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C.KANNAN, M.E. (Structure)
STRUCTURAL ENGINEER

Door .21, plot No. 257- W, Flat No. 2B
"Utopia Apartments" 2nd Floor,
4th Main Road, Indira Nagar,
Chennai- 600 020
Mobilc: 9841249815
Email: kannankds2007@gmail.com

12-12-2024

STRUCTURAL STABILITY CERTIFICATE

It is certified that the Proposed Residential Building At Gandhi Nagar, 3rd Cross Street, Perumbakkam, Chennai-100. Comprised In Olds.No: 310/2a3, 310/2b, 310/3, 311/1 & 311/1b, As Per Pattano:5076, 3753, 20114 & 20082, New S.No:310/2a3a, 310/2b1, 310/3b, 311/1a, 311/1b1 &311/1b2 Of Perumbakkam village, Tambaram Taluk, Chengalpattu District Within the Limit Of St.Thomas Mount panchayat Union. Having Stilt plus Eleven upper floors is designed to resist earthquake. Check has been made safe and sound, I hereby certify that,

1. The minimum column width is 300 in stilt floor areas
2. The minimum grade of concrete is M25.
3. The design analysis using the code of practice for loading Standards as per IS-875 Part I to III and seismic force as per one code IS 1893, is carried out.

The Structure is safe and sound when used for the purpose for which it is designed.

C. KANNAN, B.E., M.E, (Structure)
Structural Engineer,
CMDA Reg. No: SE/I/2024/2/0047
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

PROPOSED RESIDENTIAL BUILDING AT GANDHI NAGAR,3RD CROSS STREET, PERUMBAKKAM, CHENNAI-100. COMPRISED IN OLDS.NO: 310/2A3, 310/2B, 310/3, 311/1 & 311/1B, AS PER PATTANO:5076, 3753, 20114 & 20082, NEW S.NO:310/2A3A, 310/2B1, 310/3B, 311/1A, 311/1B1 &311/1B2 OF PERUMBAKKAM VILLAGE, TAMBARAM TALUK, CHENGALPATTU DISTRICT WITHIN THE LIMIT OF ST.THOMAS MOUNT PANCHAYAT UNION

GENERAL NOTE ON STRUCTURAL DESIGN.

1.0 GENERAL.

1.1 DESIGN BASIS

The proposed residential building consists of Stilt plus Eleven upper floors.

The design of this building is carried out based on frame analysis using STAAD CONNECT.

1.2 CODES AND STANDARDS

All structural design is carried out conforming to the provisions of National Building Code of India and other relevant Indian Codes and Standards.

1. I.S. 456 - 2000
2. I.S. 875 - Part I to III
3. I.S.1893 - 2016

2.0 BASIC CIVIL DESIGN LOADS

2.1 DEAD LOADS & LIVE LOADS

Typical slab dead load is calculated as follows

Self weight of slab	=	3.25kN/m²
Floor finish	=	2.0kN/m²
Live load	=	2.0kN/m²
		7.25kN/m²

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3.0 SOIL DETAILS

Based on soil test report Pile Foundation is adopted.

DESIGN METHODS

General design and detailing of concrete members/elements are done conforming to the provisions of I.S: 456 and other relevant I.S codes. Limit State method is followed for the design.

Seismic Zone III load is taken into account for the analysis. The predominant direction of vibration is horizontal. Relevant combination of forces has been taken into account.

4.1

Load Combination	Ultimate Limit Load	Serviceability Limit State
DL+LL+WL Or DL+LL+EL	1.2DL+1.2LL+1.2WL Or 1.2DL+1.2LL+1.2EL	DL+LL+WL or DL+LL+EL

4.3 **MINIMUM COVER**

Slab	15 mm
Beam	25 mm
Columns	40 mm
Foundations	50 mm

The Structure is safe and sound when used for the purpose for which it is designed.

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*          STAAD.Pro CONNECT Edition             *
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*          Bentley Systems, Inc.                 *
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     5. PERUMBAKKAM, CHENNAI-100. COMPRISED IN OLDS.NO: 310/2A3, 310/2B, 310/3, -
     6. 311/1 & 311/1B, AS PER PATTANO:5076, 3753, 20114 & 20082, NEW S.NO:310/2A3A, -
     7. 310/2B1, 310/3B, 311/1A, 311/1B1 &311/1B2 OF PERUMBAKKAM VILLAGE, TAMBARAM -
     8. TALUK, CHENGALPATTU DISTRICT WITHIN THE LIMIT OF ST.THOMAS MOUNT PANCHAYAT -
     9. UNION
    10. ENGINEER NAME KANNAN
    11. CHECKER NAME KANNAN
    12. APPROVED NAME KANNAN
    13. CHECKER DATE 12/17/2024
    14. APPROVED DATE 12/17/2024
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```
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49. 23 14 19; 25 16 21; 26 17 22; 28 19 20; 29 19 21; 30 21 22; 31 22 23; 32 19 24
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57. 104 59 64; 106 61 66; 107 62 67; 109 64 65; 110 64 66; 111 66 67; 112 67 68
58. 113 69 1; 114 70 4; 115 71 6
59. DEFINE MATERIAL START
60. ISOTROPIC CONCRETE
61. E 21.7185
62. POISSON 0.17
63. DENSITY 2.35616E-08
64. ALPHA 1E-05
65. DAMP 0.05
66. G 9.28139
67. TYPE CONCRETE
68. STRENGTH FCU 0.027579
69. END DEFINE MATERIAL
70. MEMBER PROPERTY
71. 5 7 8 14 16 17 23 25 26 32 34 35 41 43 44 50 52 53 59 61 62 68 70 71 77 79 -
72. 80 86 88 89 95 97 98 104 106 107 113 TO 115 PRIS YD 1000 ZD 230
73. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
74. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 109 TO 112 PRIS YD 600 ZD 230
75. CONSTANTS
76. MATERIAL CONCRETE ALL
77. SUPPORTS
78. 69 TO 71 FIXED
79. UNIT METER KN
80. DEFINE IS1893 2016 LOAD
81. ZONE 0.16 RF 5 I 1.2 SS 1 ST 1 DM 0.05 DT 3
82. SELFWEIGHT 1
83. MEMBER WEIGHT
84. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
85. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 109 TO 112 UNI 15 0 0
86. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
87. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 109 TO 112 UNI 45 0 0
88. DEFINE WIND LOAD

*** NOTE: If any floor diaphragm is present in the model Wind Load definition
          should be defined after Floor Diaphragm definition. Otherwise wind
          load generation may be unsuccessful during analysis.

89. TYPE 1 WIND 1
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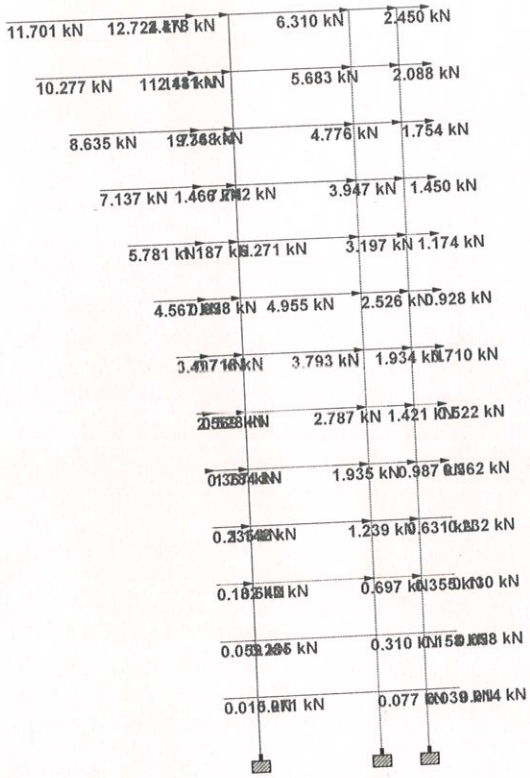
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 96. 1893 LOAD X 1
 97. LOAD 2 LOADTYPE SEISMIC-H  TITLE EQ -X
 98. 1893 LOAD X -1.
 99. LOAD 3 LOADTYPE SEISMIC-H  TITLE EQ +Z
100. 1893 LOAD Z 1
101. LOAD 4 LOADTYPE SEISMIC-H  TITLE EQ -Z
102. 1893 LOAD Z -1.
103. LOAD 5 LOADTYPE SEISMIC-H  TITLE WIND +X
104. WIND LOAD X 1 TYPE 1
105. LOAD 6 LOADTYPE SEISMIC-H  TITLE WIND -X
106. WIND LOAD -X 1 TYPE 1
107. LOAD 7 LOADTYPE SEISMIC-H  TITLE WIND +Z
108. WIND LOAD Z 1 TYPE 1
*WARNING- NO MEMBERS LOADED FOR A WIND LOAD GENERATION.
109. LOAD 8 LOADTYPE SEISMIC-H  TITLE WIND -Z
110. WIND LOAD -Z 1 TYPE 1
*WARNING- NO MEMBERS LOADED FOR A WIND LOAD GENERATION.
111. LOAD 9 LOADTYPE SEISMIC-H  TITLE LIVE LOAD
112. MEMBER LOAD
113. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
114. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 109 TO 112 UNI GY -15
115. LOAD 10 LOADTYPE SEISMIC-H  TITLE DEAD LOAD
116. SELFWEIGHT Y -1
117. MEMBER LOAD
118. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
119. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 109 TO 112 UNI GY -30
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121. 10 1.5
122. LOAD COMB 12 1.2(DL+IL+ELX)
123. 10 1.2 1 1.2
124. LOAD COMB 13 1.2(DL+IL-ELX)
125. 10 1.2 2 1.2
126. LOAD COMB 14 1.2(DL+IL+ELZ)
127. 10 1.2 3 1.2
128. LOAD COMB 15 1.2(DL+IL-ELZ)
129. 10 1.2 4 1.2
130. LOAD COMB 16 1.2(DL+IL+WLX)
131. 10 1.2 5 1.2
132. LOAD COMB 17 1.2(DL+IL-WLX)
133. 10 1.2 6 1.2
134. LOAD COMB 18 1.2(DL+IL+WLZ)
135. 10 1.2 7 1.2
136. LOAD COMB 19 1.2(DL+IL-WLZ)
137. 10 1.2 8 1.2
138. LOAD COMB 20 1.5(DL+ELX)
139. 10 1.5 1 1.5
140. LOAD COMB 21 1.5(DL-ELX)
141. 10 1.5 2 1.5
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159. 10 0.9 3 1.5
160. LOAD COMB 31 0.9 DL-ELZ
161. 10 0.9 4 1.5
162. LOAD COMB 32 0.9 DL+WLX
163. 10 0.9 5 1.5
164. LOAD COMB 33 0.9 DL-WLX
165. 10 0.9 6 1.5
166. LOAD COMB 34 0.9 DL+WLZ
167. 10 0.9 7 1.5
168. LOAD COMB 35 0.9 DL-WLZ
169. 10 0.9 8 1.5
170. PERFORM ANALYSIS
```

C. KANNAN, B.E., M.E, (Structure)
Structural Engineer,
CMDA Reg. No: SE/I/2024/2/0047
Door No: 21, 4th Main Road,
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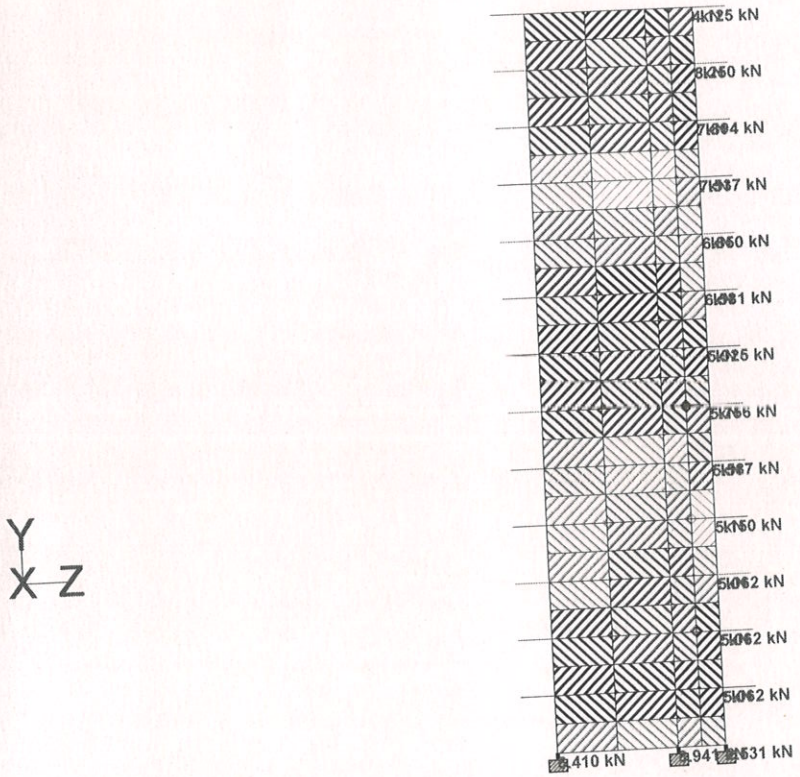
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	By Kannan	Date 17-Dec-24	Chd Kannan
Client	File URBANDO-PERUMBAKI	Date/Time	17-Dec-2024 18:25



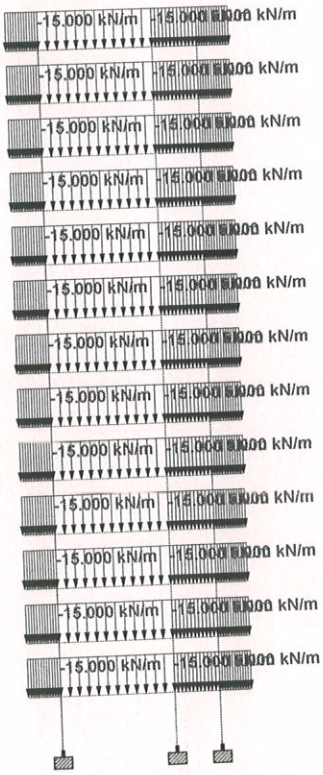
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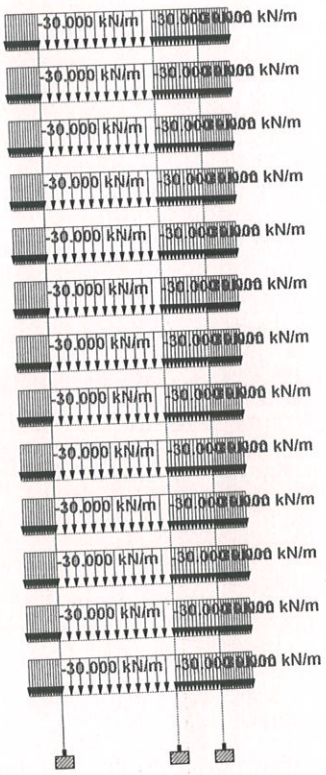
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Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.


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X Z
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Load 5


-15.000 kN/m
-15.000 kN/m
-15.000 kN/m
-15.000 kN/m
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-15.000 kN/m
-15.000 kN/m
-15.000 kN/m
-15.000 kN/m
Y
X Z

Load 9



Load 10

C. KANNAN, B.E., M.E, (Structure)
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Door No: 21, 4th Main Road,
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