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Annexure – XIV
[See rule 51 (3)]

Form 1

Structural Design Basis Report

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

Part1	General Data		
S.No.	**Description**	**Information**	**Notes**
1.	Site Address	S.No 4/4,4/5& 4/6, Mayilampatti village,Avinashi road,Neelambur,sulur taluk,coimbatore,	
2	Name of Owner	Prince property management services.	
3	Name of Registered Developer along with the Registration Number	NA – Inhouse Construction	
4	Name of Registered Architect/Engineer along with the Registration Number	Siva Anbarasan TVLR/RA/Gr-1/2019/08/003	
5	Name of Registered Structural engineer along with the Registration Number	S. Nagesh CGLDIST/SE/Gr-I/2019/05/004	
6	Use of the building	Residential Building	
7	Number of stories above ground level (including storeys to be added later, if any)	Stilt + 5 upper floors	
8	Number of basements below ground level	Nil	
9	Type of structure Load bearing walls R.C.C. frame R.C.C. frame and Shear Walls Steel frame	RCC Columns & beam/slab S. Nagesh S. NAGESH, B.E. (CIVIL), M.A.Sc., F.I.E. STRUCTURAL ENGINEER GRADE I (SE) DTCP REG No. CGLDIST/SE/GR-I/2019/05/004 (MLPA) New No. 15, 3rd Cross Street, Karpagam Gardens, Adyar, Chennai - 600 020. Email : nagesh.somadev@gmail.com Mobile : 98402 31666	

10	Soil data Type of soil Design safe bearing capacity	Soft disintegrated rock 36 t/sq.m	Is; 1893 C1.6.3.5.2 Is; 1904 Is; 1892 Is; 2131 Is; 2720
11	Dead loads (unit weight adopted) • Earth • Water • Brick masonry • Plain cement concrete • Reinforced cement concrete • Floor finish • Other fill materials	18 t/cum 1.0 t/cum 2.0 t/cum 2.4 t/cum 2.4 t/cum 2 t/cum	Is; 875 part 1
12	Imposed (live) loads Floor Loads Roof Loads	400 kg/sqm 150 kg/sqm	Is; 875 part 2
13	Cyclone/Wind • Speed • Design pressure intensity	50 m/sec 150 kg/sqm	Is; 875 part 3

14	Seismic zone	III	Is;1893 (2002)
15	Importance factor	1.2	Is;1893 (2002) Table 6
16	Seismic zone factor (Z)	0.16	Is;1893 Table 2
17	Response reduction factor	5	Is;1893 Table 7
18	Fundamental natural period – approx.	0.5 sec	Is;1893 C1.7.6
19	Design horizontal acceleration spectrum value (A_h)	0.019	Is;1893 C1.6.4.2
20	☐ Expansion/Separation Joints	No	
21	Building is regular/irregular	Regular	Is;1893

Enclose detailed drawings drawn to scale for each floor

- In case terrace garden is provided, indicate additional fill load and live load along with the detailed drawings drawn to scale

Part 2	**Load bearing masonry buildings- NOT Applicable**				
Sl.No.	**Description**	**Information**			**Notes**
1	Building category	nil			IS: 4326 C1.7 Read with IS:1893 Zone II III IV V Bldg. Ordinary B C D E Important C D E E
2	Basement Provided				
3	Number of floors including Ground Floor (all floors including stepped floors in hill slopes)				
4	Type of wall masonry				
5	Type and mix of Mortar				IS;4326 C1.8.1.2
6	Re: size and position of openings (See note No.[i]) • Minimum distance (b5) • Ratio $(b_1+b_2+b_3)/1_1$ or $(b_6+b_7)/1_2$ • Minimum 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				IS;4326 Table 4, Fig.7
7	Horizontal seismic band • at plinth level • at window sill level • at lintel level • at ceiling level	P � � � �	IP � � � �	NA ? ? ? ?	(see note No.2) IS:4326 C1 8.4.6 IS: 4326 C1 8.3 IS: 4326 C1 8.4.2 IS: 4326 C1 8.4.3 IS: 4326 C1 8.4.3

	• at eave level of sloping roof • at top of gable walls • at top of ridge walls				IS: 4326 C1 8.4.3 IS: 4326 C1 8.4.4
8	Vertical reinforcing bar at corners and T junction of walls at jambs of doors and window openings				IS: 4326 C1 8.4.8. IS: 4326 C1 8.4.9
9	Integration of prefab roofing/flooring elements through reinforced concrete screed.				IS:4326 C1 9.1.4
10	Horizontal bracings in pitched truss in horizontal plane at the level of ties in the slopes of pitched roofs				

Notes: (i) Information in Item 6 should be given on separate A4 sheets for all walls with large number of openings

(ii) IP indicated "Information Provided"

IP indicates "Information to be provided"

NA indicates "Not Applicable"

Tick mark one box

Part 3	**Reinforced concrete framed buildings -**		
Sl. No.	**Descri ption**	**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 C1 7.1
2	Number of basements	NIL	
3	Number of floors including ground floor	6 slabs	G+3 Upper Floors
4	Horizontal floor system • Beams and slabs • Waffles • Ribbed floor • Flat slab with drops • Flat plate without drops	RCC BEAM/SLAB	
5	Soil data • Type of soil • Recommended type of foundation -Independent footings -Raft -Piles • Recommended bearing capacity of soil	Soft disintegrated rock Isolated beam 36 t/sq.m	IS: 1498

	• Recommended type, length, diameter and load capacity of piles • Depth of water table • Chemical analysis of ground water • Chemical analysis of soil	More than 10 m Within BIS Limit	
6	Foundations Depth below ground level Type Independent Interconnected Raft Piles	Raft with raft beam	
7	System of interconnecting foundations Plinth beams Foundation beams	Strip beams	IS: 1893 C1 7.12.1
8	Grades if concrete used in different parts of building	M35 and M25	
9	Method of analysis used	Dynamic Analysis – 3D	
10	Computer software used	ETAB	
11	Torsion included	Yes	IS: 1893 C1 7.9
12	Base shear a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b	250 T 250T 0.99	IS: 1893 Cl. 7.5.3
13	Distribution of seismic height of forces along the building.	As per 3D analysis	IS:1893 Cl.7.7 (Provide sketch)
14	The Column of soft ground storey specially designed.	No soft storey (Forces with in limit)	IS: 1893 Cl.7.10
15	Clear minimum cover provided in • Footing • Column • Beams • Slabs • Walls	50 mm 40 mm 30 mm 25 mm 30 mm	IS: 456 Cl. 26.4
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 2-d 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	Fe 500 200 mm 200 – 600 mm 0.24 1.8 100 Within limit 3.0	IS: 456 Cl. 5.6 IS: 13920 Cl.6.1 IS: 13920 Cl.7.1.2 IS: 456 Cl.26.5.1(a) IS: 13920 Cl.6.2.1 IS: 456 Cl.26.5.1.1(b) IS: 13920 Cl.6.2.2 IS: 13920 Cl.6.3.5 IS: 456 Cl.26.5.3.1 IS: 13920 Cl. 7.4

	• 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.	100 8mm dia 1	
17	Does the features require clearance by SDRP Example: High rise building Prefab building Building in hazard prone areas	NA	

Foundation

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

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

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

Idealization for Earthquake analysis

i. In case of composite system of shear walls and rigid frames, give distribution of base shear in the two systems on the basis of analysis, and that used for design of each system

ii. Indicate the idealization of frames and shear walls adopted in the analysis with the help of sketches.

iii. Submit framing plans of each floor

iv. In case of basements, indicate the system used to contain earth pressures.

Part 4	**Buildings in structural steel: NOT Applicable**		
1	Adopted method of design		IS:800 Cl 3.4.4 IS:800 Cl.3.4.5 IS:800 Cl.3.5.6
2	Design based on		IS: 800 Section-9 SP;6 (6)
3	Floor construction		
4	Roof construction		
5	Horizontal force resisting system adopted		Note: Seismic force As per IS:1893 Would depend on system
6	Slenderness ratios maintained		IS 800; Cl.3.7
7	Member deflection		IS:800 Cl.3.13

	limited to		
8	Structural members		IS: 800 Section-10
9	Proposed material		IS: 2062 IS: 8500 IS: 801, 811 IS: 806
10.	Minimum metal thickness Specified for corrosion protection		IS: 800, Cl.3.8 Cl.3.8.1 to Cl.3.8.4 Cl.3.8.5
11	Structural connections		IS: 800, Section-8 IS: 1929, 2155, 1149 IS 6639, 1367 IS 3757, 4000 IS: 1363, 1367 IS: 816, 814,1395, 7280, 3613, 6419, 6560, 813, 9595
12	Minimum Fire rating proposed, with method		IS: 1641, 1642, 1643

Part-5

Any special weakness in the building making it vulnerable for stability related failure and the precaution to be taken during execution/completion and finishing to be indicated.

Part-6

Recommendations of structural engineer with respect to special requirements needed with respect to structural safety and stability to be taken note of by competent authority feature like incorporation of swimming pool, heavy load on roof, prefabricated structure or any other hazardous should be included.

S. Nagesh

S. NAGESH, B.E. (CIVIL), M.A.Sc., F.I.E.
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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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