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DIGITALLY VERIFIED RECORD

Er.K.GANAPATHI,

B.E.,M.E.,F.I.E.,F.I.V.,PE(I),FACCE(I).,D.Litt(USA)

GEO TECHNICAL / STRUCTURAL ENGINEER

GEOMATRIX CONSULTANCY

(An ISO 9001 : 2015 Certified Firm)

Registered Geo-Tech, Structural, Construction Engineer & Quality Auditor in CMDA, DTCP and LPA

Corporate Office : No.22,P.T.Rajan Road 3rd Street (Thomas Street), Narimedu,Madurai - 625002.

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E-mail : geomatrixconsultancy@gmail.com, GSTIN : 33AFIPG8690P1ZR, PAN : AFIPG8690P, TIN : MRIK02709A

✆ : (0452)-2905566, Mobile : 7598031360, 7708758598, 7871758599

Branch Office : ✦ Chennai ✦ Coimbatore ✦ Trichy

STABILITY CERTIFICATE

(Plan Approval Purpose only)

STATEMENT ACCOMPANYING FORM –"A"

1	Survey number/Door No of the building	:	BLOCK NO-5
2	Location: Street Number, Ward Number, Name of the place, i.e. Corporation, Municipality/ Panchayatunion/ Township/ cantonment)	:	OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV, LALBAHADHUR SASTHRI STREET,BIBIKULAM VILLAGE,MADURAI NORTH TALUK,ZONE-1,MADURAI CORPORATION,MADURAI DISTRICT
3	Year of construction	:	Proposed to be Construct.
4	Approximate cost of construction as per current rate	:	Rs.8,71,85,170 /-
5	Purpose for which the building is being used or proposed to be used	:	Residential Apartment G+5
	Details of construction of the building(Particulars the foundation soils,Specification of the various parts under)		
	a) Foundation	:	RCC PILE FOUNDATION
	b) Basement	:	P.C.C.1:4:8
	c) Superstructure	:	BRICK WORK 9"
	d) Flooring	:	CEMENT FLOORING
	e) Roof	:	RCC FRAMED STRUCTURE - cum STEEL STRUCTURE
6	Period for which license is required	:	**26.09.2025 to 26.08.2028** (3 Years)
7	No of persons to be accommodated	:	120 persons (proposed)

8 "CERTIFIED" that no addition or alteration has been made, to be existing or portion of the building for which this application has been made, I undertake to obtain a fresh license in case any addition or alteration is madeto the existing or portion of the building also undertake to obtain a fresh license if the purpose for which the license is granted for the use of building or a portion of building is originally is changed or altered subsequently.

GEOMATRIX CONSULTANCY MADURAI

Date : 26.09.2025

Place : Madurai

Er. K.GANAPATHI B.E.,M.E.,F.I.E.,F.I.V.,D.Litt(USA)
Registered Structural Engineer Grade-II/ Chartered Engineer
(CMDA Regn.No: SE/GR II/16-01067)
DTCP Regn. No: SE/Grade-II/03/2025/DTCP/MADURAI/APRIL/2025
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FORM – "B"

FORM of certificate of structural under Sub-Section (4) of Madras Public Buildings (Licensing) Act 1965 (Madras Act 13 of 1965) referred to in Rule 4 of Tamilnadu Public Building (Licensing) Rules 1966)
I certify that I have inspected the building mentioned in the statement and furnish below its salient technical features.

1. FOUNDATION

I. Depth below ground level	:	2.4m, From Nature Ground Level
II. Nature of soil met with at foundation level	:	**Clay mixed with Sand**
III. Pressure at foundation	:	1986 kN/Sq.m
IV. Probable safe bearing capacity of strata met with foundation	:	162 kN/Sq.m

2. SUPER STRUCTURE

I. Maximum stress in the most critical Section of masonry and concrete	:	Brick work in cement :5.24 MT/Sq.m Cement Concrete : 31.39 MT/Sq.m
II. Nature of masonry and concrete and it's safe permissible stress	:	Brick work in cement : 9.60 MT/Sq.m Cement Concrete : 92.14 MT/Sq.m

The structural soundness of the building has been verified by me with reference to ISI loading standards 875 (latest version) and other relevant Indian standards code of practice and I declare that the building is structurally sound to be used as a public building for the purpose noted in the statement. A license may be granted for the period from **26.09.2025 to 26.08.2028 (3 Years)** inclusive.

26/09/25

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

Er. K.GANAPATHI, B.E.,M.E.,F.I.E.,F.I.V.,D.Litt(USA)
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FORM – "C"

Under Sub-Section I of Section 5 of Madras Public Buildings (Licensing) Act 1965 (Madras Act XII) Referred to In Rule 5 of the Madras Public Building (Licensing) Rules 1966

I have inspected the building site proposed to be constructed as specified in the statement below and I have satisfied myself that the building is structurally sound to be used as a public buildings for the purpose specified in the statement. The structural soundness of the buildings has been verified taking into account, the loading as per the latest Indian Standard 875. I am therefore of the opinion that a license may be granted for the **Proposed Construction of Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV**

STATEMENT TO ACCOMPANYING THE CERTIFICATE OF STRUCTURAL SOUNDNESS

1	**Location of the building Door Number, Street and Number of the place**	BLOCK NO-5
2	**Age of the Building**	Proposed to be constructed
3	**Number of the Storey**	GF +5
4	**Short description of structures**	R.C.C Framed Struture with Brick Masontry Walls
5	**Purpose for which the building is certified for use**	Residential Apartment
6	**Period for which the building will be structurally sound**	**26.09.2025 to 26.08.2028 (3 Years)**
7	**Number of persons to be accommodated**	120 persons (proposed)
REMARKS : Periodical building repair and maintanance is essentially needed as when necessary arises		

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

26/9/25

Er. K.GANAPATHI, B.E.,M.E.,F.I.E.,F.I.V.,D.Litt(USA)
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WATER TREATMENT PLANT

Proposed Construction of Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV

EQUALIZATION TANK:

Waste water let into the equalization tank.

BIOLOGICAL TREATMENT:

In this the sewage water passes through the specially designed Rotary Bio Contractor (RBC) allows the Sewage maximum contact with the Bio mass.

POST SEDIMENTATION TANK:

From the biological tank the water flows into the post sedimentation tank where the sedimentation takes place. From the post sedimentation tank the sludge is pumped into the sludge tank and the overflow inlet into the Sedimentation tank. Overflow from the settling tank is the treated water.

SLUDGE TANK:

From the post sedimentation tank it is pumped into the sludge tank.

TREATED WATER TANK:

Treated water is collected in the treated water tank from the settling tank as the Overflow.

ELECTRICAL POWER:

AC Three phase 440v-8KW

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

Ganapathi 26/09/25

Er. K.GANAPATHI, B.E.,M.E.,F.I.E.,F.I.V.,D.Litt(USA)
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RAINWATER HARVESTING REPORT

Report Accompany the Rain Water Harvesting pit for the Construction of **Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV**

Size of rainwater harvesting provide

Width	:	1.00 m
Depth	:	1.50 m
R.W.H. pit provide	:	Along the East and West side of the proposed building

SPECIFICATIONS:

Earth work excavation for Rain Water Harvesting pit. All round in pit provide 0.23 m thick brick wall in C.M. 1:5 mix using best country bricks up to 1.50 m depth. The course Rubble stone filling in the pit 0.90 m depth in second layer. The Sand filling in the pit 0.50 m depth in top layer. Provide 4 inch dia P.V.C. pipe to collect the rain water from the building and to connect the Rain Water Harvesting Pit.

As per the above details, I certify that the Rain Water Harvesting Pit proposed in the site is more than Sufficient. This provision is under Government order no. 138 dt. 11.10.2002 Dept. Municipal Administration and Water Supply.

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

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SOLAR HOT WATER SYSTEM (SHWS) CALCULATIONS

Report Accompany the Solar Hot Water System (SHWS) Calculation for the **Proposed Construction of Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV**

Total number of persons	:	120 persons (proposed)
Water consumption @50 lit/person/day	:	120x135
Total consumption	:	16,200 liters
No. of SWHS (5000 lit capacity)	:	4 Nos.

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

Ganapati 26/09/25

Er. K.GANAPATHI, B.E.,M.E.,F.I.E.,F.I.V.,D.Litt(USA)
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DECLARATION

I K.GANAPATHI, son of P.KUTHALINGAM residing at No.22(First Floor),Thomas 3rd Street,Narimedu, Madurai- 625002. (Residence), No.22(Ground Floor),Thomas 3rd Street,Narimedu,Madura- 625002. (Office) do hereby declare that,I am the Registered Structural Engineer in Government of Tamilnadu and have the qulaifications as per Tamilnadu Combined building Rules 2019 for issuing the certificate of structural soundness of the buildings for the

OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV, LALBAHADHUR SASTHRI STREET,BIBIKULAM VILLAGE,MADURAI NORTH TALUK,ZONE-1,MADURAI CORPORATION,MADURAI DISTRICT

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

26/09/25

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1	**Name and Address**	:	**Dr.K.GANAPATHI.,B.E.,M.E.,M.I.E.,F.I.V.,D.Litt, (USA). No.22(Ground Floor),Thomas 3rd Street,Narimedu,Madurai- 625002.**
2	**Engineering Qualification**	:	1. Degree in Bachelor of Engineering (Civil) - Thiyagaraja College of Engineering – 2003 - (First class) 2. M.E. (Soil Mechanics and Foundation Engineering), Anna University – 2011 –First Class 3. Corporate Member of the Institution of Engineers & **Chartered Engineer** 4. Fellow in the Institute of Valuers & Approved Valuer 5. Doctorate of letters from World Tamil University (USA) for Geotechnical and Structural Engineer 6.Approved **Professional Engineer** in Engineering Counsil of India (Registration No:PE-00244/16) 7.Registered structural Engineer Grade - II (SE) as per theTamilNadu combined Development and Building Rules 2019 approved vide G.O.(Ms)No:18 MAWS (MAI)Dept Dated 04.02.2019.**(CMDA Regn No:SE/GR-II/19/04/067 Renewed dt :30.04.2024 & MLPA Regn No.SE 005/2019/ GR-II dt :05.09.2019)**
3	**No. of years of experience and nature there of**	:	**39 years** Experience in Building Construction, Chartered & Consulting Engineer, Service as Consulting Engineer for State and Central Government Departments like AED, PWD, CPWD etc

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

26/09/25

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STABILITY CERTIFICATE

(Plan Approval Purpose only)

STATEMENT ACCOMPANYING FORM –"A"

1	Survey number/Door No of the building	:	BLOCK NO-5
2	Location: Street Number, Ward Number, Name of the place, i.e. Corporation, Municipality/ Panchayatunion/ Township/ cantonment)	:	OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV, LALBAHADHUR SASTHRI STREET,BIBIKULAM VILLAGE,MADURAI NORTH TALUK,ZONE-1,MADURAI CORPORATION,MADURAI DISTRICT
3	Year of construction	:	Proposed to be Construct.
4	Approximate cost of construction as per current rate	:	Rs.8,71,85,170 /-
5	Purpose for which the building is being used or proposed to be used	:	Residential Apartment G+5
	Details of construction of the building(Particulars the foundation soils,Specification of the various parts under)		
	a) Foundation	:	RCC PILE FOUNDATION
	b) Basement	:	P.C.C.1:4:8
	c) Superstructure	:	BRICK WORK 9"
	d) Flooring	:	CEMENT FLOORING
	e) Roof	:	RCC FRAMED STRUCTURE - cum STEEL STRUCTURE
6	Period for which license is required	:	**26.09.2025 to 26.08.2028** (3 Years)
7	No of persons to be accommodated	:	120 persons (proposed)

8 "CERTIFIED" that no addition or alteration has been made, to be existing or portion of the building for which this application has been made, I undertake to obtain a fresh license in case any addition or alteration is madeto the existing or portion of the building also undertake to obtain a fresh license if the purpose for which the license is granted for the use of building or a portion of building is originally is changed or altered subsequently.

Date : 26.09.2025
Place : Madurai

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FORM of certificate of structural under Sub-Section (4) of Madras Public Buildings (Licensing) Act 1965 (Madras Act 13 of 1965) referred to in Rule 4 of Tamilnadu Public Building (Licensing) Rules 1966)
I certify that I have inspected the building mentioned in the statement and furnish below its salient technical features.

1. FOUNDATION

I. Depth below ground level	:	2.4m, From Nature Ground Level
II. Nature of soil met with at foundation level	:	**Clay mixed with Sand**
III. Pressure at foundation	:	1986 kN/Sq.m
IV. Probable safe bearing capacity of strata met with foundation	:	162 kN/Sq.m

2. SUPER STRUCTURE

I. Maximum stress in the most critical Section of masonry and concrete	:	Brick work in cement :5.24 MT/Sq.m Cement Concrete : 31.39 MT/Sq.m
II. Nature of masonry and concrete and it's safe permissible stress	:	Brick work in cement : 9.60 MT/Sq.m Cement Concrete : 92.14 MT/Sq.m

The structural soundness of the building has been verified by me with reference to ISI loading standards 875 (latest version) and other relevant Indian standards code of practice and I declare that the building is structurally sound to be used as a public building for the purpose noted in the statement. A license may be granted for the period from **26.09.2025 to 26.08.2028 (3 Years)** inclusive.

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

20/09/25

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(CMDA Regn No: SE/GR-II/19/04/057)
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FORM – "C"

Under Sub-Section I of Section 5 of Madras Public Buildings (Licensing) Act 1965 (Madras Act XII) Referred to In Rule 5 of the Madras Public Building (Licensing) Rules 1966

I have inspected the building site proposed to be constructed as specified in the statement below and I have satisfied myself that the building is structurally sound to be used as a public buildings for the purpose specified in the statement. The structural soundness of the buildings has been verified taking into account, the loading as per the latest Indian Standard 875. I am therefore of the opinion that a license may be granted for the **Proposed Construction of Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV**

STATEMENT TO ACCOMPANYING THE CERTIFICATE OF STRUCTURAL SOUNDNESS

1	**Location of the building Door Number, Street and Number of the place**	BLOCK NO-5
2	**Age of the Building**	Proposed to be constructed
3	**Number of the Storey**	GF +5
4	**Short description of structures**	R.C.C Framed Struture with Brick Masontry Walls
5	**Purpose for which the building is certified for use**	Residential Apartment
6	**Period for which the building will be structurally sound**	**26.09.2025 to 26.08.2028 (3 Years)**
7	**Number of persons to be accommodated**	120 persons (proposed)
REMARKS : Periodical building repair and maintanance is essentially needed as when necessary arises		

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

26/09/25

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WATER TREATMENT PLANT

Proposed Construction of Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV

EQUALIZATION TANK:

Waste water let into the equalization tank.

BIOLOGICAL TREATMENT:

In this the sewage water passes through the specially designed Rotary Bio Contractor (RBC) allows the Sewage maximum contact with the Bio mass.

POST SEDIMENTATION TANK:

From the biological tank the water flows into the post sedimentation tank where the sedimentation takes place. From the post sedimentation tank the sludge is pumped into the sludge tank and the overflow inlet into the Sedimentation tank. Overflow from the settling tank is the treated water.

SLUDGE TANK:

From the post sedimentation tank it is pumped into the sludge tank.

TREATED WATER TANK:

Treated water is collected in the treated water tank from the settling tank as the Overflow.

ELECTRICAL POWER:

AC Three phase 440v-8KW

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

20/09/25

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RAINWATER HARVESTING REPORT

Report Accompany the Rain Water Harvesting pit for the Construction of **Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV**

Size of rainwater harvesting provide

Width	:	1.00 m
Depth	:	1.50 m
R.W.H. pit provide	:	Along the East and West side of the proposed building

SPECIFICATIONS:

Earth work excavation for Rain Water Harvesting pit. All round in pit provide 0.23 m thick brick wall in C.M. 1:5 mix using best country bricks up to 1.50 m depth. The course Rubble stone filling in the pit 0.90 m depth in second layer. The Sand filling in the pit 0.50 m depth in top layer. Provide 4 inch dia P.V.C. pipe to collect the rain water from the building and to connect the Rain Water Harvesting Pit.

As per the above details, I certify that the Rain Water Harvesting Pit proposed in the site is more than Sufficient. This provision is under Government order no. 138 dt. 11.10.2002 Dept. Municipal Administration and Water Supply.

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

26/9/25

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Branch Office : ✦ Chennai ✦ Coimbatore ✦ Trichy

SOLAR HOT WATER SYSTEM (SHWS) CALCULATIONS

Report Accompany the Solar Hot Water System (SHWS) Calculation for the **Proposed Construction of Residential BUILDING IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV**

Total number of persons	:	120 persons (proposed)
Water consumption @50 lit/person/day	:	120x135
Total consumption	:	16,200 liters
No. of SWHS (5000 lit capacity)	:	4 Nos.

Date : 26.09.2025
Place : Madurai

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DECLARATION

I K.GANAPATHI, son of P.KUTHALINGAM residing at No.22(First Floor),Thomas 3rd Street,Narimedu, Madurai- 625002. (Residence), No.22(Ground Floor),Thomas 3rd Street,Narimedu,Madura- 625002. (Office) do hereby declare that,I am the Registered Structural Engineer in Government of Tamilnadu and have the qulaifications as per Tamilnadu Combined building Rules 2019 for issuing the certificate of structural soundness of the buildings for the

OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO -5,S.WARD NO.XIV, LALBAHADHUR SASTHRI STREET,BIBIKULAM VILLAGE,MADURAI NORTH TALUK,ZONE-1,MADURAI CORPORATION,MADURAI DISTRICT

Date : 26.09.2025
Place : Madurai

GEOMATRIX CONSULTANCY MADURAI

26/09/25

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1	**Name and Address**	:	**Dr.K.GANAPATHI.,B.E.,M.E.,M.I.E.,F.I.V.,D.Litt, (USA). No.22(Ground Floor),Thomas 3rd Street,Narimedu,Madurai- 625002.**
2	**Engineering Qualification**	:	1. Degree in Bachelor of Engineering (Civil) - Thiyagaraja College of Engineering – 2003 - (First class) 2. M.E. (Soil Mechanics and Foundation Engineering), Anna University – 2011 –First Class 3. Corporate Member of the Institution of Engineers & **Chartered Engineer** 4. Fellow in the Institute of Valuers & Approved Valuer 5. Doctorate of letters from World Tamil University (USA) for Geotechnical and Structural Engineer 6.Approved **Professional Engineer** in Engineering Counsil of India (Registration No:PE-00244/16) 7.Registered structural Engineer Grade - II (SE) as per theTamilNadu combined Development and Building Rules 2019 approved vide G.O.(Ms)No:18 MAWS (MAI)Dept Dated 04.02.2019.**(CMDA Regn No:SE/GR-II/19/04/067 Renewed dt :30.04.2024 & MLPA Regn No.SE 005/2019/ GR-II dt :05.09.2019)**
3	**No. of years of experience and nature there of**	:	**39 years** Experience in Building Construction, Chartered & Consulting Engineer, Service as Consulting Engineer for State and Central Government Departments like AED, PWD, CPWD etc

Date : 26.09.2025
Place : Madurai

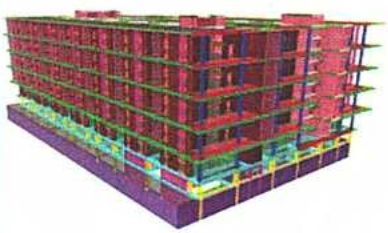
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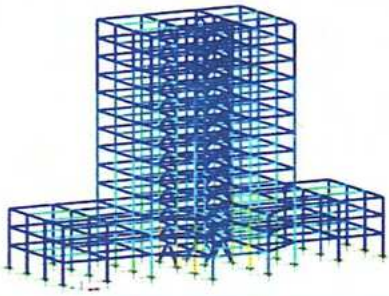
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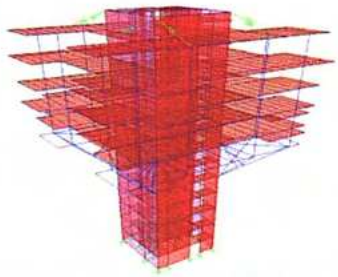
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PRELIMINARY STRUCTURAL DESIGN & STABILITY REPORT

CONSTRUCTION OF RESIDENTIAL APARTMENT BUILDING. IN OLD T.S.NO.12,12/2B, NEW T.S.NO.21/1, BLOCK NO-5, S.WARD NO.XIV

REPORT No:026 / GMC / SSR/ 25 -26	DATE :26.09.2025	REV : 0

LOCATION : LALBAHADHUR SASTHRI STREET, BIBIKULAM VILLAGE, MADURAI NORTH TALUK, ZONE-1, MADURAI CORPORATION, MADURAI DISTRICT.

CLIENT : THE CONSTRUCTIVE COMPANY, LIG COLONY,KK NAGAR, MADURAI

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REPORT NO: 26/ SSR /GMC/ 25-26 DATED: 26.09.2025

To

THE CONSTRUCTIVE COMPANY,

LIG COLONY,KK NAGAR,

Madurai.

Respected Sir,

Sub: Submission of Preliminary Structural Design & Stability Report - Reg

Name of work: Construction of **Residential Apartment Building** at BB KULAM,Madurai.

* * * * * * * * *

We appreciate the opportunity of service to you on this project and trust this reports meet your needs at this time. This report summarizes the result of our **STRUCTURAL ANALYSIS and CALCULATIONS** and contains structural recommendations for design and construction of this project. The Structure is Safe & Sound.

Based on the result of our structural calculations, we believe that the proposed project is feasible from a structural design point of concern, provided the recommendations in this report are incorporated in the design and implemented during the construction of the project.

If you have any queries regarding this report, please contact us. We look forward to being of further assistance as construction begins.

No of Pages in this Report: 09

Respectfully submitted

GEOMATRIX CONSULTANCY MADURAI

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PRIMILINARY STRUCTURAL DESIGN & STABILITY REPORT

1. INTRODUCTION

THE CONSTRUCTIVE COMPANY, **LIG COLONY, KK NAGAR, MADURAI** has proposed to construct a **RESIDENTIAL APARTMENT BUILDING, SURVEY NO.12/2B,T.S.NO:21, LAL BAHADUR SHASTRI STREET, BB KULAM, Madurai.** In order to get adequate data required for designing the structure for the purpose of structural safety, and preliminary design, he has instructed to prepare the design parameters and Structural Stability Certificate.

M/S.GEOMATRIX CONSULTANCY, Madurai, structural Design Team were entrusted with the work of preparing preliminary Design Report with brief design calculations for structural members and Submit the Structural Stability Certificate having regard to safety and durability.

2. STRUCTURAL SYSTEM

The proposed structure is a Reinforced Cement Concrete Cum with Footing, Columns, Grade beams, Floor slabs, Staircases, roof beams, & Lintel etc. the proposed site measures approximately 4049.85 Sq.m.

Sl.no	Description	Area
1	STILT FLOOR	650.74 Sq.m
2	FIRST FLOOR	667.53 Sq.m
3	SECOND FLOOR	667.53 Sq.m
4	THIRD FLOOR	667.53 Sq.m
5	FOURTH FLOOR	667.53 Sq.m
6	FIFTH FLOOR	667.53 Sq.m
7	HEAD ROOM	44.67 Sq.m

The proposed Industrial Building Ground floor. The floor height from natural ground level are 0.60 m as per architectural drawings. LMR is not considered. The structural system is of RCC Beam – columns With Rigid joints. Foundation system is Isolated Footings and few are combined footings.

Each of blocks are analysis using Principles of FEM by using ETABS, Staad pro V8i

3. ANALYSIS METHOD

And columns are modeled as "Frame Elements" Majority of the floors objects "Membrane/Shell Elements". The shear walls are modeled by using cell element. The floor slabs are idealized "Rigid diaphragms" to effectively transfer the lateral forces floor system comprises conventional beams and slabs. Appropriate Loads and its combination as per relevant clauses as per IS Codes, for most unfavorable effects are chosen for design.

4. FOUNDATION

Foundation systems are based on recommendations given as per soil Investigation report provided by GEOMATRIX CONSULATANCY provide soil investigation **REPORT No: 113 / GRB / GMC / 2024-25 Dt. 18.09.2024.** As per soil report, the minimum depth of foundation should be 0.60m below the Natural Ground Level with SBC of 148 KN/m^2

5. DESIGN LOADS

5.1 Dead Load

Weight of materials shall be calculated on the basis of unit weights given in IS: 875 (Part-I)-1987.

5.2 Super Imposed dead loads

Super Imposed Loads: Consists of PCC / filling if any

Finishes: Consists of floor finishes

Brick wall Load:

All the internal Partition walls / ledge walls loads considered & applied over the Slab.

Walls: Brick walls are considered in all area

ITEAMS	INTENSITY in KN/m^2 OF PLAN AREA
Weatherproof course	Depends on the thickness slope and kind of material to be used for weatherproofing.=0.075*20.4 = 1.5 KN/m^2
Floor Finish	= 0.075*20.4 =1.5 KN/m2
Wall load	(refer : Annexure I)
All Structural elements	Layout & Size of elements shall be followed as per structural requirements

5.3 LIVE LOADS

The imposed load or otherwise live loads are assessed based on the occupancy classifications as per IS:875 (Part – 2)-1987 are as follows:

SL.NO	FLOOR LOADING asper IS 875 (PART-2) : 1987	LIVE LOAD KN/m²	FINISHES in KN/m²	FLOOR SYSTEM
I	Stilt floor to (3rd Floor + Terrace)			
A	All Rooms	2	1.5	Conventional Beam & Slab
B	Stairs	3	1.5	
C	Lobby / Corridor	4	1.5	
D	Toilets	2	1.5	
E	Ramps	2.5	1.5	
F	Partition	1.5		
II	Terrace			
A	Floors	1.5	1.5	115 mm Tk
B	Stairs	1.5	1.5	
C	LMR	10	1.5	Conventional Beam & Slab

5.4 LOAD COMBINATIONS

The various loads shall be combined in accordance with the Stipulations in IS 875(PART5 – 1987). Whichever combination produce the most unfavorable effect in the building, the foundation or structural member concerned shall be adopted.

LIMIT STATE OF COLLAPSE	LIMIT STATE OF SERVICEABILITY
1.5 DL+1.5LL	1.0DL+1.0LL
1.5DL±1.5Eqx	0.8DL±0.8Eqx
1.5DL±1.5Eqz	0.8DL±0.8Eqz
0.9DL±1.5Eqx	0.8DL+0.8LL±0.8Eqx
0.9DL±1.5Eqz	0.8DL+0.8LL±0.8Eqz
1.2DL+1.2LL±1.2Eqx	0.8DL±0.8WLx
1.2DL+1.2LL±1.2Eqz	0.8DL±0.8WLz
1.5DL±1.5WLx	0.8DL+0.8LL±0.8WLx
1.5DL±1.5WLz	0.8DL+0.8LL±0.8WLz
0.9DL±1.5WLx	
0.9DL±1.5WLz	
1.2DL+1.2LL±1.2WLx	
1.2DL+1.2LL±1.2WLz	

DL – DeadLoad

LL - Live Load

WL-Wind Load

EQ – Earthquake Load

6.0 DESIGN LIFE

The design life of structure is assumed as 50 years. This requirement is not applicable to replaceable materials.

7.0 DESIGN METHODALOGY

All RCC Structures shall be designed according to the Limit state method as Specified in IS 456- 2000 & detailing shall be done to SP 34 (S & T) – 1987. Water Retaining structure will be design as per IS Per 3370 -2009.

8.0 MATERIALS

The self-weight of the various elements computed based on the unit weight of materials as given below.

MATERIALS	UNIT WEIGHT KN/m3
Steel	78.50
Plain Cement Concrete	24
Reinforced Cement Concrete	25
AAC Blocks	7.5(Without plaster)
Dry Soil	18
Saturated Soil	20
Water	10
Cement Concrete Screed	24
Sand	18
Solid Concrete Blocks	17.65(Without plaster)
Sunk Fill Material cinder fill	7.5

Normal weight of aggregate shall be consider for arriving self-weight of all concrete works.

9.0 REINFORCEMENT

Steel Reinforcement shall be of grade Fe 500 confirming to IS 1786 -2008.

9.1 COVER TO REINFORCEMENT – MODERATE EXPOSURE

The nominal cover to main reinforcement shall be as follows.

Isolated footing Foundation	- 50 mm
Columns	- 40 mm
Beams	- 30 mm
Slabs	- 25 mm

For any other elements not specified above, clear cover shall be as per the clause 26.4 of **IS: 456-2000**

10.0. GRADE OF CONCRETE & STEEL

ITEM	GRADE OF CONRETE	GRADE OF STEEL
Foundation	M25	Fe500
Column-At all levels	M25	Fe500
Beams-At all levels	M25	Fe500
Slabs-At all levels	M25	Fe500
Underground Sump Tank, STP	M25	Fe500

11.0. DESIGN STANDARDS

SL.NO	CODE	DESCRIPTIONS
1	IS:875(Part 1)-1987	Code of practice for design loads (other than earthquake) for buildings and structures- Unit weights of buildings materials and stored material.
2	IS:875(Part 2)-1987	Code of practice for design loads (other than earthquake) for buildings and structures- Imposed
3	IS:456-2000	Code of practice for plain & reinforced concrete
4	IS:1786-2008	High Strength deformed steel bars and wires for concrete reinforcement-specification.
5	SP:34-1987	Hand Book on Concrete reinforcement and detailing.
6	IS:3370	Code of practice for concrete structures for the storage of Liquid.
7	IS 456-1976 SP-16	Design Aids for Reinforced Concrete
8	IS 875 (PART-3)	Design and Analysis of wind load

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Registered Structural Engineer Grade-III/ Chartered Engineer
(CMDA Regn No: SE/GR-III/19/04/067)
DTCP Regn. No: SE/Grade-II/05/2025/DTCP/MADURAI/APRIL/2025
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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.