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

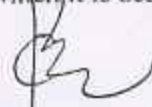
Door .21, plot No. 257- W, Flat No. 2B
"Utopia Apartments" 2nd Floor,
4th Main Road, Indira Nagar,
Chennai- 600 020
Mobile: 9841249815
Email: kannankds2007@gmail.com

STRUCTURAL STABILITY CERTIFICATE

It is certified that the Proposed Residential Building at Plot -01, Old Door No. 96, New Door No: 140, Karpagam Avenue, Santhome High Road, Raja Annamalai Puram, Chennai- 600028. And Comprised in R. S. No: 4297/24 Of Mylapore Village, Mylapore Taluk and Within the Limits of Greater Chennai Corporation, Zone: XIII, Division: 173. Having Basement plus Stilt plus Nine upper floors is designed to resist earthquake. Check has been made and found safe and 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/GR-I/19/02/002.
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

For ETICA DEVELOPERS PVT. LTD.


Managing Director.

PROPOSED RESIDENTIAL BUILDING AT PLOT -01, OLD DOOR NO. 96, NEW DOOR NO: 140, KARPAGAM AVENUE, SANTHOME HIGH ROAD, RAJA ANNAMALAI PURAM, CHENNAI-600028. AND COMPRISED IN R. S. NO: 4297/24 OF MYLAPORE VILLAGE, MYLAPORE TALUK AND WITHIN THE LIMITS OF GREATER CHENNAI CORPORATION. ZONE: XIII, DIVISION: 173

GENERAL NOTE ON STRUCTURAL DESIGN.

1.0 GENERAL.

1.1 DESIGN BASIS

The proposed residential building consists of Basement plus Stilt plus Nine 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/m ²
Floor finish	=	2.0kN/m ²
Live load	=	2.0kN/m ²

		7.25kN/m ²

For ETICA DEVELOPERS PVT. LTD.

Managing Director.

for ETICA DEVELOPERS PVT. LTD.

Managing Director

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	1.2DL+1.2LL+1.2WL	DL+LL+WL
Or	Or	Or
DL+LL+EL	1.2DL+1.2LL+1.2EL	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.

For ETICA DEVELOPERS PVT. LTD.


 Managing Director.

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06 June 2023 16:21

PAGE NO. 1

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*****
*
*      STAAD.Pro CONNECT Edition
*      Version 22.12.00.142
*      Proprietary Program of
*      Bentley Systems, Inc.
*      Date= JUN 6, 2023
*      Time= 16:33:56
*
*      Licensed to: C.Kannan
*****
```

```
1. STAAD SPACE
INPUT FILE: C:\Users\Dhanush\Desktop\LOGESH\STABILITY CERTIFICATE\ETICA...STD
2. START JOB INFORMATION
3. ENGINEER DATE 5/26/2023
4. JOB NAME PROPOSED RESIDENTIAL BUILDING AT PLOT-01, OLD DOOR NO. 96, NEW DOOR -
5. NO:140, KARPAGAM AVENUE, SANTHOME HIGH ROAD, RAJA ANNAMALAI PURAM, -
6. CHENNAI-600 028
7. ENGINEER NAME KANNAN
8. CHECKER NAME KANNAN
9. APPROVED NAME KANNAN
10. CHECKER DATE 5/26/2023
11. APPROVED DATE 5/26/2023
12. END JOB INFORMATION
13. INPUT WIDTH 79
14. UNIT MMS KN
15. JOINT COORDINATES
16. 1 0 0 0; 2 4697.95 0 0; 3 9615.37 0 0; 4 14850 0 0; 5 16425 0 0; 6 0 3000 0
17. 7 4697.95 3000 0; 8 9615.37 3000 0; 9 14850 3000 0; 10 16425 3000 0
18. 11 0 6000 0; 12 4697.95 6000 0; 13 9615.37 6000 0; 14 14850 6000 0
19. 15 16425 6000 0; 16 0 9000 0; 17 4697.95 9000 0; 18 9615.37 9000 0
20. 19 14850 9000 0; 20 16425 9000 0; 21 0 12000 0; 22 4697.95 12000 0
21. 23 9615.37 12000 0; 24 14850 12000 0; 25 16425 12000 0; 26 0 15000 0
22. 27 4697.95 15000 0; 28 9615.37 15000 0; 29 14850 15000 0; 30 16425 15000 0
23. 31 0 18000 0; 32 4697.95 18000 0; 33 9615.37 18000 0; 34 14850 18000 0
24. 35 16425 18000 0; 36 0 21000 0; 37 4697.95 21000 0; 38 9615.37 21000 0
25. 39 14850 21000 0; 40 16425 21000 0; 41 0 24000 0; 42 4697.95 24000 0
26. 43 9615.37 24000 0; 44 14850 24000 0; 45 16425 24000 0; 46 0 27000 0
27. 47 4697.95 27000 0; 48 9615.37 27000 0; 49 14850 27000 0; 50 16425 27000 0
28. 51 0 30000 0; 52 4697.95 30000 0; 53 9615.37 30000 0; 54 14850 30000 0
29. 55 16425 30000 0; 56 0 33000 0; 57 4697.95 33000 0; 58 9615.37 33000 0
30. 59 14850 33000 0; 60 16425 33000 0; 61 0 -2000 0; 62 4697.95 -2000 0
31. 63 9615.37 -2000 0; 64 14850 -2000 0
32. MEMBER INCIDENCES
33. 1 1 2; 2 2 3; 3 3 4; 4 4 5; 5 1 6; 6 2 7; 7 3 8; 8 4 9; 9 6 7; 10 6 7; 11 7 8; 12 8 9
34. 13 9 10; 14 6 11; 15 7 12; 16 8 13; 17 9 14; 18 11 12; 19 11 12; 20 12 13; 21 13 14
35. 22 14 15; 23 11 16; 24 12 17; 25 13 18; 26 14 19; 27 16 17; 28 17 18; 29 18 19
36. 31 19 20; 32 16 21; 33 17 22; 34 18 23; 35 19 24; 36 21 22; 37 22 23; 38 22 23; 39 23 24
37. 40 24 25; 41 21 26; 42 22 27; 43 23 28; 44 24 29; 45 26 27; 46 26 27; 47 27 28; 48 28 29
38. 49 29 30; 50 26 31; 51 27 32; 52 28 33; 53 29 34; 54 31 32; 55 32 33; 56 32 33; 57 33 34
```

C. KANNAN, B.E., M.E., (Structure)
Structural Engineer,
CMDA Reg. No: SE/GR-I/19/02/002.
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.

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For ETICA DEVELOPERS PVT. LTD

Managing Director.

for ETICA DEVELOPERS PVT. LTD.

Managing Director

STAAD SPACE

-- PAGE NO. 2

39. 58 34 35; 59 31 36; 60 32 37; 61 33 38; 62 34 39; 64 36 37; 65 37 38; 66 38 39
 40. 67 39 40; 68 36 41; 69 37 42; 70 38 43; 71 39 44; 73 41 42; 74 42 43; 75 43 44
 41. 76 44 45; 77 41 46; 78 42 47; 79 43 48; 80 44 49; 82 46 47; 83 47 48; 84 48 49
 42. 85 49 50; 86 46 51; 87 47 52; 88 48 53; 89 49 54; 91 51 52; 92 52 53; 93 53 54
 43. 94 54 55; 95 51 56; 96 52 57; 97 53 58; 98 54 59; 100 56 57; 101 57 58
 44. 102 58 59; 103 59 60; 113 1 66; 114 2 67; 115 3 68; 116 4 69
 45. DEFINE MATERIAL START
 46. ISOTROPIC CONCRETE
 47. E 21.7185
 48. POISSON 0.17
 49. DENSITY 2.35616E+08
 50. ALPHA 1E-05
 51. DAMP 0.05
 52. G 9.28139
 53. TYPE CONCRETE
 54. STRENGTH FCU 0.027579
 55. END DEFINE MATERIAL
 56. MEMBER PROPERTY
 57. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
 58. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 PRIS YD 500 ZD 200
 59. 5 TO 8 14 TO 17 23 TO 26 32 TO 35 41 TO 44 50 TO 53 59 TO 62 68 TO 71 -
 60. 77 TO 80 86 TO 89 95 TO 98 113 TO 116 PRIS YD 500 ZD 200
 61. CONSTANTS
 62. MATERIAL CONCRETE ALL
 63. SUPPORTS
 64. 66 TO 69 FIXED
 65. UNIT METER KN
 66. 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.

67. TYPE 1 WIND 1
 68. <I STAAD PRO GENERATED DATA DO NOT MODIFY !!!
 69. CUSTOM:PARAMS
 70. !> END GENERATED DATA BLOCK
 71. INT 1.25 1.342 1.48 1.5 1.56 1.6 HEIG 10 15 20 25 30 33
 72. EXP 1 JOINT 1 TO 60 66 TO 69
 73. DEFINE IS1893 2016 LOAD
 74. ZONE 0.16 RF 5 I 1.2 SS 1 ST 1 CM 0.05 DT 2
 75. SELFWEIGHT 1
 76. MEMBER WEIGHT
 77. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
 78. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 UNI 12 0 0
 79. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
 80. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 UNI 25 0 0
 81. LOAD 1 LOADTYPE SEISMIC-H TITLE EQ X
 82. 1893 LOAD X 1
 83. LOAD 2 LOADTYPE SEISMIC-H TITLE EQ -X
 84. 1893 LOAD X -1.

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Managing Director.

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85. LOAD 3 LOADTYPE SEISMIC-H TITLE EQ +Z
 86. 1893 LOAD Z 1
 87. LOAD 4 LOADTYPE SEISMIC-H TITLE EQ -Z
 88. 1893 LOAD Z -1
 89. LOAD 5 LOADTYPE WIND TITLE WIND +X
 90. WIND LOAD X 1 TYPE 1
 *WARNING- NO MEMBERS LOADED FOR A WIND LOAD GENERATION.
 91. LOAD 6 LOADTYPE WIND TITLE WIND -X
 92. WIND LOAD -X 1 TYPE 1
 *WARNING- NO MEMBERS LOADED FOR A WIND LOAD GENERATION.
 93. LOAD 7 LOADTYPE WIND TITLE WIND +Z
 94. WIND LOAD Z 1 TYPE 1
 95. LOAD 8 LOADTYPE WIND TITLE WIND -Z
 96. WIND LOAD -Z 1 TYPE 1
 97. LOAD 9 LOADTYPE LIVE TITLE LIVE LOAD
 98. MEMBER LOAD
 99. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
 100. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 UNI GY -12
 101. LOAD 10 LOADTYPE DEAD TITLE DEAD LOAD
 102. SELFWEIGHT Y -1
 103. MEMBER LOAD
 104. 1 TO 4 10 TO 13 19 TO 22 28 TO 31 37 TO 40 46 TO 49 55 TO 58 64 TO 67 -
 105. 73 TO 76 82 TO 85 91 TO 94 100 TO 103 UNI GY -25
 106. LOAD COMB 11 1.5(DL+IL)
 107. 9 1.5 10 1.5
 108. LOAD COMB 12 1.2(DL+IL+ELX)
 109. 9 1.5 10 1.2 1 1.2
 110. LOAD COMB 13 1.2(DL+IL-ELX)
 111. 9 1.2 10 1.2 2 1.2
 112. LOAD COMB 14 1.2(DL+IL+ELZ)
 113. 9 1.2 10 1.2 3 1.2
 114. LOAD COMB 15 1.2(DL+IL-ELZ)
 115. 9 1.2 10 1.2 4 1.2
 116. LOAD COMB 16 1.2(DL+IL+WLX)
 117. 9 1.2 10 1.2 5 1.2

For ETICA DEVELOPERS PVT. LTD


 Managing Director.

STAAD SPACE

-- PAGE NO. 4

118. LOAD COMB 17 1.2(DL+IL-WLX)
 119. 10 1.2 6 1.2
 120. LOAD COMB 18 1.2(DL+IL+WLZ)
 121. 9 1.2 10 1.2 7 1.2
 122. LOAD COMB 19 1.2(DL+IL-WLZ)
 123. 9 1.2 10 1.2 8 1.2
 124. LOAD COMB 20 1.5(DL+ELX)
 125. 9 1.5 10 1.5 1 1.5
 126. LOAD COMB 21 1.5(DL-ELX)
 127. 9 1.5 10 1.5 2 1.5
 128. LOAD COMB 22 1.5(DL+ELZ)
 129. 9 1.5 10 1.5 3 1.5
 130. LOAD COMB 23 1.5(DL-ELZ)
 131. 10 1.5 4 1.5
 132. LOAD COMB 24 1.5(DL+WLX)
 133. 10 1.5 5 1.5
 134. LOAD COMB 25 1.5(DL-WLX)
 135. 10 1.5 6 1.5
 136. LOAD COMB 26 1.5(DL+WLZ)
 137. 10 1.5 7 1.5
 138. LOAD COMB 27 1.5(DL-WLZ)
 139. 10 1.5 8 1.5
 140. LOAD COMB 28 0.9 DL+ELX
 141. 10 0.9 1 1.5
 142. LOAD COMB 29 0.9 DL-ELX
 143. 10 0.9 2 1.5
 144. LOAD COMB 30 0.9 DL+ELZ
 145. 10 0.9 3 1.5
 146. LOAD COMB 31 0.9 DL-ELZ
 147. 10 0.9 4 1.5
 148. LOAD COMB 32 0.9 DL+WLX
 149. 10 0.9 5 1.5
 150. LOAD COMB 33 0.9 DL-WLX
 151. 10 0.9 6 1.5
 152. LOAD COMB 34 0.9 DL+WLZ
 153. 10 0.9 7 1.5
 154. LOAD COMB 35 0.9 DL-WLZ
 155. 10 0.9 8 1.5
 156. PERFORM ANALYSIS PRINT ALL

PROBLEM STATISTICS

NUMBER OF JOINTS	64	NUMBER OF MEMBERS	96
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	4

Using 64-bit analysis engine.

SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER


 C. KANINAIN, B.E., M.E., (Structure)
 Structural Engineer,
 CMDA Reg. No: SE/GR-I/19/02/002.
 Door No: 21, 4th Main Road,
 Indira Nagar, Chennai-600 020.

For ETICA DEVELOPERS PVT. LTD.

Managing Director.

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CONNECTED User: Kannan Chinnasamy

Job No

Sheet No

1

Rev

Part

Job Title: Proposed Residential Building at Plot-01, Old Door No. 96, New Door No:140,
Karpagam Avenue, Santhome High Road, Raja Annamalai Puram, Chennai-600

Ref

By: Kannan

Date: 5/26/2023

Chd: Kannan

Client

File: ETICA - MRC NAGAR_T

Date/Time: 06-Jun-2023 16:33

Y
Z-X

4.870 kN	9.378 kN	9.963 kN	8.392 kN
4.046 kN	7.984 kN	8.413 kN	8.738 kN
3.524 kN	6.557 kN	6.910 kN	4.713 kN
2.672 kN	5.278 kN	5.654 kN	3.788 kN
2.091 kN	4.124 kN	4.348 kN	2.960 kN
1.581 kN	3.119 kN	3.286 kN	2.240 kN
1.142 kN	2.263 kN	2.374 kN	1.619 kN
0.778 kN	1.629 kN	1.610 kN	1.090 kN
0.478 kN	0.943 kN	0.894 kN	0.678 kN
0.283 kN	0.499 kN	0.526 kN	0.358 kN
0.099 kN	0.196 kN	0.206 kN	0.140 kN
0.016 kN	0.031 kN	0.033 kN	0.022 kN

Load 1


C. KANNAN, B.E., M.E., (Structure)
 Structural Engineer,
 CMDA Reg. No: SE/GR-I/19/02/002.
 Door No: 21, 4th Main Road,
 Indira Nagar, Chennai-600 020.

305

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CONNECTED User: Kannan Chinnasamy

Job No

Sheet No

1

Rev

Part

Job Title: Proposed Residential Building at Plot-01, Old Door No. 95, New Door No:140,
Karpagam Avenue, Santhome High Road, Raja Annamalai Puram, Chennai-600

Ref

By Kannan

Date:5/26/2023

Chd Kannan

Client

File ETICA - MRC NAGAR_T

Date/Time 08-Jun-2023 16:33

Y
Z-X

Load 3.

307

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Job No.	Sheet No.	Rev.
	1	
Part		
Ref.		
By Kannan	Date 5/26/2023	Crd Kannan
Client	File ETICA - MRC NAGAR_T	Draw/Time 06-Jun-2023 16:33

Job Title Proposed Residential Building at Plot-01, Old Door No: 96, New Door No:140,
Karpagam Avenue, Santhome High Road, Raja Annamalai Puram, Chennai-600

Y
Z-X



Load 19

For ETICA DEVELOPERS PVT. LTD
Managing Director.

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Job No.

Sheet No.

1

Rev

Part

Job Title Proposed Residential Building at Plot-01, Old Door No. 96, New Door No:140, Karpagam Avenue, Santhome High Road, Raja Annamalai Puram, Chennai-600

Ref

By Kannan

Date 5/26/2023

Chd Kannan

Client

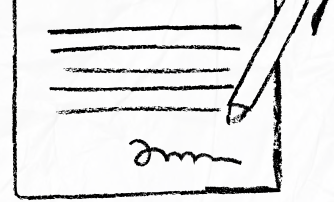
File ETICA - MRC NAGAR T

DateTime 06-Jun-2023 16:33

$$\begin{array}{c} Y \\ \vdots \\ Z-X \end{array}$$


1500

C. KANNAN, B.E., M.E., (Structure,
Structural Engineer,
CMDA Reg. No: SE/GR-I/19/02/002.
Door No: 21, 4th Main Road,
Indira Nagar, Chennai-600 020.



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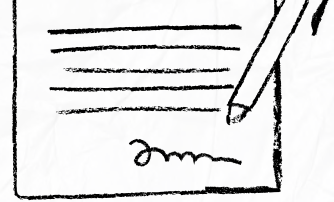
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