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12-03-2024

CERTIFICATE

It is certified the Proposed Construction of Non High Rise Group Development consists of 28 Blocks , Block 1 To 27, : Ground Floor + First Floor, Totally 221 D/U, Clubhouse Block 28 : Ground Floor + First Floor + Second Floor with Swimming Pool, Change Room & Shower Room on the Ground Floor comprised in S.Nos.267/17, 267/18, 267/19, 267/20, 267/21, & 267/22 of Sathankuppam Village (Hamlet of Pudhupakkam), Vandalur Taluk, Chengalpet District designed to resist earth quake. Check has been made and found safe and I hereby certify that,

1. The minimum grade of concrete is M25.
2. The design analysis using the code of practice for loading Standards as per IS-875 Part I to V and seismic force as per code IS 1893, is carried out.

The building will be sound and stable when used for the purpose for which it is designed.

(SURESH.J)

Dr. J. SURESH, M.E., MIE., Ph.D.
Structural Engineer

Plot No. 555, VGP Layout, Mullai Street,
Uthandi, Chennai - 600 119.

Reg. No. SE/GR-I/19/02/003

Reg. No. RSE100382019

Reg. No. CGLRGN/SE/GR-1/2019/06/012



12-03-2024

THE PROPOSED CONSTRUCTION OF NON HIGH RISE GROUP DEVELOPMENT CONSISTS OF 28 BLOCKS , BLOCK 1 TO 27, : GROUND FLOOR + FIRST FLOOR, TOTALLY 221 D/U, CLUBHOUSE BLOCK 28 : GROUND FLOOR + FIRST FLOOR + SECOND FLOOR WITH SWIMMING POOL, CHANGE ROOM & SHOWER ROOM ON THE GROUND FLOOR COMPRISED IN S.NOS.267/17, 267/18, 267/19, 267/20, 267/21, & 267/22 OF SATHANKUPPAM VILLAGE (HAMLET OF PUDHUPAKKAM), VANDALUR TALUK, CHENGALPET DISTRICT.

GENERAL NOTE ON STRUCTURAL DESIGN.

1.0 GENERAL.

1.1 DESIGN BASIS

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

1.2 CODES AND STANDARDS

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

1. I.S. 456
2. I.S. 875 - Part I to V
3. I.S.1893
4. I.S.13920

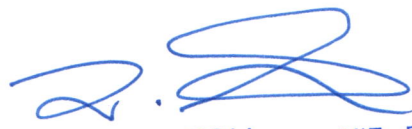
2.0 BASIC CIVIL DESIGN LOADS

2.1 DEAD LOADS & LIVE LOADS

Typical slab dead load is calculated as follows

Self weight of slab	=	3.0kN/m ²
Floor finish	=	2.0kN/m ²
Live load	=	2.0kN/m ²

		7.0kN/m ²


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3.0 SOIL DETAILS

Based on Soil Test Report Isolated Foundation is adopted.

4.0 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

4.2.1 MINIMUM COVER

Slab	25 mm
Beam	30 mm
Columns	40 mm
Foundations	50 mm

Structure will be sound and stable when used for the purpose for which it is designed.


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*          STAAD.Pro CONNECT Edition
*          Version 22.10.00.153
*          Proprietary Program of
*          Bentley Systems, Inc.
*          Date=   MAR 12, 2024
*          Time=   18:46:28
*
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1. STAAD SPACE

INPUT FILE: C:\Users\suresh\Desktop\New folder (5)\KELAMBAKKAM.STD

2. START JOB INFORMATION
3. JOB NAME THE PROPOSED CONSTRUCTION OF NON HIGH RISE GROUP DEVELOPMENT CONSISTS
4. *OF 28 BLOCKS , BLOCK 1 TO 27, : GROUND FLOOR + FIRST FLOOR, TOTALLY 221 D/U,
5. *CLUBHOUSE BLOCK 28 : GROUND FLOOR + FIRST FLOOR + SECOND FLOOR WITH SWIMMING
6. *POOL, CHANGE ROOM & SHOWER ROOM ON THE GROUND FLOOR COMPRISED IN S.NOS.267/17,
7. *267/18, 267/19, 267/20, 267/21, & 267/22 OF SATHANKUPPAM VILLAGE (HAMLET OF
8. *PUDHUPAKKAM), VANDALUR TALUK, CHENGALPET DISTRICT.
9. ENGINEER NAME SURESH
10. CHECKER NAME SURESH
11. APPROVED NAME SURESH
12. ENGINEER DATE 3/12/2024
13. CHECKER DATE 3/12/2024
14. APPROVED DATE 3/12/2024
15. END JOB INFORMATION
16. INPUT WIDTH 79
17. UNIT METER KN
18. JOINT COORDINATES
19. 1 -5 -1 0; 25 -5 -4 0; 26 -1.5 -1 0; 27 -1.5 -4 0; 28 2.2 -1 0; 29 2.2 -4 0
20. 36 -5 2 0; 37 -1.5 2 0; 38 2.2 2 0; 57 5.9 -1 0; 58 5.9 -4 0; 59 5.9 2 0
21. 63 9.6 -1 0; 64 9.6 -4 0; 65 9.6 2 0; 66 -5 5 0; 67 -1.5 5 0; 68 2.2 5 0
22. 69 5.9 5 0; 70 9.6 5 0
23. MEMBER INCIDENCES
24. 39 1 25; 40 1 26; 41 25 27; 42 26 27; 43 26 28; 44 27 29; 45 28 29; 55 1 36
25. 56 26 37; 57 28 38; 61 36 37; 62 37 38; 96 28 57; 97 29 58; 98 57 58; 99 57 59
26. 100 38 59; 107 57 63; 108 58 64; 109 63 64; 110 63 65; 111 59 65; 112 36 66
27. 113 37 67; 114 38 68; 115 66 67; 116 67 68; 117 59 69; 118 68 69; 119 65 70
28. 120 69 70
29. DEFINE MATERIAL START
30. ISOTROPIC CONCRETE
31. E 2.17185E+07
32. POISSON 0.17
33. DENSITY 23.5616
34. ALPHA 1E-05
35. DAMP 0.05
36. END DEFINE MATERIAL
37. MEMBER PROPERTY INDIAN
38. 39 42 45 55 TO 57 98 99 109 110 112 TO 114 117 119 PRIS YD 0.8 ZD 0.2


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 Reg. No. CGI/GR-I/19/06/012

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39. 40 41 43 44 61 62 96 97 100 107 108 111 115 116 118 120 PRIS YD 0.6 ZD 0.2
 40. CONSTANTS
 41. MATERIAL CONCRETE MEMB 39 TO 45 55 TO 57 61 62 96 TO 100 107 TO 120
 42. SUPPORTS
 43. 25 27 29 58 64 FIXED
 44. DEFINE 1893 LOAD
 45. ZONE 0.16 RF 3 I 1 SS 2 ST 1 DM 0.5
 46. MEMBER WEIGHT
 47. 39 TO 45 55 TO 57 61 62 96 TO 100 107 TO 120 UNI -14.5
 48. 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.

49. TYPE 1
 50. INT 0.673 1.03335 1.3537 1.65375 HEIG 10 30 50 100
 51. EXP 1 JOINT 1 25 TO 29 36 TO 38 57 TO 59 63 TO 70
 52. LOAD 1 LOADTYPE NONE TITLE SLX1
 53. 1893 LOAD X 1
 54. LOAD 2 LOADTYPE NONE TITLE SLZ1
 55. 1893 LOAD Z 1
 56. LOAD 3 LOADTYPE DEAD TITLE DL
 57. SELFWEIGHT Y -1 LIST ALL
 58. MEMBER LOAD
 59. 40 43 61 62 96 100 107 111 115 116 118 120 UNI GY -25
 60. LOAD 4 LOADTYPE LIVE TITLE LL
 61. MEMBER LOAD
 62. 40 43 61 62 96 100 107 111 115 116 118 120 UNI GY -15
 63. LOAD 7 LOADTYPE WIND TITLE WLZ1
 64. WIND LOAD Z 1 TYPE 1
 65. LOAD 8 LOADTYPE WIND TITLE WLZ2
 66. WIND LOAD Z -1 TYPE 1
 67. LOAD COMB 9 1.5(DL+LL)
 68. 3 1.5 4 1.5
 69. LOAD COMB 10 1.2(DL+LL+SLX)
 70. 3 1.2 4 1.2 1 1.2
 71. LOAD COMB 11 1.2(DL+LL+SLZ)
 72. 3 1.2 4 1.2 2 1.2
 73. LOAD COMB 14 1.2(DL+LL+WLZ1)
 74. 3 1.2 4 1.2 7 1.2
 75. LOAD COMB 15 1.2(DL+LL+WLZ2)
 76. 3 1.2 4 1.2 8 1.2
 77. LOAD COMB 16 1.5(DL+SLX)



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78. 3 1.5 1 1.5
 79. LOAD COMB 17 1.5(DL+SLZ)
 80. 3 1.5 2 1.5
 81. LOAD COMB 20 1.5(DL+WLZ1)
 82. 3 1.5 7 1.5
 83. LOAD COMB 21 1.5(DL+WLZ2)
 84. 3 1.5 8 1.5
 85. LOAD COMB 22 0.9DL+1.5SLX
 86. 3 0.9 1 1.5
 87. LOAD COMB 23 0.9DL+1.5SLZ
 88. 3 0.9 2 1.5
 89. LOAD COMB 26 0.9DL+1.5WLZ1
 90. 3 0.9 7 1.5
 91. LOAD COMB 27 0.9DL+1.5WLZ2
 92. 3 0.9 8 1.5
 93. PERFORM ANALYSIS

PROBLEM STATISTICS

NUMBER OF JOINTS	20	NUMBER OF MEMBERS	31
NUMBER OF PLATES	0	NUMBER OF SOLIDS	0
NUMBER OF SURFACES	0	NUMBER OF SUPPORTS	5

Using 64-bit analysis engine.

SOLVER USED IS THE IN-CORE ADVANCED MATH SOLVER

TOTAL PRIMARY LOAD CASES = 6, TOTAL DEGREES OF FREEDOM = 90
 TOTAL LOAD COMBINATION CASES = 13 SO FAR.

**WARNING: IF THIS UBC/IBC ANALYSIS HAS TENSION/COMPRESSION
 OR REPEAT LOAD OR RE-ANALYSIS OR SELECT OPTIMIZE, THEN EACH
 UBC/IBC CASE SHOULD BE FOLLOWED BY PERFORM ANALYSIS & CHANGE.

 * UNITS - KN METE *
 * TIME PERIOD FOR X 1893 LOADING = 0.38971 SEC *
 * SA/G PER 1893= 1.250, LOAD FACTOR= 1.000 *
 * VB PER 1893= 0.0333 X 1499.30= 49.98 KN *
 * *


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-- PAGE NO. 4

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*****
* UNITS - KN    METE                      *
* TIME PERIOD FOR Z 1893 LOADING =    0.38971 SEC      *
* SA/G PER 1893=    1.250, LOAD FACTOR= 1.000          *
* VB PER 1893=    0.0333 X    1499.30=    49.98 KN     *
*                                                         *
*****
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94. FINISH

***** END OF THE STAAD.Pro RUN *****

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Date 3/12/2024

Chd Suresh

Client

File KELAMBAKKAM.std

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Y
Z X

0.6840 kN

0.965 kN

0.965 kN

0.699 kN

Load 1


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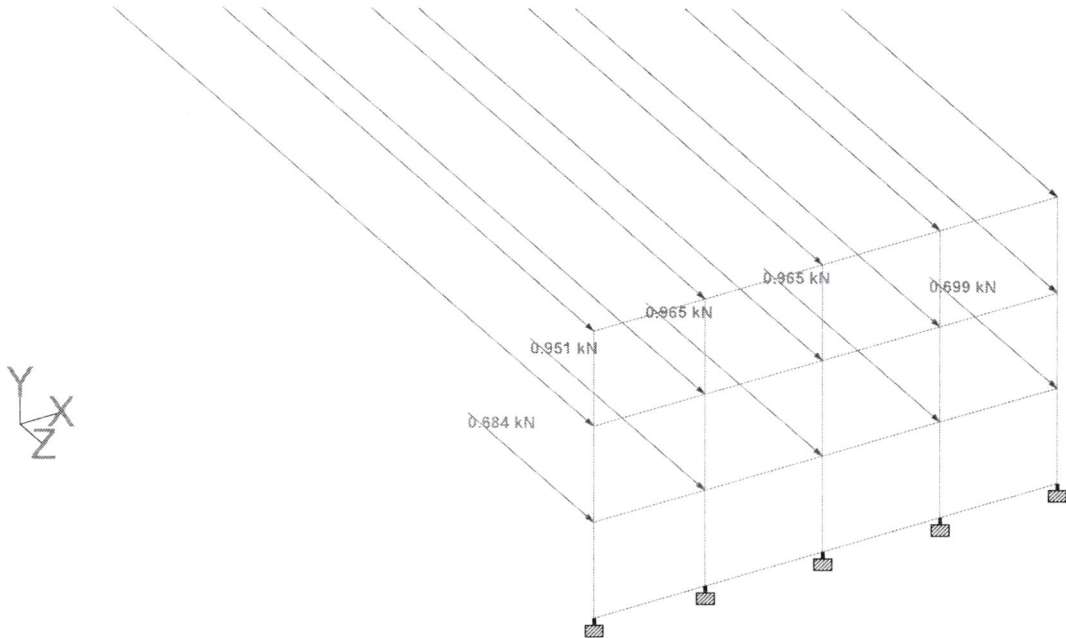
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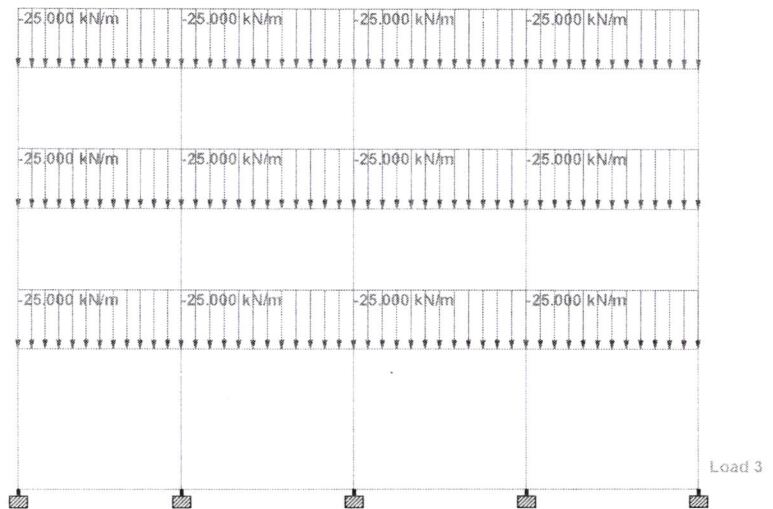
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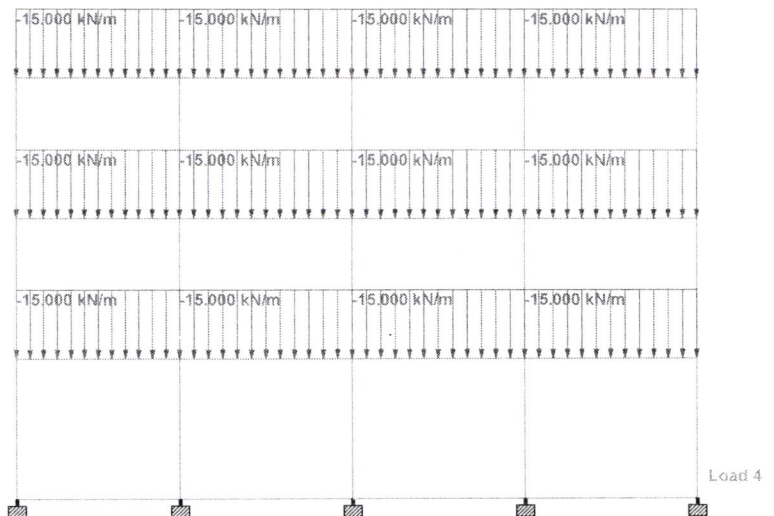
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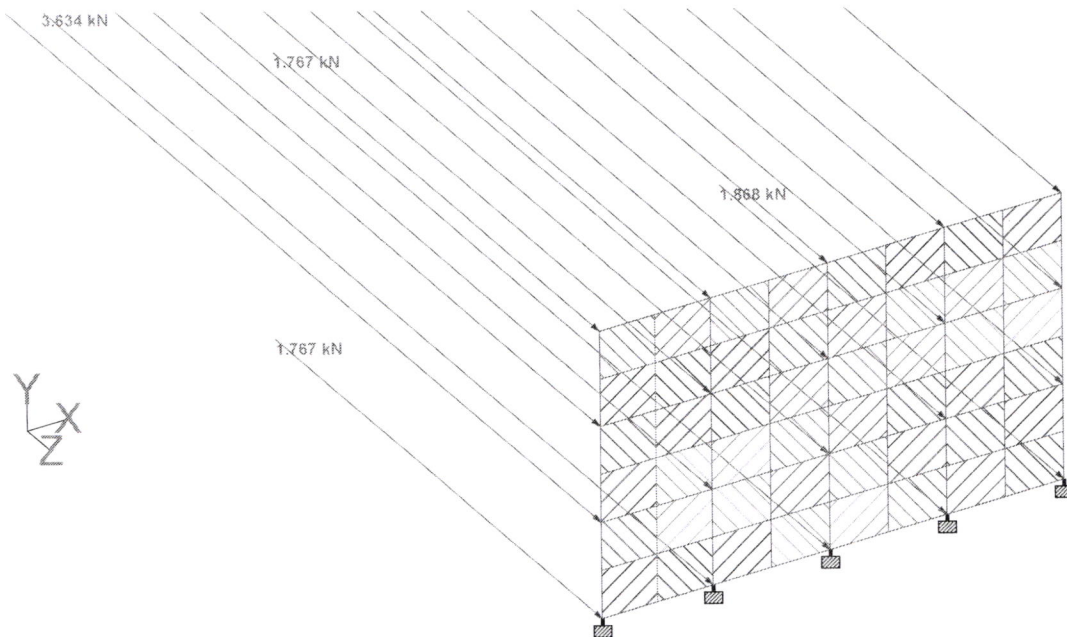
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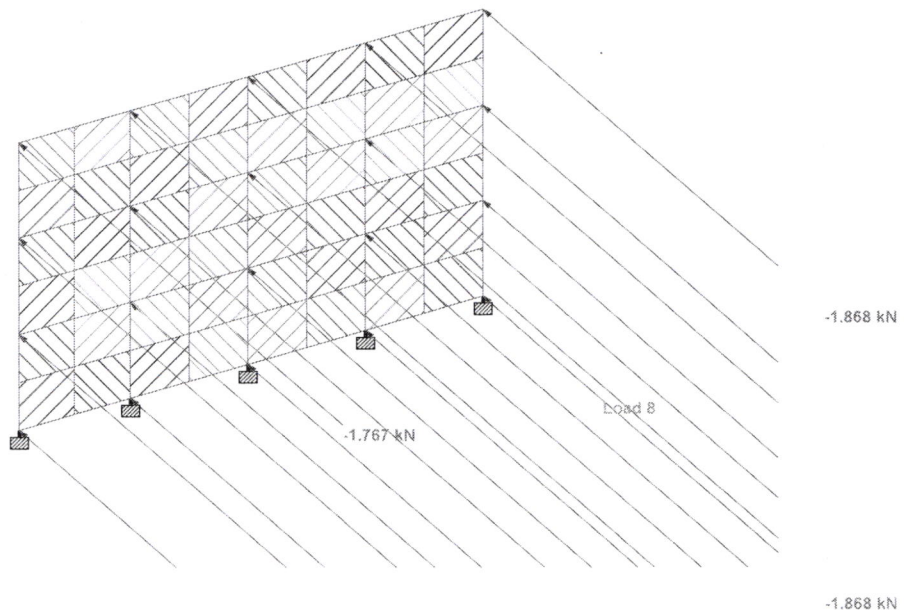
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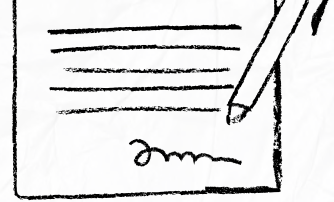
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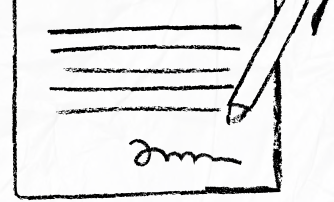
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