



Forthcoming Events

Exhibition

Seminar

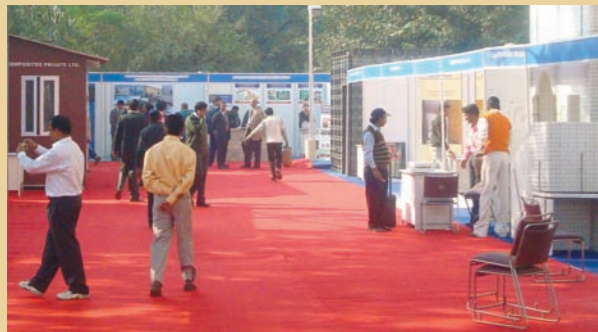
BMTPC expo '12

Appropriate Building Materials & Housing Technologies

November 6 - 8, 2012

NSIC Exhibition Complex, Technical Service Centre, Okhla, New Delhi

The Exhibition-cum-Seminar on 'Appropriate Building Materials & Housing Technologies' is being organised to bring all the stake holders working in the area of innovative building materials and construction technologies together and provide them not only the opportunity to showcase various innovations in form of products and technologies developed by them but also deliberate, interact & explore linkages with the participants during the seminar and get feed back so as to understand the applicability and wider acceptability. This will be a unique opportunity to exhibit innovations, products and systems to public at large. The Council seeks support of organisations/institutions/companies to become flag bearer in this area with the Council.



A large number of visitors are expected during the event. The event is beginning of series of such expositions to be organised jointly by BMTPC and other networking partners in future.

Themes for Seminar

- Affordable Mass Housing Technologies
- Green Building Materials & Housing Technologies
- Prefabricated Housing Systems
- Cost-effective Building Products & Components
- Field application of innovative housing technologies
- Bamboo based products & Housing Technologies
- Natural Fibre composites & its applications
- Waste Utilisation through product development
- Innovation in water supply and sanitation
- Standardization and production evaluation
- Disaster resistant construction practices
- Advancements in Cement and Concrete
- Plant and Machinery for manufacturing of productions of building products
- Public Private Partnership in mass housing schemes

Objectives:

- To present and showcase the new and emerging building technologies which may guide the mass housing construction scenario in the years to come
- To cover the various aspects of the new and emerging building materials and construction technologies
- To provide common platform for large scale application and dissemination.

Exhibition/Road Show and Seminar

on

Emerging Technologies for Mass Housing

December 18-19, 2012

Chennai Trade Centre, Chennai

in collaboration with Indian Concrete Institute, Chennai Local Chapter

For further details, please contact:



Executive Director
BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL
 Ministry of Housing & Urban Poverty Alleviation, Government of India
 Core 5 A, 1st Floor, India Habitat Centre, Lodhi Road, New Delhi - 110003
 Phone: +91-11- 24638096, 24636705; Fax: +91-11-24642849
 E-mail: bmtpc@del2.vsnl.net.in, Website: www.bmtpc.org



From the Desk of the Executive Director

Construction in sync with nature is the need of the hour; if we have to tackle the issues such as cost escalation, climate change, skilled workforce etc. It is high time that we think beyond RCC frame structures. There are myriad technologies which are essentially based on pre-fabricated, pre-cast factory made structural components. These technologies have been tested with time and proven their worth in terms of safety, durability, sustainability all over the world. Now, it is wake-up call for construction agencies particularly real-estate developers to embrace them. Expedient completion of the project along with quality construction is the added advantages with these technologies. BMTPC has been working with a few emerging technologies. In this regard, BMTPC organizes sensitization programmes for the stakeholders on the regular basis. The full technical details of these technologies are available with us and they are being shared with the construction agencies. We are also operating a scheme called PACS through which some of the technologies are being evaluated as per Indian standards.

Any construction agency bringing innovation in the construction is welcome to share with us the information so that it can reach out to the masses.

Shailish Kr. Agrawal
 (Dr. Shailish Kr. Agrawal)

Published by:

Building Materials & Technology Promotion Council, New Delhi

BIPARD entrusts BMTPC Training of Trainers Programme on Earthquake Resistant Design & Construction

The Bihar Institute of Public Administration and Rural Development (BIPARD), Government of Bihar on behest of the State Disaster Management Authority, Bihar, has requested BMTPC's assistance in conducting Training of Trainers (TOTs) on Earthquake Resistant Design and Construction.

The project for preparation of Course Modules and conduction of Training of Trainers (ToT) for Engineers and Architects on Earthquake Resistant Design and Construction has been approved by the Bihar Government. The Executive Committee of BMTPC in its 40th meeting held on 15th February, 2012 also gave nod to the project. In order to impart training, standardised Resource material for Training of Engineers, Architects and Contractors & Builders in earthquake resistant design and construction is being prepared by BMTPC. Further BMTPC will organise training programmes for Training of Trainers (8 batches for engineers and 5 batches for architects).

The Council has finalised Resource Material in association with Deptt. of Earthquake Engineering, IIT Roorkee and Padmashree Dr.A.S.Arya, Professor Emeritus, IIT Roorkee. The Resource Material contains the lecture notes in the form of book based on the syllabus. The Resource Material is being published by the Council.

National Consultation on Appropriate Building Technologies

BMTPC organised National Consultation on Development, Construction and Dissemination of Appropriate Building Technologies on 29th May, 2012 at New Delhi, in order to evolve a comprehensive and integrated transfer mechanism for cost effective building materials and construction technologies from lab to land. Around 50 participants from R&D and Academic Institutions, NGOs, Building Centres, Professionals, Manufacturers, Builders, Real Estate Consultants, Housing & Urban Development Authorities, public and private sector departments/agencies working in the area of housing and building construction participated in the Consultation.



Alternate Building Materials & Technologies

Clay Fly Ash Bricks

General

- Bricks shall be made from admixture of suitable soils and flyash in optimum proportions. The flyash shall conform to Grade 1 or Grade 2 as per IS 3812.
- Clay fly ash bricks shall be solid, compact and uniform in shape, size and colour. Bricks shall have rectangular faces with sharp and square corners. The brick shall be free from visible cracks, flaws, warpage, nodules of stone and/or free lime and organic matters. The bricks shall be hand or machine moulded.

Dimensions

- Modular sizes

Length (L)	Width (W)	Height (H)
mm	mm	mm
190	90	90
190	90	94
- Non Modular sizes

230	110	70
230	110	30

Physical Characteristics

- **Compressive Strength:** The clay flyash bricks, when tested in accordance with the procedure laid down in IS 3495 (Part-I), shall have a average compressive strength.
- **Water absorption:** The bricks, when tested in accordance with the procedure laid down in IS 3495 (Part 2), after immersion in cold water for 24 h., water absorption shall not be more than 20 percent by weight upto class 12.5 and 15 percent by weight for higher classes.
- **Efflorescence:** The bricks when tested in accordance with the procedure laid down in IS 3495 (Part 3), the rating of efflorescence, shall not be more than 'moderate' upto class 12.5 and 'slight' for higher classes.



Emerging Technologies for Building Construction

Technology using expanded steel mesh panels, polystyrene beads & alleviated concrete

The system is entirely a 'on-site' construction process. The houses are entirely, including the roof, made up of structure panels assembled with Beams. Alleviated concrete is injected into a steel structure made of panels reinforced with beams. The concrete base and the foundations of the houses are prepared in a conventional manner. Prior to the pouring of the concrete of the base, the panels are tied to the soldered wire mesh and to the iron rods in the base and in the foundations and assembled in accordance with the design of the house. They are then, held together by special made galvanized steel wire studs, which fit one into the other, horizontally and vertically, to form the complete skeleton of the construction, roof included.

'Alleviated' or 'light' concrete is then injected with a special concrete pump. The alleviated concrete is a custom-made mixture of cement fibre, sand and Expanded Polystyrene (EPS) beads, resulting in a low-density concrete (50-700 kg/m³) and hence incorporating thermal and sound insulation. The injected walls are then finished/levelled/smoothened from both sides.

Materials used: Expanded steel type of galvanized steel mesh panels, cast and expanded in continuous process from a 1.6 mm thick and 30 cm wide galvanized steel sheet coil and Alleviated concrete made up of cement, fibre, sand and expanded polystyrene beads (1-4 mm).

Salient features: Well insulated, earthquake/hurricane/tornado resistant, fire and termite resistant, built on site in less time, minimal manpower, high quality and durability, cost-effective, sound, safe, healthy, energy efficient, environment friendly, architectural flexibility, higher strength of walls and roof, wires and pipes embedded in the walls, no forms, shuttering frames or casings.



Skill Development and Capacity Building

Development of Criteria for Certification of Ready Mixed Concrete Plants

In last ten years, use of ready mixed concrete has increased many folds. A number of RMC plants have come up all over the country with varying capacity and capability. In absence of any third party certification for RMC plants, the quality of concrete supplied by some plants remains in doubt. Due to this, the very purpose of bringing quality concrete construction through RMC compared to site mix concrete is being affected. With the initiative taken by Ready Mix Concrete Plant Manufacturer's Association themselves, Quality Council of India (QCI) and BMTPC has joined hands for developing the criteria for Certification of Ready Mix Concrete Plant.

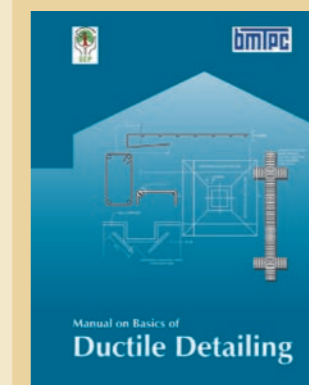
Basic document has already been prepared covering requirements for the production Control of Ready Mixed Concrete which includes requirements of resource managements, plant and equipments, laboratory, key personnel, control on quality of incoming materials, production and delivery, control on process control equipment and maintenance and feed back mechanism.

Course Curriculum and Teachers Handbook on Sustainable Building Technology

One of the bottlenecks faced in actual application of sustainable building technologies is lack of awareness among engineers & architects about these. Realising this, BMTPC has taken initiative to develop Course on Sustainable Building Technology for Engineering and Architecture Colleges to enable the budding engineers and architects to get familiar with the emerging trends. Based on a Brain Storming Session, Course Content has been developed, as an elective subject for Engineering Colleges. This covers site selection and planning, environment friendly building materials and technologies, energy and lighting, water conservation technologies & waste water treatment, solid waste management, Green building design and quantification software. The draft is under circulation for views / comments. Based on the above syllabus, a Handbook will be developed as a resource material for teaching. It is also planned to organize orientation programmes for teachers on the subject.

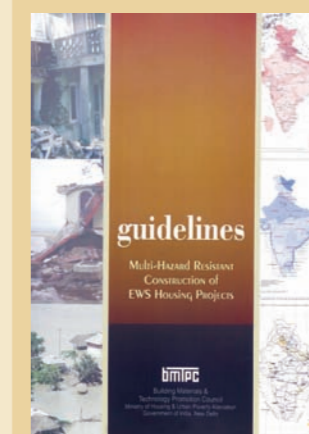
Recent Publications

MANUAL ON BASICS OF DUCTILE DETAILING



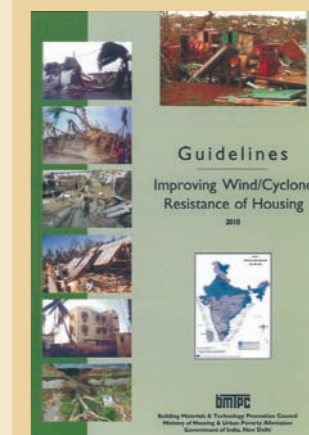
BMTPC brought out the Manual on Basics of Ductile Detailing both in Hindi and English. The Manual attempts to provide details of ductile detailing wherein the clauses from various Indian Standards have been used and a simple interpretation alongwith how to execute them in the field is provided.

GUIDELINES FOR MULTI-HAZARD RESISTANT CONSTRUCTION OF EWS HOUSING PROJECTS



The Guidelines for Multi-Hazard Resistant Construction of EWS Housing Projects published by BMTPC, empowers the professionals through series of checklists, tables and forms, to look for hazard resistant features given in Indian Standards and use them while designing and preparing the project reports.

GUIDELINES FOR IMPROVING EARTHQUAKE RESISTANCE OF HOUSING



The Guidelines for Improving Earthquake Resistance of Housing is the updated version of BMTPC's earlier publication. The Guidelines would serve as an explanatory handbook on the various clauses of Indian Standards on Earthquakes which are important from the point of view of designing new buildings or improving resistance of existing building stock.