KONERU LAKSHMAIAH EEDUCATION FOUNDATION

ACADEMIC STAFF COLLEGE

REPORT ON ONE DAY WORK SHOP RELATED TO ADVANCEMENTS IN ARCHITECTURE

TIME: 10am to 1.00PM

Venue: ETRL –L414

Resource person: Dr.Uma Shankar.Basina

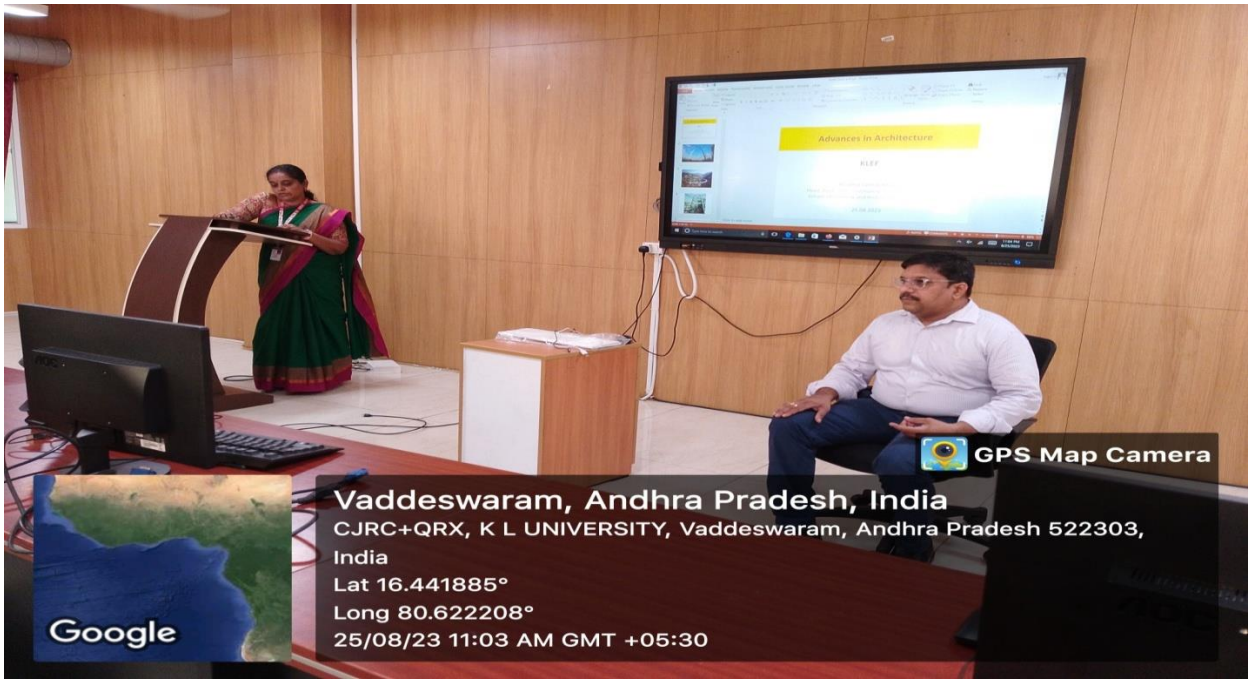
Associate Professor,

School of planning and Architecture (SPA), Vijayawada.

Architecture, the art and science of designing and constructing spaces that shape our lives, has continually evolved and adapted to the ever-changing needs and aspirations of society. In recent years, this evolution has accelerated, leading to groundbreaking advancements that are reshaping our cities and the way we live. The Academic Staff College of KL University organized a one-day Technical workshop on "Advances in architecture" to the faculty of architecture on 25-08-2023. The resource person for this workshop is Dr. Uma Sankar Basina, Associate Professor and Head of the Department, Department of Architecture, School of Planning and Architecture, Vijayawada. Dr. I Govardhini, Principal of Academic Staff College, KL University welcomed the participants and introduced the resource person.

The resource person Dr. Uma Sankar Basina delivered an engaging session on advances in architecture. He said that the future of architecture is likely to be shaped by key factors like climate change, urbanization, and the increasing demand for sustainable buildings. Architects will need to find ways to design buildings that are energy-efficient, resilient to extreme weather conditions and made from sustainable materials. He said that this is an era of smart buildings that are equipped with sensors and technology that monitors and controls energy usage, lighting, and

other systems. This technology can help to make buildings more energy-efficient and comfortable.



Architects of the future are likely to use recycled and sustainable materials in their designs for reducing the environmental impact of buildings. Architects need to design buildings that promote human health and well-being. Focus needs to be on natural light, green spaces, and indoor air quality improvement.

Dr. Basina Explained about how Technology is being used to improve the efficiency and accuracy of architectural design and construction. He stated that technologies such as BIM, computational design, and robotic fabrication is changing the world of architecture rapidly. The discussion on this topic lead to conclusion that the future of architecture is full of possibilities. As technology continues to develop, architects will have the tools they need to create buildings that are more advanced and sustainable.

Architecture is an ever-evolving field, constantly adapting to new technologies, societal needs, and environmental challenges. This report provides an overview of some of the most significant recent advances in architecture, focusing on technological innovations, sustainable design, and the changing role of architects in shaping the built environment. These advancements represent a shift towards more sustainable, adaptable, and technologically integrated architectural practices.

1. Technological Advancements:

1.1. Building Information Modeling (BIM): BIM has become a fundamental tool in architecture. It enables architects to create detailed 3D models of buildings, facilitating better visualization,

collaboration, and project management. BIM also aids in the analysis of energy efficiency and lifecycle costs.

1.2. Parametric Design: Architects are increasingly using parametric design software to create complex, highly customized structures. This technology allows for the optimization of forms, resulting in efficient and aesthetically pleasing designs.

1.3. Augmented Reality (AR) and Virtual Reality (VR): AR and VR technologies are being employed for immersive architectural experiences. They enable architects and clients to visualize designs in real-world contexts, enhancing the design process and communication.

2. Sustainable Design:

2.1. Passive Design Strategies: Architects are incorporating passive design principles to reduce energy consumption. Features like natural ventilation, daylighting, and passive solar design are being integrated into building plans to enhance energy efficiency.

2.2. Green Building Materials: Innovations in sustainable materials, such as recycled, biodegradable, and low-impact materials, are reducing the environmental footprint of construction projects.

2.3. Net-Zero Energy Buildings: The concept of net-zero energy buildings, which generate as much energy as they consume, is gaining traction. Architects are designing energy-efficient structures, utilizing renewable energy sources, and advanced HVAC systems.

3. Architectural Trends:

3.1. Adaptive Reuse: Adaptive reuse of existing structures is becoming a prominent trend. Architects are repurposing old buildings for new functions, preserving cultural heritage and reducing waste.

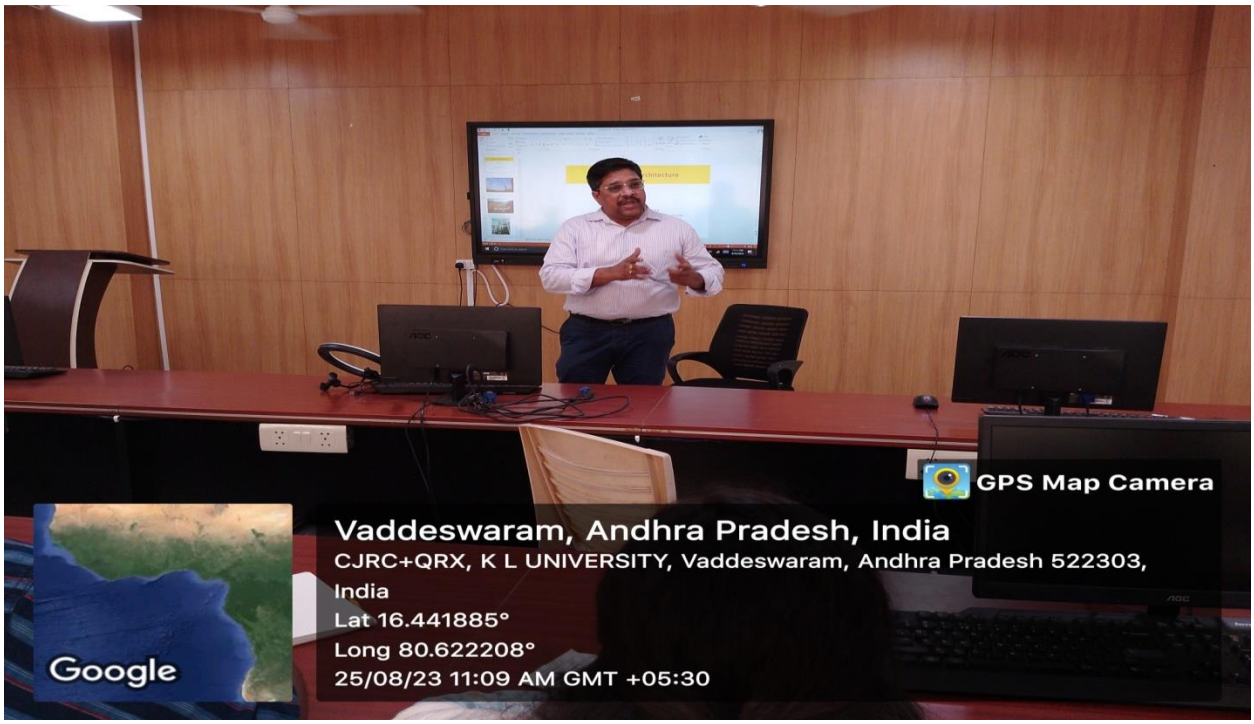
3.2. Smart Buildings: The integration of IoT (Internet of Things) technology into architecture is giving rise to smart buildings. These structures can autonomously control lighting, heating, and security systems for enhanced comfort and energy efficiency.

3.3. Resilient Architecture: Architects are designing buildings to withstand extreme weather events and other environmental challenges. Resilient architecture incorporates features like flood-resistant foundations and fire-resistant materials.

4. Human-Centric Design:

4.1. Well-being-Centered Design: Architects are placing a stronger emphasis on human well-being by designing spaces that promote physical and mental health. This includes incorporating biophilic design elements, access to natural light, and spaces for relaxation.

4.2. Inclusive Design: Inclusive architecture considers the needs of all individuals, including those with disabilities. Universal design principles are being integrated into projects to ensure accessibility for everyone.

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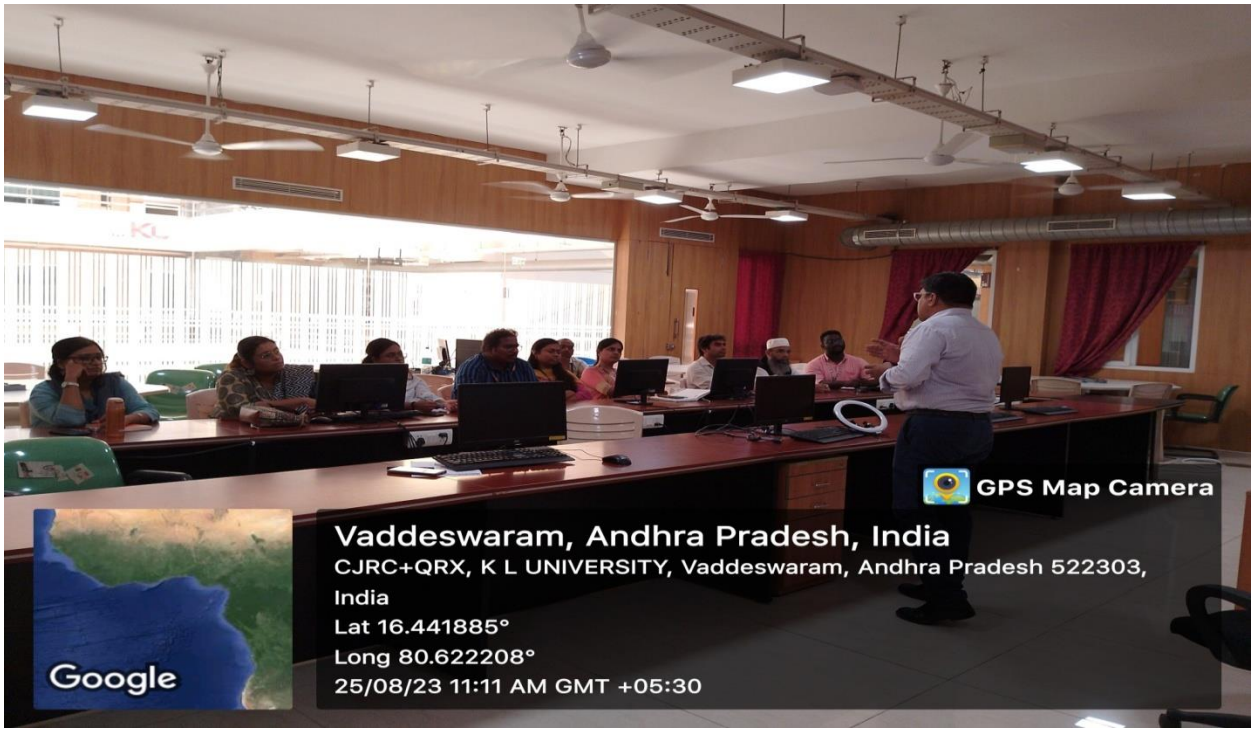
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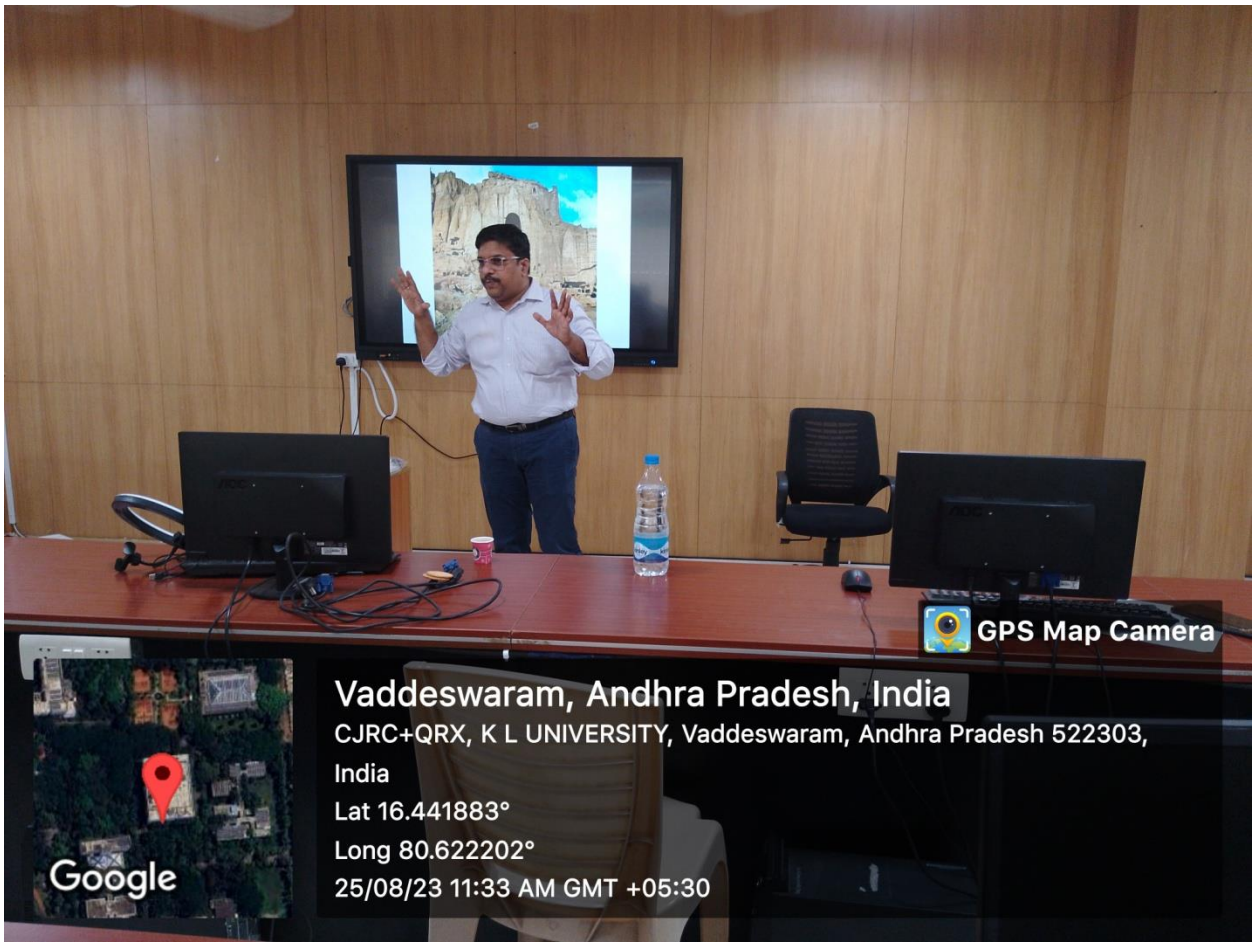
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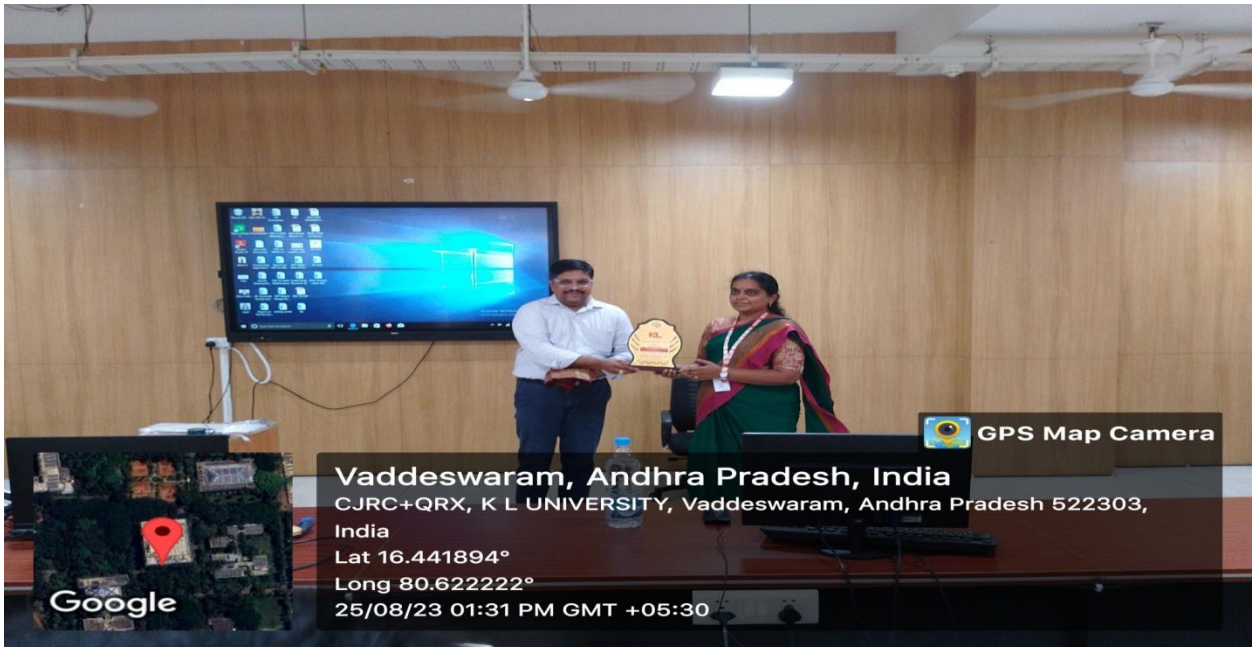

Conclusion:

Advances in architecture are profoundly shaping the way we design and interact with the built environment. From technological innovations that streamline the design process to sustainable practices that mitigate environmental impact, architects are at the forefront of creating a more sustainable, resilient, and user-friendly world. Embracing these advancements is crucial for architects and the construction industry as a whole to meet the challenges of the 21st century.

This report provides a snapshot of current trends in architectural advancement. As the field continues to evolve, architects and stakeholders should remain open to new ideas, technologies, and practices to create innovative and impactful architectural solutions.

Dr.I.Govardhani,

Principal Academic Staff College