



Amrita Varsity hosts two-day meet on infrastructure systems

Coimbatore, Apr. 23: The two-day global meet on Emerging and Sustainable Technologies for Infrastructure Systems (ESTIS 2016) commenced yesterday at Coimbatore campus of Amrita University. Leading academicians, scientists, and researchers in civil engineering assembled under one roof to present and discuss the latest innovations, trends and concerns in infrastructure systems, and the key infrastructural challenges faced by developing countries and their possible solutions.

Over 150 research papers were submitted at the meet from reputed institutions in India as well as in US, Canada, Singapore, Malaysia and Kuwait. More than 150 experts in civil engineering are participating, including TG Sitharam, Professor, Deptt. of Civil Engineering, Indian Institute of Science, Bengaluru; Dr. Siau Chen Chian, Asst. Professor, Department of Civil and Environmental Engineering, National University of Singapore; and Allen Bateman, Professor, UPC BarcelonaTech, Spain.

The conference addressed issues such as green infrastructure, environmental and socio-economic impact of infrastructural expansion,

use of advanced materials, sustainable transport systems and how infrastructure can cope with manmade and natural disasters.

Dr. KM Mini, Chairperson, Dept of Civil Engineering, Amrita University said: "ESTIS 2016 is meant to foster collaboration among all stakeholders for planning, designing, and managing sustainable infrastructure systems. Developing countries like India need to prepare a new generation of civil engineers who are ready to build infrastructure through sustainable use of materials and resources. Old Indian construction practices were sustainable and in harmony with nature. Their replacement with modern materials has not only disturbed the natural ecosystem, it is leading to poor sanitation, pollution, resource exhaustion and inferior living conditions. The Indian construction industry must adopt eco-friendly practices and materials to reduce its environmental impact, before irreversible damage is done to our life-supporting systems. It needs to take the initiative and find alternative ways to build infrastructure, using renewable energy resources and adopting non-polluting practices and materials that reduce,

recycle and reuse, before it is too late."

Dr. Siau Chen Chian, Asst. Professor, Department of Civil and Environmental Engineering, National University of Singapore, who spoke on land reclamation said that there is increasing pressure to redevelop urban spaces in crowded cities. Underground infrastructure such as subways, roadways and water tunnels is gaining popularity to free up ground space for economic and social activities. A huge amount of unwanted excavated soil gets generated which requires disposal at landfill sites. This can lead to a situation where precious land elsewhere gets occupied with this waste. One solution is to convert this excavated soil into useable fill material by using a low dosage of eco-friendly cement to stabilize the soil and enhance its engineering properties. This method can intelligently solve two issues facing overcrowded cities – reduction in the disposal landfill space needed, and creation of new land. This can be a boon to metros like Mumbai and Delhi where land is at a premium."

TG Sitharam, Professor, Dept of Civil Engineering, Indian Institute of Science (IISc), Bengaluru in his

address said, "India needs an investment of \$465 billion over the next five years to develop infrastructure, with 70% of it going to power, roads and urban infrastructure. It is critical to use the latest advanced materials to build a more resilient and sustainable future. Two critical technologies – reinforced earth and geo-synthetics – have become very popular abroad, but are yet to find widespread use in India, especially in construction works of the Government. These can create stronger, lighter and more stable structures. Reinforced earth retaining walls are an economical way to meet every-day earth retention needs for highway and bridge grade separations, railroads and mass transit systems, waterfronts, airports, loading docks, industrial facilities and commercial and residential developments. These are also used in response to difficult design conditions such as very high structures, restricted space, unstable slopes and poor foundation conditions. Several thousands of reinforced earth retaining walls have been built all over the world. These may work out about 50 % economical over conventional retaining structures."