KCM ASSOCIATES
Innovation. Design. Stability...

93631 15772

Civil Engineering Consultant Structural Designers Plan Estimate Valuation

10.08.2025

STABILITY CERTIFICATE

The detailed engineering and structure design of the building "**PROMAG ARANYA**" comprising of Group Development of Residential Building Block – A2 to A5 and Block A7 to A9 Ground Floor + First Floor + Second Floor, Block A6- Ground Floor + First Floor comprising of 8 dwelling units and Block 10 (Amenities) – Ground Floor at SF. Nos. 514/1A1, 518/2B & 519/2B of Vadavalli Village, Perur Taluk, Coimbatore District has been done by me based on the report of geotechnical Investigation (soil test) done by **M/s Geocare Engineering Consultancy** with the Project Code:102419, Dated: 16.11.2024 and considering the functional requirement of the building;

2. It is certified that among other factors, the proposed building has been designed to resist earthquake. I have checked various parameters and found that the proposed building would be safe.

3. I further certify that:

i. The minimum grade of concrete is **M20**

ii. The design and analysis has been done using the code of practice for plain and reinforced concrete as per IS 456, design loads as per IS Codes No **IS-875 and IS -1893** and design of earthquake resistant structure as per IS Code No **IS:1893**

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

Encl: Structural Design Calculation

For PROMAG FOUNDATIONS AND STRUCTURES PRIVATE LIMITED

Authorised Signatory

Dr. BA. KANNA CHOCKKALINGAM
M.E(Structures), A.I.V., M.I.E., M.I.S.T.E
REGISTERED STRUCTURAL ENGINEER
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Annexure–XIV

[See rule 51(3)]

Form1 (Structural Design Basis Report)

(1) This report to accompany the application for Building Developments

Part 1	General Data		
S.No	**Description**	**Information**	**Notes**
1	Site Address	S.F.NO: 514/1A1, 518/2B, 519/2B AT VADAVALLI VILLAGE, WEST ZONE, PERUR TALUK, COIMBATORE CORPORATION.	
2	Name of Owner	M/s. Promag foundations and structures private limited, M/s. SGK investments trust (POA)	
3	Name of Registered Developer along with the Registration Number	**PROMAG FOUNDATIONS and STRUCTURES PVT LTD.** **NO: 33AAGCP14555M1ZA**	
4	Name of Registered Architect/Engineer along with the Registration Number	**AR N. MAHESH** **CA/76/2881** TRIVANDRUM	
5	Name of Registered Structural engineer along with the Registration Number	**KANNA CHOKKALINGAM** **Reg No: Coimbatore LPA/SE/GR-1/006/2024**	
6	Use of the building	Residential group development villa buildings	
7	Number of stories above ground (including storey's to be added later, if any)	Ground + 2Floors	
8	Number of basements below ground level	Nil	

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S.No	Description	Information	Notes
9	Type of structure Load bearing walls R.C.C. frame R.C.C. frame and Shear Walls Steel frame	RCC Framed Structure	
10	Soil data Type of soil Design safe bearing capacity	Dense gravel 270 kN/Sq.m	IS:1893C1.6.3.5.2 IS:1904 IS:1892 IS:2131 IS:2720
11	Dead loads(unit weight adopted) • Earth • Water • AAC Block masonry • Brick masonry • Plain cement concrete • Reinforced cement concrete • Floor finish • Other fill materials	Earth : 18 /m3 Water : 10 KN /m3 AAC Block masonry : 6.5KN/m3 Brick masonry : 20KN/m3 Plain Cement Concrete : 24 KN/m3 R C Concrete : 25 KN/m3 Floor finish : 1.2 KN/m2	IS:875Part1
12	Imposed (live) loads • Floor loads • Roof loads	 3 KN / Sq.m 2.5KN/Sq.m	 IS:875Part2
13	Cyclone/Wind • Speed • Design pressure intensity	39m / Sec 1.0 KN / Sq.m	IS:875Part3
14	Seismic zone	Zone - II	IS:1893(2002)
15	Importance factor	1.0	IS:1893(2002) Table6
16	Seismic zone factor(Z)	0.10	IS:1893Table2
17	Response reduction factor	5.0	IS:1893Table7
18	Fundamental natural period approx.	0.17	IS:1893C1.7.6
19	Design horizontal acceleration spectrum value(A_h)	0.06	IS:1893C1.6.4.2
20	□Expansion/Separation Joints	No Expansion Joints	
21	Building is regular/irregular	Regular	IS1893

□ Enclose detailed drawings drawn to scale for each floor

♦ In case terrace garden as provided, indicate additional fill load and live load Along with the detailed drawings drawn to scale.

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Part 2	Load bearing masonry buildings		
S.No	**Description**	**Information**	**Notes**
1	Building category	Residential building; Seismic zone II	IS:1893C17.1
2	Number of basements	Nil	
3	Number of floors including ground floor	Ground + 2 Floors	
4	Type of wall masonry	Brick masonry with English bond	
5	Type of mortar mix	Cement mortar ; 1:5 mix	IS : 4326 Cl.8.1.2
6	Resize and position of openings (See note No(i) • Min.distance (b_5) • Ratio($b_1+b_2+b_3$)/1_1 or(b_6+b_7)/1_2 • Min.pier width between consequent opening (b_4) • Vertical distance (h_3) • Ratio of wall height to thickness 4 • Ratio of wall length between cross wall to thickness	0 0.42mm 340mm 600mm 13 10.4	IS: 4326 Table 4 Fig:7
7	Horizontal seismic band • At Plinth level • At window sill level • At lintel level • At ceiling level • At eave level of sloping roof • At top of gable walls • At top of ridge wall	 Provided Provided Provided Provided Not applicable Not applicable Not applicable	 IS:4326 Cl 8.4.6 IS:4326 Cl 8.3 IS:4326 Cl 8.4.2 IS:4326 Cl 8.4.3 IS:4326 Cl 8.4.3
8	Vertical reinforcing bar at corners and T junctions of walls at jambs of doors and windows openings	Provided at corners Not applicable at jambs of doors and windows	IS:4326 Cl 8.4.8 IS :4326 Cl 8.4.4

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9	Integration of prefab roofing/flooring elements through reinforced concrete screed	Not applicable	
10	Horizontal bracings in pitched truss in horizontal plane at the level of ties in the slopes of pitched roof	Not applicable	
Part 3	**Reinforced concrete framed building**		
S.No	**Description**	**Information**	**Notes**
1	Type of building • Regular frames • Regular frames with shear walls • Irregular frames • Irregular frames with shear walls • Soft storey	Regular frames	IS : 1893 Cl 7.1
2	Number of basements	Nil	
3	Number of floors including ground floor	Ground +2 Floors = 3 floors	
4	Horizontal floor system • Beams and slabs • Waffles • Ribbed floor • Flat slab with drops • Flat plate without drops	Beams and slabs	
5	Soil data's • Type of soil • Recommended type of foundation -Independent footings -Rafts -Piles • Recommended bearing capacity of soil • Recommended type, length, dia and load capacity of piles • Depth of Water table • Chemical analysis of ground water • Chemical analysis of soil	Dense gravel Rock Independent footings 270 kN/Sq.m Not applicable Nil Nil	**As per the result obtained from YUBE Prime infra's (JobNo.YPI/SIR/2022-23/068,Dated 15.02.2023**

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6	Foundations Depth below Ground level Type Independent Interconnected Raft Piles	Independent	
7	System interconnecting foundations Plinth beams Foundation beams	Plinth beams	IS : 1893 Cl 7.12.1
8	Grades of concrete	M20 & M25 FOR COLUMNS	
9	Method of analysis used	Static	
10	Computer software used	STAAD pro v8i	
11	Tension included	Yes	IS : 1893 Cl 7.9
12	Base shear a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b	0.55	IS : 1893 Cl 7.5.3
13	Distribution of seismic forces along the height of the building	Yes	IS : 1893 Cl 7.7
14	The column of soft ground storey specially designed	Yes	IS : 1893 Cl 7.10
15	Clear minimum cover provided in • Footing • Column • Beams • Slabs • Walls	Footing - 50mm Column – 40mm Beams – 25mm Slabs – 20mm Walls – 25mm	IS:456 Cl.26.4

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16	Ductile detailing of RC frame • Type of reinforcement used • Minimum dimension of beams • Minimum dimension of columns • Minimum percentage of reinforcement of beams at any cross section • Maximum percentage of reinforcement at any section of beam • Spacing of transverse reinforcement in 2d length of beams near the ends • Ratio of capacity of beams in shear to capacity of beams in flexure • Maximum percentage of reinforcement in column • Confining stirrups near ends of columns and in beam-column joints Diameter Spacing Ratio of shear capacity of columns to maximum seismic shear in the storey	Fe 500 230 x 300mm 230x 300mm 4% 6% 170mm 4% 10mm 100mm	IS:456Cl.5.6 IS:13920Cl.6.1 IS:13920Cl.7.1.2 IS:456Cl.26.5.1(a) IS:13920Cl.6.2.1 IS:456 Cl.26.5.1.1(b) IS:13920Cl.6.2.2 IS:13920Cl.6.3.5 IS:456Cl.26.5.3.1 IS:13920 Cl.7.4
17	Does the features require clearance by SDRP Example: High rise building Pre-fab building Building in hazard prone areas	NIL	

Foundation

i. In case raft foundation has been adopted; indicate K value used for analysis of the raft.

ii. In case pile foundations have been used, give full particulars of the piles, type, dia, length, capacity

- In case of high water table, indicate system of countering water pressure, and indicate the existing water table, and that assumed to design foundations.

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