

CIVIL PULSE

A yearly Newsletter for Department Of Civil Engineering [ASET]

ISSUE NO.:2, JANUARY 2025



EDITORIAL BOARD

Editor in Chief: Dr. B V Mathew, HoD, CE

Editor: Jayakrishnan.R, Assistant Professor

Coordinating Editor: Krishnapriya S, Assistant Professor

Student Editor: Greeshma K, S6 CE

*Happy
New Year*

Contents

01: Message from HoD's Desk

02: Staff write-ups

03: Activities

04: Achievements

Message from HoD's Desk

It gives me immense pleasure to present before you the second edition of the Civil Engineering Department newsletter 'CIVIL PULSE' capturing the highlights and achievements of 2024.

The year gone by has witnessed renewed energy in academics, professional development, and industry interaction. The results and placements have been encouraging. The department successfully conducted various programs, including technical workshops on Latex and Building Information Modeling (BIM), awareness sessions on GATE, and a value-added course on Structural Detailing. These initiatives aim to bridge the gap between classroom learning and industry expectations.

We take pride in our students' academic and professional accomplishments—17 students completed SWAYAM courses, several participated in internships, and companies like Arbee Structures, Ahalia Group, TCS, Tensor Architects and Engineers recruited our students. Notably, multiple industrial visits were organized, including visits to the National Institute of Oceanography, Kanjirapuzha Dam, and Malabar Cements, enriching our students with practical exposure to core engineering practices. The 'Water Conference 2024' organized by the department in association with friends of Bharathapuzha was inaugurated by the Chief Minister Sri. Pinarayi Vijayan.

Faculty members actively contributed to continuous learning through FDPs on research innovation, waste management, and AI applications in Civil Engineering. The department also signed a MoU with Archetype Design Services Pvt. Ltd., strengthening

our ties with industry for collaborative learning and future opportunities.

In addition, the department enhanced its consultancy and testing services, thereby utilizing our knowledge and infrastructure for the development of projects those are of social importance. We remain committed to nurturing a dynamic academic environment that fosters knowledge, ethics, and technical competence.

I extend my sincere appreciation to the dedicated faculty, enthusiastic students, and supportive staff whose collective efforts made these achievements possible. Let us continue striving for excellence in all our endeavors as we move forward into 2025.

Warm wishes for a fulfilling and productive year ahead.



Dr. Mathew B V
HoD-CE

Vision

To produce graduates with capabilities for adapting to new challenges and responsibilities

Mission

- **To provide quality education to produce competent Civil Engineering professionals**
- **To impart professional attitude through value-based education**
- **To instill managerial skills among budding Civil Engineers through professional orientation**

Programme Educational Objectives

- **PEO 1 – Graduates will have strong foundation to pursue a successful profession in Civil Engineering.**
- **PEO 2 – Graduates will identify and resolve Civil Engineering problems with the help of engineering tools and technology.**
- **PEO 3 – Graduates will exhibit managerial skills and professional ethics to meet social responsibilities.**

Shaping the Future of Mobility: The Role of Transportation Engineering

Jayakrishnan R, Assistant Professor

Transportation Engineering is more than just designing roads—it's about creating systems that connect people, goods, and services efficiently, safely, and sustainably. In an era of rapid urbanization, climate change, and smart technologies, transportation engineers are at the heart of shaping how cities move and evolve.

The Backbone of Modern Infrastructure

A well-designed transportation system boosts economic growth, enhances quality of life, and reduces environmental impact. Whether it's planning a new highway, optimizing traffic flow, or designing urban transit networks, transportation engineers ensure that infrastructure is responsive to current and future mobility needs.

Key areas of focus include:

- **Highway and pavement design**
- **Traffic flow analysis and signal optimization**
- **Public transport systems planning**
- **Sustainable and non-motorized transport development**
- **Transport policy and safety engineering**

Local Relevance: Transportation Challenges in Kerala

Regions like Palakkad face unique challenges due to mixed traffic conditions, narrow roads, and growing vehicle population. Our department has been actively studying local issues such as:

- **Traffic congestion at city junctions**
- **Pavement distress in industrial corridors like Kanjikode**
- **Improper pedestrian facilities and road safety concerns**



Smart and Sustainable Trends

With the global focus shifting toward **smart mobility**, the role of transportation engineers is also transforming. Some emerging areas include:

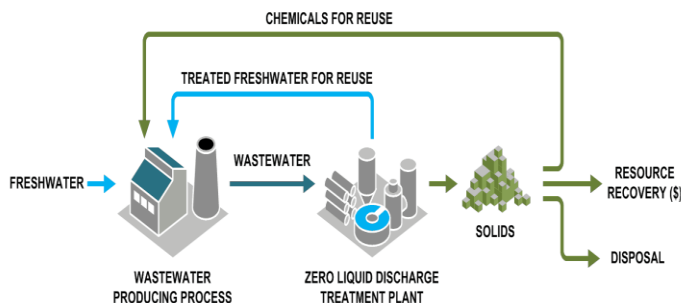
- **Intelligent Transportation Systems (ITS)** using sensors, cameras, and AI to manage traffic dynamically.
- **Electric vehicle (EV) infrastructure** planning and integration.
- **Complete Streets** concept for inclusive road design catering to all users—pedestrians, cyclists, and vehicles.
- **Green transportation planning** to reduce carbon emissions and promote public transport.

Zero Liquid Discharge: A Step toward sustainable waste water management

Neethu John, Assistant Professor

Zero Liquid Discharge (ZLD) is an advanced wastewater treatment approach that ensures complete recycling and reuse of industrial effluents, leaving behind no liquid waste. With growing concerns over water scarcity and environmental degradation, ZLD has emerged as a vital solution, especially in water-intensive industries such as textiles, pharmaceuticals, and thermal power plants. The process typically involves a combination of membrane filtration, evaporation, and crystallization techniques to recover clean water and convert remaining contaminants into solid waste.

The ZLD process begins with pre-treatment, where suspended solids, oils, and organic matter are removed using conventional methods like coagulation, flocculation, and sedimentation. This is followed by membrane-based technologies such as reverse osmosis (RO) or Nano filtration, which separate clean water from dissolved salts and other dissolved solids. The concentrate left behind from this step is then subjected to thermal processes like multi-effect evaporation (MEE) or mechanical vapor recompression (MVR), which further reduce the liquid volume. In the final stage, crystallization units are used to convert the remaining brine into solid salts, which can be disposed of safely or sometimes even reused in industrial processes. The water recovered through these stages is of high purity and can be reused within the plant, reducing dependency on freshwater sources. The solid waste generated is typically non-hazardous, making disposal easier and environmentally safer.



While the environmental benefits of ZLD are significant,

its implementation comes with certain challenges. The initial capital cost for setting up a ZLD system is high, and the energy requirements for thermal processes can be substantial. However, advancements in technology are gradually making ZLD systems more energy-efficient and cost-effective. Moreover, the long-term benefits of regulatory compliance, reduced freshwater consumption, and minimized environmental impact outweigh the operational challenges.

In countries where industrial pollution of water bodies is a major concern, regulatory bodies such as the Central Pollution Control Board (CPCB) have begun mandating ZLD for select industries, especially in water-stressed regions. This move not only safeguards public health and ecosystems but also promotes the idea of water as a renewable resource that must be preserved and reused wisely.

ZLD is not just a treatment method but a revolutionary step toward sustainable water management. ZLD offers promising avenues for innovation and improvement such as energy-saving designs, hybrid treatment systems, and waste recovery techniques. As industries strive to align with global sustainability goals, Zero Liquid Discharge stands out as a forward-looking and responsible approach in the field of wastewater treatment.

Near Surface Mounting (NSM) Method for Infrastructure Rehabilitation

Krishnapriya S, Assistant Professor

The Near Surface Mounting (NSM) method is a technique used to strengthen and repair existing concrete structures, particularly in civil engineering and infrastructure rehabilitation. This method involves embedding fiber-reinforced polymer (FRP) strips or rods into grooves cut into the surface of the concrete structure. NSM method is poised to play a significant role in ensuring the longevity and safety of critical structures.

Key Benefits

The key benefits of the Near Surface Mounting (NSM) method include enhanced strength, where NSM significantly improves the flexural and shear strength of structures, durability, as FRP materials are resistant to corrosion and environmental degradation, and ease of installation, since the method is relatively straightforward.

and can be performed with minimal disruption to the structure's function..

Applications

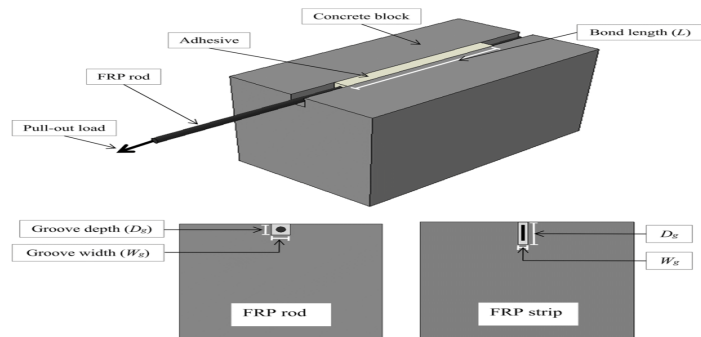
The Near Surface Mounting (NSM) method has various applications, including bridge repair, where it's used to strengthen bridge decks and piers to accommodate increased load ratings, building retrofits, which involve enhancing the structural integrity of buildings for seismic retrofitting or to meet new building codes, and infrastructure rehabilitation, which encompasses repairing and strengthening various infrastructure elements like tunnels, retaining walls, and pavements.

New Trends

-New trends in the Near Surface Mounting (NSM) method include the development of advanced FRP materials with improved mechanical properties and durability, an increased focus on sustainability through the use of sustainable materials and practices in NSM applications, the integration of sensors and monitoring systems to create smart structures that track the performance of NSM-strengthened structures, the use of digital twins to simulate and predict the behavior of NSM-strengthened structures under various loading conditions, and the adoption of robotics and automation to improve the efficiency and accuracy of NSM installation.

Future Directions

The future directions for the Near Surface Mounting (NSM) method include standardization, which involves the development of standardized guidelines and best practices for NSM applications, increased adoption, with NSM being increasingly used in various industries such as construction, infrastructure, and transportation, and ongoing research and development to continually improve the effectiveness and efficiency of NSM techniques.



Activities

January – December 2024

International Water Summit Meeting

On April 30, 2024 Dr. P. R. Sreemahadevan Pillai, Prof. Beena Kumari, Prof. Jayakrishnan, Prof. Vivek and Smt. Bindu Valoor from Ahalia School of Engineering and Technology had a discussion with the Friends of Bharathapuzha (NGO headed by Dr. E. Sreedharan, Metroman) team regarding the INTERNATIONAL WATER SUMMIT to be hosted by ASET. This meeting was attended by the representatives of NGOs and individuals who have done phenomenal work in the water conservation arena



Water Conference 2024

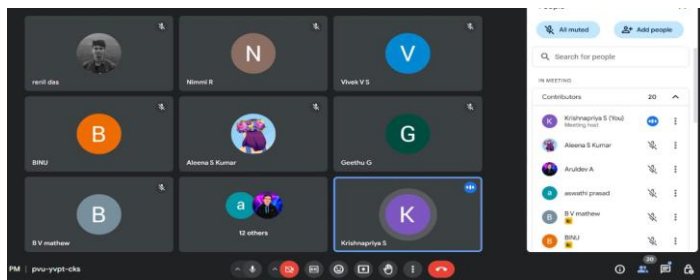
The water conference was organized by Friends of Bharathapuzha in collaboration with Ahalia Group. The program was inaugurated by the Hon'ble Chief Minister, Shri Pinarayi Vijayan. The Minister of Electricity Shri. K. Krishnankutty presided over the event. Dr. E. Sreedharan, Chairman of Friends of Bharathapuzha welcomed the audience, General Secretary Vinod Nambiar explained the conference details, Dr. P. R. Sreemahadevan Pillai, Director, Ahalia Group Academic Institutions, offered the vote of thanks. The District Panchayat President Smt. K. Binumol was the guest of honor. At the inauguration, the Chief Minister mentioned that Bharathapuzha is not just a water source, but a cultural symbol of Kerala. The Chief Minister highlighted the art, culture and renaissance movements of Nila. He said that the comprehensive revival of Bharathapuzha is the main agenda of the state government, and that the rivers of Kerala are such an important agents for our comprehensive development. He also commented that efforts are being made for revival.



It was suggested that this type of progress is possible only through the collective efforts of the society. He promised all the support of the state government for such revival efforts. The Hon'ble Minister for Electricity, Shri. Krishnankutty, in his presidential address, criticized Kerala's plight for not being able to procure adequate water. The minister accused the politicians and officials of Kerala of being apathetic in this matter. He also asked for a discussion on this issue in this conference. The District Panchayat President Smt. K. Binumol said that necessary steps will be taken after assessing the cases. NREGS Director Dr. A. Nizamuddin IAS, CWRDM Director, Dr. Manoj Samuel, Coimbatore Sirutuli Project Managing Trustee Vanitha Mohan, Director of Ahalia Educational Institutions Dr. P. R. Shri Mahadevan Pillai presented papers related to Water. CWRDM former director Dr. E. J. James moderated the discussions.

Webinar on “Leveraging LaTeX for Document Preparation”

28 September 2024: The Department of Civil Engineering at Ahalia School of Engineering and Technology successfully conducted a webinar on “**Leveraging LaTeX for Document Preparation**” on **Saturday, 28th September 2024 at 7:00 PM.**



The session was handled by **Mr. Vivek V S**, a passionate and knowledgeable research scholar, who provided a comprehensive overview of LaTeX – a powerful tool used in academic and scientific documentation. The webinar focused on the importance of structured documentation, handling mathematical notations, bibliography management, and creating professional-quality reports and theses using LaTeX.

Students, research scholars, and faculty members from various disciplines participated in the webinar and found the session highly informative and practical. Mr. Vivek also shared various tips and tools that help streamline the document preparation process and encouraged students to start adopting LaTeX early in their academic careers.

The event concluded with an interactive Q&A session, during which the speaker addressed queries from the participants, making the session even more engaging.

The Department of Civil Engineering expressed heartfelt gratitude to Mr. Vivek for his valuable contribution and to all participants for making the session a grand success.

Civil Engineering Department Celebrates Association Day “STHAPATYA” 2024

The Civil Engineering Department of Ahalia School of Engineering and Technology celebrated its Association Day with great enthusiasm on September 24, 2024. The event marked a significant milestone with the formal unveiling of the department association's name, “Sthapatya,” symbolizing a fresh chapter in the department's journey toward academic and professional excellence.

The day began with an inaugural ceremony, graced by the esteemed presence of Mr. E.R. Jasim Anamangadan, former Assistant Professor at LBS Institute of Technology, who served as the chief guest. Dr. B.V. Mathew, Head of the Civil Engineering Department, extended a warm welcome to the dignitaries and participants. The presidential address was delivered by Dr. Krishna Kumar Kishor, Vice Principal, who highlighted the importance of such events in enhancing student engagement and fostering departmental unity. Mr. E.R. Jasim Anamangadan officially inaugurated the event and delivered the inaugural

address, sharing his valuable insights into the evolving field of civil engineering. The ceremony concluded with a vote of thanks by Mr. V.S. Rishikesh, President of the Executive Committee, who acknowledged the efforts of all those involved in organizing the program.



Following the inauguration, a hands-on training session titled “Building with Intelligence: AI Innovations in Civil Engineering” was conducted by the Build-U Team. Held from 11:00 am to 1:15 pm, the session offered students practical exposure to the integration of artificial intelligence in civil engineering practices. After a lunch break, the afternoon session featured a series of technical games organized by the executive committee members, encouraging teamwork, creativity, and problem-solving among the participants.

The successful conduct of Civil Association Day – “Sthapatya” 2024 – was a testament to the department’s commitment to fostering innovation, learning, and collaboration among students and faculty alike.

MoU Signed Between Ahalia Civil Engineering Department and Archetype Design Services Pvt. Ltd.

On November 21, 2024, the Civil Engineering Department of Ahalia School of Engineering and Technology (ASET) signed a Memorandum of Understanding (MoU) with **Archetype Design Services Pvt. Ltd., Coimbatore**, marking a significant step towards academic-industry collaboration.

The MoU was formally exchanged between **Dr. P. R. Suresh**, Principal of ASET, and **Shri S. Jagadesh Kannan**, Chairman and Managing Director of Archetype Design Services Pvt. Ltd. The signing ceremony was held in the presence of **Dr. B. V. Mathew**, Head of the Civil

Engineering Department, along with faculty members of the department.



This partnership aims to strengthen ties between academia and industry by promoting collaborative projects, internships, knowledge sharing, and industry-relevant training for students. The MoU is expected to open up new avenues for skill development and practical exposure for aspiring civil engineers at ASET.

Value Added Course on Structural Detailing Held at ASET Civil Engineering Department

The Department of Civil Engineering at Ahalia School of Engineering and Technology successfully conducted a **Value Added Course on Structural Detailing** on December 18 and 19, 2024. The two-day program aimed to enhance students' technical knowledge and practical skills in the field of structural engineering, bridging the gap between classroom learning and real-world application.

The course offered a balanced mix of theoretical sessions and hands-on training. Students were introduced to the **fundamentals of structural detailing**, with sessions covering essential topics such as **AutoCAD software training** and awareness of relevant **structural code books**. Reinforcement detailing was a key component of the practical segment, where students engaged in detailed modeling exercises simulating real-life scenarios, thereby improving their applied engineering skills.



Adding an interactive dimension to the course, **technical games were organized during the afternoon sessions** each day. These activities not only reinforced the day's learnings but also fostered teamwork and competitive spirit among participants. To further motivate the students, winners of these games were awarded **cash prizes**, recognizing their enthusiasm and excellence.

The course concluded with a certificate distribution ceremony, where **Dr. P. R. Suresh**, Principal of ASET, presented **Certificates of Completion** to all participants. The program was a commendable initiative by the Civil Engineering Department to nurture technical proficiency and encourage active learning among budding engineers.

Civil Engineering Students Visit Malabar Cements for Industrial Exposure

The Department of Civil Engineering at Ahalia School of Engineering and Technology organized an **industrial visit**

to **Malabar Cements Limited** on **December 17, 2024**, for second, third, and final-year students. The visit aimed to provide students with practical insights into the cement manufacturing process and its industrial applications.



During the visit, students were given a comprehensive overview of the various stages involved in cement production. They observed critical processes such as **raw material extraction and preparation, clinker formation, cooling and grinding, quality control measures**, and the **final stages of packing and dispatch**.

The interaction with professionals and real-time exposure to the operational environment greatly enriched the students' understanding of cement technology and its importance in civil engineering. The visit proved to be a valuable learning experience, enhancing the students' academic knowledge with practical industry insights.

Achievements

Congratulations

For getting placed in
Aarbee Structures Pvt. Ltd.
Structural Steel Designers & Detailers
Center for Career Development



Aiswarya K
B.Tech CE (2020-24)

Dharshana M
B.Tech CE (2020-24)

Reshma R
B.Tech CE (2020-24)

AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY
ISO 9001:2015 Certified Institution. Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University
AHALIA HEALTH, HERITAGE & KNOWLEDGE VILLAGE, PALAKKAD - 678557. PH: 04923-226666

Congratulations

DEPARTMENT OF CIVIL ENGINEERING

STUDENTS COMPLETED **swayam** COURSES

2020 - 24 Batch



Aiswarya K.



Akhila K.



Akshara R.



Amal J.



Anaswara B. Krishnan



Dharshana M.



Nandana S.



Nithya A. S.



Saranya S.



Silpa S.



Thasni S.



Vinu S.

AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY
ISO 9001:2015 Certified Institution. Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University
AHALIA HEALTH, HERITAGE & KNOWLEDGE VILLAGE, PALAKKAD - 678557. PH: 04923-226666

Accredited by **NAAC**
NATIONAL ACCREDITATION COUNCIL
ACCREDITATION COUNCIL

AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY
ISO 9001:2015 Certified Institution. Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University
AHALIA HEALTH, HERITAGE & KNOWLEDGE VILLAGE, PALAKKAD - 678557. PH: 04923-226666

DEPARTMENT OF CIVIL ENGINEERING

Congratulations...!
For getting placed in
TCS TATA
CONSULTANCY
SERVICES



Aiswarya K
(2020-24 Batch)

Congratulations



Rishikesh V S
B.Tech CE [2021-25]



Nimmi R
B.Tech CE [2021-25]



Aswathi P
B.Tech CE [2021-25]

For getting placed in
Aarbee Structures Pvt. Ltd.
Structural Steel Designers & Detailers

AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY
ISO 9001:2015 Certified Institution. Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University
AHALIA HEALTH, HERITAGE & KNOWLEDGE VILLAGE, PALAKKAD - 678557. PH: 04923-226666

Accredited by **NAAC**
NATIONAL ACCREDITATION COUNCIL
ACCREDITATION COUNCIL

<https://ahalia.ac.in/>

Congratulations

STUDENTS COMPLETED **swayam** COURSES

DEPARTMENT OF CIVIL ENGINEERING

			
Aiswarya K.	Ajanya R.	Akash B.	Akhil M.
			
Akshaya Krishnan M.	Anushwal Krishna	Aswathi P.	Aswathy V.
			
Ayana S. Devan	Bhavana Prahladh B.	Greeshma K.	Hrithika R.
			
Nifa Thaslim M.	Sreeraghav S.	Sulfath H.	Thejaswi S.
 Vidhun N.			

AHALIA SCHOOL OF ENGINEERING & TECHNOLOGY
ISO 9001:2015 Certified Institution, Approved by AICTE & Affiliated to A. P. J. Abdul Kalam Technological University
AHALIA HEALTH, HERITAGE & KNOWLEDGE VILLAGE, PALAKKAD - 678557. PH: 04923-226666

Accredited by **NAAC**
NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

DEPARTMENT OF CIVIL ENGINEERING

Our Alumni Joining

AHALIA GROUP

Congratulations!

	
Vinu S B.Tech. CE (2020-24)	Agilesh A B.Tech. CE (2020-24)