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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**	Survey No : 285,19A(pt) 19B(pt), 19C(pt), 20A(pt), 20B(pt), 20C(pt),286 11C(pt), 287 3(pt), 4(pt), 5A(pt), 5B, 5C, 5D, 6A, 6B, 7E(pt), 7F(pt), 7F(pt), 7G(pt), 7H(pt), 7I(pt), 7J, 7K, 8, 9A(pt), 9B(pt), 9C(pt), 11(pt), 12(pt), 13A, 13B, 14, 15, 16, 288 1(pt), 3(pt), 4(pt), 5(pt), 6(pt), 7(pt), 8(pt), 9A, 9B, 9C, 9D, 9E, 10, 11A, 11B, 12A, 12B, 289, 2A,2B, 2C, 2D, 2E, 2F, 2G, 2H, 3A,3B,3C, 3D, 4, 290 15C(pt), 15D(pt), 15E(pt), 15F(pt), 15G(pt), 15H,15I AT VADANAMELI VILLAGE, THIRUVEDANTHAI REVENUE VILLAGE, THIRUPORUR TALUK, CHENGALPATTU DISTRICT.	
2	Name of Owner	Mr. K.BHARAT DOSHI, Mr. K.ARVIND KUMAR Mrs. B. ZEENATH DOSHI	
3	Name of the Power Agent	M/s GT BHARATHI URBAN DEVELOPERS PVT. LTD	
4	Name of Registered Developer along with the Registration Number	NA	
5	Name of Registered Architect/Engineer along with the Registration Number	NA	

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5	Name of Registered Structural engineer along with the Registration Number	Dr. H.G.Naikar (BCC/BL-3.6/SE-0306/2018-19)	
6	Use of the building	Residential usage	
7	Number of stories above ground level (including storeys to be added later, if any) 1. Podium Villa Block 1	Stilt+ 2 floor	
	2. Apartment Block 2	Ground+ 4 floors	
	3. Block 3, Block 4, & Block 5, Independent Villa	Ground+1 floor	
8	Number of basements below ground level **1. Podium Villa Block 1**	Nil	
	2. Apartment Block 2	Nil	
	3. **Block 3, Block 4, & Block 5, Independent Villa**	Nil	
9	Type of structure Load bearingwalls R.C.C. frame R.C.C. frame and Shear Walls Steel frame	R.C.C. frame	
10	Soil data Type of soil Design safe bearing capacity	Inorganic Soil, Non-Plastic silty sand 180KN/m2	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	16KN/m2 10KN/m2 22KN/m2 24KN/m2 25KN/m2 20KN/m2 18KN/m2	IS: 875 Part 1
12	Imposed (live) loads Floor loads Roof loads	2KN/m2 to 3KN/m2	IS: 875 Part 2
13	Cyclone/Wind • Speed • Design pressure intensity	50m/s	IS: 875 Part 3

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14	Seismic zone	III	IS: 1893
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	3.0	IS:1893 Table 7
18	Fundamental natural period – approx.		IS:1893 C1.7.6
19	Design horizontal acceleration spectrum value (A_h)		IS: 1893 C1.6.4.2
20	♠Expansion/Separation Joints		
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 toscale

Part 2	**Load bearing masonry buildings**		
Sl.No.	**Description**	**Information**	**Notes**
1	Building category	NA	IS: 4326 C1.7 Read with IS:1893 Zone / Bldg. | II III IV V Ordinary | B C D E Important | C D E E
2	Basement Provided	NA	
3	Number of floors including Ground Floor (all floors including stepped floors in hill slopes)	NA	
4	Type of wall masonry	NA	
5	Type and mix of Mortar	NA	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 thickness4 Ratio of wall length between cross wall to thickness	NA	IS: 4326 Table 4, Fig.7

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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 walls	NA	(see note No.2) IS:4326 C1 8.4.6 IS: 4326 C1 8.3 IS: 4326 C1 8.4.2 IS: 4326 C18.4.3 IS: 4326 C18.4.3 IS: 4326 C18.4.4
8	Vertical reinforcing bar at corners and T junction of walls at jambs of doors and window openings	NA	IS: 4326 C1 8.4.8. IS: 4326 C1 8.4.9
9	Integration of prefab roofing/flooring elements through reinforced concrete Screed.	NA	IS:4326 C1 9.1.4
10	Horizontal bracings in pitched truss in a horizontal plane at the level of ties in the slopes of pitched roofs	NA	

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

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Part 3	**Reinforced concrete framed buildings**		
Sl. 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 C1 7.1
2	Number of basements **1. Podium Villa - Block 1**	Nil	
	2. Apartment - Block 2	Nil	
	3. **Block 3, Block 4, & Block 5, Independent Villa**	Nil	
3	Number of floors including the ground floor **1. Podium Villa - Block 1**	Stilt+ 2 floor	
	2. Apartment - Block 2	Ground+ 4 floors	
	3. **Block 3, Block 4, & Block 5 - Independent Villa**	Ground+1 floor	
4	Horizontal floor system • Beams and slabs • Waffles • Ribbed floor • Flat slab with drops • Flat plate without drops	Beams and slabs	

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5	Soil data • Type of soil • Recommended type of foundation -Independent footings -Raft -Piles • Recommended bearing capacity of soil • Recommended type, length, diameter and load capacity of piles • Depth of water table • Chemical analysis of groundwater • Chemical analysis of soil	Inorganic Soil, Non-Plastic silty sand Isolated & combined Footings 180KN/m2 5.0m To be furnished by geotechnical consultant To be furnished by geotechnical consultant	IS: 1498
6	Foundations Depth below ground level Type Independent Interconnected Raft Piles	3m below NGL for blocks without Basement & 2m below Stilt for Blocks with Parking Isolated & combined footing	
7	System of interconnecting foundations Plinth beams Foundation beams	Plinth beams	IS: 1893 C1 7.12.1
8	Grades if concrete used in different parts of Building	Column – M30 Beam – M30 Slab – M30	
9	Method of analysis used	Frame analysis	

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10	Computer software used	ETABS	
11	Torsion included		IS: 1893 C1 7.9
12	Base shear a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio ofa/b	Based on approximate fundamental period	IS: 1893 Cl. 7.5.3
13	Distribution of seismic forces along the height of the building.		IS:1893 Cl.7.7 (Provide sketch)
14	The Column of soft ground storey specially designed.		IS: 1893 Cl.7.10
15	Clear minimum cover provided in • Footing • Column • Beams • Slabs • Walls	 50mm 40mm 30mm 25mm 40mm	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 • 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.	 Fe500 200 200 0.04bD 6% 8mm to 10mm 100mm	 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
17	Does the features require clearance by SDRP Example: High rise building Prefab building Building in hazard prone areas	NA	
Part	**Buildings in structural steel**		

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4			
1	Adopted method of design	NA	IS:800 Cl3.4.4 IS:800 Cl.3.4.5 IS:800Cl.3.5.6
2	Design based on	NA	IS: 800 Section-9 SP;6 (6)
3	Floor construction	NA	
4	Roof construction	NA	
5	Horizontal force resisting system Adopted	NA	Note: Seismic force As per IS:1893 Would depend on system
6	Slenderness ratios Maintained	NA	IS 800; Cl.3.7
7	Member deflection limited to	NA	IS:800 Cl.3.13
8	Structural members	NA	IS: 800 Section-10
9	Proposed material	NA	IS: 2062 IS: 8500 IS: 801, 811 IS: 806
10.	Minimum metal thickness Specified for corrosion protection	NA	IS: 800, Cl.3.8 Cl.3.8.1 to Cl.3.8.4 Cl.3.8.5
11	Structural connections	NA	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 with proposed, method	NA	1641, 1642,

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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-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 features should be included.

Remarks

The **Structural Soundness and Safe** of the Building has been Verified by me and declare that the building **structurally sound and safe** to be used as residential building.

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Home Vastu Shastra, Plot Vastu Shastra, Property Management

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