

Send the completed Registration form to:

Mr. H. Hemanth Kumar

Karnataka State Council for Science Technology
Indian Institute of Science
Bangalore 560012, INDIA.

Telephone: 09845707380, 080 -23314396

E-mail: hemanth.h.kumar@gmail.com

Websites: www.kscst.org.in;

http://cst.iisc.ac.in, http://civil.iisc.ac.in



Co-ordinators:

Prof. B. V. Venkatarama Reddy
Department of Civil Engineering and
Centre for Sustainable Technologies
Indian Institute of Science, Bangalore

Dr. Monto Mani
Centre for Sustainable Technologies
Indian Institute of Science
Bangalore

Mr. H. Hemanth Kumar
Karnataka State Council for Science
and Technology (KSCST)
Indian Institute of Science, Bangalore

Workshop duration: 6 days

Course fee:

Rs. 4,000 for Indian delegates
US\$ 250 for foreign delegates
(Course fee **excludes** lodging/guesthouse charges)

Who can apply:

Graduate/Diploma Civil Engineering or
Architecture



Fourteenth Workshop under the



**Energy Efficient Buildings
Workshop Series on**

**“Low Carbon Materials and
Building Systems”**

16 – 21 JULY 2018

Venue:

**Centre for Sustainable Technologies Indian
Institute of Science Bangalore 560 012,
INDIA**

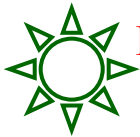


Jointly organised by

Centre for Sustainable Technologies
Department of Civil Engineering, and
Karnataka State Council for Science & Technology

**Indian Institute of Science
Bangalore 560 012, INDIA**

**Sponsored by: HT Parekh Foundation- A CSR
Initiative of HDFC Limited**



Energy Efficient Buildings Workshop Series on

“Low Carbon Materials and Building Systems”

Natural materials are processed using energy for the manufacture of construction materials and building products. Construction industry is associated with two problems; consumption of huge quantities of unsustainably extracted mined raw materials and the associated carbon emissions. Indian construction industry is the largest in terms of volume of materials produced and is responsible for nearly 30% of green house gas (GHG) emissions. Energy in buildings comprises of embodied energy and energy for maintenance during its life cycle. Maintenance energy in buildings greatly depends upon the local climatic conditions. There is a need for reducing energy in buildings in order to contain GHG emissions. Department of Civil Engineering, Centre for Sustainable Technologies and Karnataka State Council for Science & Technology, the Indian Institute of Science are involved in developing and disseminating large number of low carbon building materials since the last three decades. More than a dozen energy efficient building technologies have been developed and disseminated. Large numbers of buildings have been built using these new materials. Such buildings are energy efficient and lead to

considerable reduction in carbon emissions. There is a demand for the knowledge on low carbon building materials and systems. The workshop is aimed at disseminating this knowledge to the engineers, architects and other building professionals focused on the promotion of green building projects.

Details of the workshop

Workshop comprises of lectures, hands-on training and demonstration of construction techniques. Broad topics covered include Energy in buildings, Green building concepts, low carbon building materials (stabilised soil blocks, rammed earth, fly ash bricks, soil based building products, materials from solid wastes, etc.), alternative roofing systems, masonry vaults and domes, Bi-PV and climate responsive architecture. In addition, the afternoon sessions will be on hands on training laboratory testing and demonstration classes on the production of stabilised soil blocks, fly ash blocks and rammed earth elements, masonry bonding, masonry domes, precast elements, etc. and field visits.

Resource persons

Faculty from the Department of Civil Engineering, Centre for Sustainable Technologies, Karnataka State Council for Science and Technology, and other invited experts.

Registration form

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**Energy Efficient Buildings Workshop Series on
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16 – 21 July 2018

Venue:

**Centre for Sustainable Technologies
Indian Institute of Science, Bangalore 560 012**

Name:

Organisation:

Qualification:

Mailing address:

Postal code:

Telephone:

Fax:

E-mail:

Previous experience:

Place:

Date:

*Course fee Rs./US\$ by DD/PO

No..... drawn on.....date.....

*Bank draft/Pay order only should be drawn in favour of “Secretary, Karnataka State Council for Science & Technology” and payable at Bangalore.



Energy Efficient Buildings Workshop Series on “Low carbon materials and building systems”

Fourteenth Workshop: 16 – 21 July 2018

Day 1

09:30 – 10:45 Introduction to green buildings concepts and Sustainability

10:45 – 11:00 Tea Break

11:00 – 13:00 Stabilised soil blocks, masonry & mortars

13:30 – 14:15 Lunch break

14:15 – 14:45 Soil identification and testing

14:30 – 17:30 Stabilised soil block production and masonry construction

Day 2

09:30 – 10:45 Earthquake resistant masonry buildings

10:45 – 11:00 Tea Break

11:00 – 12:00 Masonry vaults and domes

12:00 – 13:00 Alternative roofing systems

13:00 – 14:00 Lunch break

14:00 – 15:00 Slide show on vaults and domes

15:00 – 17:30 Demonstration of dome and vault construction

Day 3

09:30 – 10:30 Rammed earth for walls

10:30 – 10:45 Tea Break

10:45 – 12:00 Energy, Environment, Buildings and sustainability

12:00 – 13:00 Fly ash blocks, bricks and building materials from solid wastes

13:00 – 14:00 Lunch break

14:00 – 17:30 Rammed earth, adobe, jack-arch panels and precast elements demonstration

Day 4

09:30 – 10:30 Lighting and BiPV

10:30 – 10:45 Tea Break

10:45 – 11:45 Thermal comfort in buildings & thermal performance (OTTV)

11:45 – 13:00 Green rating systems & examples, Energy assessment in buildings

13:00 – 14:00 Lunch break

14:00 – 17:30 Visit to RE class room, demonstration of block & masonry testing, and shock Table (video)

Day 5

09:30 – 10:00 Challenges & opportunities in Alternative building technologies

10:00 – 11:00 Domestic roof water harvesting

10:00 – 11:15 Tea Break

11:15 – 13:15 Guest Lectures – University of Bath

13:15 – 14:00 Lunch break

14:00 – Field visits

Day 6

09:30 – 10:30 Introduction to solar passive architecture & building simulation techniques

10:30 – 10:45 Tea Break

10:45 – 11:45 Guest lecture

11:45 – 12:45 Guest lecture

12:45 – 13:15 Feedback & discussion

13:15 Lunch