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CSIR – Central Building Research Institute
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CSIR-CBRI Expert Lecture Series - 02

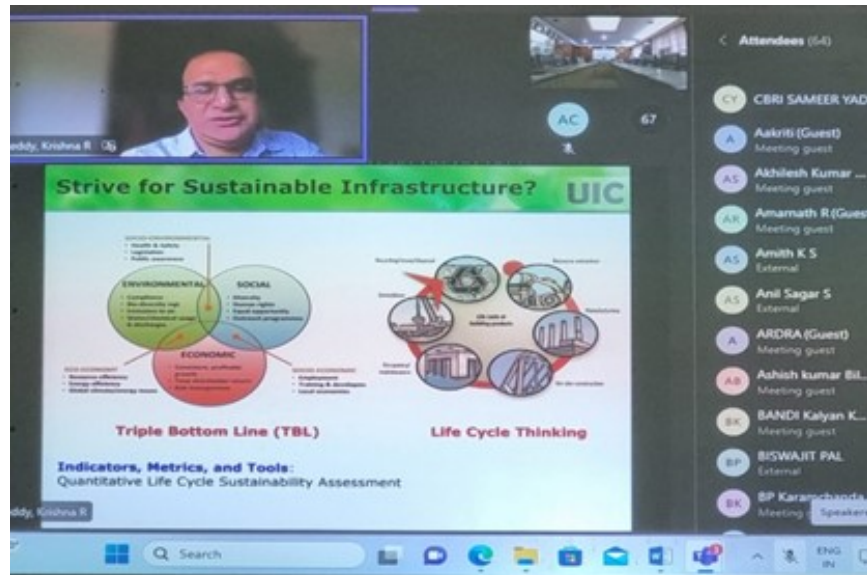
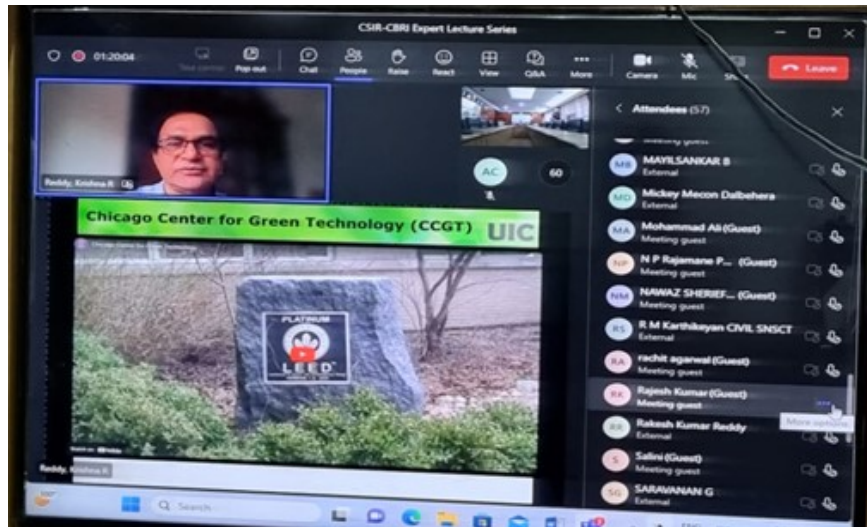
Use of Life Cycle Assessment to Promote Sustainable Construction Materials and Buildings

June 14, 2023

Under the CSIR-CBRI Expert Lecture Series an online expert lecture on ‘*Use of Life Cycle Assessment to Promote Sustainable Construction Materials and Buildings*’ was delivered by **Dr. Krishna R. Reddy** organized at CSIR-CBRI on June 14, 2023. **Dr. Krishna R. Reddy** is a university scholar and Professor in the Deptt. of Civil, Materials, & Environmental Engineering, University of Illinois Chicago (UIC). His research expertise includes geotechnical and geo-environmental engineering, and sustainable and resilient engineering. He is also the author of more than 290 journal papers, 30 edited books/conference proceedings, 25 book chapters, and more than 200 full conference papers. He is a fellow of the American Society of Civil Engineers, a diplomat of Geotechnical Engineering.



Civil infrastructure development has traditionally prioritized safety, cost, ease of construction, and construction time, with little regard for sustainability, which resulted in significant ecological and environmental damage. However, there is currently a strong emphasis on the development of sustainable infrastructure, considering environmental, economic, and social impacts throughout the entire life cycle of a project, from raw material acquisition to demolition. In addition to well-known rating systems such as LEED and Envision which encourage the advancement of sustainable infrastructure, life cycle assessment (LCA) has emerged as a favored approach for measuring the environmental impacts of different construction materials and civil infrastructure. This approach enables decision-makers to select the most sustainable options by quantifying their impacts throughout their life cycle. In the light of the above, **Dr. Krishna R. Reddy** has made presentation by introducing the LCA framework, followed by its application in assessing alternate concrete mixtures to determine the most sustainable option for pavements and bridge decks. In addition, he demonstrated the application of LCA in evaluating the environmental sustainability of three different buildings. Using these examples, the presentation demonstrated how LCA can effectively assess the environmental sustainability of infrastructure projects by promoting the use of sustainable materials and considering other relevant factors.



Technical Session by Dr. Krishna R. Reddy