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A Newsletter of BMTPC

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BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL
Ministry of Housing & Urban Poverty Alleviation, Government of India

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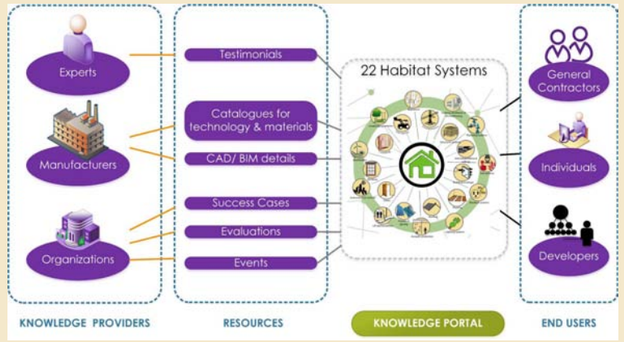
Knowledge Web Portal for Sustainable Habitat In India



In pursuit to Housing for All by 2022 Mission, BMTPC is striving to create an eco-system which will facilitate sustainable faster construction, using new prospective emerging construction systems being practiced globally. In this direction, the Council has conceptualized preparation of Knowledge Web Portal for Sustainable Habitat in India. The portal displaying all the information about emerging technologies and building materials, such as detailed description, case studies, expert opinions, cost, cycle times, comparative analysis, descriptions of building products, materials, systems, design and construction codes, best industry practices, reviews, links to manufacturers, suppliers etc., will be helpful in transferring the information to all the stakeholders involved with the Housing for All 2022 mission. Many best technologies escape from being noticed and take long to get accepted. The interlinked cataloguing system for the proposed web knowledge portal will fill this gap by connecting design related information, standards and codes, public opinion and reviews backed by cases, detailed description on products, materials, technology and building systems with validated list of manufacturers, suppliers, experts, designers and consultants. Sharing of such advanced and centralised information across the globe through the portal shall help in fastening the delivery of housing units thereby meeting the mission objectives.

The proposed knowledge network encompasses all the materials, products, technology, people and organizations that can positively impact the delivery of housing for all concept in India. It will be the most valuable and sought after resource for technical information on building products, materials, new technologies, systems, and processes so as to cater all the stakeholders. Further, this will also promote creation of an enabling environment for industry practitioners, researchers, scholars, technical experts, end-users and organizations who can act as a catalyst in the delivery of Housing for All (Urban) Mission. The knowledge network will provide product/material/ technology descriptions, design and construction guides, best practices, performance reports, case studies, and other resources that will be of immense help to the built environment sector. The design of the portal will be such that information provided in the portal will be entered by different stakeholders corresponding to the housing sector. This information will be moderated by a committee of experts.

Presentation on Emerging Technologies before the Hon'ble Chief Minister of Andhra Pradesh

The Executive Director, BMTPC presented seven alternate technologies as Chairman of the Technical Committee, before the Hon'ble Chief Minister of Andhra Pradesh on 26th March 2015. The Technical Committee was constituted by Andhra Pradesh State Housing Corporation Ltd (APSHCL) for evaluating the technologies received in response of tender for construction of 6000 houses using alternate technologies by APSHCL for the victims of HudHud cyclone in North Coastal Districts of Andhra Pradesh. Considering the two critical factors viz., the cost factor and time factor, the Hon'ble CM had agreed with the recommendation of the committee to short list the technology of "Steel frame with Aerocon panels/PUF Panels" and EPS Technology and directed the officials to study other technologies which can help in building new State.

For further details, please contact:

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From the Desk of the Executive Director

In the wake of impetus provided by Govt. of India to push Housing for all agenda by 2022, all the states are gearing up to look for technological solutions which can help in faster construction without sacrificing functional & structural requirements.

The new construction systems identified by BMTPC through a systematic study & certification have become quite important and can be game changer, if properly implemented in the field. Most of the state governments are approaching us but still there are number of issues which need to be addressed on urgent basis, if these systems are to be mainstreamed in India for mass housing. The first & foremost is to have a team of professional engineers & architects who can help in planning, design & construction including quality control & assurance. Besides, there is dearth of contractors & skilled workforce who can execute the project on the ground.

BMTPC through Ministry of Housing & Urban Poverty Alleviation is making concerted efforts to create an enabling environment so that these new systems could be used in place of conventional construction. BMTPC is organizing capacity building programmes along with expositions in different state with an idea that more and more people are sensitized about these new systems and take it further for its successful field level application.

(Dr. Shailesh Kr. Agrawal)

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Building Materials & Technology Promotion Council, New Delhi

Capacity Building Programme on Earthquake Resistant Structures and Retrofitting of Buildings for NCR Region at New Delhi

Under the Chairmanship of Secretary, Ministry of Home Affairs, a meeting was held to take stock on Earthquake Risk Reduction in National Capital Region. During the meeting, it was desired that BMTPC and NIDM may jointly organise capacity building programmes for engineers and architects of NCR region (UP, Haryana & Delhi) on Earthquake Resistant Structures and Seismic Retrofitting of Buildings. Accordingly, a Two-days programme was organized from 12-13 February, 2015 at New Delhi. The programme was attended by around 80 engineers, architects and town planners from various parts of the country. Dr. Nandita Chatterjee, Secretary, Ministry of Housing & Urban Poverty Alleviation, Govt. of India inaugurated the programme. Shri Sanjeev Kumar, Joint Secretary (HFA), Ministry of Housing & Urban Poverty Alleviation and Shri Anil Kumar Sanghi, Joint Secretary (Mitigation), National Disaster Management Authority (NDMA) addressed the participants. The faculty from IIT Roorkee, NIDM and other experts covered various topics on Earthquake Resistant Structures and Retrofitting of Buildings for NCR Region.

Mainstreaming Emerging Technologies

Executive Director, BMTPC and Dy. Chief (I&D), BMTPC visited MHADA, Mumbai and PCMC, Pune on 22-23rd January 2015 to discuss issues regarding mainstreaming Emerging Technologies in Housing Projects with the State Government officials in the light of Govt. of India's goal of "Housing for All" by 2022 which calls for faster construction without compromising the quality of construction. BMTPC official also visited a BSUP project under JNNURM at Sector 17 & 19, Chikhali, Pune where EWS houses have been constructed using RCC monolithic technology being promoted by BMTPC.

Prospective Building Technology Housing

Sismo Building Technology

Sismo Building Technology is an insulating shuttering kit for whole building based on a three-dimensional lattice made of galvanized steel wire. The lattice can be filled with materials of different nature to serve as formwork. The basic structure of the Sismo building module is steel wire lattice. At the exterior sides of the lattice, infill panels are inserted, which transform the lattice into a closed structure that can be filled with concrete. The type of infill panels used depends on the purpose of the wall: load bearing or not, insulated or otherwise, etc. The steel wire also acts as armature and anchoring for the finished material and it will hold reinforcement bars in place during concrete filling. Description of the components is given below:

- 3D lattice (2.2 mm Ø galvanized steel wire)
- Infill panels (EPS, rock wool, mineral board)
- Structural filler (concrete)
- Finishing (plastering, natural stone, paneling etc.)

Seismo panels can be quickly and accurately moulded to almost any shape during the production process.

The implementation process of Sismo panels is as follows:

- *Handling, transportation and storage of panels:* The handling of panels on site is done with gloves & protective glasses. Loading and unloading of modules is done manually as well as by machine. Modules is transported and stored sideways, standing or in vertical position.
- *Erection of panels:* The panels is placed on the foundation or on the floors. They are held together by rings longitudinally placed on both sides of the wall.
- *Installation of reinforcement:* The placing of vertical bars is done through top of panels and progresses together with the mounting of the panels. Horizontal bars for the achievement of the horizontal ties and lintels is inserted sideways and progresses together with the mounting of the walls.
- *Pouring of concrete:* The concrete filling shall be done with a pump device or a tipper. Roofs with pitch below and over 30º shall be constructed with open and closed lattices respectively.
- *Fixing of panels:* The wall surface shall be sound and free of dust, cleared of any non-adherent product. The expanded polystyrene panels shall be fixed to the support by using adhesive.
- *Finishing:*
  - *Rendering:* For rendering, the materials available and local climatic conditions shall be followed.
  - *Other types of finishing:* A wide variety of finishing techniques can be adopted such as natural stone cladding, shingles, cladding panels, masonry, curtain walling, plastering, plasterboards, tiling and wood paneling etc.
- *Imbedding of ducts:* Use of certain filling materials make it possible to install conduits quickly and easily such as self-extinguishing polystyrene etc.
- *Fixing of objects:* It is possible to fix objects up to 80 kg per fixing device in the insulation strips: for other cases, the fixing device should be inserted in the concrete.

More information: SISMO India (Building Technology), 141 – Sector -7, Manesar, Gurgaon (Haryana) – 122 050; Ph. No. 0124 – 2290256; Email: ag@sismoindia.com

Skill Development and Capacity Building

Training Programme on Cost-Effective and Disaster Resistant Technologies

BMTPC in association with Department of Civil Engineering, University College of Engineering (BIT Campus), Anna University, organised a Training Programme on Cost-Effective and Disaster Resistant Technologies in order to impart training to civil engineers and architects on 26th – 27th February, 2015 at Trichy. The eminent faculty from NIT Trichy, Auroville Earth Institute, Ultra-tech Cement, Dalmia Cement, BMTPC, provided the lectures on various topics. A field visit was also arranged for the participants to visit the Readymade Steel and Ready Mix Concrete, RBS Readymade Steel, Trichy. Around 70 participants from government agencies, working civil engineering professionals and architects from Southern States of the country participated in the programme.

Training Programme on Low Cost Housing and Earthquake Resistant Construction

A Training Programme on Low Cost Housing and Earthquake Resistant Construction was organized by BMTPC in association with Institute of Leadership Development (ILD) wholly sponsored by the IFCI Limited, Govt. of India from February 27-28, 2015 at MIRTS Campus, Alwar, Rajasthan. More than 66 engineers and architects participated in the training programme. The topics covered during the programme includes Importance of leadership in construction projects to reduce the cost and time, Innovative technologies for green and sustainable construction, Government objectives and policy reforms for the creation of affordable housing, Building construction project management, Framework for cost management of low cost housing, Cost effective construction techniques, Earthquakes and Architecture design of buildings as per IS:1905, IS:4326, Seismic Vulnerability Assessment and Retrofitting of Masonry Buildings as per IS:13935.

Training Programme on Cost effective, Environment Friendly & Disaster Resistant Construction Techniques for masons

A two days Training Programme was organized for masons on Cost effective, Environment Friendly & Disaster Resistant Construction Techniques on March 16-17, 2015 at Village Oraiya, Distt. Hazaribagh, Jharkhand. A group of 22 masons participated in the training programme from the nearby areas. The participants were given hands-on training through lectures as well as through practical sessions. Agro-Industrial wastes such as Fly ash based bricks / blocks, cement, cellular light weight concrete and aggregate were discussed in detail. Importance of foundation, Plinth Band, Roof Band, Lintel Band, reinforcement in building construction were also discussed. The participants were also taught about stirrups, lap length, vertical reinforcement, cover of reinforcement, corner reinforcement and binding of reinforcement etc.