Verified RealEstate™

Your trusted partner for buying, selling, and managing property, ensuring hassle-free service with 100% transparency.

3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai, India

hello@verified.realestate
+91 9996 12 9996
www.verified.realestate

Official Property Record



Digitally Verified Record - Powered by Verified RealEstate™

Proposed Construction of Residential Group Development with 4 Blocks; Block 1- Stilt Floor + 5 Floors (Height - 18.30M) With 67 Dwelling Units, Gymnasium, Indoor Games Room and Association Room; Block 2- Stilt Floor + 5 Floors (Height-18.30 M) With 70 Dwelling Units, Block 3- Stilt Floor + 5 Floors (Height –18.30m) With 40 Dwelling Units, Block 4 - Stilt Floor + 5 Floors (Height - 18.30 M) With 40 Dwelling Units, Totally 217 Dwelling Units for Affordable Housing benefit At Shrudhi Sai Nagar Main Road, Madambakkam,Chennai, Comprised In O.S.Nos: 771 / 1a & 771 / 2a, New S.No. 771/2a1, Of Madambakkam Village within the Limits of Tambaram Municipal Corporation.

STRUCTURAL DESIGN BRIEF REPORT

CLIENT : **DRA Aadithya South City Projects Private Limited,**
New Nos 109, 111 & 113,
Lloyds Road, Royapettah,
Chennai - 600 014
Phone: +91-98403 50001
Email : sales.chennai@drahomes.in

PROJECT : **RESIDENTIAL PROJECT.**

ARCHITECT : **KHARCHE ASSOCIATES,**
2/20 Shaffee Mohamed Road
Chennai 600006, India.

STRUCTURAL CONSULTANT'S : **VISION STRUCTURAL DESIGN AID**
 # 72,3RD FLOOR, 50 FEET ROAD,
HANUMANTHA NAGAR,
BANGALORE –560019.
TEL: 080 – 26615806
E-MAIL: amarnath@visda.co.in

JOB NO. : **VISDA-STR-2179**

ISSUE RECORD

DATE	ISSUE	PREPARED	CHECKED	REVISION
12-06-2024	R0	AJAYSINH	AMAR	PRELIMINARY

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

CONTENTS

A. Introduction

B. Design standards

C. Design Data

D. Materials

E. Structural concept

F. Geotechnical Recommandations

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/CR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

A.0 INTRODUCTION

M/s proposed construction of residential group Development with 4 blocks; block 1- stilt floor + 5 Floors (height - 18.30 m) with 67 dwelling units, gymnasium, indoor games room and association Room; block 2- stilt floor + 5 floors (height-18.30 m) With 70 dwelling units, block 3- stilt floor +5 Floors (height - 18.30 m) With 40 dwelling units, block 4 - stilt floor + 5 floors (height - 18.30 m) With 40 dwelling units, totally 217 dwelling units for affordable housing Benefit at Shrudhi sai Nagar main road, Madambakkam, Chennai, Comprised in O.S.Nos: 771 / 1a & 771 / 2a, New S.No. 771/2a1, Of Madambakkam Village within the Limits of Tambaram Municipal Corporation. Structural Engineering service is provided by M/s VISION STRUCTURAL DESIGN AID, Bangalore. The approximate built up area of the building is about **3,27,005 SQFT.**

The proposed multi storied building consists of 4 block in which each block has the following:

Stilt floor + 5 floors + Terrace and Above Terrace floor.

The criteria furnished in this document shall govern the design of civil and structural works of the proposed project. This document covers the general description of the applicable design codes and standards, characteristics of the building, specific building materials, design criteria, design loads and combination, design methodology adopted for the structures.

A.1 STATUTORY REQUIREMENTS:

The design of structural and other building services will comply with the following requirements:

- National Building Code
- The Building Regulations Act
- The Environmental Protection Act in liaison with the Environmental Agency.
- Fire prevention and detection in compliance with the local Fire Regulation.
- ASHRAE.
- Any other applicable laws as advised by the client.
- Bureau of Indian Standard Codes.

B.0 DESIGN STANDARDS:

Specific applicable codes and standards will be identified and adopted in the design philosophies as appropriate to the structural elements. The latest editions of the Codes and Standards will be used in designs. All design work shall be based on Indian Standards and Codes with latest revision, with amendments if any, as on date.

Loads:
IS: 875(PART-1)-1987-Code of Practice for Design Loads (Other than earthquake) for Buildings and structure.
PART-1 DEAD LOADS -Unit Weights of Building Materials and Stored Materials.
PART-2 - IMPOSED LOADS
PART-4 - SNOW LOADS.
PART-5 - SPECIAL LOADS AND COMBINATIONS.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/CR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

IS: 875-2015 (PART-3) - Wind Loads – Code of Practice for design loads (other than earthquake) for Buildings and structure.

Foundations:

IS: 1080 Code of Practice for design and construction of shallow foundations on soils (Other than raft, ring and shell)
IS: 1904 Code of Practice for design and construction of foundations in soils general requirement
IS: 2950 Code of Practice for design and construction of raft foundations
IS: 2974 Code of Practice for design and construction of machine foundations (All parts)
IS: 8009 Code of Practice for calculation of settlement of foundations (All parts)
IS: 11089 Code of Practice for design and construction of ring foundation
IS2911- PART2 Code of Practice for design and construction of Pile foundation.

RCC:

IS: 456 Code of Practice for plain and reinforced concrete
IS: 458 Specification for precast concrete pipes
IS: 3370 Code of Practice for concrete structures for the storage of liquids: (All parts)
IS: 3414 Code of Practice for design and installation of joints in buildings
IS: 3935 Code of Practice for composite construction
IS: 4326 Code of Practice for earthquake resistant design and construction of buildings
IS: 5525 Recommendation for detailing of reinforced concrete works
IS: 1786 Specification for high strength deformed steel bars and wires for concrete Reinforcement
IS: 10262 recommended guidelines for concrete mix design
IS: 11384 Code of Practice for composite construction in structural steel and concrete
IS: 1893-2016 (Part-1) Criteria for earthquake resistant design of structures (General Provisions and building).
IS: 1893(Part-4) Criteria for earthquake resistant design of structures (Industrial structures Including stack-like structures).
IS: 13920 Ductile Detailing of reinforced concrete structures subjected to seismic forces
IS: 16700-2017 Criteria for Structural Safety of Tall concrete

Structural steel:

IS: 800 Code of Practice for general construction in steel
IS: 806 Code of Practice for use of steel tubes in general building construction
IS: 808 Dimensions for hot rolled steel beam, column channel and angle section
IS: 813 Scheme of symbols for welding
IS: 816 Code of Practice for use of metal arc welding for general construction in mild Steel
IS: 1161 Steel tubes for structural purposes
IS: 2062 Structural steel (fusion welding quality)
IS: 4000 High Strength bolts in steel structures – Code of Practice
IS: 7215 Tolerances for fabrication of steel structures
IS: 9595 Recommendation for Metal arc welding of carbon and carbon manganese steel
IS: 12843 Tolerances for erection of steel structures

Miscellaneous:

IS: 432(part 2) Specification for mild steel and medium tensile steel bars and hard-drawn

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Asholnagar,
CHENNAI - 83, Ph : 9731303187

Steel wire for concrete reinforcement
IS: 8112 43 grade Ordinary Portland cement specification.
IS: 6313(part II) Standards for anti-termite treatment
IS: 2751 Code of practice for welding of mild steel bars used for reinforced concrete construction
IS: 1346 Code of Practice for water proofing of roofs with bitumen felts
IS: 1742 Code of Practice for building drainage
IS: 1905 Code of Practice for structural use of unreinforced masonry
IS: 2470 Code of Practice for installation of septic tank:
(Part 1) Design criteria and construction
(Part 2) Secondary treatment and disposal of septic tank effluent
IS: 3067 Code of Practice for general design details and preparatory works for damp Proofing and water proofing of buildings
SP: 6 Handbook for structural engineers (all parts)
SP: 7 National Building Code of India
SP: 16 Design Aids for reinforced concrete to IS: 456-1978
SP: 20 Handbook on masonry design and construction
SP: 22 Explanatory handbooks on codes for earthquake engineering (IS: 1983-1975 and IS: 4326-1976)
SP: 24 Explanatory handbook on Indian Standard code of Practice for plain and Reinforced concrete
SP: 25 Handbook on causes and prevention of cracks in buildings
SP: 32 Handbook on functional requirements of industrial buildings
SP: 34 Handbook of concrete reinforcement and detailing (SCIP)

C.0 DESIGN DATA

C.1.1 DEAD LOADS

Dead load shall include weight of all Structural and Architectural components. Self-weight of the materials shall be calculated on the basis of unit weights given in IS: 875.

Materials	Unit weight kN/m^3
Steel	78.50
Plain Concrete	24.00
Reinforced Concrete	25.00
Brickwork	20.00
Solid Block work	20.00
Cement plaster	21.00
Roof treatment (7 course bituminous)	1.25
Floor finish	24.00
Aerated block masonry	8.65
Soil	18.00
Water	10.00
Glass	0.167
Dry Partition Walls	As Per Actuals

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

C.1.2 LIVE LOADS

The imposed loads shall be calculated in accordance with IS: 875(Part-2)-1987 based on Occupancy Classification. For multiple occupancies of use in the building, it shall be referred with the other appropriate comparable occupancy classification as per Table.1 of IS 875(Part-2)-1987.

1. Living rooms, Dining rooms	:	2.0	kN / sq.m
2. Bedrooms	:	2.0	kN / sq.m
3. Kitchen	:	2.0	kN / sq.m
4. Toilets	:	2.0	kN / sq.m
5. Store rooms	:	3.0	kN / sq.m
6. Foyer	:	3.0	kN / sq.m
7. Balconies	:	3.0	kN / sq.m
8. Corridors	:	3.0	kN / sq.m
9. Staircases	:	3.0	kN / sq.m
10. Passages	:	3.0	kN / sq.m
11. Lobbies	:	3.0	kN / sq.m
12. Parking Areas	:	5.0	kN / sq.m
13. STP Pump room	:	5.0	kN / sq.m
14. Generator room	:	5.0	kN / sq.m
15. Gymnasium	:	5.0	kN / sq.m
16. Terraces	:	2.0	kN / sq.m
17. Solar panels at terrace level	:	1.0	kN / sq.m

C.1.3 SUPER DEAD LOADS

The super dead loads (SDL) are considered to have floor finishes, plastering, in addition with the toilet and balcony sunken slabs.

1. Floor finishes	:	1 kN/sq. MT
2. Ceiling plastering (15mm)	:	0.3 kN/sq. MT
3. Sunken loads (50mm)	:	1 kN/sq. MT

Sunk Considered is 50mm and the filling material density should not exceed 20KN/cum.

The floor finishes at the parking levels are considered to be 100 mm Thick with the density of the flooring material Considered is 20 KN/ cum and SDL works out to be 2 kN / Sq. MT.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

C.1.4 WIND LOADS

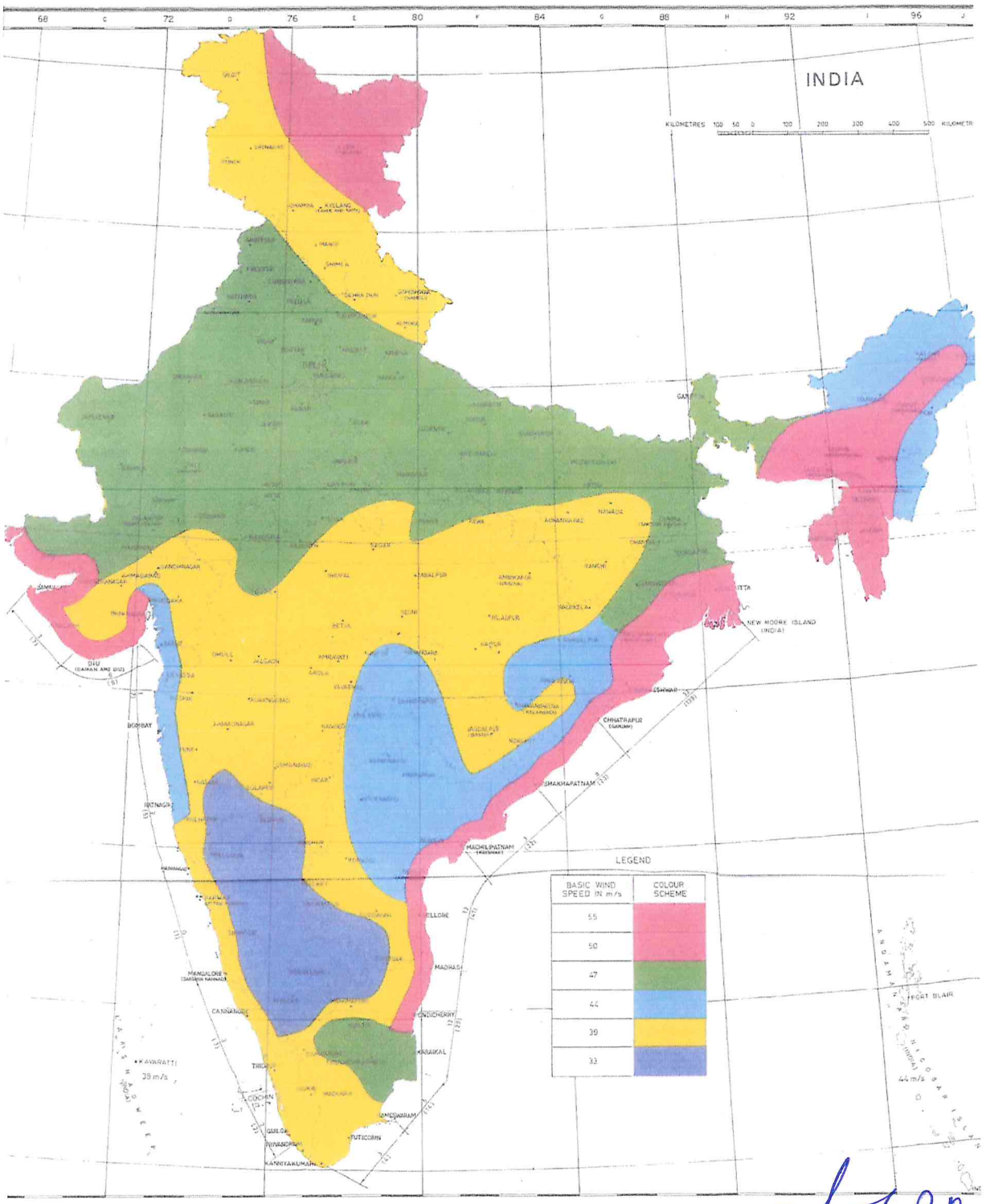


Fig.2 Basic Wind Speed

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/CR-1/19/03/017
17, C Block, P.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

The proposed project is located at, **Madambakkam, Chennai** in Tamilnadu and the wind loads as per IS 875 part 3-2015 has been considered. The following parameters are considered for the calculation of wind pressure for the proposed residential apartment,

Basic Wind Speed (Vb)	:	50 m/sec
Risk Coefficient (k1)	:	1.0
Terrain, category and class	:	Category 2
Size factor (k2) Structure)	:	1.0 (Calculated by considering the actual height of the
Topography factor (k3)	:	1.0
Importance Factor (k4)	:	1.0
Design wind speed, Vz	:	***Vb x k1 x k2 x k3 x k4***
Design wind pressure, Pz	:	***0.6 x Vz^2***

The external and internal pressure co-efficient shall be as per respective clause of IS: 875 (Part 3)

C.1.5 SEISMIC FORCES

Madambakkam, Chennai comes under **Seismic zone III** as per **IS 1893-2016** (Part 1) (Sixth Revision) and has the following factors to be considered for designs:

Seismic Zone	: III
Seismic Zone factor, Z	: 0.16 (As per Table 3-IS: 1893-2016)
Importance factor, I	: 1.2 (As per Table 8-IS: 1893-2016)
Response reduction Factor, R	: 4 (Buildings with ductile RC Structural walls, As per Table 7 – IS 1893-2016)

Time Period is being calculated by considering RC structural walls, i.e. as per Clause 7.6.2 of IS 1893-2016

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

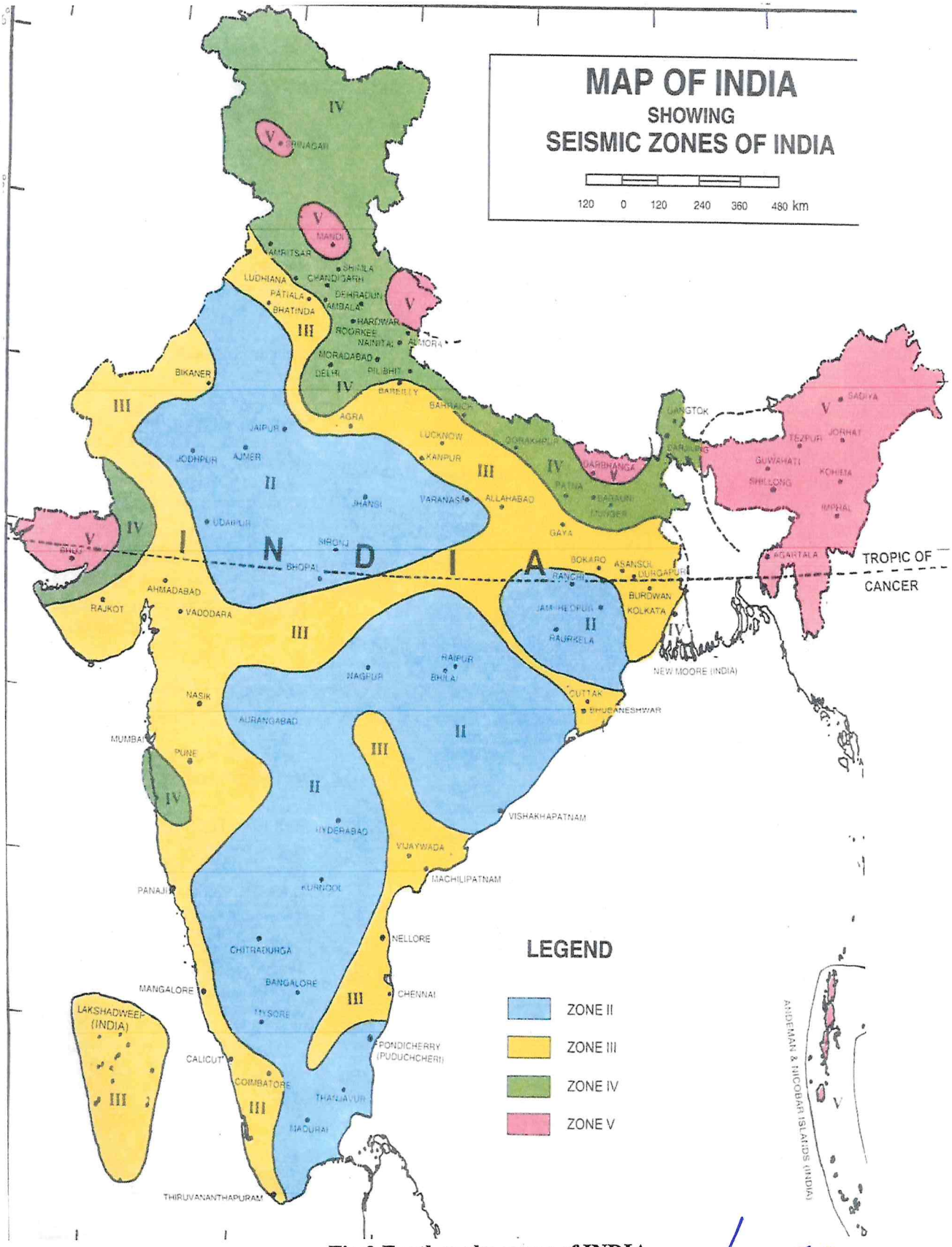


Fig.3 Earthquake zones of INDIA

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

C.1.6 Temperature Loads

Temperature Load Calculation:

Average Annual Minimum Temperature: 22 degree

Average Annual Maximum Temperature: 45 degree
(Considered Avg. annual Min / Max Temp)

Design Temperature Differential: ((45 - 22) x 2/3) x 0.5 = 7.67deg

Temperature variation has been considered as 2/3 of the average annual variation and designed for 50% of the Temperature variation

C.2 ENVIRONMENTAL CONDITIONS, CORROSION AND FIRE PROTECTION FOR CONCRETE AND STRUCTURAL STEEL

C.2.1

- **Environment** : Moderate for all structures other than water retaining structure
- **Exposure conditions** : Concrete surfaces protected against weather or aggressive Condition except those situated in coastal area.
- **Fire protection** : Thickness of the structural elements as per cl.21.0 of IS456:2000

Fire Resistance h	*Minimum Beam Width b*	*Rib Width of Slabs b_w*	*Minimum Thickness of Floors D*	*Column Dimension (b or D)*			*Minimum Wall Thickness*		
				Fully Exposed	50% Exposed	One Face Exposed	$p<0.4\%$	$0.4\% \le p \le 1\%$	$p>1\%$
	mm	mm	mm	mm	mm	mm	mm	mm	mm
0.5	200	125	75	150	125	100	150	100	100
1	200	125	95	200	160	120	150	120	100
1.5	200	125	110	250	200	140	175	140	100
2	200	125	125	300	200	160	–	160	100
3	240	150	150	400	300	200	–	200	150
4	280	175	170	450	350	240	–	240	180

NOTES

1 These minimum dimensions relate specifically to the covers given in Table 16A.

2 p is the percentage of steel reinforcement.

FIG. 1 MINIMUM DIMENSIONS OF REINFORCED CONCRETE MEMBERS FOR FIRE RESISTANCE

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

- **Minimum grade of concrete** : Severe exposure – M30
- **Nominal cover to reinforcement** : For Sever Exposure Nominal cover should Not be less than 30 mm.

Type of Structural element	Min. Cover to reinforcement
Retaining wall	30 mm
Footing	50 mm

For 2.0 hr. Fire Resistance Beams, Slabs and Columns Shall have the min Cover as Specified Below:
Ref: (Table 16 A of IS456:2000)

Type of Structural element	Min. Cover to reinforcement
Beam	30 mm
Slabs	25mm
Columns	40 mm

C.3 TEMPERATURE AND SHRINKAGE EFFECT:

Horizontal floor displacement due to differential temperatures and shrinkage is of importance in long concrete buildings. It can be taken care of by either providing expansion joints at an appropriate spacing or designing structural members for the additional moments caused by the temperature and shrinkage effects.

C.3.1 TEMPERATURE LOADS:

The effect of temperature will be considered wherever applicable in accordance with relevant Indian Codes. The coefficient for thermal expansion and contraction will be in accordance with IS: 456 for concrete.

C.4 EXCEPTIONAL LOADS:

- Loads due to the following catastrophe scenarios are not considered in the design.
- Exceptional loads due to terrorist attacks (Explosions)
- Accidental loads (Falling of aircraft on the building)
- Accidental hitting of vehicle on the façade
- Snow Load

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/CR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

D.0 MATERIALS:

Materials specified will confirm to the latest edition of the relevant Indian Standard or other accepted standard. Specifications for materials will include sampling and testing as stipulated in the design standards. Detailed material specifications will be included in the Technical Specification.

D.1 CONCRETE:

- Unless otherwise specified all structural concrete shall have cube crushing strength of minimum 30 N/sq.mm or greater (M30) at 28 days.
- Plain cement concrete shall have cube crushing strength of 10 N/sq.mm (M10) at 28 days.

D.1.1 CONCRETE MIX

Concrete item	Grade
Isolated and Combined footing	M30
RC Walls	M30
Columns	M30
Girder Beams /Beams/Slabs	M30/M25/M25
Slabs	M40/M30

The grade of concrete for structural elements varies from M30 to M25 based on the number of floors contained in that block of the building.

D.2 REINFORCEMENT STEEL:

- All reinforcement shall confirm to IS: 1786 – 2008 having minimum yield strength of 500 N/sq-mm.

E.0 STRUCTURAL CONCEPT

The proposed Residential multi storied building, with Structural Wall system that contains four blocks in which each block has the following number of floors,

Stilt floor + 5 Upper floors + Terrace and Above Terrace floors.
The proposed building is of the following structural concept

- RC Structural wall system.
- Girder level Slabs/ beams are being provided at Level to support the planted columns going above.
- Staircases are provided with mid-landing between the floors as per architectural layout.
- Analysis and design of the structure have been carried out using commercially available Software packages like Etabs and Safe.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

E.1 STRUCTURAL CONFIGURATION

FRAMING SYSTEM

RC structural wall system as per IS 16700- 2017 consisting of

1. RC walls, Columns, Beams, and Slabs.
2. Detailing is done as per SP 34 & IS 13920 -2016 for all vertical and frame members

From foundation to First / Second floor, the structure is framed with Columns and Walls. Plinth beams at Basement level and Transfer beams at First Floor Level. Few long RC walls are also considered from foundation to First for adequate rigidity. Above Second floor level, the structure is made of full RC walls of about 200thk.The walls are considered with Double layer reinforcement with the walls resisting moment only in the Major axis. Out of plane moments are not considered and Minor axis moment is released. Shear stress is checked for 0.25 Sqrt (Fck) as per IS 13920.

	DESCRIPTION	BUILDING SYSTEM
a)	Structural system	RC Structural Wall System 200/300/400 /thk wall up to level-1 200thk wall for above levels may vary as per design.
b)	Plinth beams	Varies
c)	Slab thickness	125/150/200 mm
d)	Girder Beams	varies
e)	No. of slabs	Stilt floor + 5 Upper floors + Terrace and Above Terrace floors.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

STRUCTURAL ANALYSIS AND DESIGN:

E.2.1. GENERAL

- The structural analysis is carried out by finite element method using the commercially available software tool for the load combinations as per standards.
- Forces and moments from the 3D analysis output for the worst combinations are used for the design of the structure.
- The structure is analyzed for specific loads like dead load, live load, wind and seismic loads and for the load combinations as given in the relevant codes.
- The structure shall be designed according to the Limit State Method as specified in IS: 456 – 2000.
- Construction sequence analysis is also carried out to obtain proper axial load transfer in the transfer beams at Plinth level.

E.2.2. FOUNDATION

As per soil report SBC is 300 kN/m^2 at a depth 2m from the EGL and type of foundation is isolated footing for the estimated immediate settlement of 8mm is within the allowable limit of 60mm. Hence isolated foundation shall be adopted. Foundation width restricted to 1.50m.

E.3 DEFLECTION LIMITS:

For Reinforced concrete works:

- Limiting values of deflection (Short and Long term) as per **cl. 35.3and 23.2 of IS: 456-2000** is followed in the design.
- Limiting value for short term deflection is considered as span/250 and for the long term deflection is considered as span/350 or 20mm whichever less as per IS 456 – 2000.
- The vertical deflection limits may generally be assumed to be satisfied provided that the span to depth ratios is not greater than the values obtained as below:
  - **Continuous**..... 26
  - **Simply Supported**.....20
  - **Cantilever**.....7
- As per IS1893 (Part1): 2016, Story drift in any story due to minimum specified design seismic lateral force shall not exceed 0.004 times the story height.
- Lateral sway due to wind load should not exceed H/500 (H is the total height of structure).

E.4 CRACKING LIMITS

- Limiting values of crack width as per cl. 35.3 of IS: 456-2000 is followed in the design.
- In general for slabs and beams, the crack width is limited to 0.3mm.
- For water retaining structures, the water retaining portion of the structure will be designed as uncracked section.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Asholnagar,
CHENNAI - 83, Ph : 9731303187

E.5 LOAD COMBINATIONS

Load Combination	Limit State of Collapse			Limit State of Serviceability		
	DL	LL	WL/EL/TL	DL	LL	WL/EL/TL
DL +LL	1.5	1.5	—	1	1	—
DL +/- WL+TL	1.5	—	1.5	1	—	1
DL +/- EL+TL	1.5	—	1.5	1	—	1
DL +/- WL	0.9*	—	1.5	1	—	1
DL +/- EL	0.9*	—	1.5	1	—	1
DL+LL+/-WL+TL	1.2	1.2	1.2	1	0.8	0.8
DL+LL+/-EL+TL	1.2	1.2	1.2	1	0.8	0.8

Other than the above mentioned combinations, some more combinations are considered as specified in IS:1893-2016 / Cl. 6.3.2.2 and 6.3.4.1 for the Block 1 ,2 , 3 & 4 due to its non-parallel lateral force system.

(*This value is to be considered when stability against overturning and stress reversal is critical.)

The various loads are combined in accordance with the stipulations in IS: 875 (Part 5)-1987; whichever combination produces the most unfavorable effect in the building foundation or structural member concerned may be adopted.

Where DL/LL/WL/EL denotes,

DL- Dead Load- Includes Self Weight of Structure and Super Imposed Load (SDL)

LL- Live Load

WL- Wind Load

EL- Earthquake Load

TL- Temperature Load

Wind load and Earthquake loads are considered for both x & y directions. Whenever imposed load is combined with earthquake load, the appropriate part of imposed load as specified in IS: 1893-2016 / Cl. 7.3.1 of seismic code will be used both for evaluating earthquake effect and for combined load effects used in such combination.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Ashoknagar,
CHENNAI - 83, Ph : 9731303187

F. GEOTECHNICAL RECOMMENDATIONS:

As per soil report SBC is 300 kN/m^2 at a depth 2m from the EGL and type of foundation is isolated footing for the estimated immediate settlement of 8mm is within the allowable limit of 60mm. Hence isolated foundation shall be adopted. Foundation width restricted to 1.50m.

AMARNATH R. BORAIAH
CHENNAI METROPOLITAN DEVELOPMENT AUTHORITY
Registered Structural Engineer Grade-1 (SE)
REG No. SE/GR-1/19/03/017
17, C-Block, R.V. Nagar, Asholnagar,
CHENNAI - 83, Ph : 9731303187

Our services go beyond

Buying & Selling Services

Property Buying Assistance, Property Selling Support, Market Price Analysis, Owner Outreach and Negotiation.

Legal & Documentation Services

Certified EC, Patta, legal opinions, property verification, due diligence, litigation solutions, and legal heir certificates.

Property Development & Approvals

Building plan approvals, construction, layout and sub-division approvals, zone conversion, and occupancy certification.

NRI & Investment Services

Escrow Services, Rentals, Litigation Solutions, Property Valuation and Property Management

Compliance & Special Services

Demolition, Vaasthu checks, regularization of unauthorized buildings, and office space solutions.

Smarter Tools, Stronger Decisions

Property Valuation & Cost Estimation

Guideline Value, Apartment Composite Value, Stamp Duty & Registration Fees Calculator, Building Value Calculator, Capital Gains Calculator, Area Unit Converter, Length Unit Converter

Ownership, Compliance & Legal Verification

Encumbrance Certificate (EC) Search, Find Your SRO, Temple Property Check, WAQF Property Check, View Patta/Chitta, View FMB, Patta Analyzer, EC Analyzer

Zoning & Land Use Analysis

Land Use Zone Finder, CRZ Zone Check, Aquifer Zone Check, CBA Check, EWS Check, Road Width Check, Proposed Road Widening Check, FSI Calculator

Property Documentation & Workflow Tools

Forms & Templates, Document Generator, Document Translation, Dictionary

Vastu & Property Management Tools

Home Vastu Shastra, Plot Vastu Shastra, Property Management

Verified RealEstate™

Verified RealEstate™

We're honored to be part of your
real estate journey

3/350/2 Mettukuppam,
OMR Thoraipakkam,
Chennai, India

hello@verified.realestate
+91 9996 12 9996
www.verified.realestate