



राष्ट्रीय प्रौद्योगिकी संस्थान पुदुच्चेरी
थिरुवेत्ताकुडी, कारैकाल- 609 609
NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY
Thiruvettakudy, Karaikal - 609 609

Dr. Madappa V.R. Sivasubramanian
BE (Civil Engineering), ME & PhD (Structural Engineering @BITS-Pilani)
Assistant Professor
Department of Civil Engineering

CERTIFICATE OF INTERNSHIP

This is to certify that Ms D. Anu (College: Thiagarajar college of Engineering, Madurai. Branch : B.E Civil Engineering) has successfully completed her one month (01.06.2017 to 30.06.2017) summer internship programme under my guidance in the Department of Civil Engineering at National Institute of Technology Puducherry.

During this tenure, she has closely worked as a part of my research group. She has gained and learned about the basic concepts, modeling, analysis, applications and recent advancements of the base isolation systems and her review article is in progress.

I wish her good luck for all future endeavors and looking forward to work with her again in future.

Dr. Madappa V.R. Sivasubramanian
30-06-2017
Karaikal

Dr. Madappa V.R. SIVASUBRAMANIAN
Assistant Professor
Department of Civil Engineering
National Institute of Technology Puducherry
Karaikal-609609, India.

Indian Institute of Technology Madras
Department of Ocean Engineering
Chennai - 600 036, India



भारतीय प्रौद्योगिकी संस्थान मद्रास
समुद्र अभियांत्रिकी विभाग
चेन्नई-600 036, भारत

Dr. V. SRIRAM
Assistant Professor

डॉ. वी. श्रीराम
सहायक प्राध्यापक

Date: July 31st, 2017

Place: Chennai

To whom so ever it may Concern

This is to certified that **Ms. Rithika S**, third year B.E., Civil Engineering from Thiagarajar College of Engineering, Madurai undergone summer internship with my research group at IIT Madras, during the period May 24th, 2017 to July 25th 2017. During her stay, she worked in the area of 'coastal flood inundation mapping due to sea level rise'.

Thanking you

V. Sriram

DEPARTMENT OF CIVIL ENGINEERING

INDIAN INSTITUTE OF TECHNOLOGY MADRAS



CERTIFICATE

This is to certify that

CATHERINE SANCHANA I

student of **THIAGARAJAR COLLEGE OF ENGINEERING, TAMILNADU**
has participated in the Summer Fellowship Programme (SFP)-2017 at
Department of Civil Engineering, IIT Madras from 25th May 2017 to 15th July 2017.

SubhadEEP Banerjee

Dr. SubhadEEP Banerjee
Coordinator-SFP 2017

Prof. K. Rammamurthy
Prof. K. Rammamurthy
Head of the Department

DEPARTMENT OF CIVIL ENGINEERING

INDIAN INSTITUTE OF TECHNOLOGY MADRAS



CERTIFICATE

This is to certify that

A. ANGEL JESSIELEENA

student of **THIAGARAJAR COLLEGE OF ENGINEERING, TAMILNADU**
has participated in the Summer Fellowship Programme (SFP)-2017 at
Department of Civil Engineering, IIT Madras from 25th May 2017 to 15th July 2017.

SubhadEEP Banerjee

Dr. SubhadEEP Banerjee
Coordinator-SFP 2017

Prof. K. Ramamurthy

Prof. K. Ramamurthy
Head of the Department



राष्ट्रीय प्रौद्योगिकी संस्थान पुदुच्चेरी
थिरुवेत्ताकुडी, कारैकाल- 609 609
NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY
Thiruvettakudy, Karaikal - 609 609

Dr. Madappa V.R. Sivasubramanian
DE (Civil Engineering), ME & PhD (Structural Engineering @BITS-Pilani)
Assistant Professor
Department of Civil Engineering

CERTIFICATE OF INTERNSHIP

This is to certify that Ms A. Annie Varshini Raj (College: Thiagarajar college of Engineering, Madurai. Branch : B.E Civil Engineering) has successfully completed her one month (01.06.2017 to 30.06.2017) summer internship programme under my guidance in the Department of Civil Engineering at National Institute of Technology Puducherry.

During this tenure, she has closely worked as a part of my research group. She has gained and learned about the basic concepts, modeling, analysis, applications and recent advancements of the shape memory alloys in civil engineering structures and her review article is in progress.

I wish her good luck for all future endeavors and looking forward to work with her again in future.

Dr. Madappa V.R. Sivasubramanian
30-06-2017
Karaikal


Dr. Madappa V.R. SIVASUBRAMANIAN
Assistant Professor
Department of Civil Engineering
National Institute of Technology Puducherry
Karaikal-609609, India.

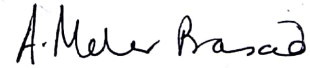


**DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY MADRAS**

CERTIFICATE

This is to certify that K. MUTHURAJA, student of THIAGARAJAR COLLEGE OF ENGINEERING, MADURAI has participated in the Summer Fellowship Programme 2015 at Department of Civil Engineering, IIT Madras from 16th May 2015 to 15th July 2015.


Dr. V. Lelitha Devi
Coordinator


Prof. A. Meher Prasad
Head of the Department



Indian Academy of Sciences
Bengaluru



Indian National Science Academy
New Delhi



The National Academy of Sciences, India
Allahabad

SUMMER RESEARCH FELLOWSHIP PROGRAMME CERTIFICATE

This is to certify that Mr. S. Lakshman Kumar worked on a project entitled "Development of GIS plugin for modelling soil erosion processes using modified MMT model" during May-July as a Summer Research Fellow under the supervision of Dr. Raaj Ramsankaran, Indian Institute of Technology-Bombay, Mumbai. The Summer Research Fellowship Programme is jointly sponsored by IASc (Bengaluru), INSA (New Delhi) and NASI (Allahabad).

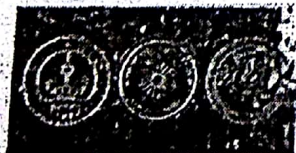
KL Sebastian

K. L. Sebastian

Place: Bengaluru

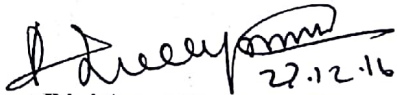
Date: 16 - 08 - 2016

Chairman, Science Education Panel



HIGHWAYS DEPARTMENT
QUALITY CONTROL
MADURAI
CERTIFICATE OF INTERNSHIP

This is to certify that Mr.T.Kumara sankar pursuing B.E. (Civil) 3rd year – at Thiagarajar College of Engineering, Madurai, had undergone his internship in this office from 21/12/2016 to 27/12/2016. He was actively involved with various quality control tests in laboratory. During the internship, He was found punctual, positive and performance oriented. He worked well as part of a team during tenure.


Assistant Divisional Engineer(H),
Quality Control Subdivision,
Madurai.

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.SANJANA.A (Reg.No-16B080) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICl.,
Regd., Professional Engineer Structural (ECI)
Mail Id: tsj1168@gmail.com,
Ph: 0452 4370596

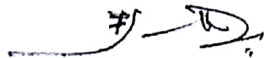
7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhal,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.LOGESHWARI.S (Reg.No-16B050) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICl.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

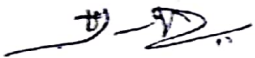
7A, Panthady 8th st.,
(first floor)
Near - Thavittu sandhai,
MADURAI

DATE: 18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.BHARATHI.M (Reg.No-16B018) a student of B.E. (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

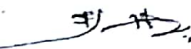
7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.RAAJEE SARAVANAN (Reg.No-16B075) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.PINKY.S (Reg.No-16B066) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering,Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

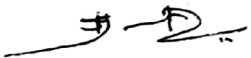
7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhal,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.PRAGATHI.S (Reg.No-16B067) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: ts11168@gmail.com,
Ph: 0452 4370596

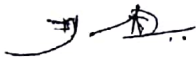
7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.THURITHA SRI (Reg.No-16B103) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 23-06-2017 to 04-07-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICl.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:22.12.17

INTERNSHIP CERTIFICATE

This is to certify that Mr.PRADEEPKUMAR.T (Reg.No-15B065) a student of B.E., (Civil engineering V semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 07-12-2017 to 17-12-2017) internship programme in my site. During the period of his internship programme with us he found punctual, hardworking and inquisitive.

I wish him every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:22.12.17

INTERNSHIP CERTIFICATE

This is to certify that Mr.KARTHIC.BG (Reg.No-15B036) a student of B.E., (Civil engineering V semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 07-12-2017 to 17-12-2017) internship programme in my site. During the period of his internship programme with us he found punctual, hardworking and inquisitive.

I wish him every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICl.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.PAVIYAA.J.S (Reg.No-16B065) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 08-12-2017 to 18-12-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.SRUTHI.B (Reg.No-16B090) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 08-12-2017 to 18-12-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICl.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.EVELINE KARUNYA.A (Reg.No-16B027) a student of B.E.,
(Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has
successfully completed In-plant Training for a period of ten days (from 08-12-2017 to
18-12-2017) internship programme in my site. During the period of her internship
programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI,
Regd., Professional Engineer Structural (ECI)
Mail id: tsi1168@gmail.com,
Ph: 0452 4370596

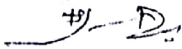
7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhal,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.ABIRAMI.R (Reg.No-16B116) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering,Madurai has successfully completed In-plant Training for a period of ten days (from 08-12-2017 to 18-12-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

En.T.S.Janarthanan, M.E., FACCE(I), FICL,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com
Ph: 0452 4370598

7A, Panthady 8th st.,
(first floor)
Near - Thavittu sandhai,
MADURAI

DATE: 18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.HARINI.T.S (Reg.No-168032) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 08-12-2017 to 18-12-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhal,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.SUJITHAA DEVI.S (Reg.No-16B097) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 08-12-2017 to 18-12-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life


T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural

Er.T.S.Janarthanan, M.E., FACCE(I), FICI.,
Regd., Professional Engineer Structural (ECI)
Mail id: tsj1168@gmail.com,
Ph: 0452 4370596

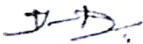
7A, Panthady 8th st.,
(first floor)
Near – Thavittu sandhai,
MADURAI

DATE:18.12.2017

INTERNSHIP CERTIFICATE

This is to certify that Ms.KEERTHANA.M (Reg.No-16B046) a student of B.E., (Civil engineering III semester), from Thiagarajar College of Engineering, Madurai has successfully completed In-plant Training for a period of ten days (from 08-12-2017 to 18-12-2017) internship programme in my site. During the period of her internship programme with us she found punctual, hardworking and inquisitive.

I wish her every success in life



T.S. JANARTHANAN, M.E.,
Regd. Professional Engineer Structural (ECI)

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled '**DESIGN OF MULTISTORIED RESIDENTIAL BUILDING USING STAAD PRO**' is the bonafide work of **P.PANDIKUMAR (14B134), R.PRASANA (14B76), S.RISHIKUMAR (14B92) and K.S.RATHISH CHAND (14B89)** who carried out the project work under my supervision. Certified further, that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.SIVAGURUNATHAN

Head of the Department

Department of Civil Engineering

Thiagarajar College of Engineering

INTERNAL GUIDE

Dr.R.PONNUDURAI

Assistant Professor

Department of Civil Engineering

Thiagarajar College of Engineering

4.5.18

Station: Madurai

Date:

Submitted for **VIVA-VOCE** examination of Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____

INTERNALEXAMINER

EXTERNALEXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. aided, ISO 9001:2008 certified, Autonomous Institution affiliated to Anna University)

MADURAI-625 015



BONAFIDE CERTIFICATE

Certified that this project report "GREENER RIGID PAVEMENT BY USING WASTE PAPER PULP" is the bonafide work of MADHUMITHA VARSHINI M (RegNo: 14B53), LOGESH KUMAR P (RegNo: 14B51) and KARTHIGA R (RegNo: 14B123), who all carried out the project work under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr. B. Sivagurunathan, Ph.D.,
Head of the Department
Department of Civil
Engineering

GUIDE

Dr. R. Velkennedy, Ph.D.,
Associate Professor,
Department of Civil
Engineering

CO-GUIDE

Dr. A. Ramalinga Chandra Sekar, Ph.D.
Assistant Professor,
Department of Chemistry

Submitted for VIVA-VOCE of 14CE880 Project Examination held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

HDCE

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)

MADURAI 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “COMPARATIVE ANALYSIS OF T-BEAM BRIDGE DECK BY RATIONAL METHOD AND FEM” is the bonafide work of K.GOWTHAMAN(14B37) in partial fulfilment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.Sivagurunathan,
Head of Department,
Department of Civil Engg.
Thiagarajar college of Engg.

GUIDE

Dr.S.Nagan,
Associative Professor,
Department of Civil Engg.,
Thiagarajar college of Engg.

Submitted for **VIVA-VOCE** examination of Project held at Thiagarajar College of Engineering, Madurai – 625 015 on _____

EXTERNAL EXAMINER

INTERNAL EXAMINER

HDCE

**ASSESSMENT OF POLLUTION LOAD ON URBAN
STRETCH OF RIVER VAIGAI**

14CE880 PROJECT WORK

Submitted in partial fulfilment for the award of the degree of

**BACHELOR OF ENGINEERING IN
CIVIL ENGINEERING**

Submitted by

T.SANGAVI (14B94)

S.SATHIYAMOORTHY (14B96)

P.ABIRAMI (14B118)



DEPARTMENT OF CIVIL ENGINEERING

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015

APRIL 2018

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)

MADURAI 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled "PLANNING, ANALYSIS AND DESIGN OF SCHOOL BUILDING" is the bonafide work of T.MURUGANANTH(14B63), S.VIJAYMOHAN(14B115), D.SELVA KANNAN (14B139) in partial fulfilment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

[Signature]

HDCE

Dr.B.Sivagurunathan,
Head,
Department of Civil Engg.,
Thiagarajar college of Engg.

[Signature]

GUIDE

Dr.S.NAGAN
Associate Professor,
Department of Civil Engg.,
Thiagarajar college of Engg.

Submitted for VIVA-VOCE examination of Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna university)

MADURAI-625020



BONAFIDE CERTIFICATE

Certified that this project titled on "E-WASTE MANAGEMENT IN THIAGARAJAR COLLEGE OF ENGINEERING" is the bonafide work of R.MEENAKSHI(14B60), R.MONISHA(14B62), M.DEEPIKA(14B125), who carried out the project work under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.SIVAGURUNATHAN,
Head of the Department,
Department of Civil Engineering,
Thiagarajar College of Engineering,
Madurai-625015

Ms.K.KEERTHY,
Assistant Professor,
Department of Civil Engineering,
Thiagarajar College of Engineering,
Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering,
Madurai-625015, on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.O.D.NOMINEE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015

BONAFIDE CERTIFICATE

Certified that this Report titled “EVALUATION OF BEHAVIOUR OF SHAPE MEMORY ALLOY IN CONCRETE ELEMENTS” is the bonafide work of A.ANNIE VARSHINI RAJ (14B11), M.CHINNA ANNAMALAI (14B23), U.KARTHIKEYAN (14B48) who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.



Dr.B.Sivagurunathan

Associate Professor and Head
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015



Mr.A.Rajasekar

Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai- 625015

Submitted for the VIVA -VOCE Examination of 14CE880 Project held at Thiagarajar College of Engineering, Madurai-625 015 on

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt aided, ISO 9001:2008 certified, Autonomous Institution affiliated to Anna University)

MADURAI-625015



BONAFIDE CERTIFICATE

Certified that this project report “**FLEXURAL STRENGTH OF SCC BEAMS INCORPORATED WITH STEEL FIBRE AND COPPER SLAG**” is the bonafide work of **R.Piradheep (14B73), M.Rashmi (14B88), S.Nishanth (14B133)** who carried out the project work under my supervision. Certified further, that to the best of knowledge, the work reported herein does not form part of my other thesis or dissertation on the basis of which a degree or award was conferred on a earlier occasion on this or any other candidate.

R. Cantaraman
GUIDE

Dr.D.Brindha,
Assistant Professor,
Department of Civil Engg,
Thiagarajar College of Engineering

Dr. B. Sivagurunathan
HDCE

Dr.B.Sivagurunathan,
Associate Professor and Head,
Department of Civil Engg,
Thiagarajar College of Engineering.

Station: Madurai

Date:

Submitted for VIVA-VOCE examination of 14CE880 project held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this Report titled “SEISMIC SAFETY OF STRUCTURES” is the bonafide work of P.AJITH KUMAR (14B06), D.ANU (14B12), P.MANOJ KARTHIK (14B56) who carried out the project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.Sivagurunathan

Associate Professor and Head

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai-625015

Dr.B.Sivagurunathan

Associate Professor and Head

Department of Civil Engineering

Thiagarajar College of Engineering

Madurai- 625015

Submitted for the VIVA -VOCE Examination of 14CE880 Project held at Thiagarajar College of Engineering, Madurai-625 015 on

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled “ASSESSMENT OF ECONOMIC VALUE IN SOLID WASTE” is the bona-fide work of **Ms.M.PAVITHRA (14B72), Mr.N.PRADEESH (14B75) and Mr.A.TAMIL ELVAN (14B106)** who carried out the project work under my supervision. Certified further, that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.SIVAGURUNATHAN M.E.,Ph.D.,
Head of the department,
Department of Civil Engineering,
Madurai

Dr.S.CHANDRAN M.E.,Ph.D.,
Associate Professor,
Department of Civil Engineering,
Date:

Submitted for **VIVA-VOCE** examination of B84 Project held at Thiagarajar College of Engineering, Madurai – 625015, on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI - 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “SEISMIC ANALYSIS AND DESIGN OF APARTMENT BUILDING” is the bonafide work of M.S.ABDUL MALIK (14B02), K.S.KARTHIK (14B46), R.KARTHICK KUMAR (14B122) in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.Sivagurunathan,
Head of the Department,
Department of Civil
Engineering
Station: Madurai

GUIDE

Dr.M.C.Sundarraja,
Assistant Professor,
Department of Civil
Engineering
Date: 03.05.2018

Submitted for the VIVA-VOCE examination held at Thiagarajar College of Engineering, Madurai on_____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “**PLANNING, DESIGNING AND ANALYSIS OF SHOPPING MALL**” is the bonafide work of **B.DHAMOTHARAN(14B29),R.MANOVIJAY(14B55),R.UMASHANKAR (14B143)** in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr. B. Sivagurunathan,
Professor and Head,
Department of Civil Engg.
Thiagarajar college of Engg.

GUIDE

Dr. K. Sudalaimani,
Assoc.Professor & Assoc.Dean,
Department of Civil Engg.,
Thiagarajar college of Engg.

Submitted for **VIVA-VOCE** examination of Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt.Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University, Chennai)

MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “ENHANCING THE WATER RETAINING CAPACITY OF SANDY SOIL IN DRIP IRRIGATION SYSTEM” is the bonafide work of K. SATHEESH KUMAR (14B95), R. UMAIYAL (14B109) and R. VASANTH (14B111) in partial fulfillment for the award of Bachelor of Engineering Degree in Civil Engineering who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.T. BASKARAN

Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Dr. B. SIVAGURUNATHAN

Head of the department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625 015, on _____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt.Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University, Chennai)

MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “STATISTICAL ANALYSIS OF RAINFALL DATA AND CROP PLANNING - A CASE STUDY AT VAIGAI RAIN FED AREA” is the bonafide work of V. RAKSHINI (14B83), N. RESHMA SHAMIM (14B91) and S. THIRUNAVUKKARASAN (14B142) in partial fulfillment for the award of Bachelor of Engineering Degree in Civil Engineering who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.T. BASKARAN
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Dr. B. SIVAGURUNATHAN
Head of the department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625 015, on _____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt.Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University, Chennai)


MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “**AESTHETIC DESIGN OF COMMERCIAL DEMOUNTABLE STEEL STRUCTURE**” is the bonafide work of **MITHILESHWARA KUMARAN.R (14B61), RAGHUNATHAN.G (14B81)** and **SHEIK AZARUDEEN.R (14B97)** in partial fulfillment for the award of Bachelor of Engineering Degree in Civil Engineering who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Dr.S.ARUL MARY
Associate Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015


Dr.B.SIVAGURUNATHAN
Head of the department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for **VIVA-VOCE** examination of 14CE880 project held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled '**FLOOD FREQUENCY ANALYSIS OF VAIGAI RIVER USING PROBABILITY DISTRIBUTION**' is the bonafide work of **T.PAUL DANIEL (14B71), C.RAM KUMAR (14B84) and C.RANJITH (14B87)** who carried out the project work under my supervision. Certified further, that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE


Dr.B.SIVAGURUNATHAN
Head of the Department
Department of Civil Engineering
Thiagarajar College of Engineering


INTERNAL GUIDE

Mr.M.RAMASAMY
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering

Station: Madurai

Date: 3 . 5 . 2018

Submitted for **VIVA-VOCE** examination of B84 Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled 'INVESTIGATION OF GEOPOLYMER CONCRETE USING MSAND AND DMS UNDER AMBIENT CURING CONDITION' is the bonafide work of M.NANDHINI (14B66), K.NIRANJANA DEVI(14B69)and R.PRIYADHARSHINI (14B79)who carried out the project work under my supervision. Certified further , that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr. B. Sivagurunathan
(i/v) 05/05/18

S. Nagan
GUIDE

Dr.B. SIVAGURUNATHAN
Head of the Department
Department of Civil Engineering
Thiagarajar College of Engineering

Dr.S. NAGAN
Associate Professor
Department of Civil Engineering
Thiagarajar College of Engineering

Station: Madurai

Date: 05/05/18

Submitted for VIVA-VOCE examination of B84 Project held at Thiagarajar College of Engineering, Madurai - 625 015 on 05-05-18

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt. Aided ISO 9001-2008 Certified, Autonomous Institution Affiliated to Anna University)


MADURAI – 625 015.



BONAFIDE CERTIFICATE

Certified that this project report “MANAGING TIME AND COST IN CONSTRUCTION PROJECT” is the bonafide work of **S.RITHIKA (14B93), B.SIVAGANESH (14B102), M.KARTHIK KUMARAN (14B124)**, who carried out the project work under my supervision. Certified further that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Dr.B.SIVAGURUNATHAN,M.E.,Ph.D.,
Head of the Department
Department of Civil Engineering


Mr.M.A.RAVINDHARRAJA,M.E.,
Assistant Professor
Department of Civil Engineering

Station : Madurai

Date :

Submitted for Viva-Voce examination of 14CE880 Project Work held at
Thiagarajar College of Engineering, Madurai-625 015, on _____

INTERNAL EXAMINER

H.D.C.E

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt. aided ISO 9001:2008certified Autonomous Institution affiliated to Anna University)

MADURAI-625015

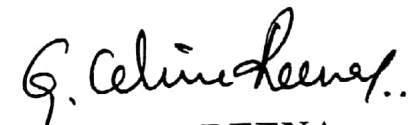
BONAFIDE CERTIFICATE



Certified that this project report “**DESIGN OF A PRE-ENGINEERED BUILDING (INDUSTRIAL) USING IS 800-2007**” (B84 PROJECT WORK) is the bonafide work of **S. NISHANTH VARMA (14B70)** in partial fulfillment for the award of B.E. degree in Civil Engineering who carried out the project work during the year 2017-2018 under my supervision.


Dr. B. SIVAGURUNATHAN
Head of the Department
Department of Civil Engineering

Date: 05/05/2018


G. CELINE REENA
Guide
Assistant Professor
Department of Civil Engineering
Station: Madurai

Submitted for **VIVA-VOCE** examination held at Thiagarajar College of Engineering, Madurai-625 015, on 05/05/2018

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. aided ISO 9001:2008certified Autonomous Institution affiliated to Anna University)

MADURAI-625015

BONAFIDE CERTIFICATE



Certified that this project report "**STUDY ON THE EXPERIMENTAL BEHAVIOUR OF UNSYMMETRICAL LACED COLUMN USING IS800-2007 AND EUROCODE 3**" (B84 PROJECT WORK) is the bonafide work of **P. VEDHASRI(14B112), R. VELMURUGAN (14B113), R. PRASANTH (14B136)** in partial fulfillment for the award of B.E. degree in Civil Engineering who carried out the project work during the year 2017-2018 under my supervision.

Dr. B. SIVAGURUNATHAN
Head of the Department
Department of Civil Engineering

Date: 05.05.2018

G. CELINE REENA
Guide
Assistant Professor
Department of Civil Engineering
Station: Madurai

Submitted for **VIVA-VOCE** examination held at Thiagarajar College of Engineering, Madurai-625 015, on 05.05.2018

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. aided, ISO 90012008 certified, Autonomous Institution affiliated to Anna University)

MADURAI-625 015



BONAFIDE CERTIFICATE

Certified that this project report titled **“PLANNING AND DESIGNING OF HOTEL BUILDING”** is the bonafide work of **MEENAKSHI PL** (RegNo **14B59**), who carried out the project work under my supervision. Certified further, that to the best of my kNowledge, the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other

candidate.

HDCE

EXTERNAL GUIDE

Mr. P. KASI

INTERNAL GUIDE

Mr. R. INDRAJITH KRISHNAN
APCE

Dr. B. SIVAGURUNATHAN

HDCE

Submitted for **VIVA-VOCE** examination of 14CE880(Project) held at Thiagarajar College of Engineering, Madurai – 625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E


THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt aided, ISO 9001:2008 certified, Autonomous Institution affiliated to Anna University)

MADURAI-625015

BONAFIDE CERTIFICATE

Certified that this project report “**STUDY ON FLEXURAL BEHAVIOUR OF FIBER REINFORCED CONCRETE**” is the bonafide work of **E.Muthamil (14B64), S.T.Thamarai Kannan (14B107)** who carried out the project work under my supervision. Certified further, that to the best of knowledge, the work reported herein does not form part of my other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Dr.B.SIVAGURUNATHAN
 Associate Professor and Head,
 Department of Civil Engineering,
 Thiagarajar College of Engineering,
 Madurai-625015.


Dr.D.BRINDHA
 for
 Assistant Professor,
 Department of Civil Engineering,
 Thiagarajar College of Engineering,
 Madurai-625015.

Submitted for **VIVA-VOCE** OF Project Phase II examination held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

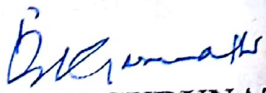
THIAGARAJAR COLLEGE OF ENGINEERING
(A Govt Aided..Autonomous Institution Affiliated to Anna University)


MADURAI – 625 015.



BONAFIDE CERTIFICATE

Certified that this project report “STAKEHOLDER RELATED RISK MANAGEMENT IN CONSTRUCTION PROJECT” is the bonafide work of S.MUTHU PRAKASH (14B65), M.NAVEEN (14B67), B.NETHAJI (14B68), who carried out the project work under my supervision. Certified further that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Dr.B.SIVAGURUNATHAN,M.E.,Ph.D.,
Head of the Department
Department of Civil Engineering


Mrs.T.KARTHIGAIPRIYA,M.E.,
Assistant Professor
Department of Civil Engineering

Station : Madurai

Date :

Submitted for Viva-Voce examination of 14CE880 Project Work held at
Thiagarajar College of Engineering, Madurai-625 015, on_____.

INTERNAL EXAMINER

H.D.C.E

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled "Seismic Hazard Analysis of Tripura" is the bonafide work of A.BALAKUMAR(14B20) who carried out the project work under my supervision. Certified further, that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.Sivagurunathan, Ph.D.,

**Head of the Department
Department of Civil
Engineering**

GUIDE

Dr.R.Sanjay Kumar,Ph.D

**Assistant Professor
Department of Civil
Engineering**

Station: Madurai

Submitted for VIVA-VOCE examination of B84 Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING

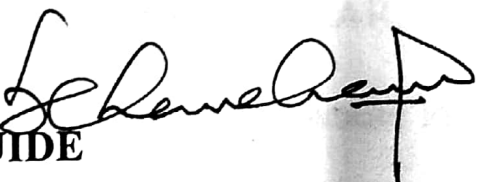
(A Govt. Aided, ISO 9001:2008 Certified, Autonomous institution affiliated to Anna University)

MADURAI – 625015.



BONAFIDE CERTIFICATE

Certified that this project report titled “INSTIGATION OF SOILFILTER TO TREAT URBAN WASTEWATER” is the bonafide work of PRITHVIM (Reg No:14B78), ABINESH.S (Reg No:13B117), KARTHIKA LAKSHMI.J.S (Reg No:14B125), who carried out the project work under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


GUIDE

Department of Civil Engineering

Location: Madurai


HEAD OF THE DEPARTMENT

Department of Civil Engineering

Date:

Submitted for VIVA-VOCE examination of Project held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)


MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “**STABILISATION OF BLACK COTTON SOIL USING WASTE PLASTIC AND GYPSUM**” is the bonafide work of **K.KAARUNYA SRIPRABHA (14B43)**, **C.MEENAKSHI (14B58)** and **S.KARTHIK (12B4)** in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Ms.S.AYSWARYA
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015


Dr.B.SIVAGURUNATHAN
Head of the department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for **VIVA-VOCE** examination held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “EFFECTS OF RICE HUSK ASH ON NATURAL CLAY LINERS” is the bonafide work of **S.GAYATHRI (14B35), K.HARI PRIYA (14B38) and R.KAVIYA PRIYA (14B126)** in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.R.SANJAY KUMAR
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Dr.B.SIVAGURUNATHAN
Head of the department
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for **VIVA-VOCE** examination held at Thiagarajar College of Engineering, Madurai-625015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided Autonomous Institution Affiliated to Anna University)

MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this report, "FLOOD FREQUENCY ANALYSIS FOR VAIGAI RIVER BY VARIOUS PLOTTING POSITION METHODS", is the bonafide work of P.KALAIVANI (14B44), G.GOKULAKANNAN (14B36) and G.P. DANUSH NARAYAN (14B25) who carried out project work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr. B. SIVAGURUNATHAN

Associate Professor and Head
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai- 625015

GUIDE

Mr. M. RAMASAMY

Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai- 625015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625 015, on _____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “THERMAL COMFORT ANALYSIS IN NATURALLY VENTILATED CLASSROOMS- A CASE STUDY OF TCE” is the bonafide work of S.AKSHAYA(14B08), EVELLIN SATHISH(14B33) and R.KARTHIGA (14B45) in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr. B.SIVAGURUNATHAN, Ph.D.,

Associate Professor and Head,
Department of Civil Engineering,
Thiagarajar College of Engineering,
Madurai- 625 015

GUIDE

Mr. V.Ravi Sankar, M.E.,

Assistant Professor,
Department of Civil Engineering,
Thiagarajar College of Engineering,
Madurai- 625 015

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering,
Madurai – 625 015, on _____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled “**RISK MANAGEMENT IN CONSTRUCTION PROJECTS**” is the bonafide work of **DEVNATH I R (14B28), DHIREN AMRITH E (14B30), DIVYA P (14B32)** who carried out the project work under my supervision. Certified further , that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HEAD OF THE DEPARTMENT

Dr.B.Sivagurunathan, Ph.D.,
Head of the Department,
Department of Civil Engineering

INTERNAL GUIDE

Mr. R..Jegan, M.E.,
Assistant Professor,
Department of Civil Engineering

Station: Madurai

Date :

Submitted for **VIVA-VOCE** examination of 14CE880 Project
held at Thiagarajar College of Engineering, Madurai - 625 015
on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING


(A Govt. aided Autonomous Institution affiliated to Anna University)


MADURAI-625 015



BONAFIDE CERTIFICATE

Certified that this project report "SUBGRADE STRENGTHENING USING RICE HUSK ASH AND SILICA" is the bonafide work of M.SUJAANAA (14B105), T.VAISHNAVI (14B110) and C.F.THIRUMOORTHY (14B108), who carried out the project work under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.


Dr.B.Sivagurunathan, Ph.D.,
Head of The Department,
Department of Civil Engineering,
Thiagarajar Collage of Engineering,
Madurai.


Mrs.D.SRIVIDYA, M.Tech.,
Assistant Professor,
Department of Civil Engineering,
Thiagarajar Collage of Engineering,
Madurai.

Submitted for VIVA-VOCE of 14CE880 Project examination held at
Thiagarajar College of Engineering, Madurai-625015
on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)

MADURAI 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled "INFLUENCE OF RICE HUSK ASH WITH GGBS IN GEOPOLYMER CONCRETE" is the bonafide work of M.MATHAVAN (14B57), M.ARCHUNAN (14B14), M.KRISHNAN (14B127) who carried out the project under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.Sivagurunathan,
Professor and Head,
Department of Civil Engg.

GUIDE

Mr.R.Indrajith Krishnan,
Assistant Professor,
Department of Civil Engg.,

Submitted for **VIVA-VOCE** examination of Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____.

INTERNAL EXAMINER

H.D.C.E

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001-2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625015



BONAFIDE CERTIFICATE

Certified that this Report titled “SEISMIC DESIGN OF RC STRUCTURES USING ETABS SOFTWARE” is the bonafide work of SIVA KEERTHANA S (14B101), SUDAR MATHI M (14B103), YOGA NISHA L (14B117) who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.Sivagurunathan
Associate Professor and Head
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai - 625 015

Dr.R.Ponnudurai
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai - 625 015

4.5.18

Submitted for the VIVA VOCE Examination of 14CE880 – PROJECT held at Thiagarajar College of Engineering, Madurai – 625 015 on.....

INTERNAL EXAMINER

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. Aided, ISO 9001: 2008 Certified, Autonomous Institution Affiliated to Anna University)

MADURAI – 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled “POLYMER MODIFIED BITUMEN EMULSION FOR COLD MIX TECHNOLOGY” is the bonafide work of S.ANITHA (14B10), M.JANANI (14B40) and M.MAHENDRAN (14B54) in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.SIVAGURUNATHAN

Head,
Department of Civil
Engineering

INTERNAL GUIDE

Dr.R.VELKENNEDY

Assistant Professor
Department of Civil
Engineering

INTERNAL GUIDE

Dr.A.RAMALINGA

CHANDRA SEKAR
Assistant Professor
Department of
Chemistry

Station: Madurai

Date: _____

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering, Madurai – 625 015, on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)



BONAFIDE CERTIFICATE

Certified that this project report entitled " NUMERICAL STUDY OF BLAST LOADING AND PROJECTILE IMPACT ON DIFFERENT CONCRETES" is the bonafide work of **BALA MURALI KUMAR B (14B19)** who carried out the project work under my supervision. Certified further , that to the best of my Knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE
Dr.B.Sivagurunathan, Ph.D.,
Head of the Department
Department of Civil Engineering

INTERNAL GUIDE
Mr. D.Rajkumar, M.E.,
Assistant Professor
Department of Civil Engineering

Station: Madurai

Submitted for VIVA-VOCE examination of 14CE880 Project held at
Thiagarajar College of Engineering, Madurai - 625 015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. aided, ISO 9001:2008 certified, Autonomous Institution affiliated to Anna University)

MADURAI-625 015



BONAFIDE CERTIFICATE

Certified that this project report "DURABILITY STUDY ON FIBRE REINFORCED HIGH STRENGTH GEOPOLYMER MORTAR" (PROJECT) is the bonafide work of MANIMOZHI B (Reg No: 14B129), ARUN PRASAATH R (Reg No: 14B120) and PRITHVIRAJ E (Reg No: 14B137), who all carried out the project work under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.Sivagurunathan
Associate Professor and Head
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625 015

Mr.R.Sankaranarayanan
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625 015

Submitted for VIVA-VOCE of Project examination held at Thiagarajar College of Engineering, Madurai-625 015 on

INTERNAL EXAMINER

HDCE

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt. aided Autonomous Institution affiliated to Anna University)

MADURAI-625 015



BONAFIDE CERTIFICATE

Certified that this project report “**OPTIMIZATION OF PAVEMENT LAYER USING IITPAVE**” is the bonafide work of **S. PRASANTH KUMAR (14B77), L.RAMYA (14B86) and P.MEYYAPPAN (14B130)**, who carried out the project work under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.Sivagurunathan, Ph.D.,
Head of The Department,
Department of Civil Engineering,
Thiagarajar Collage of Engineering,
Madurai.

Mrs.D.SRIVIDYA, M.Tech.,
Assistant Professor,
Department of Civil Engineering,
Thiagarajar Collage of Engineering,
Madurai.

Submitted for VIVA-VOCE of 14CE880 Project examination held at
Thiagarajar College of Engineering, Madurai-625015 on

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE

i

THIAGARAJAR COLLEGE OF ENGINEERING
(A Govt. Aided Autonomous Institution Affiliated to Anna University)
MADURAI – 625 015.



BONAFIDE CERTIFICATE

Certified that this project report "QUALITY MANAGEMENT IN CONSTRUCTION FIRMS" is the bonafide work of PRIYANKA J (14B80), MOHAMED ISMAIL S A(14B131) and SAKTHI NARAYANAN R (14B138), who carried out the project work under my supervision. Certified further, that to the best of my knowledge, the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.SIVAGURUNATHAN,M.E.,Ph.D.,
Head of the Department
Department of Civil Engineering

Mr.G.S.JEGAN,M.E.,
Assistant Professor
Department of Civil Engineering

Station : Madurai

Date :

Submitted for Viva-Voce examination of 14CE880 Project Work held at
Thiagarajar College of Engineering, Madurai-625 015, on

_____.

INTERNAL EXAMINER

H.D.C.E

EXTERNAL EXAMINER

THIAGARAJAR COLLEGE OF ENGINEERING

(An Autonomous Institution Affiliated to Anna University)

MADURAI – 625 015.



BONAFIDE CERTIFICATE

Certified that this project report entitled “STUDY ON VARIOUS ALTERNATIVES TO MINIMIZE EVAPORATION LOSSES IN VAIGAI RESERVOIR” is the bonafide work of A.DEEPAK (14B26), M.KARTHIKEYAN (14B47) and S.JONATHAN (14B41) in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

HDCE

Dr.B.SIVAGURUNATHAN
Professor and Head
Department of Civil
Engineering

INTERNAL GUIDE

Dr.S.CHANDRAN
Associate Professor
Department of Civil
Engineering

04/05/18

Station: Madurai

Date:

Submitted for Viva-Voce examination held at Thiagarajar College of Engineering,
Madurai – 625 015, on _____.

INTERNAL EXAMINER

EXTERNAL EXAMINER

H.D.C.E.

THIAGARAJAR COLLEGE OF ENGINEERING

(A Govt Aided, ISO 9001:2008 Certified, Autonomous Institution Affiliated To Anna University)

MADURAI 625 015



BONAFIDE CERTIFICATE

Certified that this project report entitled "STUDY OF IMPACT RESISTENCE ON CONCRETE SLAB USING ANSYS WORKBENCH" is the bonafide work of K.RAJKUMAR(14B82), D.SUDHAKAR (14B104) R.THANGARAJA (14B141) in partial fulfillment for the award of Bachelor of Engineering in Civil Engineering, who carried out the project work during the year 2017-2018 under my supervision. Certified further, that to the best of my knowledge the work reported here in does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

Dr.B.Sivagurunathan
Associate professor and Head
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Mr.R.Sankaranarayanan
Assistant Professor
Department of Civil Engineering
Thiagarajar College of Engineering
Madurai-625015

Submitted for VIVA-VOCE examination of 14CE880 Project held at Thiagarajar College of Engineering, Madurai - 625 015 on _____

INTERNAL EXAMINER

EXTERNAL EXAMINER

HDCE