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Student's Chapters



Indian Concrete Institute

&



India Chapter
of American Concrete Institute

CONCRETE NEWS

The News Bulletin from Nandha Engineering College

Department of Civil Engineering

Shaping Minds...Reshaping India...

Volume: 15, Issue: 02, Jan - June '23



Dr N RENGARAJAN
Principal

The truly educated individuals are capable of doing new things: they have the ability to generate ideas & turn them into the reality. Today's values based education is an approach to prepare them for the practice at the professional level & sure the Department of Civil Engineering offers the value in all aspect. And sure this would be in high aspiration to showcase their work. I wish all them the very best.

It is a matter of great pride and satisfaction for Nandha Engineering College to bring out the Concrete News Bulletin for the academic year 2022-23 (Even Semester) by the Department of Civil Engineering. The side spectrum of articles in different reactions gives me a sense of delight that our students and professors possess creative potential and innovative thinking in ample measures. A news bulletin is like a mirror which reflects the clear picture of all sorts of activities undertaken by the department. My heartfelt congratulations to the team who took responsibility for completing this herculean task to the best.



Dr J SENTHIL
Director



Dr E K MOHANRAJ
Dean Civil Engg.

Welcome to the Fifteenth issue of Concrete News, which highlights the achievements of the Civil Engineering Department at Nandha Engineering College. Academic Year 2022-23 (Even Semester) was a year of great achievements and carried on the momentous journey of the department Vision. As always, this academic year also saw our students bringing laurels to the institute by winning prestigious awards and prizes in various competitions. Once you read it, I'm sure you'll find them more than deserving of such an honor for the achievers.

Department Vision

To foster academic excellence by imparting knowledge in civil engineering and allied disciplines to meet the ever growing needs of the society.

Department Mission

Civil Engineering Department is committed

- To impart quality education to produce professionals with social responsibility.
- To excel in the thrust areas of civil and allied engineering to solve real world problems.
- To create a learner centric environment with continual progress to meet the global engineering needs.

Academic Toppers

Bachelor of Engineering (Civil Engineering)

(2020-24 Batch)



Matheswaran S
(9.20 GPA)



Ritheha J
(8.96 GPA)



Venkatesh P
(8.88 GPA)

(2021-25 Batch)



Dharsana S
(8.42 GPA)



Prem Kumar S
(8.00 GPA)



Saritha K
(7.86 GPA)

(2022-26 Batch)



Anusrie P
(9.09 GPA)



Shreetha S
(8.77 GPA)



Sivaranjani P
(8.73 GPA)



PROJECT BASED LEARNING (PBL)

17 No's of PBL projects has been displayed for the course 17CEC15 Water Resources and Irrigation Engineering and 17CEC05 Building Materials and review has been conducted for II and III Year students on 25th Jan 2023.



NATIONAL VOTERS DAY

On the mark of National Voters Day pledge has been made in our first year classroom on 25th Jan 2023.



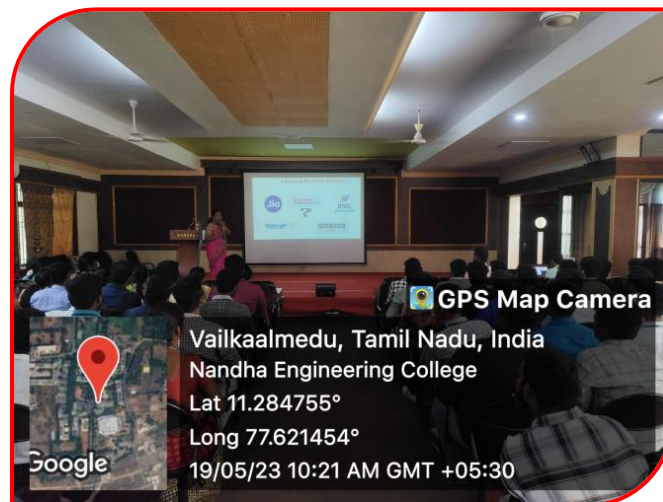
ONE CREDIT COURSE

One Credit Course has been conducted for II and III Year students "Preparation of Building Plan" by Er. P. GowsikPrasaanth, G S Builders, Tiruppur on 15th and 16th April 2023.



GUEST LECTURE

ICI-NEC organized guest lecture on Drone Technology in Civil Engineering handled by Dr. R. Malathy, Professor & HoD, Sona College of Tech., Salem on 19th May 2023.



SKILL UPGRADATION-FACULTY MEMBERS

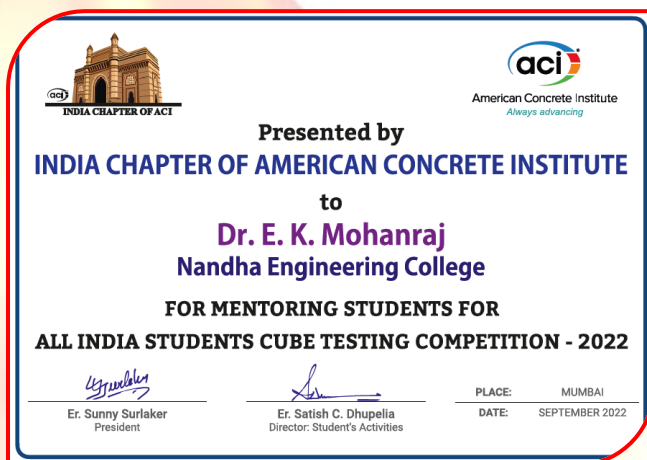
- Mr. P. B. Narandiran, AP has been certified for reviewing the article namely "Determination of Corrosion Mass Level of Reinforced Concrete with and without Polypropylene Fibre using Mass-loss Measurement Method" in the Journal of Engineering Research and Sciences.



- Dr. E. K. Mohanraj, Dean had attended *G20 Summit* at IIT-M, Research Park, Chennai on 01st Feb 2023.



- Dr. E. K. Mohanraj has certified for mentoring students for **All India Students Cube Testing Competition 2022**.



- Mr. P. B. Narandiran, AP has been selected as reviewer for *Advance in Science, Technology and Engineering Systems Journal*.



- S. GnanaVenkatesh, Ku. Manikandhan, M. Yeswanth, APs attended AICTE (ATAL) Faculty Development Program on “Future Trends in Transportation and Logistics Industry” Organized by Department of Civil Engineering, NIT Raipur and Bannari Amman Institute of Tech. during 6th to 11th (Online) & 13th to 18th (Offline) Feb 2023.





- Mr. M. Yeswanth, AP has delivered industrial seminar on “Water Conservation” to KG Fabrics, SIPCOT, Perundurai on the mark of World Water Day on 22nd March 2023.



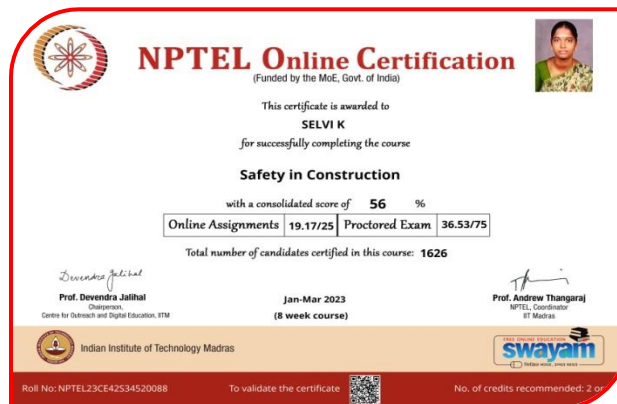
- S. Gnana Venkatesh, AP has participated in Five Days Virtual FDP on “Sustainable Repair and Rehabilitation of Constructed facilities” organized by VIT, Chennai from 13th to 17th February 2023.



- 9 No's of our Civil Engineering faculty members has filed a **Design Patent** in the title of Hand Held Device to Analyze Cement Quality thro' Intellectual Property Rights.



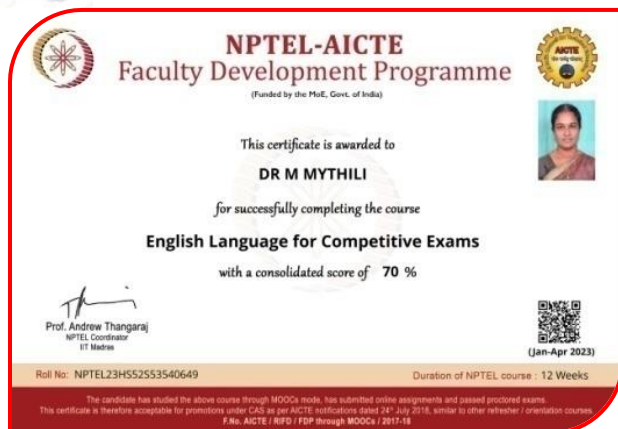
- 8 No's of Faculty Members has successfully completed NPTEL Exams and FDP during the Jan - April 2023 sessions.



- Mr. T. Bragadeeswaran, AP has participated in IP Awareness/Training Program on National Intellectual Property Awareness Mission on 21st April, 2023.



- Mr. P. B. Narandiren, AP has got appreciation certificate for Best Event Organizer Award 2023.
- Dr. M. Mythili, Associate Professor has successfully completed NPTEL Course and FDP on English Language for Competitive Exams.



- Dr. E. K. Mohanraj has attended the online lecture on *"Green Concrete and Modern Construction Chemical for Energy Efficient Buildings"* delivered by "Er. Sunny Surlaker, President, India Chapter of American Concrete Institute" on 19th June 2023.



SKILL UPGRADATION / EXTRA CURRICULAR / CO-CURRICULAR ACTIVITIES - STUDENTS

- Mr. S. Umapathi from RR Cables had delivered an installation and erection procedure for our students on *High Volume Low Speed (HVLS) Industrial Ceiling fan* on 06th Feb 2023.



- M. Mohammad Rafeek, I Yr student have participated and finished the Mini Marathon 2023 of 5 kms on 12th Feb 2023 organised by ArasuPockkuvarathuUzhiarSangam, Erode.



- The various Innovative Projects have been displayed by our students during the Innovation Day held on 16th, 17th & 18th Feb 2023. A unique project Multifunctional Robot has been demonstrated by V. Gokulan, II Year Civil Engineering Student to the chief guest.





- P. Venkatesh, III Yr secured Second Place with a Cash Prize of Rs 2,500 in the event AutoCAD conducted by College of Engineering Guindy, Anna University, Chennai on 3rd March 2023.



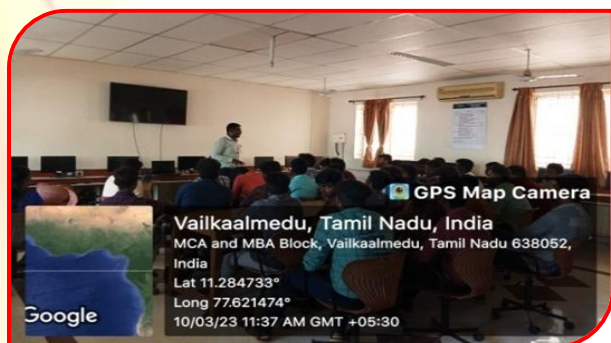
- Gokulan P and Harikrishnan R, II Year had secured Second Prize in paper presentation held at PSNA College of Engineering and Technology, Dindugal on 17th March 2023.



- Aravinth. S, II Year had secured Third Place in volleyball club match held at Salem on 18th March 2023 and Attur Youth organization on 09th Apr 2023.



- A Software Demonstration on Primavera P6 by ETS Academy, Erode on 10th March 2023.



- An Induction Program on “An Overview of MEP in Building Industry” by Er. S. Mohammad Varis, MEP Design Engineer and Er.Imran Sheriff, BIM Manager, Unique MEP Engineering Academy Pvt. Ltd, Coimbatore on 14th March 2023.





- S. Dharanesh, III year won Third Prize in Short film contest and K.Premkumar and S.Hariprakash got First Prize in "Site on Site" event held at Kongu Engineering College, Perundurai on 1st April 2023.



- M. Yogeswari, III Year has won First Prize in the event Crack "O" Code held at KSRCE, Tiruchengode on 5th April 2023.



- 16 PG students were presented a paper in the Indo-African International Conference on Advancements in Construction Materials (ICACM 2023) @ VidhaJyothi Institute of Technology, Hyderabad on 28th & 29th April 2023.



- Dharanidharan S, Raja M, Matheswaran S, Saritha K and Prem Kumar S has successfully completed the NPTEL Course on Basic Construction Materials and earned three credits for course exemptions.





- Our Civil Engineering students totally 35 No's went for Traffic Origin and Destination Survey Work in and around Erode Location on 12th May 2023.



- Our final year students S. Salamonraja (Kabaddi), M. Abdulabasha (Volleyball) and S. ShamimEbrahim (Volleyball) have been selected for *State Level CM Trophy event* by Department of Physical Education.

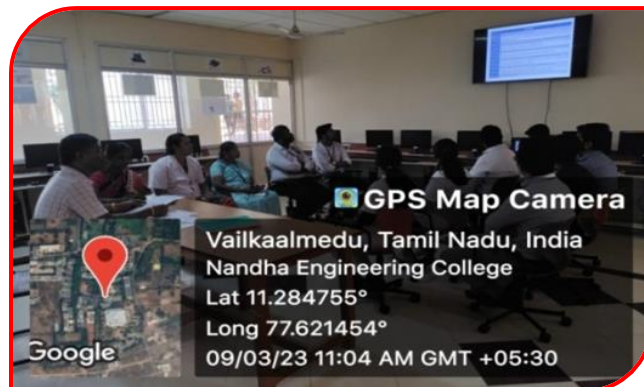
NEWS LETTER

Our Civil Engineering Department Newsletter "Concrete News" for the Academic Year 2022-23 (Odd Semester) has been released on 11th May 2023.



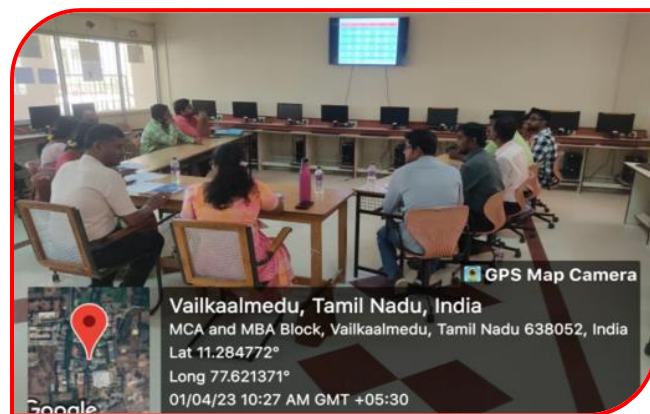
PAC MEETING

Third PAC Meeting of our Civil Engineering department is conducted on 9th March 2023.



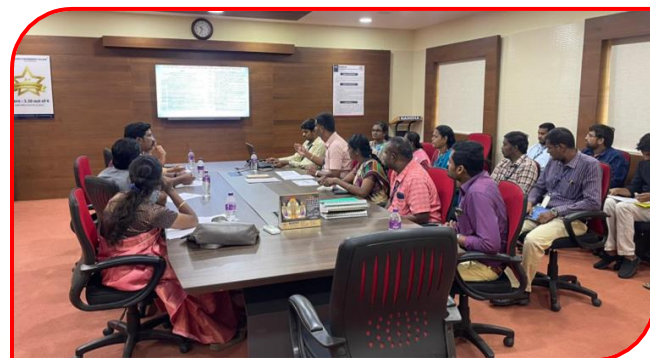
DAB MEETING

2nd DAB Meeting of our department is conducted on 1st April 2023.



BOARD OF STUDIES (BoS)

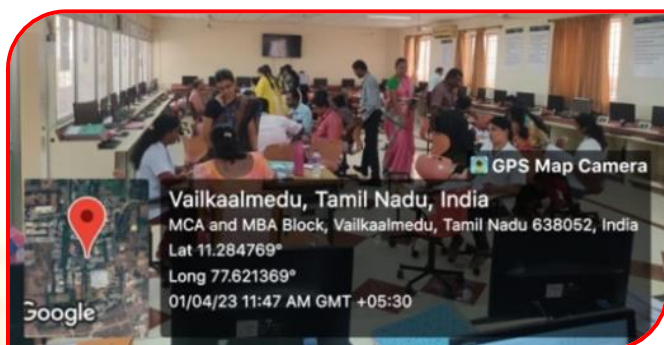
11thBoS meeting has been held for our Civil Engineering Department on 26th May 2023.





ACADEMIC AUDIT

Academic Audit for the academic year 2022-23 Odd Semester was conducted with External Member Dr. D. Ambika, Associate Professor, KEC, Perundurai on 1st April 2023.



TESTING AND CONSULTANCY

- Our Civil Engineering Department faculty members has generated revenue through testing and consultancy amount of Rs. 6.53 Lakhs during the academic year 2022-2023.

TESTING AND CONSULTANCY WORK DETAILS

Academic Year	No. of Testing and Consultancy works carried out	Revenue Generated (Rs)
2022-2023	485	6,53,150
2021-2022	170	2,68,000
2020-2021	176	2,56,150
2019-2020	196	2,44,850
2018-2019	226	2,03,750
2017-2018	116	1,36,400
2016-2017	22	71,900
2015-2016	13	32,400

*Upto 31.05.2023

- Dr. E. K. Mohanraj and K. L. Ravisankar have involved consultancy works (Third Party inspection for Panchayat Road) at

Peranambut, Vellore District on 5th June 2023.



VALUE ADDED COURSE

- Value Added Course has been conducted for III year students "Analysis of framed Structures using STAAD.Pro" by Er. R. Udhayasankar, PG Alumni, BTR Constructions, on 09th & 10th Feb 2023.



PALS

- Dr. E. K. Mohanraj, Mr. K. L. Ravisankar are visited the industry Saint Gobain as





PALS initiatives on 28th March 2023.



- Our institution received the *immoWAH! Innovation Challenge Winner Award* and *Award of Excellence Participation* at IIT-M, Chennai through PALS for the Academic Year 2022-23 on 3rd June 2023.

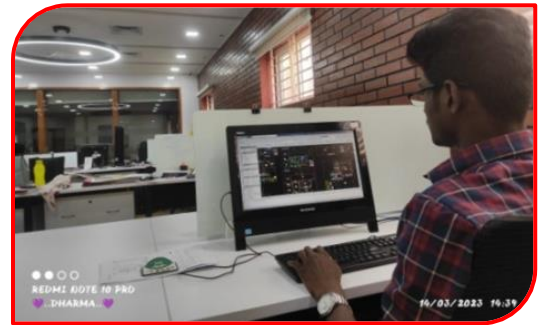


INTERNSHIP & INDUSTRIAL PROJECT

- 8 No's of III Year Civil Engineering students are undergoing internship with stipend at Highways Department, Erode.



- M.Vasanth and V.Dharmaraj, III Year were joined internship at MTA Architects, Tirupur from 13.03.2023 onwards.



- Bamang Negaakin and Bamang Talang, IV Year is doing Industrial Project at PWD, Government of Arunachal Pradesh.



- Ravikant Prajapati, IV Year has gone for industrial project "Experimental Study on Strength of Concrete by Partial Replacement of Fine Aggregate with Flyash" at T4A Network Pvt Ltd, Meghalaya.



**AWARDS/ACHIEVEMENTS**

- Dr. E. K. Mohanraj has received Certificate of Appreciation for his instrumental role as SPOC from SWAYAM-NPTEL Local Chapter based on Performance and Participation of candidates for the Jul-Dec 2022.



- Department of Civil Engineering, NEC has recognized as an **“Excellent University Award 2022”** from American Concrete Institute (ACI) for Students Chapter Activities bagged 3rd time.



- Our NEC NPTEL-SWAYAM Local Chapter is Awarded Active SPOC during the Jan - April 2023 session @ IIT-M, Chennai on 24th June 2023.

**ALUMNI CORNER**

- Er. J. Sriponshankar (Alumni B2016-20), Structural Steel Designer, *M Steel Detailing Services, Hosur* has interacted with our II & III Year students and shared his experience about the Tekla Software in construction industry on 3rd March 2023.



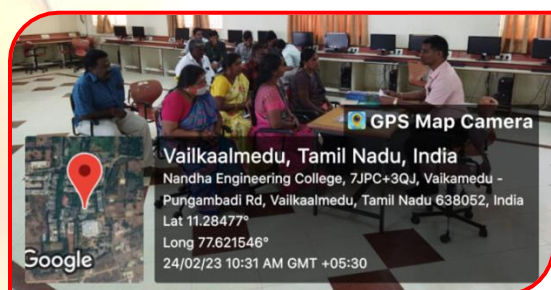


- Er. N. Gobinath, PG Alumni (2018-20), Steel Designer in Maestro Steel Detailing Pvt Ltd, Trichy has interacted with our III Year students on 1st April 2023.



PARENTS MEETING

- Parents meeting of our I Year students were conducted to intimate the CAT Performance and End Semester Examination Results on 24th Feb 2023.



GRADUATION DAY AND ALUMNI MEET

- 17th Graduation Day and Alumni Meet was conducted for our UG & PG Students on 25th Feb 2023



FIRE PROTECTION TO CONCRETE

By Venkatesh P (20CE017)

Can we make concrete a fire fighter? Can we? What real is concrete is actually a good fire resisting material than any other material using for construction. Fire resistant refers to a material's ability to stand firm in fire while everything around it burns. Concrete actually does not burn, it cannot be set on fire like other material in building and it does not emit any toxic fumes, smoke or drip molten particles when exposed to fire. Besides, it also does well in face of dangers like floods, tornadoes and hurricanes. However, concrete is a protective material. Different constituent components used to prepare concrete including clay, limestone, gypsum, and aggregates make the concrete impervious to heat and flames. But R.C.C (Reinforced Cement Concrete) structures need fire protection from preventing it from destruction.

Fire has been a source of comfort and catastrophe to the human race since ancient history. Fire is a destructive force causing thousands of deaths and loss of properties. Considerable progress has been made in the understanding of structural fire protection since the earliest attempts to implement fire safety. Fire protection activity was initiated after a great fire in London in 1666; however investigation of structural fire protection began in second half of 18th century. Further





the advances in material technology led to the concept of fire proof structures using gypsum. The recent collapse of the twin-towers, World Trade Centre building in New York, USA, due to the terrorist attack and subsequent fire has renewed the interest in fire-resistant design of structures. Traditionally, the provision of fire resistance for reinforced concrete (RC) structures and components is usually treated indirectly in structural design. Most design procedures assume sufficient fire resistance, if certain criteria, mainly the distance of the reinforcing bars from the concrete surface, are kept

Building codes specify regulations for buildings designed in such a way that they exhibit an acceptable level of performance in the event of fire. These regulations are concerned with the prevention of premature collapse, the provision to evacuate the occupants from the structure on fire, avoiding spread of the fire to adjacent properties etc. However, when the means for containing a fire fail, such as a Fire Suppression System, Structural Integrity is the last line of defense. Hence, it is necessary to consider the risk of fire in designing of structures. Generally concrete is thought to have good fire resistance but the behaviour of reinforced concrete columns under high temperature is mainly affected by the strength of the concrete, the changes of material property and explosive spalling.

An excellent example of the good behaviour towards fire of concrete structures is the Windsor Tower in Madrid. The fire occurred on 14 February 2005, during which the building was fortunately unoccupied. Despite that the fire spread over numerous floors and lasted for 26 hours, the building remained standing, only the part that collapsed were the steel perimeter columns above the 20th floor, which supported the floors. Concrete also has a slow rate of heat transfer, which means concrete is slightly a conductor of heat. Even though concrete is non-flammable and offers excellent fire protective qualities for preventing the spread of fire, it loses most, if not all its structural strength characteristics when exposed to extreme heat. At the high temperature experienced in fires, hydrated cement in concrete gradually dehydrates, reverting back to water (actually steam) and cement. This results in a reduction of strength and modulus of elasticity (stiffness) of concrete. In some fire spalling of concrete occurs fragments of concrete break loose from the rest of the concrete, sometimes violently. Most fire resistance rating requirements are dedicated by building codes, depending on the type of building and its occupancy. Fire ratings are given in hours. For example, the required fire resistance rating for columns in high rise hospitals are much more stringent than those for single story buildings used for





storage of non-combustible products or materials. In high rise hospital the column might need a four hour rating, whereas in the single story building exterior walls may need only a one hour rating.

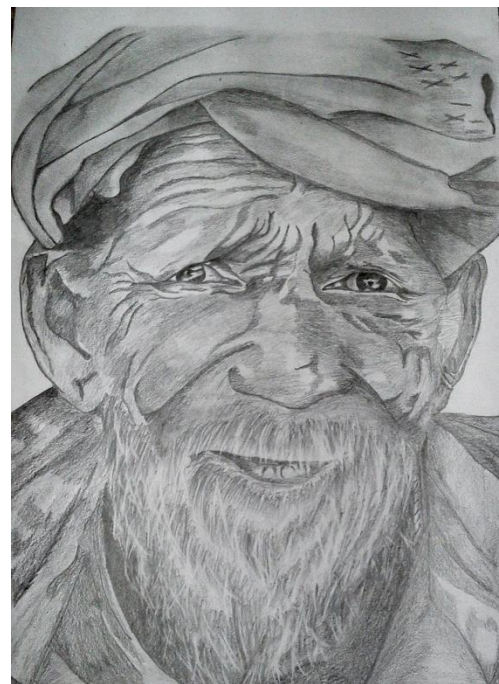
Researchers at the University of Sheffield have discovered a new way of protecting concrete from fire damage by using materials recycled from old tyres. The team used fibers from extracted the textile reinforcement commonly embedded into tyres to guarantee their performance. Adding these fibers to the concrete mix was shown to reduce the concrete's tendency to spall, where surface layers of concrete break off explosively under the intensive heat from a fire. "Because the fibers are so small, they don't affect the strength or the stiffness of the concrete", says Dr.Huang. "Their only job is to melt when heat becomes intense. Concrete is a brittle material, so will break out relatively easily without having these fibers help reducing the pressure with concrete", she added. Collaborating with Sheffield based company Twincon, the researchers have also developed technologies for reclaiming the fibers from the used tyres. Despite being one of the most fire resistant materials, it's still possible to improve the effectiveness of concrete in a fire by applying a heat coated in intumescent paint. Applying a layer of lightweight mortar to exposed concrete

surface. Protecting concrete with board system. Thus we should make R.C.C structures with enough fire protection and make this world a safe place to live and it is our responsibility as a civil engineer to this world.

PENCIL ART

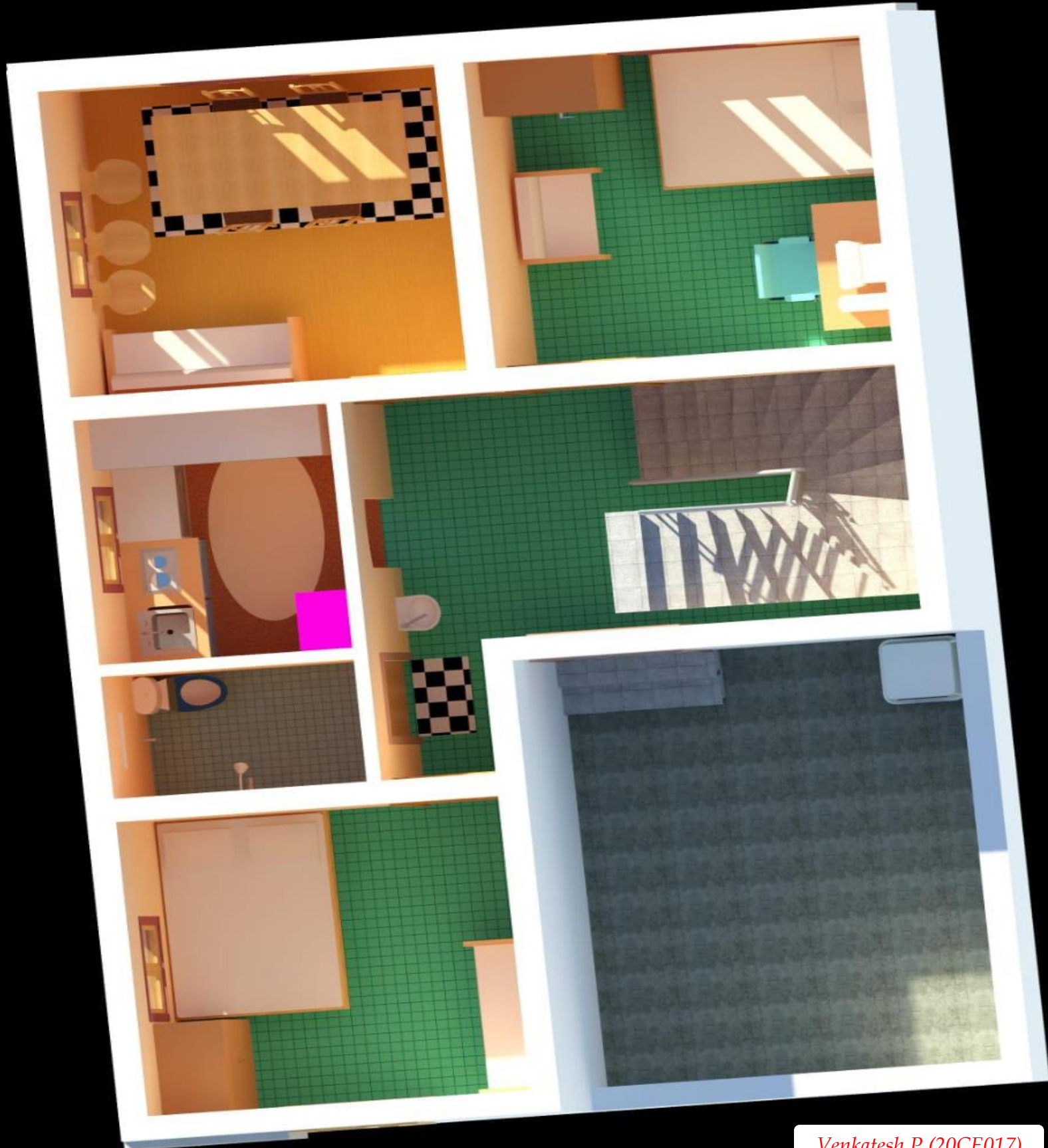


By B.P.Sriroobini (23CE015)



By Mr. V. Aravind, AP/Civil Engg.





Venkatesh P (20CE017)

NANDHA ENGINEERING COLLEGE

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