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DESIGN BASIS REPORT

OF STRUCTURAL DESIGN FOR GROUP DEVELOPMENT OF THE REVISED AND PROPOSED CONSTRUCTION OF HIGH RISE (AFFORDABLE RESIDENTIAL HOUSES) GROUP DEVELOPMENT CONSISTS OF COMBINED EXTENDED BASEMENT FLOORS WITH BLOCK-01(TOWER A & B) 630 DWELLING UNITS (STILT TO 35TH FLOOR) AND BLOCK-02 (CLUB HOUSE): GROUND FLOOR + FIRST FLOOR WITH SWIMMING POOL @ GROUND LEVEL COMPRISED IN S. NO's. 585/1A2A1, 586/1A, 586/2A, 586/2B, 586/2C, 587, 595/1B1A, 596/1A, 598/1 OF PADUR VILLAGE, THIRUPORUR TALUK, CHENGALPATTU DISTRICT, CHENNAI.

13-03-2026	R0	ISSUED FOR APPROVAL	SS	SK	RM
DATE	**REV.N0**	**DESCRIPTION**	**PREPARED**	**CHECKED**	**APPROVED**

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1. Introduction

This report provides the brief summary of approach adopted for analysis and design of **Group development of the revised and proposed construction of high rise (affordable residential houses), group development consists of combined extended basement floors with block-01 (Tower A & B) 630 dwelling units (stilt to 35th floor) and block-02 (club house) ground floor + first floor with swimming pool @ ground level comprised in S. NO'S. 585/1A2A1, 586/1A, 586/2A, 586/2B, 586/2C, 587, 595/1B1A, 596/1A, 598/1 of padur village, thiruporur taluk, chengalpattu district.** It is situated in Chennai. The structure consists of 2 Basement Parking + STILT + 35 Floors + Terrace. The foundation system proposed for this structure is Raft Foundation. The ductile shear wall system is proposed as lateral load resisting system.

2. Building Details and Modeling

Basic Dimensions of the building:

- Total Height of Tower A and B : 114.30m
- Number of Suspended Slabs :38
- Stilt Floor Height : 3.65
- Typical Floor Height : 3.15m
- First Basement Height : 4.50m
- Second Basement Height : 3.40m

For the analysis of the tower to get an accurate behavior, structure is simulated in ETABS software, with accurate geometric dimensions, relevant modeling parameters and loading which are mentioned in subsequent sections.

Structural System:

Ductile Shear Wall system is adopted for providing stability against the gravity and lateral loads. Shear walls will be main lateral stability providing elements in the system. Column/wall sizes are decided based on the stresses developed in the members considering the architectural design intent. Floor system to be beam slab system, unless necessary for lateral stability. Foundation system is designed based on soil investigation report.

Structural Modeling and Analysis:

The structural analysis is carried out using ETABS software. A 3D ANALYSIS model is developed to study the acceptable serviceability criteria and to obtain the design forces of various members. Frames in both directions are modeled as *ductile shear wall* with beam-slab element in ETABS. Beam and slabs are modeled as line and membrane respectively. The frames/shear walls in either direction are designed considering various listed combinations of Dead load, Live load and Earthquake/Wind loads. Dead loads, live loads and unit weights used for analysis are listed in Design parameters.

While analyzing and designing appropriate live load reduction as per *clause 3.2 of IS: 875 (PART-2)* is considered.

Stiffness modifiers for structural members

1. For factored load combination/design modifiers:
   a. Columns - 0.7
   b. Shear walls - 0.7
   c. Beams - 0.35
   d. Slabs - 0.25
2. For unfactored load combination/serviceability/deflection check:
   a. Columns - 0.9
   b. Shear walls - 0.9
   c. Beams - 0.7
   d. Slabs - 0.35

Serviceability checks:

1. Vertical deflection limit –
   a. The final deflection due to all loads including the effects of temperature, creep and shrinkage and measured from the as-cast level of the support of floors, roofs and all other horizontal members, should not exceed span/250.
   b. The deflection including the effects of temperature, creep and shrinkage occurring after erection of partitions and the application of finishes should not normally exceed span/350 or 20mm whichever is less.
2. Horizontal deflection limit –
   a. The horizontal deflection due to lateral wind loads should not exceed H/500, where "H" is overall height of building.
   b. The horizontal deflection due to lateral earthquake loads should not exceed H/250, where "H" is overall height of building.
3. Inter-story drift limit –
   When design lateral forces are applied on the building, the maximum inter-storey elastic lateral drift ratio (Δ_{max}/h_i) under serviceability loads (wind load with return period of 20 years), shall be limited to H/500. For a single story the drift limit shall be relaxed to $h_i/400$. For earthquake load (factored) combinations the drift shall be limited to $h_i/250$.
4. Crack width control limit –
   The surface width of the cracks should not, in general, exceed 0.3mm except in members where cracking in the tensile zone is harmful either because they are exposed to the effects of the weather or continuously exposed to moisture or in contact soil or ground water, an upper limit of 0.2mm is considered.

P-Delta effect and load combinations:

The P-Δ load combination for the initial analysis taken as 1.2 Dead Load + 0.5 Imposed Load.

3. List of referred IS codes.

1. IS 456:2000 – Code of Practice for Plain & Reinforced Concrete.
2. IS 875 (Part-1): 1987 - Code of Practice for Design loads – Unit weights.
3. IS 875 (Part-2): 1987 - Code of Practice for Design loads – Imposed loads.
4. IS 875 (Part-3): 2015- Code of Practice for Design loads – Wind loads.
5. IS 1893 (Part-1): 2016 - Criteria for Earthquake resistant design structures (General provisions and Buildings).
6. IS 13920:2016 Ductile design and detailing of reinforced concrete structures subjected to seismic forces.
7. IS 3370: 2009 - Code of Practice for Concrete Structures for the Storage of Liquids.
8. IS 800: 2007 Code of Practice for General Construction in Steel.
9. IS 16700:2017 Criteria for Structural Safety of Tall Buildings.

4. Design Parameters.

A. Dead Loads: The Unit Weight of various material used is considered as per IS 875 (Part 1) as below:

Table: 1: Dead Load

Sr. No.	Structural Units	Unit weight (kN/m^3)
1	R.C.C	25
2	Floor Finish/Plain concrete	24
3	AAC Block	07
4	Mortar	20.4
5	Soil	18
6	Brick Bat Coba	19.5

B. Seismic Forces:

IS 1893 (Part 1) -2016 provides the provision for estimating seismic forces on a structure. Depending on the location, importance of structure, and type of lateral force resisting elements, seismic forces are calculated. Main factors used in this project are as follows:

- Location of Structure : Chennai, India.
- Seismic Zone : Zone III
- Z = Seismic zone factor : 0.16
- I = Importance factor : 1.2
- R = Response reduction factor : 4

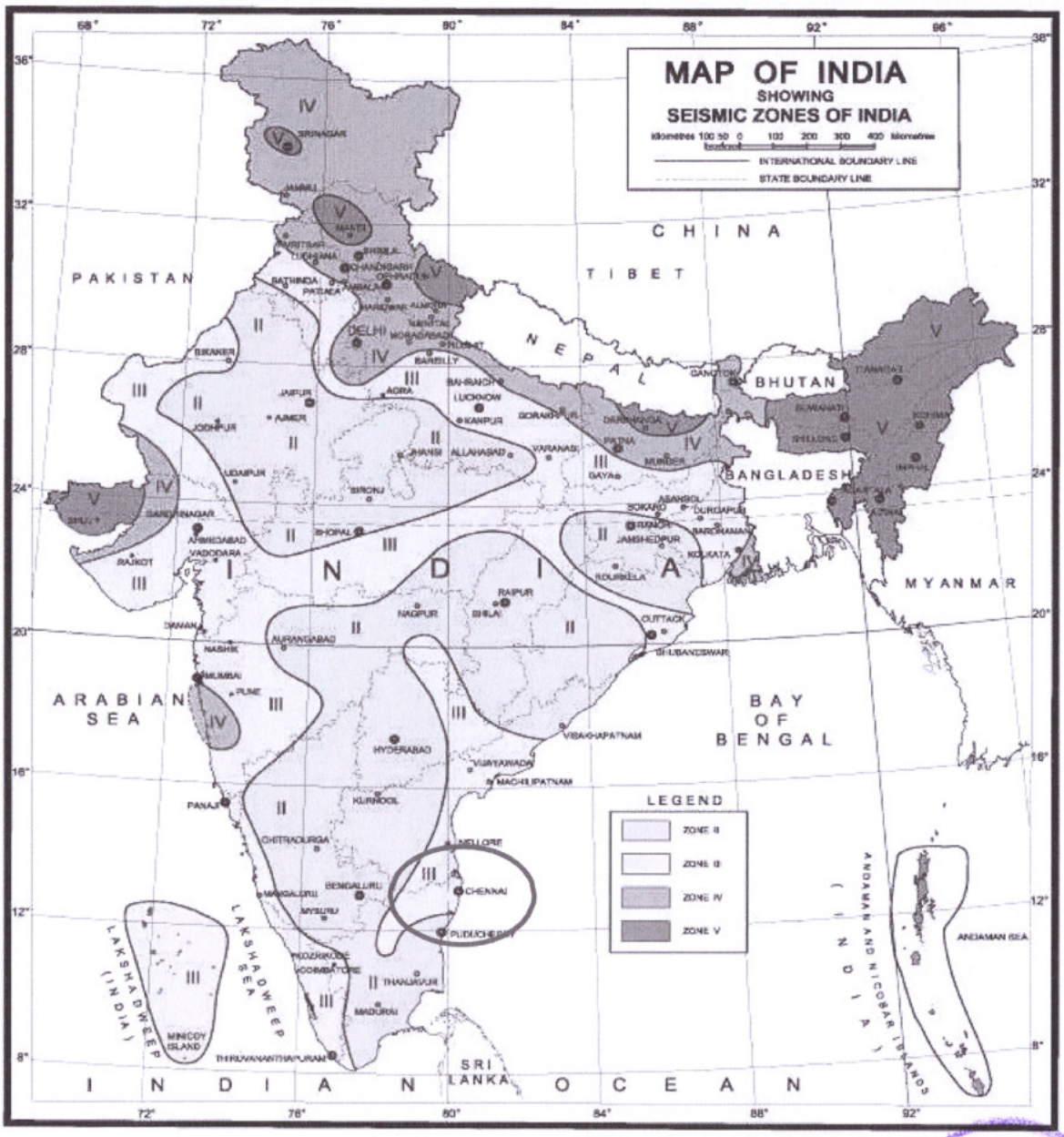


Figure 1 Seismic zones of INDIA

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Time Period

a. $T=0.075 \times h^{0.75}$

b. $T=\frac{0.075h^{0.75}}{Aw^{0.5}} \geq \frac{0.09h}{d^{0.5}}$

$$Aw=\sum_{i=1}^{Nw}[Awi\{0.2+(\frac{Lwi}{h})^2\}]$$

Where,

h= height of building

A_{wi} = effective cross-sectional area of wall *i* in first story, in m^2

L_{wi} = length of structural wall *i* in first story in the considered direction of lateral force, in m.

d= base dimension of the building at the plinth level along the considered direction of earthquake shaking, in m

N_w = number of walls in the considered direction of earthquake shaking.

L_{wi}/h shall not exceed 0.9.

c. $T=\frac{0.09h}{d^{0.5}}$

Design Base Shear

$V_B= A_hW$

Where,

A_h= design horizontal acceleration coefficient value

W= seismic weight of the building

$A_h=(\frac{Z}{2})(\frac{Sa}{g})/(\frac{R}{I})$

Where,

Z=seismic zone factor

I=importance factor

R=response reduction factor

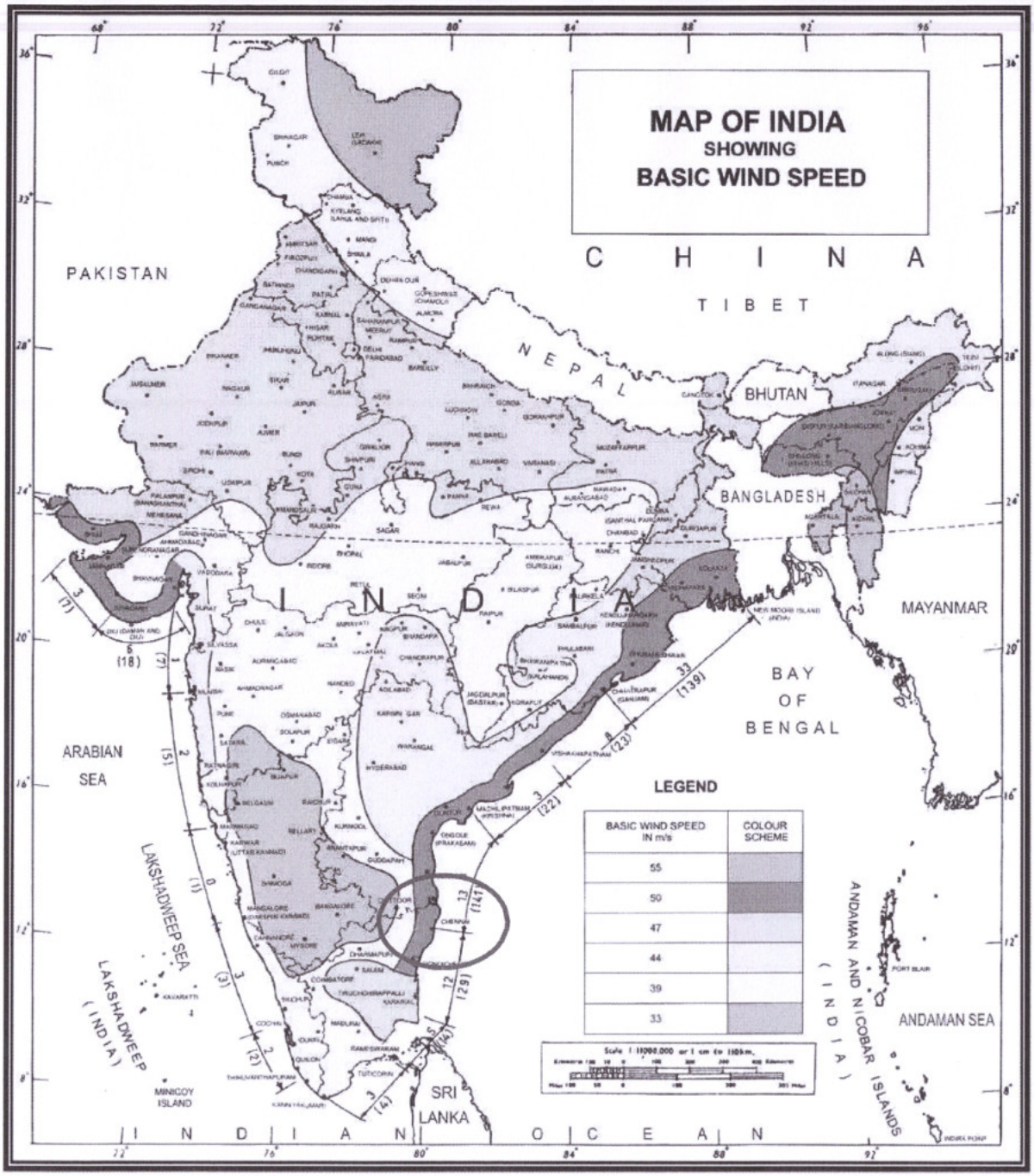
$(\frac{Sa}{g})_g$=design acceleration coefficient, corresponding to natural time period of building.

C. Wind Forces

As per the IS 875 (Part-3): 2015 wind forces are estimated using the following factors. Gust factor method is considered in calculating wind loads.

- Basic Wind Speed in Chennai: V_b = 50 m/s
- k_1 = Probability factor- risk coeff. = 1.0
- k_2 = Category – 3
- k_3 = Topography Factor = 1.0
- k_4 = Importance Factor = 1.0
- Design Wind Speed, $Vz = k_1 * k_2 * k_3 * k_4 * V_b$
- Wind Pressure at height Z, $Pz = 0.6 (V_z)^2$
- Design Wind Pressure , $P_d = k_d * k_a * k_c * P_z$
- k_d - Wind directionality factor = 0.9
- k_a - Area averaging factor = 0.9
- k_c - Combination Factor = 1

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Based upon Survey of India Outline Map printed in 1993.

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The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.
The boundary of Meghalaya shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.
Responsibility for correctness of internal details shown on the map rests with the publisher.
The state boundaries between Uttaranchal & Uttar Pradesh, Bihar & Jharkhand and Chhatisgarh & Madhya Pradesh have not been verified by Governments concerned.

Figure 2 Basic Wind Speed in m/s (Based on 50 Years Return Period)

5. Loading Data.

Table: 3: Loading Data on Slab

Loading Data				
Basement / Parking				
Sl.No	**Parameter**	**Thk (mm)**	**Density (kN/m³)**	**Weight (kN/m²)**
1	Self-Weight	As per Design		
2	Floor Finishes	75	24	1.80
3	Ceiling Services			0.3
4	LL			3.00
	Total			**5.10**
Typical Floor				
Sl.No	**Parameter**	**Thk (mm)**	**Density (kN/m³)**	**Weight (kN/m²)**
1	Self-Weight	As per Design		
2	Floor Finishes	50	24	1.20
3	Ceiling Services			0.30
4	LL			2.00
	Total			**3.50**
Toilet Slab				
Sl.No	**Parameter**	**Thk (mm)**	**Density (kN/m³)**	**Weight (kN/m²)**
1	Self-Weight	As per Design		
2	Floor Finishes	50	24	1.20
3	100mm Sunk	90 thk screed	19.5	1.755
4	Ceiling Services			0.30
5	LL			2.00
	Total			**5.30**
Balcony Slab				
Sl.No	**Parameter**	**Thk (mm)**	**Density (kN/m³)**	**Weight (kN/m²)**
1	Self-Weight	As per Design		
2	Floor Finishes	50	24	1.20
3	150mm Sunk	140thk screed	19.5	2.75
4	Ceiling Services			0.30
5	LL			3.00
	Total			**7.25**

Terrace Slab				
Sl.No	**Parameter**	**Thk (mm)**	**Density (kN/m^3)**	**Weight (kN/m^2)**
1	Self-Weight	As per Design		
2	Coba	150	20	3.00
5	LL			2.00
4	Ceiling Services			0.30
	Total			**5.30**

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6. Primary Loads & Load Combinations.

Table: 4: Basic Load combination

Primary Load cases	
1	DL: Dead Load
2	SIDL: Super Imposed Dead Load
3	LL: Live Load
4	WL: Wind Load
5	EQ: Earthquake Load
6	SPEC: Response Spectrum Method
7	WG: Wind Gust Factor Method
8	TL: Temperature Load

Table: 5: Load Combinations

Factored Load Combinations		
Gravity	EQ. Load Combinations	Wind Load Combinations
1.5(DL+SIDL+LL)	1.5 (DL+SIDL+ EQX)	1.5 (DL+SIDL+WX)
	1.5 (DL +SIDL-EQX)	1.5 (DL+SIDL-WX)
1.5(DL+SIDL+LL+TL)	1.5 (DL +SIDL+ EQY)	1.5 (DL+SIDL+WY)
	1.5 (DL +SIDL- EQY)	1.5 (DL+SIDL-WY)
	1.5 (DL+SIDL+SPECX)	1.5 (DL+SIDL+WGX)
	1.5 (DL+SIDL-SPECX)	1.5 (DL+SIDL-WGX)
	1.5 (DL+SIDL+SPECY)	1.5 (DL+SIDL+WGY)
	1.5 (DL+SIDL-SPECY)	1.5 (DL+SIDL-WGY)
	1.2 (DL+SIDL+LL+EQX)	1.2 (DL+SIDL+LL+WX)
	1.2 (DL+SIDL+LL-EQX)	1.2 (DL+SIDL+LL-WX)
	1.2 (DL+SIDL+LL+EQY)	1.2 (DL+SIDL+LL+WY)
	1.2 (DL+SIDL+LL-EQY)	1.2 (DL+SIDL+LL-WY)
	1.2 (DL+SIDL+LL+SPECX)	1.2 (DL+SIDL+LL+WGX)
	1.2 (DL+SIDL+LL-SPECX)	1.2 (DL+SIDL+LL-WGX)
	1.2 (DL+SIDL+LL+SPECY)	1.2 (DL+SIDL+LL+WGY)
	1.2 (DL+SIDL+LL-SPECY)	1.2 (DL+SIDL+LL-WGY)
	0.9*(DL+SIDL)+1.5SPECX	0.9*(DL+SIDL)+1.5WX/WGX
	0.9*(DL+SIDL)-1.5SPECX	0.9*(DL+SIDL)-1.5WX/WGX
	0.9*(DL+SIDL)+1.5SPECY	0.9*(DL+SIDL)+1.5WY/WGY
	0.9*(DL+SIDL)-1.5SPECY	0.9*(DL+SIDL)-1.5WY/WGY
	* This value is to be considered when stability against overturning or stress reversal is critical.	

Serviceability Load Combinations		
Gravity	EQ. Load Combinations	Wind Load Combinations
1.0 (DL+SIDL+LL)	1.0 (DL+SIDL+EQX) 1.0 (DL+SIDL-EQX) 1.0 (DL+SIDL+EQY) 1.0 (DL+SIDL-EQY) 1.0 (DL+SIDL+SPECX) 1.0 (DL+SIDL-SPECX) 1.0 (DL+SIDL+SPECY) 1.0 (DL+SIDL-SPECY) 1.0 (DL+SIDL)+0.8 (LL+EQX) 1.0 (DL+SIDL)+0.8 (LL-EQX) 1.0 (DL+SIDL)+ 0.8 (LL+EQY) 1.0 (DL+SIDL)+ 0.8 (LL-EQY) 1.0 (DL+SIDL)+0.8 (LL+SPECX) 1.0 (DL+SIDL)+ 0.8 (LL-SPECX) 1.0 (DL+SIDL)+ 0.8 (LL+SPECY) 1.0 (DL+SIDL)+0.8 (LL-SPECY)	1.0 (DL+SIDL+WX) 1.0 (DL+SIDL-WX) 1.0 (DL+SIDL+WY) 1.0 (DL+SIDL-WY) 1.0 (DL+SIDL+WGX) 1.0 (DL+SIDL-WGX) 1.0 (DL+SIDL+WGY) 1.0 (DL+SIDL-WGY) 1.0 (DL+SIDL)+0.8 (LL+WX) 1.0 (DL+SIDL)+ 0.8 (LL-WX) 1.0 (DL+SIDL)+ 0.8 (LL+WY) 1.0 (DL+SIDL)+ 0.8 (LL-WY) 1.0 (DL+SIDL)+ 0.8 (LL+WGX) 1.0 (DL+SIDL)+ 0.8 (LL-WGX) 1.0 (DL+SIDL)+ 0.8 (LL+WGY) 1.0 (DL+SIDL)+ 0.8 (LL-WGY)

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7. Construction Material for Structural Elements:

Minimum grade of concrete proposed is M30. Based on analysis and design the concrete is increased at lower floors. This shall result in required strength and durability. TMT bars conforming to IS: 1786 with minimum yield stress of 500MPa are proposed.

8. Foundation and substructure

Based on the Geotechnical recommendations Raft Foundation is proposed with the SBC of 70T/Sq.m.

9. Exposure condition

Following environmental exposure conditions are assumed,For Superstructure - Mild
For substructure – Moderate

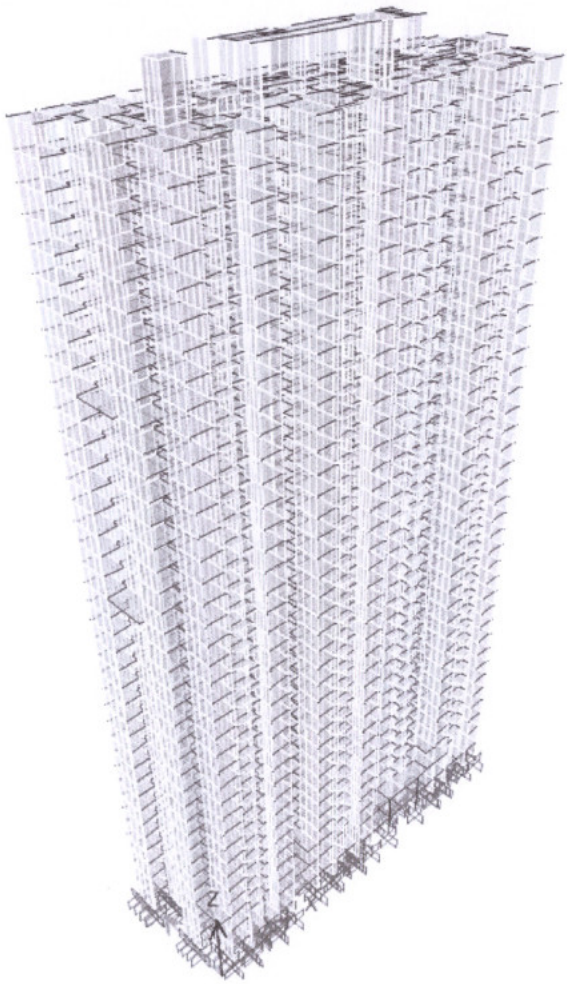
Fire Rating –
Shear wall/Column - 120
MinuteFloor System - 90
Minute

Following nominal clear cover to the reinforcement are considered,

Foundations and foundation beams (side/top/bottom)	- 50MM
Columns	- 40MM
Floor slabs (100mm Thk – 15MM)	- 20MM
Floor beams bottom	- 40MM
Floor beams top/side/lintels	- 30MM
Retaining wall for soil face	- 40MM
Retaining wall for inner/dry face	- 30MM
Shear wall	- 40MM
UGWT wall for soil face	- 40MM
UGWT wall for water face	- 40MM
STP wall for STP fluid face	- 45MM
Staircase flight	- 25MM
OHWT wall for internal and external face	- 30MM

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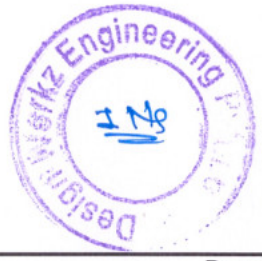


User Report
A and B Building

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1 Structure Data

This chapter provides model geometry information, including items such as story levels, point coordinates, and element connectivity.

1.1 Story Data

Table 1.1 - Story Definitions

Tower	Name	Height m	Master Story	Similar To	Splice Story	Color
T1	OHT Top	4.2	No	None	No	Yellow
T1	OHT Bottom	1.5	No	None	No	Blue
T1	T	3.15	No	1	No	Cyan
T1	35	3.15	No	1	No	Magenta
T1	34	3.15	No	1	No	Gray8Dark
T1	33	3.15	No	1	No	Green
T1	32	3.15	No	1	No	Red
T1	31	3.15	No	1	No	Yellow
T1	30	3.15	No	1	No	Blue
T1	29	3.15	No	1	No	Cyan
T1	28	3.15	No	1	No	Magenta
T1	27R	3.15	No	18R	No	Gray8Dark
T1	26	3.15	No	1	No	Green
T1	25	3.15	No	1	No	Red
T1	24	3.15	No	1	No	Yellow
T1	23	3.15	No	1	No	Blue
T1	22	3.15	No	1	No	Cyan
T1	21	3.15	No	1	No	Magenta
T1	20	3.15	No	1	No	Gray8Dark
T1	19	3.15	No	1	No	Green
T1	18R	3.15	Yes	None	No	Red
T1	17	3.15	No	1	No	Yellow
T1	16	3.15	No	1	No	Blue
T1	15	3.15	No	1	No	Cyan
T1	14	3.15	No	1	No	Magenta
T1	13	3.15	No	1	No	Gray8Dark
T1	12	3.15	No	1	No	Green
T1	11	3.15	No	1	No	Red
T1	10	3.15	No	1	No	Yellow
T1	9	3.15	No	1	No	Blue
T1	8	3.15	No	1	No	Cyan
T1	7	3.15	No	1	No	Magenta
T1	6	3.15	No	1	No	Gray8Dark
T1	5	3.15	No	1	No	Green
T1	4	3.15	No	1	No	Red
T1	3	3.15	No	1	No	Yellow
T1	2	3.15	No	1	No	Blue
T1	1	3.65	Yes	None	No	Cyan
T1	S	4.5	No	B1	No	Magenta
T1	B1	3.4	Yes	None	No	Gray8Dark



2 Properties

This chapter provides property information for materials, frame sections, shell sections, and links.

2.1 Materials

Table 2.1 - Material Properties - General

Material	Type	SymType	Grade	Color	Notes
A416Gr270	Tendon	Uniaxial	Grade 270	Green	
FE415	Rebar	Uniaxial	HYSD Grade 415	Gray8Dark	
FE500	Rebar	Uniaxial	HYSD Grade 500	Magenta	
FE550	Rebar	Uniaxial	HYSD Grade 550	Blue	
M30	Concrete	Isotropic	M30	Green	
M35	Concrete	Isotropic	M35	Cyan	
M40	Concrete	Isotropic	M40	Red	
M45	Concrete	Isotropic	M45	Yellow	
M50	Concrete	Isotropic	M50	Blue	
M55	Concrete	Isotropic	M55	Red	
M60	Concrete	Isotropic	M60	Yellow	



3 Loads

This chapter provides loading information as applied to the model.

3.1 Load Patterns

Table 3.1 - Load Pattern Definitions

Name	Is Auto Load	Type	Self Weight Multiplier	Auto Load
~LLRF	Yes	Other	0	
~SPECXECC	Yes	Other	0	
~SPECYECC	Yes	Other	0	
DEAD	No	Dead	1	
EQX	No	Seismic	0	IS 1893:2016
EQX(1/3)	Yes	Seismic	0	IS 1893:2016
EQX(2/3)	Yes	Seismic	0	IS 1893:2016
EQX(3/3)	Yes	Seismic	0	IS 1893:2016
EQY	No	Seismic	0	IS 1893:2016
EQY(1/3)	Yes	Seismic	0	IS 1893:2016
EQY(2/3)	Yes	Seismic	0	IS 1893:2016
EQY(3/3)	Yes	Seismic	0	IS 1893:2016
GWX	No	Wind	0	User Loads
GWY	No	Wind	0	User Loads
LIVE	No	Reducible Live	0	
LIVE1	No	Reducible Live	0	
LIVE2	No	Roof Live	0	
SIDL	No	Super Dead	0	
TLC	No	Temperature	0	
TLE	No	Temperature	0	
WINDX	No	Wind	0	Indian IS 875:2015
WINDY	No	Wind	0	Indian IS 875:2015

3.2 Auto Wind Loading

Table 3.2 - Load Pattern Definitions - Auto Wind - Indian IS 875 2015 (Part 1 of 3)

Name	Exposure Set	Is Auto Load	Exposure Source	Top Story	Bottom Story	Include Parapet	Parapet Height m	Cp Windward	Cp Leeward	Wind Speed meter/sec
WINDX	1	No	Diaphragms	T	S	Yes	1.5	0.8	0.5	50
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
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WINDX	1	No								
WINDX	1	No								
WINDX	1	No								

Name	Exposure Set	Is Auto Load	Exposure Source	Top Story	Bottom Story	Include Parapet	Parapet Height m	Cp Windward	Cp Leeward	Wind Speed meter/sec
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDX	1	No								
WINDY	1	No	Diaphragms	T	S	Yes	1.5	0.8	0.5	50
WINDY	1	No								
WINDY	1	No								
WINDY	1	No							

Name	Exposure Set	Terrain Category	Importance Factor	Risk Coefficient	Topography	Width Type	Direction Angle deg	Story	Diaphragm
WINDX	1	3	1.00	1	1	Auto	0	T	D1
WINDX	1							35	D1
WINDX	1							34	D1
WINDX	1							33	D1
WINDX	1							32	D1
WINDX	1							31	D1
WINDX	1							30	D1
WINDX	1							29	D1
WINDX	1							28	D1
WINDX	1							27R	D1
WINDX	1							26	D1
WINDX	1							25	D1
WINDX	1							24	D1
WINDX	1							23	D1
WINDX	1							22	D1
WINDX	1							21	D1
WINDX	1							20	D1
WINDX	1							19	D1
WINDX	1							18R	D1
WINDX	1							17	D1
WINDX	1							16	D1
WINDX	1							15	D1
WINDX	1							14	D1
WINDX	1							13	D1
WINDX	1							12	D1
WINDX	1							11	D1
WINDX	1							10	D1
WINDX	1							9	D1
WINDX	1							8	D1
WINDX	1							7	D1
WINDX	1							6	D1
WINDX	1							5	D1
WINDX	1							4	D1
WINDX	1							3	D1
WINDX	1							2	D1
WINDX	1							1	D1
WINDX	1							S	D1
WINDX	1							B1	D1
WINDY	1	3	1.00	1	1	Auto	90	T	D1
WINDY	1							35	D1
WINDY	1							34	D1
WINDY	1							33	D1
WINDY	1							32	D1
WINDY	1							31	D1
WINDY	1							30	D1
WINDY	1							29	D1
WINDY	1							28	D1
WINDY	1							27R	D1
WINDY	1							26	D1
WINDY	1							25	D1
WINDY	1							24	D1
WINDY	1							23	D1
WINDY	1							22	D1
WINDY	1							21	D1
WINDY	1							20	D1
WINDY	1							19	D1
WINDY	1							18R	D1
WINDY	1							17	D1
WINDY	1							16	D1

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Name	Exposure Set	Terrain Category	Importance Factor	Risk Coefficient	Topography	Width Type	Direction Angle deg	Story	Diaphragm
WINDY	1							15	D1
WINDY	1							14	D1
WINDY	1							13	D1
WINDY	1							12	D1
WINDY	1							11	D1
WINDY	1							10	D1
WINDY	1							9	D1
WINDY	1							8	D1
WINDY	1							7	D1
WINDY	1							6	D1
WINDY	1							5	D1
WINDY	1							4	D1
WINDY	1							3	D1
WINDY	1							2	D1
WINDY	1							1	D1
WINDY	1							S	D1
WINDY	1							B1	D1

Table 3.2 - Load Pattern Definitions - Auto Wind - Indian IS 875 2015 (Part 3 of 3)

Name	Exposure Set	Width m	Depth m	X m	Y m
WINDX	1	20.96	64.635	32.2175	10.64

Name	Exposure Set	Width m	Depth m	X m	Y m
WINDX	1	20.96	64.635	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64
WINDY	1	64.635	20.96	32.2175	10.64

Table 3.3 - Load Pattern Definitions - Auto Wind - User Loads

Name	Number Load Sets	Reversible?	Load Set Number	Story	Diaphragm	Fx kN	Fy kN	Mz kN-m	X m	Y m
GWX	1	Yes	1	T	D1	231.45	150.95	0	32.2175	10.64
GWX			1	35	D1	259.31	165.74	0	32.2175	10.64
GWX			1	34	D1	255.81	161.31	0	32.2175	10.64
GWX			1	33	D1	252.25	156.89	0	32.2175	10.64
GWX			1	32	D1	248.62	152.46	0	32.2175	10.64
GWX			1	31	D1	244.92	148.04	0	32.2175	10.64
GWX			1	30	D1	241.16	143.61	0	32.2175	10.64
GWX			1	29	D1	237.34	139.19	0	32.2175	10.64
GWX			1	28	D1	233.47	134.76	0	32.2175	10.64
GWX			1	27R	D1	229.55	130.34	0	32.2175	10.64
GWX			1	26	D1	225.58	125.91	0	32.2175	10.64
GWX			1	25	D1	221.56	121.49	0	32.2175	10.64
GWX			1	24	D1	217.48	117.06	0	32.2175	10.64
GWX			1	23	D1	213.34	112.63	0	32.2175	10.64
GWX			1	22	D1	209.14	108.21	0	32.2175	10.64

Name	Number Load Sets	Reversible?	Load Set Number	Story	Diaphragm	Fx kN	Fy kN	Mz kN-m	X m	Y m
GWX			1	21	D1	204.87	103.78	0	32.2175	10.64
GWX			1	20	D1	200.52	99.36	0	32.2175	10.64
GWX			1	19	D1	196.08	94.93	0	32.2175	10.64
GWX			1	18R	D1	191.54	90.51	0	32.2175	10.64
GWX			1	17	D1	186.9	86.08	0	32.2175	10.64
GWX			1	16	D1	182.12	81.66	0	32.2175	10.64
GWX			1	15	D1	177.2	77.23	0	32.2175	10.64
GWX			1	14	D1	172.1	72.81	0	32.2175	10.64
GWX			1	13	D1	166.81	68.38	0	32.2175	10.64
GWX			1	12	D1	161.29	63.95	0	32.2175	10.64
GWX			1	11	D1	155.49	59.53	0	32.2175	10.64
GWX			1	10	D1	149.36	55.1	0	32.2175	10.64
GWX			1	9	D1	142.84	50.68	0	32.2175	10.64
GWX			1	8	D1	135.83	46.25	0	32.2175	10.64
GWX			1	7	D1	128.22	41.83	0	32.2175	10.64
GWX			1	6	D1	119.84	37.4	0	32.2175	10.64
GWX			1	5	D1	110.43	32.98	0	32.2175	10.64
GWX			1	4	D1	99.62	28.55	0	32.2175	10.64
GWX			1	3	D1	86.74	24.13	0	32.2175	10.64
GWX			1	2	D1	70.5	19.7	0	32.2175	10.64
GWX			1	1	D1	51.4	15.27	0	32.2175	10.64
GWY	1	Yes	1	T	D1	132.03	581.68	0	32.2175	10.64
GWY			1	35	D1	144.96	652.68	0	32.2175	10.64
GWY			1	34	D1	141.09	644.96	0	32.2175	10.64
GWY			1	33	D1	137.22	637.11	0	32.2175	10.64
GWY			1	32	D1	133.35	629.14	0	32.2175	10.64
GWY			1	31	D1	129.48	621.03	0	32.2175	10.64
GWY			1	30	D1	125.61	612.78	0	32.2175	10.64
GWY			1	29	D1	121.74	604.38	0	32.2175	10.64
GWY			1	28	D1	117.87	595.83	0	32.2175	10.64
GWY			1	27R	D1	114	587.1	0	32.2175	10.64
GWY			1	26	D1	110.13	578.2	0	32.2175	10.64
GWY			1	25	D1	106.26	569.11	0	32.2175	10.64
GWY			1	24	D1	102.39	559.82	0	32.2175	10.64
GWY			1	23	D1	98.52	550.31	0	32.2175	10.64
GWY			1	22	D1	94.64	540.57	0	32.2175	10.64
GWY			1	21	D1	90.77	530.58	0	32.2175	10.64
GWY			1	20	D1	86.9	520.31	0	32.2175	10.64
GWY			1	19	D1	83.03	509.74	0	32.2175	10.64
GWY			1	18R	D1	79.16	498.84	0	32.2175	10.64
GWY			1	17	D1	75.29	487.57	0	32.2175	10.64
GWY			1	16	D1	71.42	475.89	0	32.2175	10.64
GWY			1	15	D1	67.55	463.74	0	32.2175	10.64
GWY			1	14	D1	63.68	451.08	0	32.2175	10.64
GWY			1	13	D1	59.81	437.82	0	32.2175	10.64
GWY			1	12	D1	55.94	423.88	0	32.2175	10.64
GWY			1	11	D1	52.07	409.14	0	32.2175	10.64
GWY			1	10	D1	48.2	393.47	0	32.2175	10.64
GWY			1	9	D1	44.33	376.69	0	32.2175	10.64
GWY			1	8	D1	40.46	358.56	0	32.2175	10.64
GWY			1	7	D1	36.58	338.77	0	32.2175	10.64
GWY			1	6	D1	32.71	316.87	0	32.2175	10.64
GWY			1	5	D1	28.84	292.2	0	32.2175	10.64
GWY			1	4	D1	24.97	263.75	0	32.2175	10.64
GWY			1	3	D1	21.1	229.77	0	32.2175	10.64
GWY			1	2	D1	17.23	186.84	0	32.2175	10.64
GWY			1	1	D1	13.36	136.3	0	32.2175	10.64

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3.3 Auto Seismic Loading

Table 3.4 - Load Pattern Definitions - Auto Seismic - IS 1893 2016 (Part 1 of 3)

Name	Period Used sec	Coeff Used	Weight Used kN	Base Shear kN	Is Auto Load	X Dir?	X Dir Plus Ecc?	X Dir Minus Ecc?	Y Dir?	Y Dir Plus Ecc?	Y Dir Minus Ecc?
EQX					No	Yes	Yes	Yes	No	No	No
EQX(1/3)	1.274	0.018844	581414.7644	10956.3084	Yes	Yes	No	No	No	No	No
EQX(2/3)	1.274	0.018844	581414.7644	10956.3084	Yes	No	Yes	No	No	No	No
EQX(3/3)	1.274	0.018844	581414.7644	10956.3084	Yes	No	No	Yes	No	No	No
EQY					No	No	No	No	Yes	Yes	Yes
EQY(1/3)	2.182	0.011	581414.7644	6395.6157	Yes	No	No	No	Yes	No	No
EQY(2/3)	2.182	0.011	581414.7644	6395.6157	Yes	No	No	No	No	Yes	No
EQY(3/3)	2.182	0.011	581414.7644	6395.6157	Yes	No	No	No	No	No	Yes

Table 3.4 - Load Pattern Definitions - Auto Seismic - IS 1893 2016 (Part 2 of 3)

Name	Period Used sec	Coeff Used	Weight Used kN	Base Shear kN	Ecc Ratio	Top Story	Bottom Story	Period Type	User T sec	Z
EQX					0.05	T	S	User Defined	1.274	0.16
EQX(1/3)	1.274	0.018844	581414.7644	10956.3084	0.05	T	S	User Defined	1.274	0.16
EQX(2/3)	1.274	0.018844	581414.7644	10956.3084	0.05	T	S	User Defined	1.274	0.16
EQX(3/3)	1.274	0.018844	581414.7644	10956.3084	0.05	T	S	User Defined	1.274	0.16
EQY					0.05	T	S	User Defined	2.182	0.16
EQY(1/3)	2.182	0.011	581414.7644	6395.6157	0.05	T	S	User Defined	2.182	0.16
EQY(2/3)	2.182	0.011	581414.7644	6395.6157	0.05	T	S	User Defined	2.182	0.16
EQY(3/3)	2.182	0.011	581414.7644	6395.6157	0.05	T	S	User Defined	2.182	0.16

Table 3.4 - Load Pattern Definitions - Auto Seismic - IS 1893 2016 (Part 3 of 3)

Name	Period Used sec	Coeff Used	Weight Used kN	Base Shear kN	Site Type	I	R
EQX					I	1.2	4
EQX(1/3)	1.274	0.018844	581414.7644	10956.3084	I	1.2	4
EQX(2/3)	1.274	0.018844	581414.7644	10956.3084	I	1.2	4
EQX(3/3)	1.274	0.018844	581414.7644	10956.3084	I	1.2	4
EQY					I	1.2	4
EQY(1/3)	2.182	0.011	581414.7644	6395.6157	I	1.2	4
EQY(2/3)	2.182	0.011	581414.7644	6395.6157	I	1.2	4
EQY(3/3)	2.182	0.011	581414.7644	6395.6157	I	1.2	4

3.4 Functions

3.4.1 Response Spectrum Functions

Table 3.5 - Functions - Response Spectrum - IS1893 2016

Name	Period sec	Value	Seismic Zone	I	Soil Type	R	Damping Ratio
RSPECTRUM	0	0.024	III	1.2	I	4	0.05
RSPECTRUM	0.1	0.06					
RSPECTRUM	0.4	0.06					
RSPECTRUM	0.6	0.04					
RSPECTRUM	0.8	0.03					
RSPECTRUM	1	0.024					
RSPECTRUM	1.2	0.02					
RSPECTRUM	1.4	0.017143					
RSPECTRUM	1.6	0.015					
RSPECTRUM	1.8	0.013333					
RSPECTRUM	2	0.012					
RSPECTRUM	2.5	0.0096					
RSPECTRUM	3	0.008					

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Name	Period sec	Value	Seismic Zone	I	Soil Type	R	Damping Ratio
RSPECTRUM	3.5	0.006857					
RSPECTRUM	4	0.006					
RSPECTRUM	4.5	0.006					
RSPECTRUM	5	0.006					
RSPECTRUM	5.5	0.006					
RSPECTRUM	6	0.006					
RSPECTRUM	6.5	0.006					
RSPECTRUM	7	0.006					
RSPECTRUM	7.5	0.006					
RSPECTRUM	8	0.006					
RSPECTRUM	8.5	0.006					
RSPECTRUM	9	0.006					
RSPECTRUM	9.5	0.006					
RSPECTRUM	10	0.006					

3.5 Load Cases

Table 3.6 - Load Case Definitions - Linear Static

Name	Exclude Group	Mass Source	Stiffness Type	Load Type	Load Name	Load SF	Design Type	Notes
DEAD	None	MASS SOURCE	P-Delta	Load	DEAD	1	Program Determined	
EQX	None	MASS SOURCE	P-Delta	Load	EQX	1	Program Determined	
EQY	None	MASS SOURCE	P-Delta	Load	EQY	1	Program Determined	
GWX	None	MASS SOURCE	P-Delta	Load	GWX	1	Program Determined	
GWY	None	MASS SOURCE	P-Delta	Load	GWY	1	Program Determined	
LIVE	None	MASS SOURCE	P-Delta	Load	LIVE	1	Program Determined	
LIVE1	None	MASS SOURCE	P-Delta	Load	LIVE1	1	Program Determined	
LIVE2	None	MASS SOURCE	P-Delta	Load	LIVE2	1	Program Determined	
SIDL	None	MASS SOURCE	P-Delta	Load	SIDL	1	Program Determined	
TLC	None	MASS SOURCE	P-Delta	Load	TLC	1	Program Determined	
TLE	None	MASS SOURCE	P-Delta	Load	TLE	1	Program Determined	
WINDX	None	MASS SOURCE	P-Delta	Load	WINDX	1	Program Determined	
WINDY	None	MASS SOURCE	P-Delta	Load	WINDY	1	Program Determined	

Table 3.7 - Modal Case Definitions - Eigen (Part 1 of 2)

Name	Design Type	Exclude Group	Mass Source	Stiffness Type	Max Modes	Min Modes	Freq Shift cyc/sec	Cutoff Freq cyc/sec
Modal	Program Determined	None	MASS SOURCE	P-Delta	16	16	0	0

Table 3.7 - Modal Case Definitions - Eigen (Part 2 of 2)

Name	Design Type	Convergence Tol	Auto Shift?	Notes
Modal	Program Determined	1E-07	Yes	

Table 3.8 - Load Case Definitions - Response Spectrum (Part 1 of 2)

Name	Design Type	Mass Source	Load Name	Function	Trans Accel SF mm/sec2	Coordinate System	Angle deg
SPECX	Program Determined	Previous (MASS SOURCE)	U1	RSPECTRUM	30350	Global	0
SPECY	Program Determined	Previous (MASS SOURCE)	U2	RSPECTRUM	16415	Global	0

Table 3.8 - Load Case Definitions - Response Spectrum (Part 2 of 2)

Name	Design Type	Modal Case	Modal Combo Method	Rigid Response?	Directional Combo Type	Eccentricity Ratio	Notes

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Name	Design Type	Modal Case	Modal Combo Method	Rigid Response?	Directional Combo Type	Eccentricity Ratio	Notes
SPECX	Program Determined	Modal	CQC	No	SRSS	0.05	
SPECY	Program Determined	Modal	CQC	No	SRSS	0.05	

Table 3.9 - P-Delta Option Definition

Load Pattern	ScaleFactor	Convergence Tolearnce	Automation Method
DEAD	1.2	0.0001	Iterative Based on Loads
LIVE	0.25		
LIVE2	0.25		
SIDL	1.2		
LIVE1	0.5		

3.6 Load Combinations

Table 3.10 - Load Combination Definitions

Name	Type	Is Auto	Load Name	SF	Notes
1.0D0.8LEQX	Linear Add	No	DEAD	1	
1.0D0.8LEQX			SIDL	1	
1.0D0.8LEQX			LIVE	0.8	
1.0D0.8LEQX			LIVE1	0.8	
1.0D0.8LEQX			LIVE2	0.8	
1.0D0.8LEQX			EQX	0.8	
1.0D0.8LEQXN	Linear Add	No	DEAD	1	
1.0D0.8LEQXN			SIDL	1	
1.0D0.8LEQXN			LIVE	0.8	
1.0D0.8LEQXN			LIVE1	0.8	
1.0D0.8LEQXN			LIVE2	0.8	
1.0D0.8LEQXN			EQX	-0.8	
1.0D0.8LEQY	Linear Add	No	DEAD	1	
1.0D0.8LEQY			SIDL	1	
1.0D0.8LEQY			LIVE	0.8	
1.0D0.8LEQY			LIVE1	0.8	
1.0D0.8LEQY			LIVE2	0.8	
1.0D0.8LEQY			EQY	0.8	
1.0D0.8LEQYN	Linear Add	No	DEAD	1	
1.0D0.8LEQYN			SIDL	1	
1.0D0.8LEQYN			LIVE	0.8	
1.0D0.8LEQYN			LIVE1	0.8	
1.0D0.8LEQYN			LIVE2	0.8	
1.0D0.8LEQYN			EQY	-0.8	
1.0D0.8LGWX	Linear Add	No	DEAD	1	
1.0D0.8LGWX			SIDL	1	
1.0D0.8LGWX			LIVE	0.8	
1.0D0.8LGWX			LIVE1	0.8	
1.0D0.8LGWX			LIVE2	0.8	
1.0D0.8LGWX			GWX	0.8	
1.0D0.8LGWXN	Linear Add	No	DEAD	1	
1.0D0.8LGWXN			SIDL	1	
1.0D0.8LGWXN			LIVE	0.8	
1.0D0.8LGWXN			LIVE1	0.8	
1.0D0.8LGWXN			LIVE2	0.8	
1.0D0.8LGWXN			GWX	-0.8	
1.0D0.8LGWY	Linear Add	No	DEAD	1	
1.0D0.8LGWY			SIDL	1	
1.0D0.8LGWY			LIVE	0.8	
1.0D0.8LGWY			LIVE1	0.8	
1.0D0.8LGWY			LIVE2	0.8	

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Name	Type	Is Auto	Load Name	SF	Notes
1.0D0.8LGWY			GWY	0.8	
1.0D0.8LGWYN	Linear Add	No	DEAD	1	
1.0D0.8LGWYN			SIDL	1	
1.0D0.8LGWYN			LIVE	0.8	
1.0D0.8LGWYN			LIVE1	0.8	
1.0D0.8LGWYN			LIVE2	0.8	
1.0D0.8LGWYN			GWY	-0.8	
1.0D0.8LSPECX	Linear Add	No	DEAD	1	
1.0D0.8LSPECX			SIDL	1	
1.0D0.8LSPECX			LIVE	0.8	
1.0D0.8LSPECX			LIVE1	0.8	
1.0D0.8LSPECX			LIVE2	0.8	
1.0D0.8LSPECX			SPECX	0.8	
1.0D0.8LSPECXN	Linear Add	No	DEAD	1	Dead + Live [Strength]
1.0D0.8LSPECXN			SIDL	1	
1.0D0.8LSPECXN			LIVE	0.8	
1.0D0.8LSPECXN			LIVE1	0.8	
1.0D0.8LSPECXN			LIVE2	0.8	
1.0D0.8LSPECXN			SPECX	-0.8	
1.0D0.8LSPECY	Linear Add	No	DEAD	1	
1.0D0.8LSPECY			SIDL	1	
1.0D0.8LSPECY			LIVE	0.8	
1.0D0.8LSPECY			LIVE1	0.8	
1.0D0.8LSPECY			LIVE2	0.8	
1.0D0.8LSPECY			SPECY	0.8	
1.0D0.8LSPECYN	Linear Add	No	DEAD	1	Dead + Live [Strength]
1.0D0.8LSPECYN			SIDL	1	
1.0D0.8LSPECYN			LIVE	0.8	
1.0D0.8LSPECYN			LIVE1	0.8	
1.0D0.8LSPECYN			LIVE2	0.8	
1.0D0.8LSPECYN			SPECY	-0.8	
1.0D0.8LWINDX	Linear Add	No	DEAD	1	
1.0D0.8LWINDX			SIDL	1	
1.0D0.8LWINDX			LIVE	0.8	
1.0D0.8LWINDX			LIVE1	0.8	
1.0D0.8LWINDX			LIVE2	0.8	
1.0D0.8LWINDX			WINDX	0.8	
1.0D0.8LWINDXN	Linear Add	No	DEAD	1	
1.0D0.8LWINDXN			SIDL	1	
1.0D0.8LWINDXN			LIVE	0.8	
1.0D0.8LWINDXN			LIVE1	0.8	
1.0D0.8LWINDXN			LIVE2	0.8	
1.0D0.8LWINDXN			WINDX	-0.8	
1.0D0.8LWINDY	Linear Add	No	DEAD	1	
1.0D0.8LWINDY			SIDL	1	
1.0D0.8LWINDY			LIVE	0.8	
1.0D0.8LWINDY			LIVE1	0.8	
1.0D0.8LWINDY			LIVE2	0.8	
1.0D0.8LWINDY			WINDY	0.8	
1.0D0.8LWINDYN	Linear Add	No	DEAD	1	
1.0D0.8LWINDYN			SIDL	1	
1.0D0.8LWINDYN			LIVE	0.8	
1.0D0.8LWINDYN			LIVE1	0.8	
1.0D0.8LWINDYN			LIVE2	0.8	
1.0D0.8LWINDYN			WINDY	-0.8	
1.0DEQX	Linear Add	No	DEAD	1	
1.0DEQX			SIDL	1	
1.0DEQX			EQX	1	
1.0DEQXN	Linear Add	No	DEAD	1	
1.0DEQXN			SIDL	1	

Design Werkz Engineering Pvt.Ltd.

Name	Type	Is Auto	Load Name	SF	Notes
1.0DEQXN			EQX	-1	
1.0DEQY	Linear Add	No	DEAD	1	
1.0DEQY			SIDL	1	
1.0DEQY			EQY	1	
1.0DEQYN	Linear Add	No	DEAD	1	
1.0DEQYN			SIDL	1	
1.0DEQYN			EQY	-1	
1.0DGWX	Linear Add	No	DEAD	1	
1.0DGWX			SIDL	1	
1.0DGWX			GWX	1	
1.0DGWXN	Linear Add	No	DEAD	1	Dead [Deflections]
1.0DGWXN			SIDL	1	
1.0DGWXN			GWX	-1	
1.0DGWY	Linear Add	No	DEAD	1	
1.0DGWY			SIDL	1	
1.0DGWY			GWY	1	
1.0DGWYN	Linear Add	No	DEAD	1	Dead + Live [Deflections]
1.0DGWYN			SIDL	1	
1.0DGWYN			GWY	-1	
1.0DL	Linear Add	No	DEAD	1	
1.0DL			SIDL	1	
1.0DL			LIVE	1	
1.0DL			LIVE1	1	
1.0DL			LIVE2	1	
1.0DLLLTLC	Linear Add	No	DEAD	1	
1.0DLLLTLC			SIDL	1	
1.0DLLLTLC			LIVE	1	
1.0DLLLTLC			LIVE1	1	
1.0DLLLTLC			LIVE2	1	
1.0DLLLTLC			TLC	1	
1.0DLLLTLE	Linear Add	No	DEAD	1	
1.0DLLLTLE			SIDL	1	
1.0DLLLTLE			LIVE	1	
1.0DLLLTLE			LIVE1	1	
1.0DLLLTLE			LIVE2	1	
1.0DLLLTLE			TLE	1	
1.0DSPECX	Linear Add	No	DEAD	1	
1.0DSPECX			SIDL	1	
1.0DSPECX			SPECX	1	
1.0DSPECXN	Linear Add	No	DEAD	1	
1.0DSPECXN			SIDL	1	
1.0DSPECXN			SPECX	-1	
1.0DSPECY	Linear Add	No	DEAD	1	
1.0DSPECY			SIDL	1	
1.0DSPECY			SPECY	-1	
1.0DSPECYN	Linear Add	No	DEAD	1	
1.0DSPECYN			SIDL	1	
1.0DSPECYN			SPECY	-1	
1.0DWLX	Linear Add	No	DEAD	1	
1.0DWLX			SIDL	1	
1.0DWLX			WINDX	1	
1.0DWLXN	Linear Add	No	DEAD	1	Dead [Deflections]
1.0DWLXN			SIDL	1	
1.0DWLXN			WINDX	-1	
1.0DWLY	Linear Add	No	DEAD	1	
1.0DWLY			SIDL	1	
1.0DWLY			WINDY	1	
1.0DWLYN	Linear Add	No	DEAD	1	Dead + Live [Deflections]
1.0DWLYN			SIDL	1	
1.0DWLYN			WINDY	-1	

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Name	Type	Is Auto	Load Name	SF	Notes
1.5DLLLTLC	Linear Add	No	DEAD	1.5	Dead + Live [Strength]
1.5DLLLTLC			SIDL	1.5	
1.5DLLLTLC			LIVE	1.5	
1.5DLLLTLC			LIVE1	1.5	
1.5DLLLTLC			LIVE2	1.5	
1.5DLLLTLC			TLC	1.5	
1.5DLLLTLE	Linear Add	No	DEAD	1.5	Dead [Deflections]
1.5DLLLTLE			SIDL	1.5	
1.5DLLLTLE			LIVE	1.5	
1.5DLLLTLE			LIVE1	1.5	
1.5DLLLTLE			LIVE2	1.5	
1.5DLLLTLE			TLE	1.5	
09D15EQX	Linear Add	No	DEAD	0.9	Dead + Live [Deflections]
09D15EQX			SIDL	0.9	
09D15EQX			EQX	1.5	
09D15EQXN	Linear Add	No	DEAD	0.9	
09D15EQXN			SIDL	0.9	
09D15EQXN			EQX	-1.5	
09D15EQY	Linear Add	No	DEAD	0.9	
09D15EQY			SIDL	0.9	
09D15EQY			EQY	1.5	
09D15EQYN	Linear Add	No	DEAD	0.9	
09D15EQYN			SIDL	0.9	
09D15EQYN			EQY	-1.5	
09D15GWX	Linear Add	No	DEAD	0.9	
09D15GWX			SIDL	0.9	
09D15GWX			GWX	1.5	
09D15GWXN	Linear Add	No	DEAD	0.9	
09D15GWXN			SIDL	0.9	
09D15GWXN			GWX	-1.5	
09D15GWY	Linear Add	No	DEAD	0.9	
09D15GWY			SIDL	0.9	
09D15GWY			GWY	1.5	
09D15GWYN	Linear Add	No	DEAD	0.9	
09D15GWYN			SIDL	0.9	
09D15GWYN			GWY	-1.5	
09D15SPECX	Linear Add	No	DEAD	0.9	
09D15SPECX			SIDL	0.9	
09D15SPECX			SPECX	1.5	
09D15SPECXN	Linear Add	No	DEAD	0.9	
09D15SPECXN			SIDL	0.9	
09D15SPECXN			SPECX	-1.5	
09D15SPECY	Linear Add	No	DEAD	0.9	
09D15SPECY			SIDL	0.9	
09D15SPECY			SPECY	1.5	
09D15SPECYN	Linear Add	No	DEAD	0.9	
09D15SPECYN			SIDL	0.9	
09D15SPECYN			SPECY	-1.5	
09D15WX	Linear Add	No	DEAD	0.9	
09D15WX			SIDL	0.9	
09D15WXN	Linear Add	No	DEAD	0.9	
09D15WXN			SIDL	0.9	
09D15WY	Linear Add	No	DEAD	0.9	
09D15WY			SIDL	0.9	
09D15WYN	Linear Add	No	DEAD	0.9	
09D15WYN			SIDL	0.9	
12DLEQX	Linear Add	No	DEAD	1.2	
12DLEQX			SIDL	1.2	
12DLEQX			LIVE	1.2	
12DLEQX			LIVE1	1.2	



Name	Type	Is Auto	Load Name	SF	Notes
12DLEQX			LIVE2	1.2	
12DLEQX			EQX	1.2	
12DLEQXN	Linear Add	No	DEAD	1.2	
12DLEQXN			SIDL	1.2	
12DLEQXN			LIVE	1.2	
12DLEQXN			LIVE1	1.2	
12DLEQXN			LIVE2	1.2	
12DLEQXN			EQX	-1.2	
12DLEQY	Linear Add	No	DEAD	1.2	
12DLEQY			SIDL	1.2	
12DLEQY			LIVE	1.2	
12DLEQY			LIVE1	1.2	
12DLEQY			LIVE2	1.2	
12DLEQY			EQY	1.2	
12DLEQYN	Linear Add	No	DEAD	1.2	
12DLEQYN			SIDL	1.2	
12DLEQYN			LIVE	1.2	
12DLEQYN			LIVE1	1.2	
12DLEQYN			LIVE2	1.2	
12DLEQYN			EQY	-1.2	
12DLGWX	Linear Add	No	DEAD	1.2	
12DLGWX			SIDL	1.2	
12DLGWX			LIVE	1.2	
12DLGWX			LIVE1	1.2	
12DLGWX			LIVE2	1.2	
12DLGWX			GWX	1.2	
12DLGWXN	Linear Add	No	DEAD	1.2	
12DLGWXN			SIDL	1.2	
12DLGWXN			LIVE	1.2	
12DLGWXN			LIVE1	1.2	
12DLGWXN			LIVE2	1.2	
12DLGWXN			GWX	-1.2	
12DLGWY	Linear Add	No	DEAD	1.2	
12DLGWY			SIDL	1.2	
12DLGWY			LIVE	1.2	
12DLGWY			LIVE1	1.2	
12DLGWY			LIVE2	1.2	
12DLGWY			GWY	1.2	
12DLGWYN	Linear Add	No	DEAD	1.2	
12DLGWYN			SIDL	1.2	
12DLGWYN			LIVE	1.2	
12DLGWYN			LIVE1	1.2	
12DLGWYN			LIVE2	1.2	
12DLGWYN			GWY	-1.2	
12DLSPECX	Linear Add	No	DEAD	1.2	
12DLSPECX			SIDL	1.2	
12DLSPECX			LIVE	1.2	
12DLSPECX			LIVE1	1.2	
12DLSPECX			LIVE2	1.2	
12DLSPECX			SPECX	1.2	
12DLSPECXN	Linear Add	No	DEAD	1.2	
12DLSPECXN			SIDL	1.2	
12DLSPECXN			LIVE	1.2	
12DLSPECXN			LIVE1	1.2	
12DLSPECXN			LIVE2	1.2	
12DLSPECXN			SPECX	-1.2	
12DLSPECY	Linear Add	No	DEAD	1.2	
12DLSPECY			SIDL	1.2	
12DLSPECY			LIVE	1.2	
12DLSPECY			LIVE1	1.2	

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Name	Type	Is Auto	Load Name	SF	Notes
12DLSPECY			LIVE2	1.2	
12DLSPECY			SPECY	1.2	
12DLSPECYN	Linear Add	No	DEAD	1.2	
12DLSPECYN			SIDL	1.2	
12DLSPECYN			LIVE	1.2	
12DLSPECYN			LIVE1	1.2	
12DLSPECYN			LIVE2	1.2	
12DLSPECYN			SPECY	-1.2	
12DLWX	Linear Add	No	DEAD	1.2	
12DLWX			SIDL	1.2	
12DLWX			LIVE	1.2	
12DLWX			LIVE1	1.2	
12DLWX			LIVE2	1.2	
12DLWX			WINDX	1.2	
12DLWXN	Linear Add	No	DEAD	1.2	
12DLWXN			SIDL	1.2	
12DLWXN			LIVE	1.2	
12DLWXN			LIVE1	1.2	
12DLWXN			LIVE2	1.2	
12DLWXN			WINDX	-1.2	
12DLWY	Linear Add	No	DEAD	1.2	
12DLWY			SIDL	1.2	
12DLWY			LIVE	1.2	
12DLWY			LIVE1	1.2	
12DLWY			LIVE2	1.2	
12DLWY			WINDY	1.2	
12DLWYN	Linear Add	No	DEAD	1.2	
12DLWYN			SIDL	1.2	
12DLWYN			LIVE	1.2	
12DLWYN			LIVE1	1.2	
12DLWYN			LIVE2	1.2	
12DLWYN			WINDY	-1.2	
15DGWX	Linear Add	No	DEAD	1.5	
15DGWX			SIDL	1.5	
15DGWX			GWX	1.5	
15DGWXN	Linear Add	No	DEAD	1.5	
15DGWXN			SIDL	1.5	
15DGWXN			GWX	-1.5	
15DGWY	Linear Add	No	DEAD	1.5	
15DGWY			SIDL	1.5	
15DGWY			GWY	1.5	
15DGWYN	Linear Add	No	DEAD	1.5	
15DGWYN			SIDL	1.5	
15DGWYN			GWY	-1.5	
15DL	Linear Add	No	DEAD	1.5	
15DL			SIDL	1.5	
15DL			LIVE	1.5	
15DL			LIVE1	1.5	
15DL			LIVE2	1.5	
15DLEQX	Linear Add	No	DEAD	1.5	
15DLEQX			SIDL	1.5	
15DLEQX			EQX	1.5	
15DLEQXN	Linear Add	No	DEAD	1.5	
15DLEQXN			SIDL	1.5	
15DLEQXN			EQX	-1.5	
15DLEQY	Linear Add	No	DEAD	1.5	
15DLEQY			SIDL	1.5	
15DLEQY			EQY	1.5	
15DLEQYN	Linear Add	No	DEAD	1.5	
15DLEQYN			SIDL	1.5	

Design Werkz Engineers Pvt. Ltd.

Name	Type	Is Auto	Load Name	SF	Notes
15DLEQYN			EQY	-1.5	
15DLSPECX	Linear Add	No	DEAD	1.5	
15DLSPECX			SIDL	1.5	
15DLSPECX			SPECX	1.5	
15DLSPECXN	Linear Add	No	DEAD	1.5	
15DLSPECXN			SIDL	1.5	
15DLSPECXN			SPECX	-1.5	
15DLSPECY	Linear Add	No	DEAD	1.5	
15DLSPECY			SIDL	1.5	
15DLSPECY			SPECY	1.5	
15DLSPECYN	Linear Add	No	DEAD	1.5	
15DLSPECYN			SIDL	1.5	
15DLSPECYN			SPECY	-1.5	
15DLWX	Linear Add	No	DEAD	1.5	
15DLWX			SIDL	1.5	
15DLWX			WINDX	1.5	
15DLWXN	Linear Add	No	DEAD	1.5	
15DLWXN			SIDL	1.5	
15DLWXN			WINDX	-1.5	
15DLWY	Linear Add	No	DEAD	1.5	
15DLWY			SIDL	1.5	
15DLWY			WINDY	1.5	
15DLWYN	Linear Add	No	DEAD	1.5	
15DLWYN			SIDL	1.5	
15DLWYN			WINDY	-1.5	

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THE LANDLENS SUITE

Eight ways to know a piece of land before you pay for it.

This report covers one part of the picture. These cover the rest, drawn from the same government records, for any property in Tamil Nadu.

LandLens One
Ask anything about a property and get an answer grounded in live government records, with the sources shown.
/landlens/one

Verify My Land
Every record check run on one property and returned as a single report.
/landlens/verify-my-land

Legal Opinion
An advocate's written opinion on the title, built on the records we pull for it.
/landlens

One Map
Every layer on one map: the parcel, its boundary, zoning, water bodies and what sits around it.
/landlens/one/map

PriceMap
What land actually changed hands for around this plot, taken from the registered deeds.
/landlens/pricemap

Build Scope
What you are allowed to build here: floor space, height, coverage and setbacks.
/landlens/build-scope

Property Tracker
Watch a property and hear about it when something new is registered against it.
/landlens/property-tracker

Deal Room
Run the transaction in one place: documents, stamping, signatures and the parties.
/landlens/deal-room

FREE TOOLS · NO ACCOUNT NEEDED

Twenty-four checks you can run yourself, at no cost.

Records and verification

The registers themselves, read for you.

- Encumbrance Certificate
- Patta and Chitta
- Field Measurement Sketch
- EC Analyzer
- Bank charge check
- Court case search
- Seller background check
- Approval check by survey

Value and duty

What it is worth and what it costs to register.

- Guideline value by street
- Guideline value by survey
- Stamp duty and registration fees
- Capital gains
- Floor space index
- Area unit converter

Zoning and land use

What the plan says can happen on this land.

- Land use zone finder
- CMDA land use check
- Coastal regulation zone
- Master plan check
- Water bodies finder
- Airport height clearance

Registers and directories

Who holds it, and which office keeps the record.

- Find your registering office
- Temple property check
- Waqf property check
- RERA register

Every free tool
/tools

Services we run for you
/services

The LandLens suite
/landlens/one

Verified RealEstate™

Every claim in this document traces back to a government record.

- Legal opinions, due diligence and title verification
- Building plan, layout and sub-division approvals
- Completion and occupancy certificates, regularisation
- Escrow, negotiation and NRI property management
- Land survey, soil testing, architecture and construction

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Prepared from the registers named on the page each finding sits on. Where a register could not be read, this document says so in its place rather than leaving the gap to be read as a clean result.