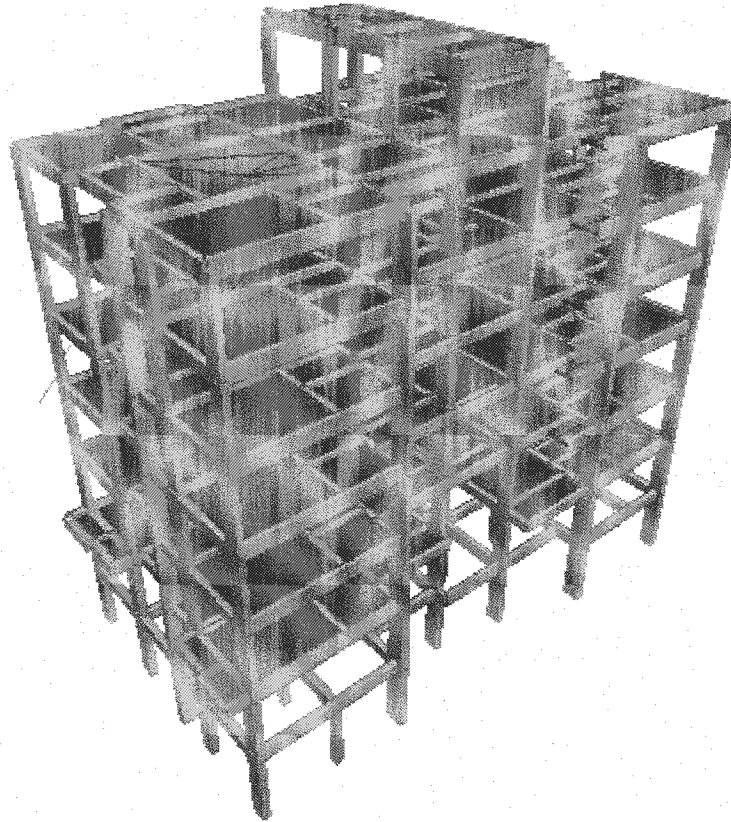
PRINT ANALYSIS RESULTS

PERFORM ANALYSIS PRINT ALL

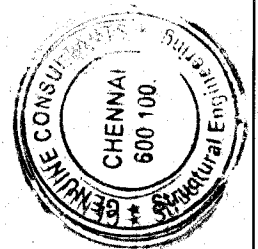
FINISH

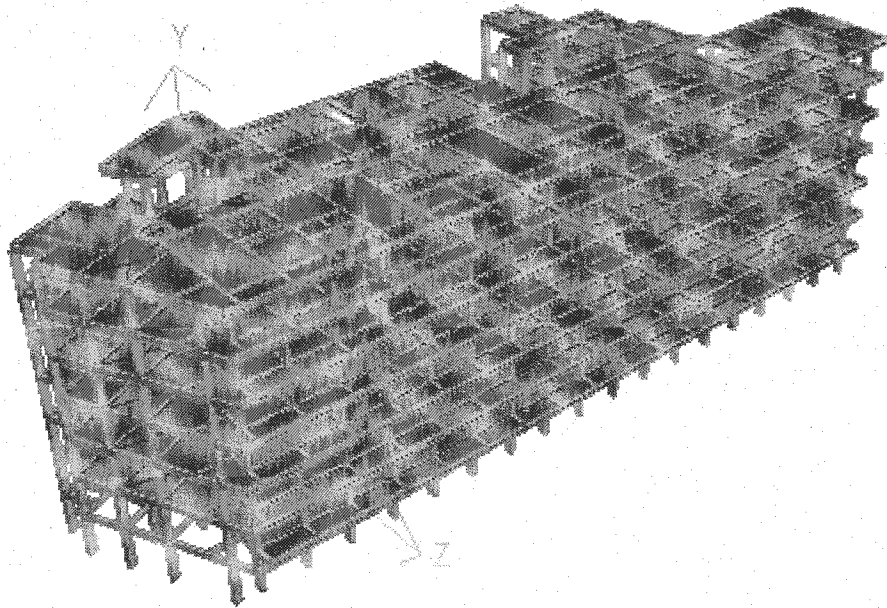


ISOMETRIC VIEW OF STAAD MODEL

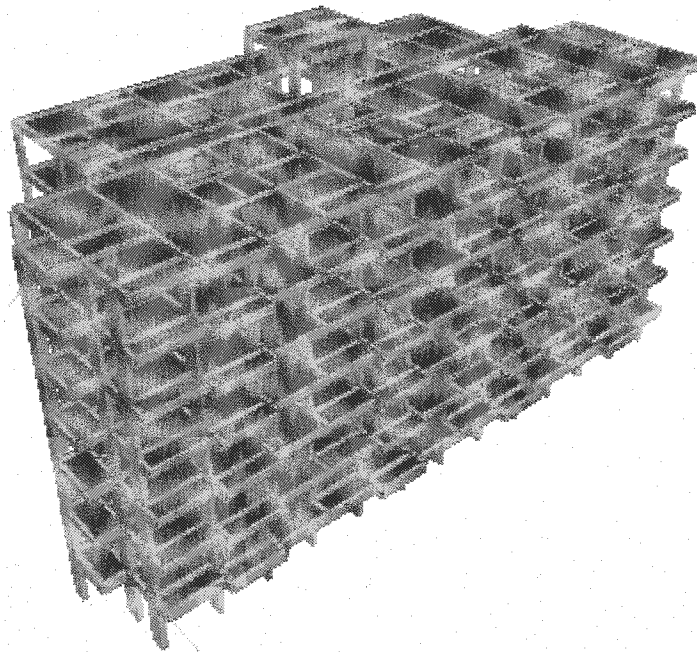


BLOCK-A

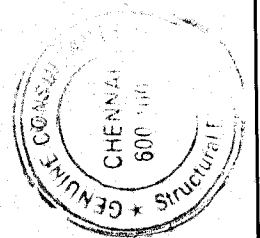


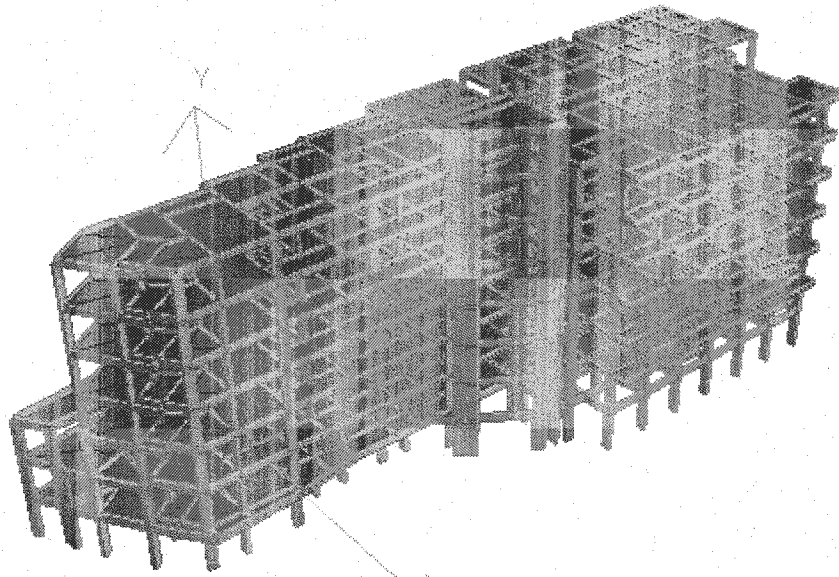


BLOCK- B & C

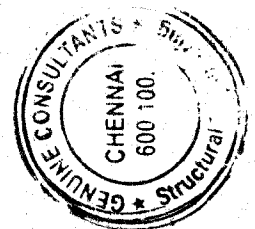


BLOCK- D





BLOCK- E



Our services go beyond



Buying & Selling Services

Property Buying Assistance, Property Selling Support, Market Price Analysis, Owner Outreach and Negotiation.



Legal & Documentation Services

Certified EC, Patta, legal opinions, property verification, due diligence, litigation solutions, and legal heir certificates.



Property Development & Approvals

Building plan approvals, construction, layout and sub-division approvals, zone conversion, and occupancy certification.



NRI & Investment Services

Escrow Services, Rentals, Litigation Solutions, Property Valuation and Property Management



Compliance & Special Services

Demolition, Vaasthu checks, regularization of unauthorized buildings, and office space solutions.

Smarter Tools, Stronger Decisions



Property Valuation & Cost Estimation

Guideline Value, Apartment Composite Value, Stamp Duty & Registration Fees Calculator, Building Value Calculator, Capital Gains Calculator, Area Unit Converter, Length Unit Converter



Ownership, Compliance & Legal Verification

Encumbrance Certificate (EC) Search, Find Your SRO, Temple Property Check, WAQF Property Check, View Patta/Chitta, View FMB, Patta Analyzer, EC Analyzer



Zoning & Land Use Analysis

Land Use Zone Finder, CRZ Zone Check, Aquifer Zone Check, CBA Check, EWS Check, Road Width Check, Proposed Road Widening Check, FSI Calculator



Property Documentation & Workflow Tools

Forms & Templates, Document Generator, Document Translation, Dictionary



Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

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