

Proceedings of the Second International Conference in Civil Engineering for a Sustainable Planet: ICCESP 2024

Editors

Dr. Narayanan S.

Dr. Kishore P.

Prof. Abhijith R. P.

Prof. Renju C. M.



Organized by

Habilete Learning Solutions, Kollam, Kerala, India

In Collaboration with

American Society of Civil Engineers (ASCE)

Marian Engineering College, Kazhakuttom, Trivandrum, Kerala, India

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(Editors)

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Conference Organizer

Habilet Learning Solutions, Kollam, Kerala, India

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ICCESP 2024

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ICCESP 2024

Foreword

Sustainable development is a multifaceted concept encompassing environmental restoration, social progress, and economic growth. Achieving sustainable prosperity requires a strong focus on infrastructural development through innovative and eco-friendly technologies. As the mother of all engineering disciplines, Civil Engineering shoulders the immense responsibility of ensuring that advancements and innovations align with the principles of sustainability.

The *Second International Conference in Civil Engineering for a Sustainable Planet (ICCESP 2024)* continues its commitment to addressing critical issues and challenges related to sustainability in all domains of Civil Engineering. This global platform aims to showcase cutting-edge research, innovative solutions, and transformative ideas that contribute to building a sustainable planet.

The conference aspires to unite leading academicians, researchers, technocrats, practitioners, and students, enabling the exchange of ideas, experiences, and research findings across various branches of Civil Engineering. It also provides a premier interdisciplinary platform to present and discuss the latest innovations, trends, challenges, and practical solutions adopted in the pursuit of sustainability. The proceedings of ICCESP 2024 aim to converge thoughts and groundbreaking research, fostering collaboration and progress across geographic boundaries.

We extend our heartfelt gratitude to the Advisory Committee, Scientific Committee, and Organizing Committee for their tireless support and guidance in making this conference a success. We also acknowledge the dedication of the reviewers in upholding the quality of the conference and its proceedings. A special thanks goes to the American Society of Civil Engineers (ASCE), ASCE India Section Southern Region for their unwavering support and invaluable contributions.

Let ICCESP 2024 be a beacon of knowledge and inspiration in advancing sustainable development through Civil Engineering innovations.

Dr. Narayanan S.
Dr. Kishore P.
Prof. Abhijith R.P.
Prof. Renju C.M.
(Editors)

About the Conference

The main aim of this conference is to bring together leading academicians, researchers, technocrats, practitioners and students to exchange and share their experiences and research outputs on all aspects of Civil Engineering. It will also provide a premier interdisciplinary platform to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the field of Civil Engineering.

Vision

To integrate the different facets of Civil Engineering by connecting the leading academicians, researchers, technocrats, practitioners, and students to share their knowledge and expertise. This conference fosters technological innovation and excellence in the field of Civil Engineering and its sustainable practises for the benefit of humanity.

Mission

- Understand worldwide advancements in the field of Civil Engineering through broad collaboration and sharing of knowledge.
- Enhance public understanding of sustainable engineering practises and pursue standards for their functional application. • Foster possibilities for career and professional development.
- Motivate global audience by creating communities that develop technical interests, advise public policies, and spread awareness for the benefit of humanity

About the ICCESP 2024 Organizers

Marian Engineering College

Marian Engineering College, a premier institution located in Trivandrum, Kerala, has established itself as a leader in engineering education with a strong emphasis on innovation, research, and sustainable practices. Known for its academic rigor and state-of-the-art facilities, the college provides a nurturing environment for aspiring engineers to excel in their careers. By co-organizing ICCESP 2024, Marian Engineering College underscores its commitment to advancing knowledge, fostering collaboration, and addressing pressing global challenges in civil engineering.

Habilete Learning Solutions Private Limited

Habilete Learning Solutions Private Limited, headquartered in Kollam, Kerala, is a leading skilling and training organization dedicated to empowering engineering students and professionals with cutting-edge knowledge and industry-relevant expertise. Specializing in Building Information Modeling (BIM) and advanced construction technologies, Habilete has been instrumental in bridging the gap between academic learning and industry demands. Through its innovative training programs and collaborations with prestigious institutions, Habilete plays a vital role in nurturing the next generation of engineering professionals. As the brand owner of ICCESP Conference series, Habilete reaffirms its commitment to fostering innovation, sustainability, and excellence in civil engineering.

American Society of Civil Engineers - Region 10

The American Society of Civil Engineers (ASCE) - Region 10 represents a diverse and dynamic global network of civil engineering professionals from regions outside the United States. Dedicated to advancing the profession and promoting sustainable development, Region 10 fosters collaboration, innovation, and knowledge exchange among civil engineers worldwide. Through its support for conferences like ICCESP 2024, ASCE Region 10 continues to play a pivotal role in addressing global challenges in civil engineering and driving advancements toward a sustainable future.

American Society of Civil Engineers India Section Southern Region

The American Society of Civil Engineers (ASCE) India Section Southern Region serves as a crucial hub for civil engineering professionals, academicians, and students in Southern India. Committed to promoting technical excellence and sustainable practices, the region actively engages in knowledge-sharing initiatives, technical workshops, and collaborative events. By supporting ICCESP 2024, ASCE India Section Southern Region reinforces its dedication to fostering innovation, sustainability, and professional growth in the field of civil engineering.

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Chief Convener's Message

On Behalf of Habilete it gives me great pleasure to extend to you a hearty welcome to the second International Conference in Civil Engineering for a Sustainable Planet 2024 (ICCESP-2024). Building on the well-established track of successful academic and research events in Engineering and Management issues. Habilete is privileged to partner with ASCE and Marian College of Engineering in bringing to you an impressive and leading academic, scholars, researchers and practitioners of civil engineering from around the world.

Dr. Kishor P, PhD, PMP, MBA, Prince2, A.M.ASCE
Organizer, ICCESP 2024
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Keynote Speakers

1. "Leveraging on Unique properties of Waste Materials for Development of Sustainable Construction Materials" Prof. Ir. Mo Kim Hung, Professor, Department of Engineering, Sunway University, Malaysia
2. "Sustainable Infrastructure in a time of Climate Change" Dr. Narayanan Neithalath, Professor, School of Sustainable Engineering and the Built Environment, Arizona State University, U. S. A
3. "Ductility Characteristics of infilled Frames" Dr. S. Pradeep, President, ASCE, India Section, Southern Region

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