

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report “METHODS OF CONDITION ASSESSMENT OF EXISTING STRUCTURE USING NON DESTRUCTIVE METHODS”, has been satisfactorily completed by **Samiksha .N. Bhoyar, Yogesh .A. Kharode, Dhiraj .D. Hirole, Siddhesh .V. Bhoyar, Nandeshwar .S. Lasnapure, Rutvik .R. Thakare, Yash S. Jain, Bhargav G. Bhelonde** , in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.


Internal


Head of Department


External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**STRUCTURAL ANALYSIS AND DESIGN OF G+7 BUILDING BY USING STAAD PRO**”, has been satisfactorily completed by **Vedant S. Samdurkar, Sarvesh D. Harne, Manali C. Dinode, Manjusha S. Yeole, Vikram R. Tirpude, Yash A. Kaware, Shivani S. Muley, Sakshi V. Dive** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



Dr. P. S. Pajgade

Guide



Dr. P. S. Pajgade

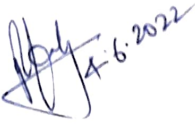
Head of Department



External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “BEARING CAPACITY OF FOUNDATION SOIL BY ANALYTICAL AND SOFTWARE METHOD”, has been satisfactorily completed by Santosh Paradhi, Karan Jangid, Ram Mundokar, Rushabh Dhoke, Tejas Sambhare, Parimal Makode, Vaibhav Chavhan, Pratiksha Bhurkade in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



PROF. R. Y. KALE

Guide



PROF. DR. P. S. PAJGADE

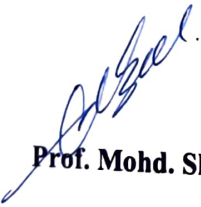
Head of Department



External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**ENHANCING THE STRENGTH OF CONCRETE BY USING POLYPROPYLENE FIBER**”, has been satisfactorily completed by **Gitesh N. Wasankar, Swarda R. Adwanikar, Chetan S. Alone, Samarth Atrey, Neha N. Saraf, Hrutik V. Piprade, Rushika D. Vighe, Anup V. Nayse** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



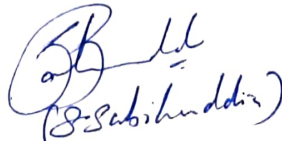
Prof. Mohd. Shahezad

Guide



Dr. P. S. Pajgade

Head of Department



External

CERTIFICATE OF EXAMINATION


This is to certify that the Project Report titled “**Planning , Analysis and Design of Bungalow Building** ”, has been satisfactorily completed by **Vikesh B. Talda, Vaishnavi G. Tayade, Kalyani S. Rajulwar, Tejaswini G. Tule, Shubham J. Sawarkar, Pratiksha R. Farkunde, Tejaswini R. Solanke, Shaad Ahmad Siddiqui** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.


Dr. N. P. KATARIA

Guide



Head of Department


External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**TO STUDY THE FEASIBILITY OF GEOPOLYMER CONCRETE**”, has been satisfactorily completed by **Mr. Ishant N. Burse, Mr. Rohit B. Neware, Mr. Shushant A. Kulat, Mr. Faique Z. Ahmad, Mr. Avirat**

A. Kale, Mr. Abhishek D. Arekar, Mr. Abhiraj S. Kale and Mr. Roshan B. Bhatkar in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVILENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



Prof. S. C. Sagane
Internal



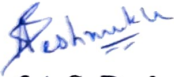
Dr. P. S. Pajgade
Head of Department



External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**PARTIAL REPLACEMENT OF VARIOUS INGREDIANTS OF CONCRETE**”, has been satisfactorily completed by **Arpit Deshmukh, Jayant Tawar, Vikram Jane, Sahil Deshmukh, Ashish Yadav, Yusuf Ansari, Vaibhavi Deshmukh, Vishal Ajmire**, in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-22.



Prof.A.S. Deshmukh
Guide




Dr.P.S.Pajgade
Head of Department



External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “STUDY ON APPLICATION OF DIFFERENT ISOTHERM FOR ADSORPTION PROCESS WITH RESPECT TO CADMIUM REMOVAL”, has been satisfactorily completed by Geetesh V. Ganweer, Ms. Aboli P. Fate, Ms. Sushmita K. Bahekar, Ms. Snehal D. Taywade, Ms. Sanskruti D. Kanse, Saurav V. Parteki, Ms. Pratiksha D. Amle, Abhishek S. Nayse in partial fulfillment of the award of degree of bachelor of engineering in civil engineering from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



05062022

Prof. (Dr.) Nitin W. Ingole
Professor & Dean (R&D)
Guide



Prof. (Dr.) P. S. Pajgade
Head of Department



P. V. Khandke

External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**PERFORMANCE OF EXPANSIVE SOIL TREATED WITH BIO – ENZYME, LIME AND MICRO - SILICA**”, has been satisfactorily completed by **Kartik Kadu, Dikshita Rathod, Jayesh Gayakwad, Heramb Daware, Harshal Chaudhari, Priya Take, Komal Landge, Abhiraj Ghatole, Anjali Agrawal** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.


Guide


Head of Department


External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**Design of Rotary**”, has been satisfactorily completed by **Aanchal Killedar, Darshan Wade, Pradyumn Dharmale, Yash Dhandar, Rushikesh Gadekar, Rutuja Hingankar, Vaishnavi Ingole, Om Chokhat** in partial fulfillment to the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



Prof. M. S. Mahalle

Guide



Dr P.S Pajgade

Head of Department



External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**Design and Analysis of Building with STAAD Pro**”, has been satisfactorily completed by **Sakshi Pawar, Pratiksha Zalake, Sejal Julme, Arjun Charjan, Om Dolas, Pratik Gaoner, Rahul Sirsat.** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



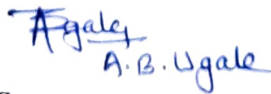
Prof. SWAPNIL R. BAND

Guide



DR. P.S. PAJGADE SIR

Head of Department



External

CERTIFICATE

This is certify to that the Project Report Entitled

"STUDY AND DEVELOPMENT OF BAMBOO, CONCRETE WITH FLY ASH"

has been satisfactorily completed by

MR.PINKESHWAR SONTAKKE

MR.YASH GADEKAR

MR.PRATHAMESH KADAM

MR.RUTVIK GULALKARI

MR.PRANJAL VINCHURKAR

MS.PRIYANKA LANJEKAR

MR.SHUBHAM JAMODKAR

MS.GAURI THAKARE

Under the guidance of

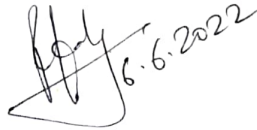
Prof. S.D.Malkhede

towards the partial fulfillment of the award of degree of **BACHELOR OF ENGINEERING** in **CIVIL ENGINEERING** from **Sant Gadge Baba Amravati University**, for the academic session 2021-2022.



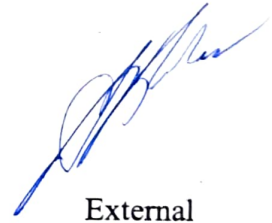
Prof. S.D.Malkhede

Project guide



Prof. P.S.Pajgade

Head of Department



External

DEPARTMENT OF CIVIL ENGINEERING


**PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND
RESEARCH,**

BADNERA, AMRAVATI-444701

2021-2022

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “HYBRID FIBER REINFORCED CONCRETE”, has been satisfactorily completed by **Akhilesh A. Ingle, Jatin S. Tahelwani, Nikita T. Kasdekar, Pavan W. Waghmare, Pratiksha R. Wandhe, Sakshi R. Ubhad, Sumedh A. Waghmare, Shravan D. Deshmukh.** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



07-06-22

Prof. S. R. Bhuskade

Guide



Head of Department




External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “TO STUDY THE FEASIBILITY OF GEOPOLYMER CONCRETE”, has been satisfactorily completed by **Ms. Arpita P. Rangari, Ms. Divya P. Rakhe, Ms. Shweta S. Puri, Ms. Pragati R. Yeul, Ms. Shrutika V. Deshmukh, Ms. Divya P. Ghayal, Mr. Rushabh S. Dharamkhele, Mr. Raj P. Jamnik** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.


07/166
Prof. H. P. Nistane
Internal


Dr. P. S. Pajgade
Head of Department


A. B. Ugale
External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled "**Design and Analysis of Building with STAAD Pro**", has been satisfactorily completed by **Sakshi Pawar, Pratiksha Zalake, Sejal Julme, Arjun Charjan, Om Dolas, Pratik Gaoner, Rahul Sirsat**. in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.



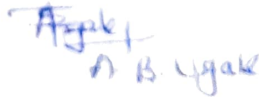
Prof. SWAPNIL R. BAND

Guide



DR. P.S. PAJGADE SIR

Head of Department



External

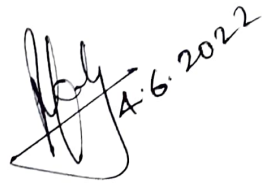
CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “ASSESSMENT AND PREDICTION OF AIR QUALITY WITH RESPECT TO AMRAVATI CITY”, has been satisfactorily completed by **Akanksha Mahure, Prasanna Hurde, Vipul Satpute, Arti Sonone, Dhanashree Muley, Achal Afare, Yashkumar Tale, Yogeshwar Veywhare, Darshan Pokale** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-22.



Prof. Sachin V. Dharpal

(Guide)



Dr. P. S. Pajgade

(Head of Department)



External

Date – 28-02-2022

To,

Executive Engineer

Amravati Project Construction Division No. 1

Amravati.

Subject – Permission for conducting Minor Project of Third Year Civil Engineering Students P.R.M.I.T. & R. Badnera, at rehabilitated village Alangaon, Kathora Bu.

Respected Sir,

As per the curriculum, there is a minor project of third year civil engineering students. This year we are planning to do it at rehabilitated village Alangaon Kathora Bu., for 7 days in which students will do various surveying activities. The feasible dates are 07-03-2022 to 13-03-2022. There are in all 215 students from third year sections. So, it's my kind request to allow our students to work at above site for nourishing field knowledge.

Hope for your positive response.

Thank You

Yours's Faithfully

Pspajgade

Head

Head Civil Engineering Department
Dept. of Civil Engineering
P.R.M.I.T. & R., Badnera-Amravati
P.R.M.I.T.&R. Badnera.

8/02/2022
आचार्य
प्रमुख, प्रमुख विभाग
प.र.म.ि.त. र. बदनरा-अमरावती
पिन कोड नं. 444602

Vidarbha Youth Welfare Society's
**PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY &
RESEARCH BADNERA, AMRAVATI (M.S.)**



**PRMITR
Badnera-Amravati**

MINOR PROJECT REPORT

**ALL STUDENTS OF
THIRD YEAR
ENGINEERING**

**Department of Civil Engineering
Prof. Ram Meghe Institute of Technology & Research
Badnera, Amravati**

CONTENTS

Sr. No.	Items of the Report	Page No.	
		Start	End
1	Introduction	2	5
2	Objective/Aim	6	
3	Work Procedure <ul style="list-style-type: none">• Levelling• Calculating RL• Drawing level Sheet• Using WaterGEMS Softwares• Uses & Limitations of WaterGEMS	6	10
4	Conclusion	10	
5	Acknowledgment	10	11
6	Annexures	11	14

➤ BACKGROUND

Alangaon village is home to around 1588 citizens residing in 392 houses (Census 2011 data) located in Bhatkuli Tehsil, Dist. Amravati came under the widespread of an Irrigation Project named **Nimna Pedhi Prakalpa** resulting to arise a need to shift the whole village to another place as the current location lies under the submergence of the Project. The process of Rehabilitation was adopted and all the necessary steps were taken to relocate the villagers to their new homes as soon as possible, from here Rehabilitation was concerned and this is also going to serve as the base of our project. Thus, resettlement refers to the process of settling again in a new area.

➤ IDEA OF REHABILITATION

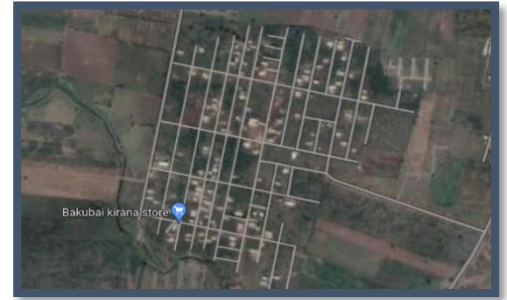
Rehabilitation means restoration to the former state, rehabilitation is done for many reasons like natural disasters, Man-made Disasters, Agricultural projects, Energy-related projects, and Infrastructural Projects too. In our case, the rehabilitation was done due to the Irrigation project. Here the villagers need to resettle in a new suitable place with mutual consent where the authorities build/develop all the necessary amenities required for the smooth functioning of the Village. All of this is done as per the provisions mentioned in the Rehabilitation and Resettlement Policy 2007 this government also provides monetary compensation including other benefits like a piece of land to the beneficiaries The Rehabilitation and Resettlement Bill, 2007 provides for benefits and compensation to people displaced by land acquisition purchases or any other involuntary displacement. The Bill creates project-specific, state, and national authorities to formulate, implement, and monitor the rehabilitation and resettlement process. This policy has provisions according to which the beneficiaries are to be provided with a piece of land in favor of their land as compensation for the acquired land. The site selected for relocation by the authorities is near the P.R.Pote College of Engineering.

➤ RELOCATION OF SITE

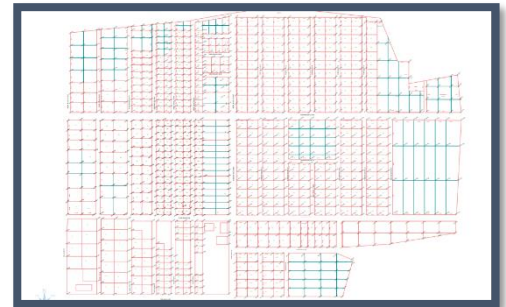
Provision of public facilities or infrastructure often requires the exercise of legal powers by the state under the principle of eminent domain for the acquisition of private property, leading to the involuntary displacement of people, depriving them of their land, livelihood, and shelter; restricting their access to traditional resource base, and uprooting them from their socio-cultural environment. These have traumatic, psychological, and socio-cultural consequences on the affected population which calls for protecting their rights. There is an imperative need to recognize rehabilitation and resettlement issues as intrinsic to the development. The process is formulated with the active participation of the affected persons, rather than as externally-imposed requirements. There should be a clear perception, through a careful quantification of the costs and benefits that will accrue to society at large, of the desirability and justifiability of each project. The aim should be to minimize large-scale displacement, as far as possible. Only the minimum area of land commensurate with the purpose of the project may be acquired. Considering all of these a site was selected for the rehabilitation of the Alangaon. The details of which are as follows.

➤ SITE DETAILS

- **Name of Site:** - Alangaon (Rehabilitation)
- **New Location of Village:** - Opposite Kathora Bk.
- **Type of Land:** - Non-Agricultural Land (Residential)
- **Total Area of Land:** - 401700 sqm. (40.17 Ha.)

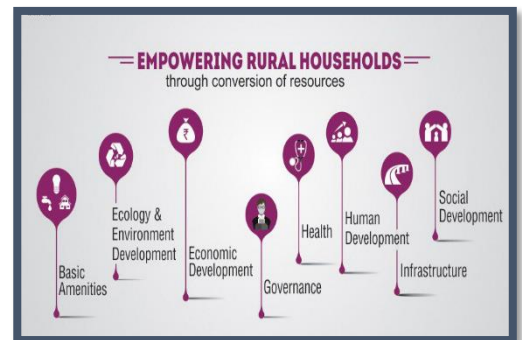


- **Total No. of Plots :-** 559 plots.
- **Sizes of Plot :-**
 - a) 2000 sq.ft.
 - b) 4000 sq.ft.
 - c) 6000 sq.ft.



➤ Amenities Provided

- 1) Community Center
- 2) Primary School
- 3) Open Space/Playground
- 4) Cremation site
- 5) Cow Shed
- 6) Public Toilet
- 7) Bus stop
- 8) Market Place
- 9) Other Administrative Buildings
- 10) Primary Health Centre



➤ Nearby Places

- 1) Amravati Railway Station - 8.6 kms
- 2) Amravati Bus Depot - 8.4 kms
- 3) Nearest Post Office - 2.6 kms
- 4) Nearest Airport (Nagpur) - 155 kms



➤ IMPACT OF REHABILITATION

While undertaking a project of such level, the appropriate Government shall, inter alia, take into consideration the impact that the project will have on public and community properties, assets, and infrastructure; particularly, 'roads, public transport, drainage, sanitation, sources of safe drinking water, sources of drinking water for cattle, community ponds, grazing land, plantations; public utilities, such as post offices, fair price shops, etc.; food storage godowns, electricity supply, health care facilities, schools and educational/training facilities, places of worship, land for traditional tribal institutions, burial and cremation grounds, etc.

The appropriate Government may specify that the ameliorative measures, which will need to be undertaken for addressing the said impact for a component, may not be less than what is provided in a scheme or program, if any, of the Central Government or a State Government in operation in that area. The prime motive is to bring socio-economic development by providing the required infrastructure developed with good planning which further opens doors for new opportunities for the residing citizens to find out new sources of income resulting in high per capita income and a good lifestyle. In our case, the place where the villagers of Alangaon have been shifted will bring them to give them an advantage of location and bring them nearer to the Amravati city which is going to benefit their lives a lot more than before.

➤ SCOPE/SELECTION OF WORK AT THE REHABILITATION SITE

Rehabilitation of a village comes with a challenge to developing higher-grade infrastructure projects while developing the alangaon site many works like construction of roads, Sewage lines, Water Supply Schemes, Construction of ESR & erections of other important Buildings. Considering the current situation at the site the alignment of all the roads was already laid and at some stretches, construction of flexible pavements was already done along with the sewer lines on both the sides of the Roads. But one of the most important basic needs i.e., drinking water was yet to be reached by the households of the new Alangaon.

So, among all the other works, it was decided to undertake the work of Designing a Water Supply Scheme. People depend on water for drinking, cooking, washing, carrying away wastes, and other domestic needs. Water supply systems must also meet requirements for public, commercial, and industrial activities. In all cases, the water must fulfill both quality and quantity requirements, and to fulfill all these water requirements also develop a sustainable water supply scheme including the ESR. Further details are discussed in the upcoming topics.



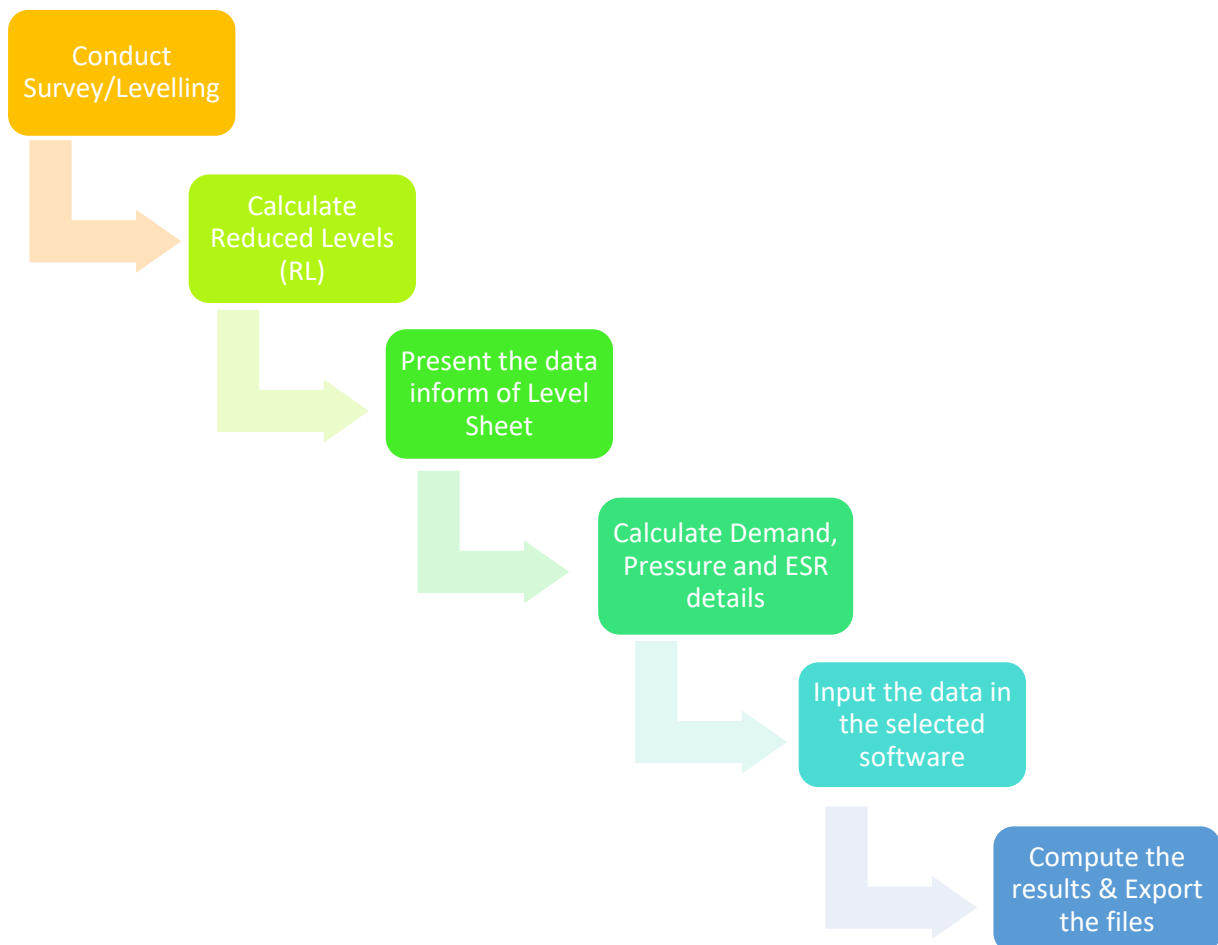
➤ OBJECTIVE OF THE PROJECT

1. To plot the grid on the site and conduct a leveling survey
 2. To calculate the Reduced Levels of the pre-decided nodal points of the plots
 3. To apply the knowledge of surveying and solve the civil engineering problems
 4. To plot the determined data and present it in the form of a level sheet.
 5. To calculate the water demand and the pressure required in the water system
 6. To determine the diameter, length, material, flow, and the costing of the system
-

➤ OUTCOMES

1. Students understood various applications of surveying in the branch of Civil Engineering
2. Students learn to use and handle various equipment while performing various tasks
3. Students get an opportunity to solve critical calculations for determining desired results
4. Students apply their knowledge of environmental engineering to perform the calculations
5. Students are able to use the software effectively to design water supply schemes

➤ WORK PROCEDURE/METHODOLOGY



- **Levelling**

Leveling or leveling is a branch of surveying, the object of which is to establish or verify or measure the height of specified points relative to a datum. Leveling is the general term applied to any of the various processes by which elevations of points or differences in elevation are determined. The act of leveling was performed by the students so as to collect the on-ground data on the level. For which auto level was used and levels of the plot boundaries were taken and recorded in the field book, the RLs were calculated using the Height of Instrument (HI) method.

- **Calculating the Reduced Levels**

The R.L. of each point is found by obtaining the RL of the line of collimation by adding the BS reading of a point whose RL is known. The RL of the line of collimation is called the Height of Instrument. From this, the staff readings of all intermediate stations are subtracted to get the RL at those points. The RLs are found by using the following formula.

$$HI = BS + RL \quad \& \quad RL = HI - \text{Staff Reading}$$

Station	Chainage	Distance		Bearing		Staff Reading			Collimation Plane		Reduced Level	Remarks
		Left	Right	Back	Fore	Back	Inter	Fore	Rise	Fall		
847						1.875			100.61		98.725	
848						1.765					97.845	
849						1.740					97.27	
849 B						1.490					99.12	
849 B						1.570					98.04	
849 B						1.590					97.92	
849 B						1.615					97.995	
849 B						1.610					97.9	
849 B						2.20	1.610	101.2			99	CP
849 B						1.700					97.5	
850 A						1.720					97.48	
Date _____						Arithmetic Check		$\sum BS - \sum FS = \text{Last RL} - \text{First RL}$ $0.565 = 0.565$				

Sample Calculations: -

$$HI = BS + RL \text{ at BM}$$

$$= 0.620 + 100$$

$$HI = 100.62 \text{ M.}$$

$$RL = HI - \text{Staff Reading}$$

$$= 100.62 - 1.310$$

$$HI = 99.300 \text{ M.}$$

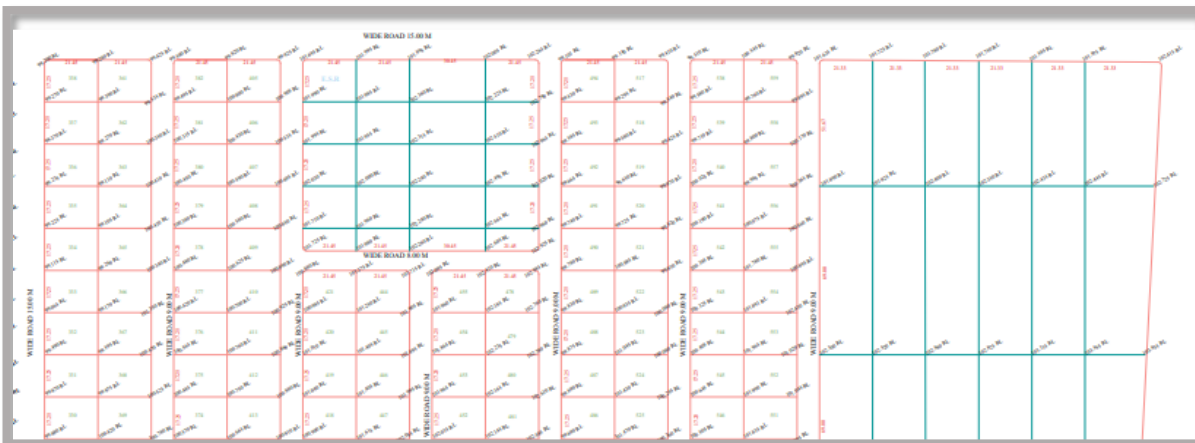
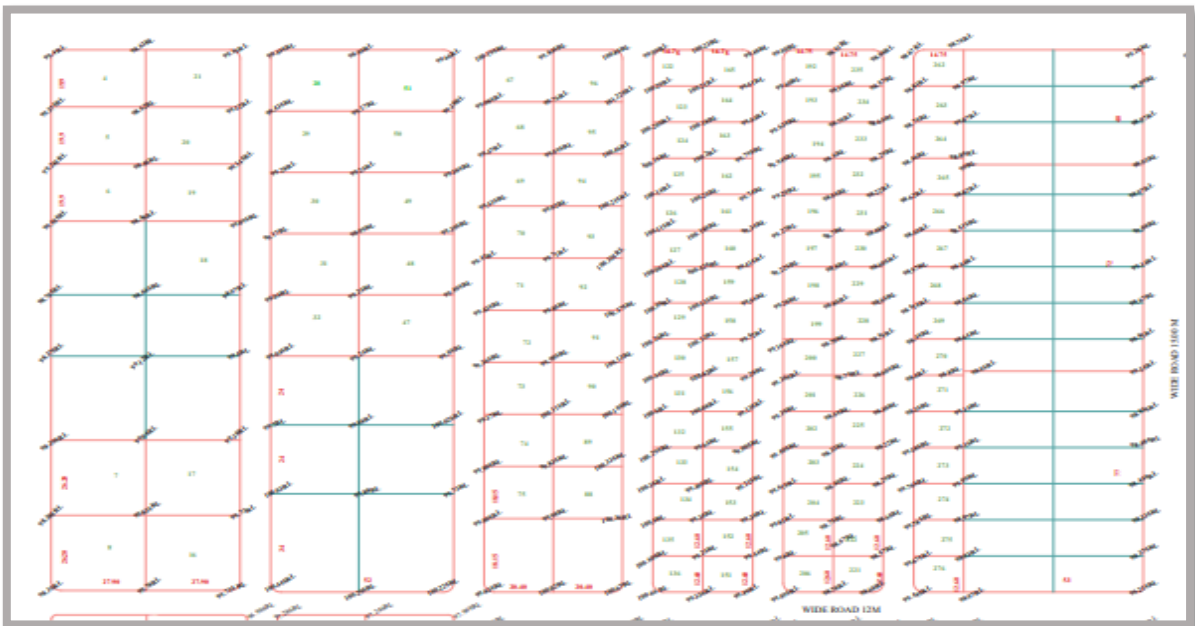
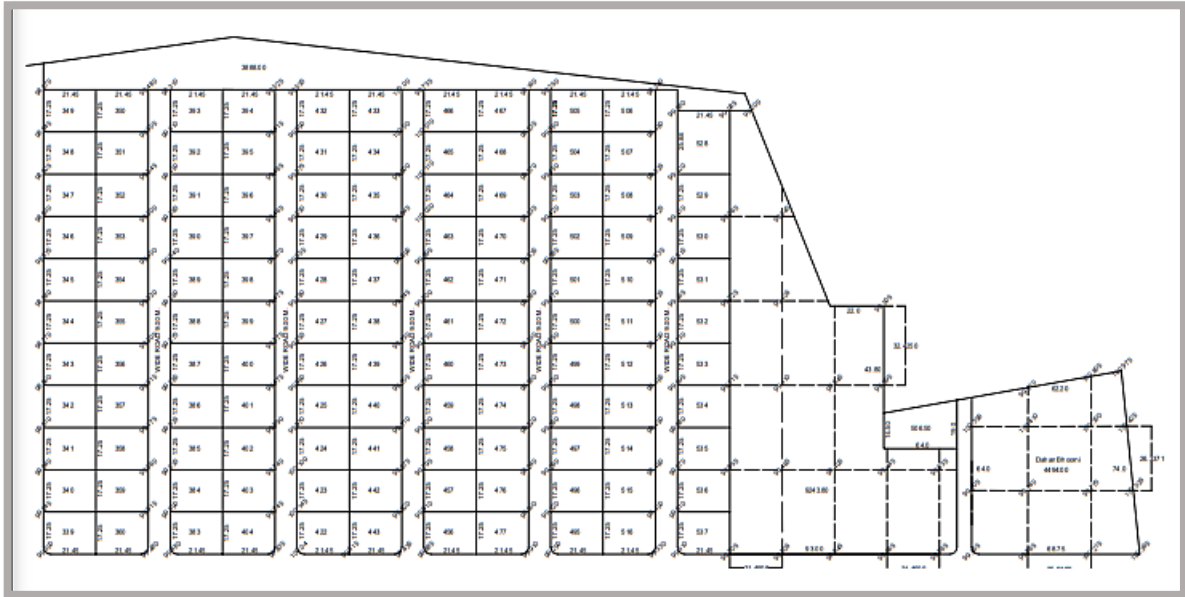
where,
RL = Reduced Level
HI = Height of Instrument
IS = Intermediate Sight
FS = Fore Sight
BS = Back Sight

- **Arithmetic check:**
 $\sum BS - \sum FS = \text{LAST RL} - \text{FIRST RL}$

Station	Chainage	Distance		Bearing		Staff Reading			Collimation Plane		Reduced Level	Remarks
		Left	Right	Back	Fore	Back	Inter	Fore	Rise	Fall		
								0.610		100.61	100	
553 A								1.510			99.300	
553 B								1.865			97.435	
540 A								1.570			99.040	
541 A								1.600			98.010	
542 A								1.710			97.900	
545								1.840			97.77	
546								1.730			98.88	
545								1.735			98.875	
544								1.670			98.980	
547								1.685			98.925	
Date _____						Arithmetic Check		$\sum BS - \sum FS = \text{Last RL} - \text{First RL}$ $1.075 = 1.075$				

- **Drawing the Level Sheet**

All of these levels are then further represented on the sheet, drawn digitally using AutoCAD. As the work was done in parts, individual batches first drew their own respective sheets



- **Use of software for Hydraulic Design (WaterGEMS)**

A water distribution network is an essential hydraulic infrastructure that is a part of the water supply system composed of a different set of pipes, hydraulic devices, and storage reservoirs. The water distribution network connects consumers to sources of water using hydraulic components. A distribution network may have different configurations depending upon the layout of the existing area. Generally, water distribution networks have a branched and looped type of configuration of pipelines. The primary variable is flow in the network. The constraints are that demands are to be met and pressures at selected junctions in the network are to be within specified limits.



The decision variables thus consist of design parameters i.e. pipe diameters, reservoir capacity, and elevation. The network system must be modeled, analyzed, and its performance is evaluated under the various physical and hydraulic parameters or conditions. This process is called “Simulation”, this can be done with the help of various software like Branch, WaterGEMS & Jaltantra. But Bentley WaterGEMS is a widely accepted and used software as WaterGEMS is a software that performs an extended period simulation of hydraulic and water quality behavior within pressurized pipe networks.

WaterGEMS tracks the flow of water in each pipe, the pressure at each junction, the height of water in each tank, and the concentration of water throughout the network during a simulation period. WaterGEMS is optimization software that can be used to simulate or design new or partially existing gravity-fed water distribution systems. The software finds the lowest allowable diameter for each pipe segment that will allow the system to function, or more specifically, to meet the minimum pressure requirements at all junctions. Since pipe diameters are linked to the capital cost of the network.

Following are the step has been carried out to Analyze/Design the existing Water Distribution Network using WaterGEMS

Step 1: Encoding of Input Data Most hydraulic analysis software has common input data requirements. These data are grouped into pipe data and node data. Pipe data are the assigned pipe number, pipe diameter (mm), C-value, length (m), and diameter (mm). Node data are assigned node number, elevation (m), and water demand (lps). Pump curve data are the assigned head (m) and flow (lps).

Step 2: Hydraulic Network Simulation This step is done by WATERGEMS. If all the data required have been input, the software could proceed with its hydraulic run. The software computes the head losses (m) in each pipe, the rate of head loss (m/km) in each pipe, the flow velocities (m/s), and the pressure in each node (m).

Step 3: Examination of Hydraulic Run Results Usually, all possible hydraulic parameters can be shown from the computer run results.

Step 4: Finalizing the Network Configuration The model is subjected to repeated simulation and data adjustments until an acceptable network configuration is reached.

Step 5: Result and Analysis WATERGEMS generates the results in table and graph format as a Results given by the software program in form of table and graph are displayed.

Step 6: Result and Discussions The network diagram of the water distribution system showing the location of ESR is drawn.

- **Use & Limitations of WaterGEMS**

- ❖ WaterGEMS provides you with a comprehensive yet easy-to-use decision-support tool for water distribution networks. The software helps improve your knowledge of how infrastructure behaves as a system, how it reacts to operational strategies, and how it should grow as population and demands increase.
- ❖ Though being a comprehensive software, WaterGEMS may not be very user friendly if tried with manual input as it increases the extra effort to draw the layout and requires a bit more skilled operator

CONCLUSION

- ❖ After successfully performing all the necessary steps, I have come to a conclusion that hydraulic design is an engineered process, and if carried out properly it can help in developing an efficient and economical Distribution System
- ❖ Advance Softwares like WaterGEMS are like a revolution in the field of hydraulic designing as it helped in designing a perfect sustainable & cost-effective system for Alangaon.
- ❖ By using WaterGEMS a water supply scheme has been successfully designed for alangaon village which will continue serving the households for next 30 Years

ACKNOWLEDGEMENT

I would express my gratitude for giving me the opportunity to be a part of such an informative project and to provide us with such opportunities to expand our knowledge.

I would like to thank our HOD Dr. P.S. Pajgade Sir for his continuous guidance and this project won't happen successfully without the support of Dr. M.V. Modod, Prof. V.S. Gohatre & Prof. M. Mahalle. I thank them for their kind suggestions, inspiration, and guidance during the preparation of this Minor Project Report

Thank You!!!


ME

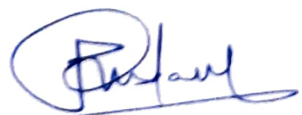
(Environmental Engineering)

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled "**PERFORMANCE OF RECYCLED HYBRID FIBRE REINFORCED CONCRETE UNDER VARYING CURING CONDITION**" has been satisfactorily completed by **Ms. Kajal Shrikrushna Vaidhya** in partial fulfillment of the award of Degree of **MASTER OF ENGINEERING (FULL TIME)** in **CIVIL ENGINEERING (STRUCTURAL ENGINEERING)** from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 19/07/2022


Internal Examiner


External Examiner
Dr. P. O. Modani

CERTIFICATE OF EXAMINATION

This is to certify that the Seminar Report titled “**PERFORMANCE OF BRIDGE CUM BANDHARA (BCB) PIER UNDER HORIZONTAL PRESSURE**”, has been satisfactorily completed by **Salman Aarif Shaikh** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022

DATE:-19/9/2022



INTERNAL

R. Sameer Shah



EXTERNAL

Do. P. O. Modani

CERTIFICATE

This is certified that this dissertation titled "Study on Biogas Generation using Diphasic Digestion Process" is the bonafide work of Mr. Waman Pandurang Bhave who, carried out the research under my supervision for the award of P.G. Degree of Master of Engineering - Civil Engineering (Environmental Engineering) of Sant Gadge Baba Amravati University, Amravati.


Certified 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.

Place: Prof. Ram Meghe Institute of Technology and Research Badnera, Amravati

Date:

 30/05/2022

Dr. Nitin W. Ingole
Professor & Dean
(R & D)


HOD


Principal

External Examiner

CERTIFICATE

This is to certify that the work contained in the thesis entitled “ASSESSMENT AND PREDICTION OF AIR QUALITY WITH RESPECT TO AMRAVATI TOWN”, submitted by **SAKSHI SANJAY SUROSHE** for the award of the degree of Master of Civil Engineering in Environmental Engineering to the Sant Gadge Baba Amravati University, is a record of bonafide research works carried out by him under my direct supervision and guidance.

I considered that the thesis has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. The contents embodied in the thesis have not been submitted for the award of any other degree or diploma in this or any other university.

Place: Prof. Ram Meghe Institute of Technology and Research Badnera, Amravati (M.S.)

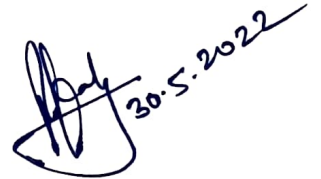
Date: 30/5/2022



PROF. S. V. DHARPAL
(CO-GUIDE)



HEAD OF DEPT.



PROF. R. Y. KALE
(GUIDE)



PRINCIPAL
Principal
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

EXTERNAL EXAMINER.

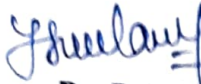
CERTIFICATE

This is to certify that the work contained in the thesis entitled "**SOLID WASTE MANAGEMENT IN WANI**", submitted by **DIVYA VISHAL SHEJAO** for the award of the degree of Master of Civil Engineering in Environmental Engineering to the Sant Gadge Baba Amravati University, is a record of bonafide research works carried out by her under my direct supervision and guidance.

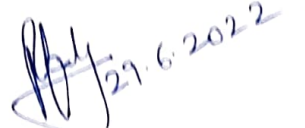
I considered that the thesis has reached the standards and fulfilling the requirements of the rules and regulations relating to the nature of the degree. The contents embodied in the thesis have not been submitted for the award of any other degree or diploma in this or any other university.


Place: Prof. Ram Meghe Institute of Technology and Research Badnera, Amravati (M.S.)

Date: 29/6/2022


29/6/22
Dr. P.A. KADU
Co- Guide




29.6.2022
PROF. R. Y. KALE
Guide


for **Head of Department**
Department of Civil Engineering



29.6.2022
Principal
PRMIT&R, Badnera

External Examiner

CERTIFICATE OF EXAMINATION


This is to certify that the Dissertation Report titled “**COMPARATIVE STUDY ON PANEL STRUCTURE VS FRAME STRUCTURE**”, has been satisfactorily completed by **Shweta Dadarao Tayade** in partial fulfillment of the award of Degree of **MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING)** from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 08/09/2022



Prof. S.R. Bhoskade

Internal Examiner



External Examiner
(M.M. Joshi)

CERTIFICATE OF EXAMINATION


This is to certify that the Seminar Report titled “**EFFECT OF TREATED SEWAGE EFFLUENT ON MECHANICAL PROPERTIES OF CONCRETE – A LEAN TECHNIQUE**”,

has been satisfactorily completed by **KOMAL SUNIL BHATKAR** in partial fulfillment of the award of Degree of **MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING)** from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

06/09/22

Date: / /20



Internal Examiner

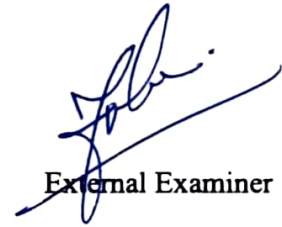

External Examiner

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**INTELLIGENT SEISMIC VIBRATION CONTROL OF STRUCTURE**”, has been satisfactorily completed by **Rupal S. Shriwas** in partial fulfillment of the award of Degree of **MASTER OF ENGINEERING (FULL TIME)** in **CIVIL ENGINEERING (STRUCTURAL ENGINEERING)** from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date:


Internal Examiner


External Examiner


CERTIFICATE OF EXAMINATION

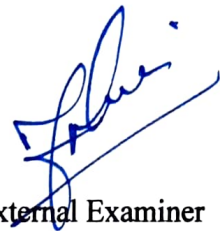
This is to certify that the Dissertation Report titled “**STUDY & DEVELOPMENT OF BAMBOO CONCRETE COMPOSITE STRUCTURE FOR TRIBAL AREA**”, has been satisfactorily completed by **Karan J. Deshmukh** in partial fulfilment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 24/09/22


S. D. Malland

Internal Examiner


Dr. M. V. Mohod - 



External Examiner

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**CONDITION ASSESSMENT OF STRUCTURE AND REMEDIAL MEASURES**”, has been satisfactorily completed by **Suyog Ramrao Dhawade** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 6/9/22

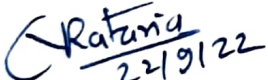

Internal Examiner

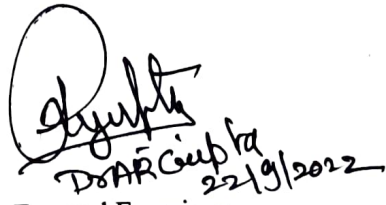

External Examiner

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “SEISMIC PROTECTION OF RC STRUCTURE USING NEW AGE VIBRATIONAL CONTROL DEVICE”, has been satisfactorily completed by **Pranay P. Rathi** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2020-2022.

Date:



Internal Examiner



External Examiner


CERTIFICATE

This is to certify that **Ravi V. Rothkar** has satisfactorily completed the work towards the **Master of Engineering (M.E.)** degree of **Sant Gadge Baba Amravati University** in **Civil-Environmental Engineering** discipline from Prof. Ram Meghe Institute of Technology and Research, Bandera-Amravati on the topic entitled "**Impact of Diwali Celebration on Urban Air and Noise Quality in Amravati City**". This work has been completed under my guidance.

The thesis embodies the original research work done by the candidate in partial fulfillment of the requirements of the **Master of Engineering (M.E.)** degree of **Sant Gadge Baba Amravati University, Amravati** and to the best of my knowledge and belief, work embodied in this thesis has not formed earlier the basis for the award of any degree or similar title of this or any other university or examination body.


Dr. Nitin W. Ingole
Professor & Dean
(R & D)

30/05/2022 
Head of Dept.
Civil Engineering


Principal
Principal
Prof. Ram Meghe Institute of
Technology and Research
Badnera-Amravati



External

CERTIFICATE

This is certified that this dissertation titled "**Application of Adsorption Models for the Removal of Heavy Metal from Wastewater**" is the bonafide work of **Ku. Pritee Hemantrao Choudhary** (Enrollment No. 20030310015) who, carried out the research under my supervision for the award of P.G. Degree of Master of Engineering - Civil Engineering in Environmental Engineering of Sant Gadge Baba Amravati University, Amravati.

Certified 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.

Place: Prof. Ram Meghe Institute of Technology and Research Badnera, Amravati

Date: 30.05.2022


30/05/2022

Dr. Nitin W. Ingole
Professor & Dean



Head of Dept.
Civil Engineering


30/05/2022

Principal
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati



External

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report “METHODS OF CONDITION ASSESSMENT OF EXISTING STRUCTURE USING NON DESTRUCTIVE METHODS”, has been satisfactorily completed by **Samiksha .N. Bhoyar, Yogesh .A. Kharode, Dhiraj .D. Hirole, Siddhesh .V. Bhoyar, Nandeshwar .S. Lasnapure, Rutvik .R. Thakare, Yash S. Jain, Bhargav G. Bhelonde** , in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

C. Ratana
7/6/22

Internal


P. S. Jadhav
Head of Department


A. B. Jadhav
External

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**EXPERIMENTAL STUDY ON RETROFITTING OF STRUCTURAL ELEMENTS**”, has been satisfactorily completed by **Name of Student** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: / /


Dr. N.P. Katamra
Internal Examiner

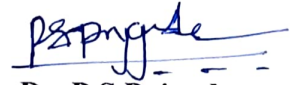

Dr. A.R. Gupta 22/9/22
External Examiner

CERTIFICATE OF EXAMINATION

This is to certify that the Project Report titled “**COMPARISON BETWEEN REINFORCED CONVENTIONAL PANEL AND BLOCK AGAINST REINFORCED SUSTAINABLE MATERIAL PANEL AND BLOCK BUILDING UNIT FOR DIFFERENT GRADES OF CONCRETES,**” has been satisfactorily completed by **Tanay P. Jaiswal, Aboli K. Chaudhari, Arpita R.Gurav, Bhushan G.Bhagat, Divya S.Shelke, Giriraj P.Belokar, Harshal D.Khalode, Parth A.Shirbhate** in partial fulfillment of the award of Degree of BACHELOR OF ENGINEERING in CIVIL ENGINEERING from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022



Prof. Riyaz Sameer Shah
Project Guide



Dr. P.S.Pajgade
Head of Department



External Examiner

ME

(Structural Engineering)

Department of Civil Engineering
ME Civil Engineering (Structural Engineering) (F.T.) 2021-2022

Sr. No.	Name of Students
1	BHENDKAR SHUBHAM ANILRAO
2	GUPTA DIVYA SANTRAM
3	SHRIWAS RUPAL SHAMLAL
4	RATHI PRANAY PRAKASH
5	BHATKAR KOMAL SUNIL
6	VAIDYA KAJAL SHRIKRUSHNARAO
7	DHAWADE SUYOG RAMRAO
8	SAWDEKAR AKSHAY VIJAY
9	TAYADE SHWETA DADARAO
10	UIKEY DIKSHA SHIWLAL
11	DESHMUKH KARAN JAYWANTRAO

N. P. Kataria
22/10/22

Dr. N. P. Kataria

Class Teacher

M.E. -Structural Engineering

PRMIT&R, Badnera

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

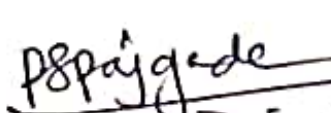
BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING

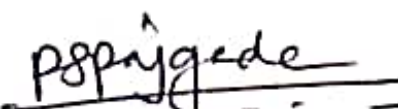


CERTIFICATE

This is to certify that this dissertation report titled "IMPORTANCE OF BIM IN CONSTRUCTION INDUSTRY" is the bona fide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by Shubham A. Bhendkar in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021 - 2022 under the guidance of Dr. P. S. Pajgade


Head of Department




Dr. P. S. Pajgade
Guide


PRINCIPAL
Prof. Ram Meghe Institute of
Technology and Research
Badnera-Amravati

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

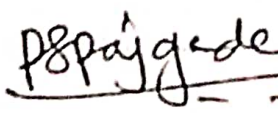
BADNERA, AMRAVATI-444701

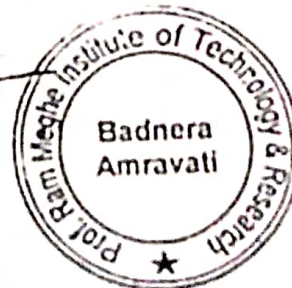
DEPARTMENT OF CIVIL ENGINEERING

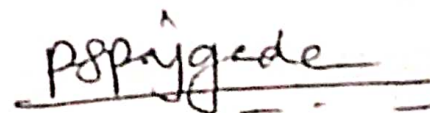


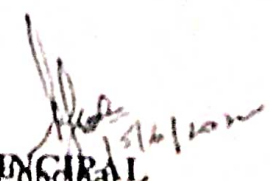
CERTIFICATE

This is to certify that this dissertation report titled "IMPORTANCE OF BIM IN CONSTRUCTION INDUSTRY" is the bona fide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by Shubham A. Bhendkar in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021 - 2022 under the guidance of Dr. P. S. Pajgade


Head of Department




Dr. P. S. Pajgade
Guide


PRINCIPAL
Prof. Ram Meghe Institute of
Technology and Research
Badnera-Amravati

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

BADNERA, AMRAVATI-444701

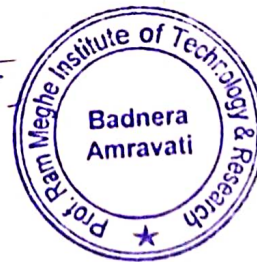
DEPARTMENT OF CIVIL ENGINEERING




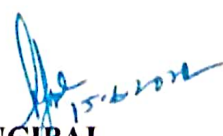
CERTIFICATE

This is to certify that this dissertation report titled “ANALYSIS AND DESIGN OF RC BUILDINGS USING LATEST IS CODES FOR EARTHQUAKE AND WIND” is the bona fide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by **Divya S. Gupta** in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021 - 2022 under the guidance of **Dr. P. S. Pajgade**


Head of Department



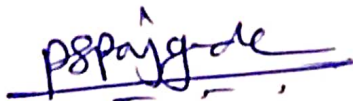

Dr. P. S. Pajgade
Guide


PRINCIPAL
Prof. Ram Meghe Institute of
Technology and Research
Badnera-Amravati

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled "ANALYSIS AND DESIGN OF RC BUILDINGS USING LATEST IS CODES FOR EARTHQUAKE AND WIND", has been satisfactorily completed by **Divya S. Gupta** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 15/06/2022


Internal Examiner


External Examiner

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE

This is to certify that this dissertation report titled “INTELLIGENT SEISMIC VIBRATION CONTROL OF STRUCTURE” is the bona fide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by **Rupal Shamlal Shriwas** in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021 - 2022 under the guidance of **Dr. P. S. Pajgade** co-guidance of **Dr. N. P. Kataria**.

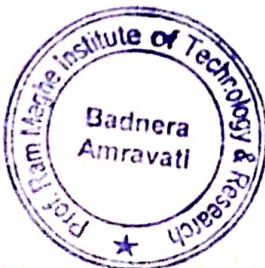
Dr. P. S. Pajgade

Guide

Dr. N. P. Kataria

Co-Guide

Head of Department

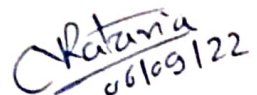


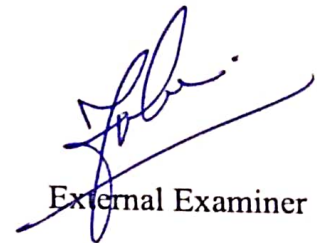
PRINCIPAL
Principal
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**INTELLIGENT SEISMIC VIBRATION CONTROL OF STRUCTURE**”, has been satisfactorily completed by **Rupal S. Shriwas** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date:


Internal Examiner


External Examiner

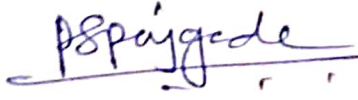
PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,
BADNERA, AMRAVATI-444701


DEPARTMENT OF CIVIL ENGINEERING

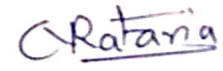


CERTIFICATE

This is to certify that this dissertation report titled "SEISMIC PROTECTION OF RC STRUCTURE USING NEW AGE VIBRATIONAL CONTROL DEVICE" is the bona fide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by **Pranay P. Rathi** in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2020 - 2022 under the guidance of **Dr. Sunil S. Somani** and co-guidance of **Dr. Nitin P. Kataria**.


Head of Department


Dr. Sunil S. Somani
Guide


Dr. Nitin P. Kataria
Co-Guide

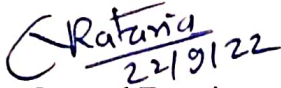


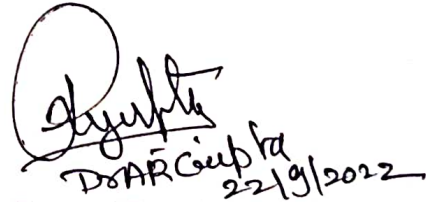

PRINCIPAL
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**SEISMIC PROTECTION OF RC STRUCTURE USING NEW AGE VIBRATIONAL CONTROL DEVICE**”, has been satisfactorily completed by **Pranay P. Rathi** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2020-2022.

Date:


Internal Examiner


External Examiner

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

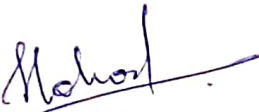
BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING



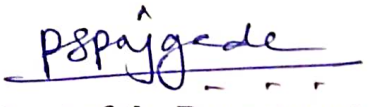
BONAFIDE CERTIFICATE

Certified that this Dissertation report titled “EFFECT OF TREATED SEWAGE EFFLUENT ON MECHANICAL PROPERTIES OF CONCRETE – A LEAN TECHNIQUE APPROACH” is the bonafied work of Miss. KOMAL S. BHATKAR who carried out the Dissertation work under the guidance of Asst Prof Dr. M. V. Mohod


Dr. M. V. Mohod

Assistant professor

Guide


Head of the Department




Principal
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

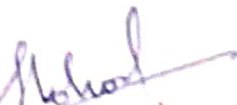
CERTIFICATE OF EXAMINATION


This is to certify that the Seminar Report titled "EFFECT OF TREATED SEWAGE EFFLUENT ON MECHANICAL PROPERTIES OF CONCRETE - A LEAN TECHNIQUE",

has been satisfactorily completed by **KOMAL SUNIL BHATKAR** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

06/07/22

Date: / /20


Internal Examiner


External Examiner

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

BADNERA, AMRAVATI-444701

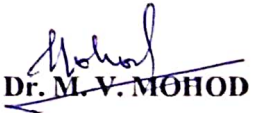
DEPARTMENT OF CIVIL ENGINEERING



BONA FIDE CERTIFICATE

Certified that this Dissertation report titled “**PERFORMANCE OF RECYCLED HYBRID FIBRE REINFORCED CONCRETE UNDER VARYING CURING CONDITION**” is the bona fide work of Miss Kajal Shrikrushnarao Vaidhya who carried out the Dissertation work under the guidance of Dr. M. V. Mohod




Dr. M. V. MOHOD
Guide



Head of Department

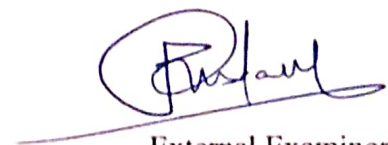

Principal
Prof. Ram Meghe Institute of
Technology and Research
Badnera-Amravati

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**PERFORMANCE OF RECYCLED HYBRID FIBRE REINFORCED CONCRETE UNDER VARYING CURING CONDITION**” has been satisfactorily completed by **Ms. Kajal Shrikrushna Vaidhya** in partial fulfillment of the award of Degree of **MASTER OF ENGINEERING (FULL TIME)** in **CIVIL ENGINEERING (STRUCTURAL ENGINEERING)** from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 19/07/2022


Internal Examiner


External Examiner
Dr. P. O. Modani

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING



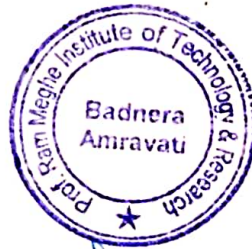
CERTIFICATE

This is to certify that this dissertation report titled “**CONDITION ASSESSMENT OF STRUCTURE AND REMEDIAL MEASURES**” is the bonafide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by **Suyog Ramrao Dhawade** in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021-2022 under the guidance of **Dr. P. S. Pajgade** and Co-guide **Prof. M. A. Banarase**

Dr. P. S. Pajgade

Guide

Head of Department



PRINCIPAL
Principal
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

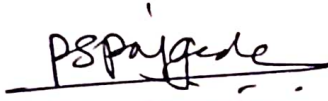
Prof. M. A. Banarase


Co-Guide

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**CONDITION ASSESSMENT OF STRUCTURE AND REMEDIAL MEASURES**”, has been satisfactorily completed by **Suyog Ramrao Dhawade** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 6/9/22


Internal Examiner


External Examiner

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE

This is to certify that this dissertation report titled “EXPERIMENTAL STUDY ON RETROFITTING OF STRUCTURAL ELEMENTS” is the bona fide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by Akshay Vijay Sawdekar in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021 - 2022 under the guidance of Dr. P. S. Pajgade & Prof. M. A. Banarase

Dr. P. S. Pajgade

Guide

Head of Department

Prof. M. A. Banarase

Co-Guide




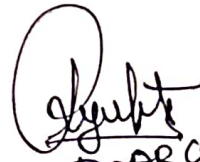
PRINCIPAL
Prof. Ram Meghe Institute of
Technology and Research
Badnera Amravati

CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**EXPERIMENTAL STUDY ON RETROFITTING OF STRUCTURAL ELEMENTS**”, has been satisfactorily completed by **Name of Student** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: / /


Dr. N.P. Kulkarni
Internal Examiner


Dr. A.R. Ambekar 22/9/22
External Examiner

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,

BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING



CERTIFICATE

This is to certify that this dissertation report titled “**COMPARATIVE STUDY ON PANEL STRUCTURE VS FRAME STRUCTURE**” is the bonafide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by **Shweta Dadarao Tayade** in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021-2022 under the guidance of **Prof. R. Y. Kale** and **Co-guide Prof. S. R. Bhuskade**

Dr. P. S. Pajgade

Head of Department

Prof. R. Y. Kale

Guide

Prof. S. R. Bhuskade

Co - Guide




PRINCIPAL
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

CERTIFICATE OF EXAMINATION


This is to certify that the Dissertation Report titled “**COMPARATIVE STUDY ON PANEL STRUCTURE VS FRAME STRUCTURE**”, has been satisfactorily completed by **Shweta Dadarao Tayade** in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 08/09/2022



Prof. S.R. Bhosikade

Internal Examiner



External Examiner
(M.M. Joshi)

PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND

RESEARCH, BADNERA, AMRAVATI-444701

DEPARTMENT OF CIVIL ENGINEERING



BONAFIDE CERTIFICATE

Certified that this Dissertation report titled “OPTIMIZATION OF CONCRETE MIX DESIGN USING LOW-COST REPLACEMENTS” is the bonafied work of Miss. Diksha S. Uikey who carried out the Dissertation work under the guidance of Dr. P. S. Pajgade co-guidance of Prof. A. S. Deshmukh

Prof. A. S. Deshmukh
Co-Guide

Dr. P. S. Pajgade
Guide

Head of the Department



PRINCIPAL
Principal

Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati

CERTIFICATE OF EXAMINATION

This is to certify that the Seminar Report titled "OPTIMIZATION OF CONCRETE MIX DESIGN USING LOW-COST REPLACEMENTS", has been satisfactorily completed by Diksha Shiwlal Uikey in partial fulfillment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Place: Amravati

Date:

Deshmukh
03.09.22
Internal Examiner

Shiwla
03/09/2022
External Examiner

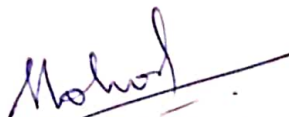
PROF. RAM MEGHE INSTITUTE OF TECHNOLOGY AND RESEARCH,
BADNERA, AMRAVATI-444701

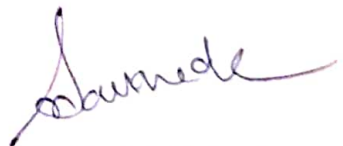
DEPARTMENT OF CIVIL ENGINEERING

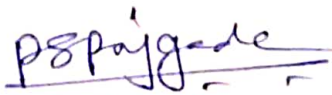


CERTIFICATE


This is to certify that this dissertation report titled “STUDY & DEVELOPMENT OF BAMBOO CONCRETE COMPOSITE STRUCTURE FOR TRIBAL AREA” is the bonafide work and it is submitted to the Sant Gadge Baba Amravati University, Amravati by **Karan Jaywantrao Deshmukh** in the partial fulfillment of the requirement for the award of degree of Master of Engineering in Civil Engineering (Structural Engineering), during the academic year 2021-2022 under the guidance of **Dr. M. V. Mohod** and Co-guide **Prof. S. D. Malkhede**


Dr. M. V. Mohod
Guide


Prof. S. D. Malkhede
Co-Guide


Dr. P. S. Pajgade
Head of Department






PRINCIPAL
Principal
Prof Ram Meghe Institute of
Technology and Research
Badnera-Amravati


CERTIFICATE OF EXAMINATION

This is to certify that the Dissertation Report titled “**STUDY & DEVELOPMENT OF BAMBOO CONCRETE COMPOSITE STRUCTURE FOR TRIBAL AREA**”, has been satisfactorily completed by **Karan J. Deshmukh** in partial fulfilment of the award of Degree of MASTER OF ENGINEERING (FULL TIME) in CIVIL ENGINEERING (STRUCTURAL ENGINEERING) from Sant Gadge Baba Amravati University, Amravati for the academic session 2021-2022.

Date: 24/09/22


D. M. Mulla
Internal Examiner

Dr. M. V. Mohod - 


External Examiner