

ASHHIRWAAD ANALYTICAL LABORATORY

(NABL Accredited Laboratory TC - 8619)

(A Unit of Ashhirwaad Associates - Regd. No. 18/2000)

(Approved by Government of India)

Civil Engineering Consultancy Services

- ❖ Geotechnical Investigation
- ❖ Survey and contouring
- ❖ Load testing on Piles
- ❖ Structural consultancy
- ❖ Material testing
- ❖ NDT Services

"A Total Solution Provider In Civil Engineering Services"



Ref: AAL/9634/22

Date: 25.05.22

FORM - 5

(Bye - Law 18)


Building Completion & Structural Stability Certificate

I hereby certify that the school "Maharishi Vidya Mandir" functioning in the buildings of Block 'A' and 'C' located in No. R.S.No. 120/1, 120/2, 120/3, 124 & 127/6 at Keelparikalpet Village, Bahour Commune, Puducherry - 607402 confirm in all respect to all the requirements of the building Bye-Law in respect of structural safety, Fire safety, Hygienic and Sanitary condition inside and in the surroundings as per the pursuance of permission granted by the Pondicherry Planning Authority and completed the same.

The Present structure of buildings is suitable for running an educational institution and around 2000pupils can be accommodated in both buildings.

These buildings were inspected by me and it is structurally sound, the residual life of the buildings is more than 35 years under proper periodic maintenance. The Structural Stability certificate is to be revalidated after 3yeras from the date of issue.

For ASHIRWAAD ANALYTICAL LABORATORY


Proprietor



Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA., (Ph.D.),
MIB., FIV., MICI., IIT Arb.

Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-969/PPA/LIC/2018)
Regd. Quality Auditor: (3-1215/PPA/LIC/RQA/2021)
Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No.182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008. South India

Head Office: "Mayan Vihar" No.182, 2nd Floor, 4th Main Road, Mahaveer Nagar, Karuvadikuppam, Puducherry-605008 Phone: 0413-2252663 Extn.27 & 31 Cell: 7598491505

Branch Office: No. 6C/20, First Floor, Cauvery-Street, Saligramam, Chennai- 93. Cell: 9629486505
E.mail: aageotech@gmail.com, Website: www.ashhirwaadassociates.co.in

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Civil Engineering Consultancy Services

- ❖ Geotechnical Investigation
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 - ❖ Material testing
 - ❖ NDT Services
- "A Total Solution Provider In Civil Engineering Services" ISO/IEC 17025:2005

Ref:

Date: 21.02.20

FORM - 5

(Bye - Law 18)

Building Completion & Structural Stability Certificate


I hereby certify that the school "Maharishi Vidya Mandir" functioning in Block 'C' - Sri Ganesh College Campus located in R.S. No. R.S.No. 120/1, 120/2, 120/3, 124 & 127/6 at Keelparikalpet Village, Bahour Commune, Puducherry - 607402 has been completed in all aspects.

I declare that the building confirms in all respects to all the requirements of the building Bye-Law in respect of structural safety, Fire safety, Hygienic and Sanitary condition inside and in the surroundings as per the pursuance of permission granted by the Pondicherry Planning Authority and completed the same.

The present structure is suitable for running educational institution and around 500 Pupils can be accommodated in this building.

This building was inspected by me and it is structurally sound, the residual life of the building is more than 35 years under proper periodic maintenance. The structural stability certificate is to be revalidated after 3 years from the date of issue.

For ASHIRWAAD ANALYTICAL LABORATORY


Proprietor 21/02/2020



Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA,
MIE., FIV., MICI, IIT Arb.
Chief - Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-1 Structural Engineer : (3-969/PPA/LIC/2018)
Regd. Engineer: (3-724/PPA/LIC/2011)
Office : "Mayan Vihar" No.182, 4th Main Road,
Mahaveer Nagar, Puducherry - 605 008, South India.

Head Office: "Mayan Vihar" No.182, 2nd Floor, 4th Main Road, Mahaveer Nagar, Karuvadikuppam, Puducherry-605008 Phone: 0413-2252663 Extn.27 & 31 Cell: 7598491505
Branch Office: No. 14/57C, Nerkundram Road, Vadapalani, Chennai - 26. Cell: 9629486505
E.mail: ageotech@gmail.com, Website: www.ashhirwaadassociates.co.in

FORM NO 8
CERTIFICATE OF UNDERTAKING
FOR MULTISTOREYED/ SPECIAL/ GROUP DEVELOPMENT BUILDINGS
SAFETY REQUIREMENT


To

The Member – Secretary,
Planning Authority.

**Ref: EXISTING INSTITUTIONAL BUILDING “MAHARISHI VIDHYA MANDIR”
(MAIN BLOCK ‘A’- G+2) AT MULLODAI, PUDUCHERRY- 607402.**

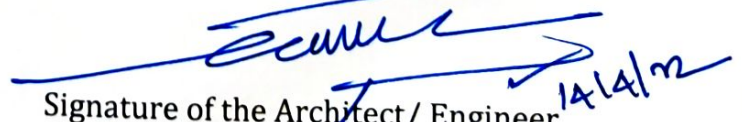
- (1) Certified that the building plans submitted for approval will satisfy the safety requirements as stipulated under Building Bye-law and Zoning Regulations and the information given therein is factually correct to the best of our knowledge and understanding.
- (2) It is also certified that the structural design including safety from natural hazards based on soil conditions shall be duly incorporated in the design of the building and these provisions shall be adhered to during the construction.

Signature of Owner with Date:
Name in Block Letters
Address


Registered Structural Engineer
on Record with date

Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA., (Ph.D.),
MIB., FIV., MICI., IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-969/PPA/LIC/2018)
Regd. Quality Auditor: (3-1215/PPA/LIC/RQA/2021)
Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No: 182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

Signature of Developer with Date
Name in Block Letters:
Address:


Signature of the Architect/ Engineer
on Record with date.
Name in Block Letters:
Address:

Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA., (Ph.D.),
MIB., FIV., MICI., IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-969/PPA/LIC/2018)
Regd. Quality Auditor: (3-1215/PPA/LIC/RQA/2021)
Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No: 182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

FORM NO: 10

CERTIFICATE OF UNDERTAKING OF REGISTERED STRUCTURAL ENGINEER

To

The Member – Secretary,
Planning Authority.

REF: EXISTING INSTITUTIONAL BUILDING “MAHARISHI VIDHYA MANDIR”
(MAIN BLOCK 'A'- G+2) AT MULLODAI, PUDUCHERRY- 607402.

Owner : Mr. S. SELVAMANI. / *Correspondent*

I am a Registered Structural Engineer (R.S.E.). This is to certify that I have been appointed as Structural Engineer to prepare the Structural design basis report, detailed structural design and detailed Structural drawings for above mentioned project. I am fully conversant of my duties and responsibility under the building Bye – laws and Zoning Regulations and assure that I shall fulfill them in all respects.

I have prepared and signed a structural design basis report (S.D.B.R.)

I undertake to carry out a detailed structural design and prepare detailed structural Drawings of proposed building as per the latest Indian Standard Specifications, and as indicated in the Structural Design basis report.

I undertake to supply the Owner and the supervisor the detailed Structural Drawings. If my services are terminated, I undertake to intimate the Authority in writing.

Signature:

[Handwritten Signature]
14/9/22

Er. N.J.L. RAMESH, M.Tech, M.Sc, MBA, (Ph.D),
MIS, FIV, MICI, IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-889/PPA/LIC/2018)
Regd. Quality Auditor: (3-1215/PPA/LIC/RQA/2021)
Regd. Engineer (3-724/PPA/LIC/2011)
Office: Mayan Vihar, No. 18, 40, Main Road,
Manaveer Nagar, Puducherry-605 008, South India

STRUCTURAL DESIGN BASIS REPORT

Part 1		General Data	
S.No.	Description	Information	Notes
(1)	Address of the building <ul style="list-style-type: none"> Name of the Building Plot Number Sub Plot Number Village <ul style="list-style-type: none"> a) Name b) R.S./T.S. Number Locality/Township District 	EXISTING INSTITUTIONAL BUILDING "MAHARISHI VIDHYA MANDIR" (MAIN BLOCK 'A'- G+2) AT MULLODAI, PUDUCHERRY- 607402.	
(2)	Name of the owner	Mr. S. SELVAMANI. / <i>Consulment</i>	
(3)	Name of the Builder	-	
(4)	Name of Registered Architect/Engineer	Er. N.J.L. RAMESH	
(5)	Name of Registered Structural Engineer	Er. N.J.L. RAMESH	
(6)	Use of the building	EDUCATIONAL INSTITUTIONAL BUILDING	
(7)	Number of storey's above ground level (including storey's to be added later, if any)	(G+2)	
(9)	Type of Structure <ul style="list-style-type: none"> Load bearing walls R.C.C. frame R.C.C. frame & shear walls Steel frame 	RCC Framed Structure with Brick in filled Partition walls	
(10)	Soil data <ul style="list-style-type: none"> Type of soil Design safe bearing capacity 	Not Available	
(11)	Dead loads (unit weight adopted) <ul style="list-style-type: none"> Earth Water Brick masonry Plain Cement Concrete Reinforced Cement Concrete Floor finish Other fill materials Piazza floor fill and landscape 	1600 Kg/m ³ 1000 Kg/m ³ 1920 Kg/m ³ 2400 Kg/m ³ 2500 Kg/m ³ 125Kg/m ³ - -	IS:875 Part 1
(12)	Imposed (Live) loads <ul style="list-style-type: none"> Piazza floor accessible to Fire Tender Piazza floor not accessible to Fire Tender Floor load 	- - 500 Kg/m ² 200Kg/m ²	IS: 875 Part 2

	• Roof load		
(13)	Cyclone/Wind • Speed • Design pressure intensity	50m/s 150Kg/m ²	IS: 875
(14)	Seismic Zone	Zone II	IS: 875(2002)
(15)	Importance Factor	1.5	IS: 875(2002) Table 6
(16)	Seismic Zone Factor (Z)	0.10	IS: 1893 Table 2
(17)	Response reduction factor	3(Ordinary moment Resistant Frame)	IS: 1893 Table 7
(18)	Fundamental natural period - approximate	0.245 sec	IS: 1893 Cl.7.6
(19)	Design horizontal acceleration spectrum value (Ah)	0.0147	IS: 1893 Cl.6.4.2
(20)	Expansion / Separation Joints	Nil	

Part 2 applicable	Load bearing masonry buildings	Not Applicable
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[Handwritten Signature]
14/1/22

Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA., (Ph.D.),
MIB., FIV., MICI., IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-969/PPA/LIC/2018)
Regd. Quality Auditor: (3-1215/PPA/LIC/QQA/2021)
Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No:182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

Part 3 Reinforced concrete framed buildings			
S.No.	Description	Information	Notes
(1)	Type of Structure <ul style="list-style-type: none"> • Regular frames • Regular frames with shear wall • Irregular frames • Irregular frames with shear wall • Soft storey 	Regular Frame	IS: 1893 Cl.7.1
(2)	Number of basement	Nil	
(3)	Number of floors including ground floor	3	
(4)	Horizontal floor system <ul style="list-style-type: none"> • Beam and Slabs • Waffles • Ribbed Floor • Flat slab with drop • Flat slabs without drops 	Beam and Slab	
(5)	Soil Data <ul style="list-style-type: none"> • Type of soil • Recommended type of foundation <ul style="list-style-type: none"> - Independent footings - Raft - Piles • Recommended bearing capacity of soil • Recommended, type, length diameter and load capacity of piles • Depth of Water table • Chemical analysis of ground water • Chemical analysis of soil 	Not available	IS: 1498
(6)	Foundations <ul style="list-style-type: none"> • Depth below ground level • Type <ul style="list-style-type: none"> - Independent - Interconnected - Raft - Piles 	Not available	
(7)	System of interconnecting foundations <ul style="list-style-type: none"> • Plinth beams • Foundation beams 	Plinth beams Grade beams	
(8)	Grades of concrete used in different parts of building	M25	
(9)	Method of analysis used	P delta analysis	
(10)	Computer software used	Staad.Pro V8i-Software	

(12)	Base shear a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b	36 KN Based on Dynamic Analysis	IS: 1893 Cl.7.5.3
(13)	Distribution of seismic forces along the height of the building	Included in the 3D Analysis	IS: 1893 Cl.7.7
(14)	The column of soft ground storey specially designed	N/A	IS: 1893 Cl.7.10
(15)	Clear minimum cover provided in • Footing • Column • Beams • Slabs • Walls	60mm 50mm 30mm 20mm 20mm	
(16)	Ductile detailing of RC frame • Type of reinforcement used • Minimum dimension of beams • Minimum dimension of columns • Minimum percentage of reinforcement of beams at any cross section • Maximum percentage of reinforcement at any section of beam • Spacing of transverse reinforcement of 2-d length of beams near the ends • Ratio of capacity of beams in shear to capacity of beams in flexure • Maximum percentage of reinforcement in column • Confining stirrups near ends of columns and in beam column joints a) Diameter b) Spacing • Ratio of shear capacity of columns to maximum seismic shear in the storey	Fe 500 230x300 230x230 0.25% 2.0% 100mm 1.25 3.25% 8mm 100mm 0.9	IS: 456 Cl.5.6 IS:13920 Cl.6.1 IS:13920 Cl.7.1.2 IS: 456 Cl.26.5.1(a) IS :13920 Cl.6.2.1 IS:456 Cl.26.5.1.1(b) IS:13920 Cl.26.5.1.1(b) IS:13920 Cl.6.2.2 IS:13920 Cl.6.3.5 IS:456 Cl.26.5.3.1 IS:13920Cl.7.4

Part 4

Buildings in Structural Steel

Not applicable


Er. N.J.L. RAMESH, M.Tech, M.Sc, Ph.D.,

MBE., FIV., MCI., IT Arb.
Chief Consultant (Geotech & Structures)
Regd. Geotechnical Engineer (M/3148/2011)
Regd. Grade-I Structural Engineer (3-969/PPA/LIC/2018)
Regd. Quality Auditor (3-1215/PPA/LIC/RQA/2021)
Regd. Engineer (3-724/PPA/LIC/2011)

Office: 'Mayan Vihar' No:182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

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Survey and contouring

Load testing on Piles

Structural consultancy

Material testing

NDT Services

"A Total Solution Provider In Civil Engineering Services"



NABL - TC - 8619

Ref: 9448) MVM - stol. stability certificate /2022-23

Date: 14/4/22



Head Office: "Mayan Vihar" No.182, 2nd Floor, 4th Main Road, Mahaveer Nagar, Karuvadikuppam, Puducherry-605008 Phone: 0413-2252663 Extn.27 & 31 Cell: 7598491505

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Survey and contouring

Load testing on Piles

Structural consultancy

Material testing

NDT Services



NABL - TC - 8619

"A Total Solution Provider In Civil Engineering Services"

Ref: 9448/MVM - steel stability Certificate /2022-23

Date: 14/04/22



Head Office: "Mayan Vihar" No.182, 2nd Floor, 4th Main Road, Mahaveer Nagar, Karuvadikuppam, Puducherry-605008 Phone: 0413-2252663 Extn.27 & 31 Cell: 7598491505

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NDT Services



NABL - TC - 8619

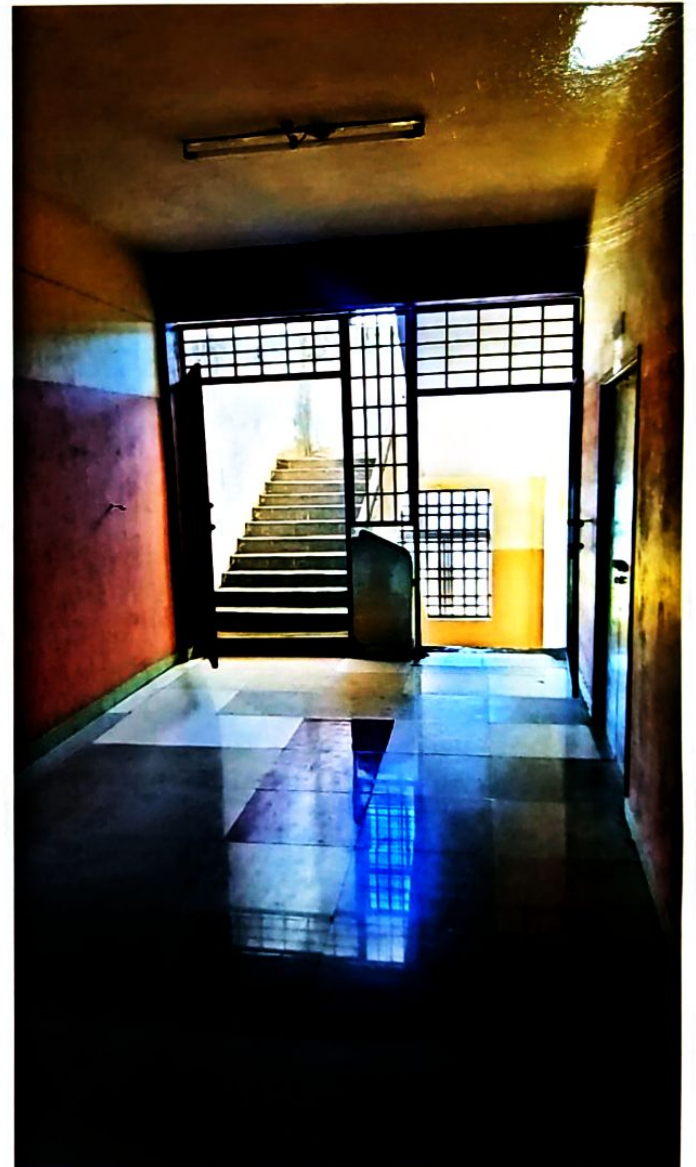
"A Total Solution Provider In Civil Engineering Services"

Ref:

9448 / MVM - stal. Stability Certificate / 2022-23

Date: 14/04/22

MVM Main Block "A" - Stairs



Head Office: "Mayan Vihar" No.182, 2nd Floor, 4th Main Road, Mahaveer Nagar, Karuvadikuppam, Puducherry-605008 Phone: 0413-2252663 Extn.27 & 31 Cell: 7598491505

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FORM NO 8
CERTIFICATE OF UNDERTAKING
FOR MULTISTOREYED/ SPECIAL/ GROUP DEVELOPMENT BUILDINGS
SAFETY REQUIREMENT

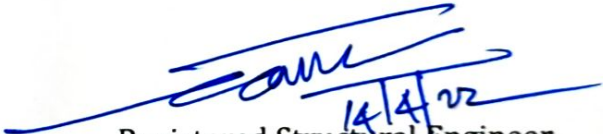
To

The Member – Secretary,
Planning Authority.

**Ref: EXISTING INSTITUTIONAL BUILDING "MAHARISHI VIDHYA MANDIR"
(PRE-PRIMARY BLOCK 'C'- G+1) AT MULLODAI, PUDUCHERRY-
607402.**


- (1) Certified that the building plans submitted for approval will satisfy the safety requirements as stipulated under Building Bye-law and Zoning Regulations and the information given therein is factually correct to the best of our knowledge and understanding.
- (2) It is also certified that the structural design including safety from natural hazards based on soil conditions shall be duly incorporated in the design of the building and these provisions shall be adhered to during the construction.

Signature of Owner with Date:
Name in Block Letters
Address


14/4/22
Registered Structural Engineer
on Record with date

Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA, (Ph.D.),
M.B., F.V., M.C.I., IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-969/PPA/LIC/2018)
Regd. Quality Auditor: (3-1215/PPA/LIC/RQA/2021)
Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No.182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

Signature of Developer with Date
Name in Block Letters:
Address:


14/4/22
Signature of the Architect/ Engineer
on Record with date.
Name in Block Letters:
Address:

Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA, (Ph.D.),
M.B., F.V., M.C.I., IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
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Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No.182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

FORM NO: 10

CERTIFICATE OF UNDERTAKING OF REGISTERED STRUCTURAL ENGINEER

To

The Member – Secretary,
Planning Authority.

**REF: EXISTING INSTITUTIONAL BUILDING “MAHARISHI VIDHYA MANDIR”
(PRE-PRIMARY BLOCK ‘C’- G+1) AT MULLODAI, PUDUCHERRY- 607402.**

Owner: Mr. S. SELVAMANI.

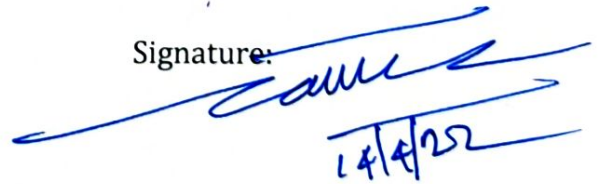
I am a Registered Structural Engineer (R.S.E.). This is to certify that I have been appointed as Structural Engineer to prepare the Structural design basis report, detailed structural design and detailed Structural drawings for above mentioned project. I am fully conversant of my duties and responsibility under the building Bye – laws and Zoning Regulations and assure that I shall fulfill them in all respects.

I have prepared and signed a structural design basis report (S.D.B.R.)

I undertake to carry out a detailed structural design and prepare detailed structural Drawings of proposed building as per the latest Indian Standard Specifications, and as indicated in the Structural Design basis report.

I undertake to supply the Owner and the supervisor the detailed Structural Drawings. If my services are terminated, I undertake to intimate the Authority in writing.

Signature:



E. N. J. L. RAMESH, M.Tech, M.Sc, MBA, (Ph.D).
MIB, FIV, MICI, IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd Geotechnical Engineer LM 3148/2011
Regd Grade-I Structural Engineer (3-969/PPA/LIC/2018)
Regd Quality Auditor (3-1215/PPA/LIC/RQA/2021)
Regd Engineer (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No. 182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008, South India

STRUCTURAL DESIGN BASIS REPORT

Part 1		General Data	
S.No.	Description	Information	Notes
(1)	Address of the building <ul style="list-style-type: none"> Name of the Building Plot Number Sub Plot Number Village <ul style="list-style-type: none"> a) Name b) R.S./T.S. Number Locality/Township District 	EXISTING INSTITUTIONAL BUILDING "MAHARISHI VIDHYA MANDIR" (PRE - PRIMARY BLOCK 'C'- G+1) AT MULLODAI, PUDUCHERRY - 607402.	
(2)	Name of the owner	Mr. S. SELVAMANI	
(3)	Name of the Builder	-	
(4)	Name of Registered Architect/Engineer	-	
(5)	Name of Registered Structural Engineer	Er. N.J.L. RAMESH	
(6)	Use of the building	EDUCATIONAL INSTITUTIONAL BUILDING	
(7)	Number of storey's above ground level (including storey's to be added later, if any)	(G+1)	
(9)	Type of Structure <ul style="list-style-type: none"> Load bearing walls R.C.C. frame R.C.C. frame & shear walls Steel frame 	RCC Framed Structure with Brick in filled Partition walls	
(10)	Soil data <ul style="list-style-type: none"> Type of soil Design safe bearing capacity 	Not Available	
(11)	Dead loads (unit weight adopted) <ul style="list-style-type: none"> Earth Water Brick masonry Plain Cement Concrete Reinforced Cement Concrete Floor finish Other fill materials Piazza floor fill and landscape 	1600 Kg/m ³ 1000 Kg/m ³ 1920 Kg/m ³ 2400 Kg/m ³ 2500 Kg/m ³ 125Kg/m ³ - -	IS:875 Part 1
(12)	Imposed (Live) loads <ul style="list-style-type: none"> Piazza floor accessible to Fire Tender Piazza floor not accessible to Fire Tender Floor load 	- - 500 Kg/m ² 200Kg/m ²	IS: 875 Part 2

	• Roof load		
(13)	Cyclone/Wind • Speed • Design pressure intensity	50m/s 150Kg/m ²	IS: 875
(14)	Seismic Zone	Zone II	IS: 875(2002)
(15)	Importance Factor	1.5	IS: 875(2002) Table 6
(16)	Seismic Zone Factor (Z)	0.10	IS: 1893 Table 2
(17)	Response reduction factor	3(Ordinary moment Resistant Frame)	IS: 1893 Table 7
(18)	Fundamental natural period - approximate	0.245 sec	IS: 1893 Cl.7.6
(19)	Design horizontal acceleration spectrum value (Ah)	0.0147	IS: 1893 Cl.6.4.2
(20)	Expansion / Separation Joints	Nil	

Part 2
applicable

Load bearing masonry buildings

Not

Ramesh
14/4/22

Er. N.J.L. RAMESH, M.Tech., M.Sc., MBA (Ph.D.),
MIB, FIV, MICI, IIT Arb.
Chief-Consultant (Geotech & Structures)
Regd. Geotechnical Engineer: LM 3148/2011
Regd. Grade-I Structural Engineer: (3-969/PPA/LIC/2018)
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Regd. Engineer: (3-724/PPA/LIC/2011)
Office: 'Mayan Vihar' No: 182, 4th Main Road,
Mahaveer Nagar, Puducherry-605 008. South India

Part 3 Reinforced concrete framed buildings			
S.No.	Description	Information	Notes
(1)	Type of Structure <ul style="list-style-type: none"> • Regular frames • Regular frames with shear wall • Irregular frames • Irregular frames with shear wall • Soft storey 	Regular Frame	IS: 1893 Cl.7.1
(2)	Number of basement	Nil	
(3)	Number of floors including ground floor	2	
(4)	Horizontal floor system <ul style="list-style-type: none"> • Beam and Slabs • Waffles • Ribbed Floor • Flat slab with drop • Flat slabs without drops 	Beam and Slab	
(5)	Soil Data <ul style="list-style-type: none"> • Type of soil • Recommended type of foundation <ul style="list-style-type: none"> - Independent footings - Raft - Piles • Recommended bearing capacity of soil • Recommended, type, length diameter and load capacity of piles • Depth of Water table • Chemical analysis of ground water • Chemical analysis of soil 	Not available	IS: 1498
(6)	Foundations <ul style="list-style-type: none"> • Depth below ground level • Type <ul style="list-style-type: none"> - Independent - Interconnected - Raft - Piles 	Not available	
(7)	System of interconnecting foundations <ul style="list-style-type: none"> • Plinth beams • Foundation beams 	Plinth beams Grade beams	
(8)	Grades of concrete used in different parts of building	M25	
(9)	Method of analysis used	P delta analysis	
(10)	Computer software used	Staad.Pro V8i-Software	

(12)	Base shear a. Based on approximate fundamental period b. Based on dynamic analysis c. Ratio of a/b	36 KN Based on Dynamic Analysis	IS: 1893 Cl.7.5.3
(13)	Distribution of seismic forces along the height of the building	Included in the 3D Analysis	IS: 1893 Cl.7.7
(14)	The column of soft ground storey specially designed	N/A	IS: 1893 Cl.7.10
(15)	Clear minimum cover provided in • Footing • Column • Beams • Slabs • Walls	60mm 50mm 30mm 20mm 20mm	
(16)	Ductile detailing of RC frame • Type of reinforcement used • Minimum dimension of beams • Minimum dimension of columns • Minimum percentage of reinforcement of beams at any cross section • Maximum percentage of reinforcement at any section of beam • Spacing of transverse reinforcement of 2-d length of beams near the ends • Ratio of capacity of beams in shear to capacity of beams in flexure • Maximum percentage of reinforcement in column • Confining stirrups near ends of columns and in beam column joints a) Diameter b) Spacing • Ratio of shear capacity of columns to maximum seismic shear in the storey	Fe 500 230x300 230x230 0.25% 2.0% 100mm 1.25 3.25% 8mm 100mm 0.9	IS: 456 Cl.5.6 IS:13920 Cl.6.1 IS:13920 Cl.7.1.2 IS: 456 Cl.26.5.1(a) IS :13920 Cl.6.2.1 IS:456 Cl.26.5.1.1(b) IS:13920 Cl.26.5.1.1(b) IS:13920 Cl.6.2.2 IS:13920 Cl.6.3.5 IS:456 Cl.26.5.3.1 IS:13920Cl.7.4

Part 4

Buildings in Structural Steel

Not applicable


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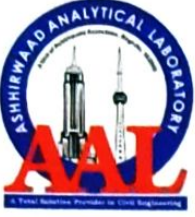
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Survey and contouring
Load testing on Piles

Structural consultancy
Material testing
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Date: 14/04/2022

"MVM Pre primary - Block 'c'"



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