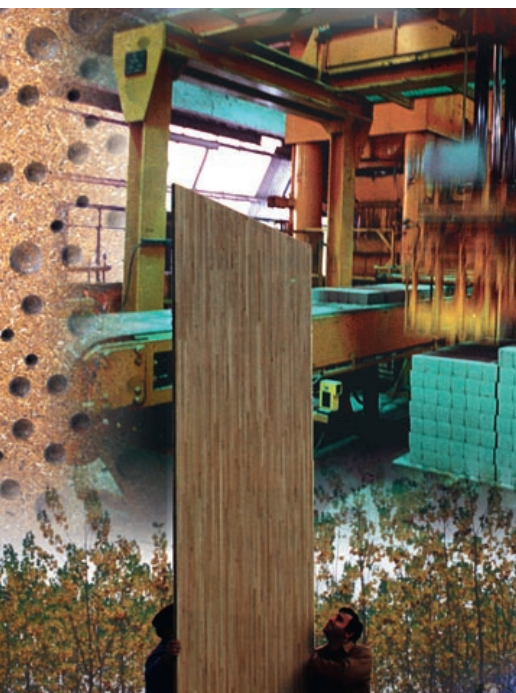




## Creating Enabling Environment for Affordable Housing for All



Building Materials & Technology Promotion Council  
Ministry of Housing & Urban Affairs  
Government of India

Building Materials & Technology Promotion Council is an autonomous body under the aegis of the Ministry of Housing & Urban Affairs, Government of India, established in 1990. Since its inception, BMTPC has been working towards development and promotion of alternate, cost effective, energy-efficient, environment-friendly and disaster resistant building materials and construction technologies and its transfer from lab to land.

## Vision

***“BMTPC to be world class knowledge and demonstration hub for providing solutions to all with special focus on common man in the area of sustainable building materials, appropriate construction technologies & systems including disaster resistant construction.”***

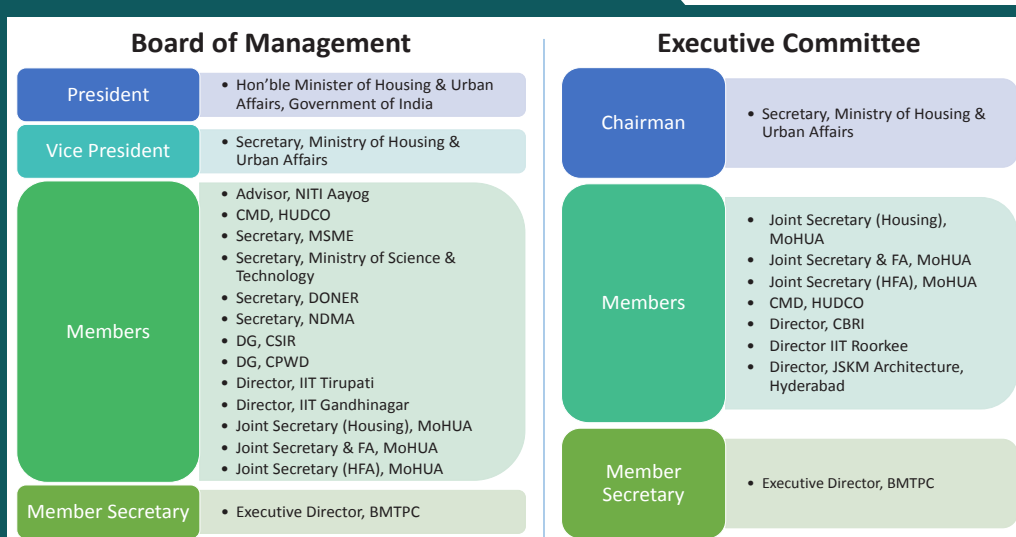
## Mission

***“To work towards a comprehensive and integrated approach for promotion and transfer of potential, cost-effective, environment-friendly, disaster resistant building materials and technologies including locally available materials from lab to land for sustainable development of housing.”***

## Objectives

- **Building Materials & Construction Technologies:** To promote development, standardization, mechanization and large scale field application of proven innovative and emerging building materials and technologies in the construction sector.
- **Capacity Building and Skill Development:** To work as a Training Resource Centre for capacity building and promotion of good construction practices to professionals, construction agencies, artisans and marketing of building technologies from lab to land.
- **Disaster Mitigation & Management:** To promote methodologies and technologies for natural disaster mitigation, vulnerability & risk reduction and retrofitting/ reconstruction of buildings and disaster resistant planning for human settlements.
- **Project Management & Consultancy:** To undertake project management and consultancy services including appraisal, monitoring and third party inspection of housing projects under the various Central/State Schemes.

## Board of Management and Executive Committee





# Development & Promotion of Green Technologies



## Walling

- Fly ash lime gypsum bricks/blocks (FaL-G)
- Sand Lime / Calcium Silicate Bricks
- Cellular light weight concrete blocks (CLC)
- Autoclaved Aerated Concrete blocks (AAC)
- Clay Fly ash bricks
- Compressed earth bricks/blocks
- Interlocking type compressed earth blocks
- Ferrocement panels
- Solid/Hollow Concrete blocks
- Precast concrete stone masonry blocks
- Bamboo mat boards
- Rat trap bond in bricks
- Jute composite boards
- Coir composite boards
- Bagasse board
- Cement bonded particle boards
- Phosphogypsum based panels
- Bamboocrete
- Pozzolonic mortar in blended cement
- EPS composites
- Bricks/blocks/pavers from C&D waste
- Hollow or Solid Lightweight Concrete Masonry Units
- Bricks/Blocks/Tiles from Marble and Granite industry waste

## Roofing

- Prefabricated reinforced brick panels and joist
- Ferrocement roofing channels
- Micro concrete roofing tiles
- Bamboo mat corrugated roofing sheet
- Filler slab
- Bamboo mat ridge cap
- Jute-Bamboo composite roofing sheet
- Cuddapah slabs over RCC rafters
- Brick funicular shell roofing
- Precast blocks over inverted T-beams
- Insulation Tiles from mining waste
- Clay flooring tiles
- Burnt clay flat terracing tiles
- Precast Channel Unit for Floors / Roofs
- Precast R.C.C.Planks and Joists for Floors/Roofs
- Thin R.C. Ribbed Slab for Floors and Roofs
- Precast Concrete Waffle Units for Floors / Roofs
- Prefabricated Reinforced Concrete L-Panels for Roofs
- Precast Doubly Curved Shell Units for Floors/Roofs
- Precast Reinforced / Prestressed Concrete Ribbed or Cored Slab Units for Floors / Roofs
- Specifications for Reinforced Brick and Reinforced Brick Concrete Slabs for Floors / Roofs

## Joinery and Miscellaneous

- RCC Door and Window Frames
- Ferro cement door shutters
- RCC Jallies
- Precast thin lintels
- Precast sunshades
- Ferrocement water tank
- Brick on edge lintels
- Corbelling for lintels
- Brick arch for lintels
- Ferrocement staircases
- Geo-textiles
- Precast Concrete Manhole Covers & Frames
- Red Mud/Flyash Polymer door shutters
- Eco-friendly rubberwood flush door shutter
- Eco friendly solid core poplar wood flush door shutter
- Glass Fibre Reinforced Polymer doors and door frames

BMTPC has undertaken several demonstration projects to showcase and propagate these green technologies across the country.



## Identification & Certification of Emerging Technologies

The Council has been evaluating alternative construction systems adopted world over to **identify, adapt** and **promote** such technologies suiting to Indian geo-climatic conditions on regular basis. In this process, 34 technologies/systems have been assessed and certified so far, which have potential to be used for mass housing in the country.

### ENGINEERED FORMWORK SYSTEM

- Monolithic Concrete Construction System (Aluminium/Composite Formwork)
- Modular Tunnel Form



### STAY-IN-PLACE FORMWORK SYSTEM

- Insulating Concrete Forms
- Monolithic Insulated Concrete System
- Structural Stay-in-place formwork system
- Lost-in-place formwork system- Plaswall Panel system
- Lost-in-place formwork system- Plasmolite Wall Panels
- Sismo Building Technology
- Glass Fibre Reinforced Gypsum Panel System
- Stay-In-Place PVC Wall Forms
- Permanent Wall Form (PVC)



### PREFABRICATED SANDWICH PANEL SYSTEM

- Advanced Building System – Emmedue
- Rapid Panels
- Reinforced EPS Core Panel System
- QuickBuild 3D Panels
- Concrewall Panel System
- Prefabricated Fibre Reinforced Sandwich Panels
- Rising EPS (Beads) Cement Panels
- Flyash EPS (Beads) Cement Sandwich Panels
- PIR Dry Wall Pre-Fab Panel System
- Baupanel System
- V-Infill Wall (Light Weight EPS Wall)
- Nano Living System Technology



## Identification & Certification of Emerging Technologies



### LIGHT GAUGE STEEL STRUCTURAL SYSTEM

- Light Gauge Steel Framed Structure (LGSF)
- Light Gauge Steel Framed Structure with Infill Concrete Panel Technology

### PREFABRICATED STEEL STRUCTURAL SYSTEM

- Factory Made Fast Track Modular Building System
- Speed Floor System
- Continuous Sandwich (PUF) Panels with Steel Structure



### PRECAST CONCRETE CONSTRUCTION SYSTEM

- SRPL Building System (Waffle-Crete)
- Precast Large Concrete Panel System
- Industrialized 3-S system using RCC precast with or without shear walls, columns, beams, Cellular Light Weight Concrete Slabs/Semi-Precast Solid Slab
- Walltec Hollowcore Concrete Panel
- K-Wall Panels
- Robomatic Hollowcore Concrete Wall Panels
- Urbanaac Precast Construction Technology
- Integrated Hybrid Solution - One

During the implementation of Pradhan Mantri Awas Yojana-Urban (PMAY(U)), the quest to bring alternate and emerging construction systems from around the globe which can not only fast track delivery of quality sustainable houses but also comply with structural, functional and safety norms stipulated in Indian Standards gained importance. There has been good response from public and private agencies and State Governments and these new systems are being now slowly picked up and used in construction projects.

## Demonstration Housing Projects using Emerging Technologies

The Council has been disseminating proven and emerging building materials & technologies in different regions of the country through **identification, evaluation, standardization, certification, capacity building** and **field level application** of such technologies.

The Council during recent past, has undertaken Demonstration Housing Projects in different parts of India using alternate and emerging technologies with the objective of spreading awareness about these technologies and disseminate technical know-how in the States under the Pradhan Mantri Awas Yojana (Urban) – Housing for All Mission.

The efforts of the Council have helped in building up confidence and acceptability of proven and emerging technologies in public & private construction agencies, professionals etc.



*Demonstration Houses  
(36 DUs) constructed  
using Glass Fibre  
Reinforced Gypsum  
(GFRG) Panel System at  
Nellore, Andhra Pradesh*

*Demonstration Houses  
(32 DUs) constructed  
using EPS Core Panel  
System at Bhubaneswar,  
Odisha*





## Demonstration Housing Projects using Emerging Technologies



*Demonstration Houses (36 DUs) constructed using Structural Stay in Place Formwork System (Coffor) at Bihar Shariff, Bihar*



*Demonstration Houses constructed using Structural Stay in Place Formwork System (Coffor) (16 houses) and Light Gauge Steel Frame System (16 houses) at Gachibowli, Hyderabad, Telangana*



*Demonstration Houses (40 DUs) constructed using Stay in Place Double Walled EPS Panel System at Aurangabad Jagir, Lucknow, Uttar Pradesh*

## Performance Appraisal Certification Scheme (PACS)

(Through Gazette Notification No. I-1601 I/5/99 H-II in the Gazette of India No. 49 dated Dec.4, 1999)

Performance Appraisal Certification Scheme (PACS), being operated by BMTPC, is a third party voluntary scheme for providing Performance Appraisal Certificate (PAC) to manufacturers or installers of a product which includes building materials, products, components, elements and systems etc. after due process of assessment. The applications under PACS are processed on the basis of data furnished by the firms, information available on their websites, inspection of manufacturing plants at site of works and testing of samples of the products/systems etc. So far, the Council has issued 62 PACs on various products and systems.

### What PACS means to:

#### Society

- Economic benefits
- Environmental improvement

#### Users

- Data for informed choice
- 3rd party assessment of manufacturers claims
- Confidence in use

#### Designers

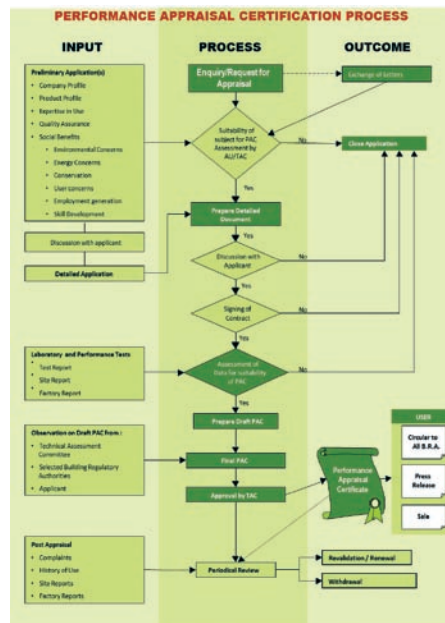
- Data for design
- Detailed specifications
- Information on limitations

#### Construction agencies

- Confidence in use
- Choice of alternative cost effective materials
- Installation instructions
- Training needs identified

#### Manufacturers/suppliers


- Marketing tool
- Technical assessment
- Verifies your claims
- Scheme details tailored to your needs



### Performance/Safety


#### Requirements, as applicable

- Mechanical/structural stability
- Fire resistance/rating
- Behaviour in rain storm and lashing rain
- Thermal performance
- Acoustic performance
- Behaviour under high winds/storms
- Behaviour under dynamic loads
- Seismic resistance
- Energy consumption
- Health/hygiene requirements
- Ventilation requirements
- Durability requirements
- Behaviour under different geoclimatic conditions



**Formwork for Monolithic Construction**

Building Materials & Technology Promotion Council  
Ministry of Housing & Urban Poverty Alleviation  
Government of India  
C-10, First Floor, India Habitat Centre,  
Lodhi Road, New Delhi - 110 003  
Tel: +91 (11) 2642 6000, 2642 6007, Fax: +91 (11) 2642 2600  
E-mail: [info@bmtpc.org](mailto:info@bmtpc.org), Web Site: [www.bmtpc.org](http://www.bmtpc.org)




**Glass Fibre Reinforced Gypsum Panel System**

Building Materials & Technology Promotion Council  
Ministry of Housing & Urban Poverty Alleviation  
Government of India  
C-10, First Floor, India Habitat Centre,  
Lodhi Road, New Delhi - 110 003  
Tel: +91 (11) 2642 6000, 2642 6007, Fax: +91 (11) 2642 2600  
E-mail: [info@bmtpc.org](mailto:info@bmtpc.org), Web Site: [www.bmtpc.org](http://www.bmtpc.org)


A 3<sup>rd</sup> Party Scheme to give data for informed building choice & confidence for use of New Building Products & Systems

Already similar schemes in operation in other countries like UK, Australia, New Zealand, France, South Africa besides India



**PIR DRY WALL PRE-FAB PANEL SYSTEM**

Building Materials & Technology Promotion Council  
Ministry of Housing & Urban Poverty Alleviation  
Government of India  
C-10, First Floor, India Habitat Centre,  
Lodhi Road, New Delhi - 110 003  
Tel: +91 (11) 2642 6000, 2642 6007, Fax: +91 (11) 2642 2600  
E-mail: [info@bmtpc.org](mailto:info@bmtpc.org), Web Site: [www.bmtpc.org](http://www.bmtpc.org)



**Structural Stay-in-Place Formwork System**

Building Materials & Technology Promotion Council  
Ministry of Housing & Urban Poverty Alleviation  
Government of India  
C-10, First Floor, India Habitat Centre,  
Lodhi Road, New Delhi - 110 003  
Tel: +91 (11) 2642 6000, 2642 6007, Fax: +91 (11) 2642 2600  
E-mail: [info@bmtpc.org](mailto:info@bmtpc.org), Web Site: [www.bmtpc.org](http://www.bmtpc.org)



## Standardisation & Product Evaluation

BMTPC provides technical inputs to various Sectional Committees of Bureau of Indian Standards (BIS), for formulation of Indian Standards on subjects related to Civil Engineering since inception. Working with BIS, the Council has facilitated formulation of Indian Standards on a number of proven alternate technologies. Formulated Working Specifications on cost-effective, environment-friendly, energy-efficient building materials and techniques and most of these specifications have been included in the Schedule of Specifications of Central Public Works Department (CPWD).

### Introduction of Emerging Technologies in National Building Code 2016 by BIS

Provisions have been updated in National Building Code 2016 to ensure use of new/alternative building materials and technologies to provide for innovation in the field of building construction. Updated provisions on new alternate technologies for speedier construction have also been included in Part-5 BUILDING MATERIALS; Part-6 STRUCTURAL DESIGN: Section 7 Prefabrication and Systems Building and Mixed/Composite Construction, 7A Prefabricated Concrete, 7B Systems Building and Mixed/Composite Construction and Part-7 CONSTRUCTION MANAGEMENT, PRACTICES AND SAFETY.

After detailed deliberations with BMTPC and due consultation with their concerned experts, BIS has included the following technologies in the National Building Code (NBC) 2016.

- Monolithic Concrete Construction System using Aluminum Formwork/Plastic & Aluminum Formwork- Modular aluminium formwork system, is covered in Cl. 6.3 of NBC: Part 6/Section 7B
- Expanded Polystyrene Core Panel is, covered in NBC: Part 6/Section 7A
- Industrialized System using Precast RCC Columns, Beams & Cellular Light Weight Concrete Precast RCC Slabs, is covered in NBC: Part 6/Section 7A
- Cold-rolled Formed Steel Joist Based /composite Concrete Floor System is, covered in NBC: Part 6/Section 7B in general covers use of various combinations of materials for mixed/composite buildings.
- Glass Fibre Reinforced Gypsum (GFRG) Panel Building System is, covered in Included in NBC: Part 7.
- Factory made pre-engineered steel structures with reinforced concrete Expanded Polystyrene core based panel or any other alternative infill walls is, covered in NBC: Part 7
- Light Gauge Steel Framed Structures (LGSF) is, covered in NBC: Part 7
- Rat Trap Bond for masonry is included in the NBC.

### INCLUSION OF EMERGING TECHNOLOGIES BY CPWD

With the efforts of the Ministry and BMTPC, CPWD has approved 16 new and emerging technologies for adoption in CPWD works for the benefit of all users vide OM No. 133/SE(TAS)/DSR/2019/115-H dated 12.03.2019:

- 1 Monolithic concrete construction system using Aluminium Formwork
- 2 Monolithic concrete construction system using Plastic-Aluminium Formwork
- 3 Reinforced EPC Panel Systems
- 4 Light Gauge Sheet Framed Structures (LGSF)
- 5 Industrialized 3-S system using RCC precast with or without shear walls, columns, beams, cellular light weight concrete slabs/semi-precast solid slab
- 6 Speed floor system
- 7 Glass Fibre Reinforced Gypsum (GFRG) Panel Building System
- 8 Factory made Fast Track Modular Building System
- 9 Non Asbestos fibre Reinforced aerated sandwich wall/ roof/floor light weight solid core panel (Prefabricated Fibre Reinforced sandwich panels)
- 10 EPS Cement sandwich wall/roof/floor light weight solid core panel
- 11 Block Masonry using AAC blocks

- 12 Block Masonry using Fly ash bricks
- 13 Reinforced Soil Technology using Technical Textiles
- 14 Use of self-compacting Concrete
- 15 Use of Confined Masonry
- 16 Use of C&D Waste Products in Construction

Following 13 new and emerging technologies have also been approved by CPWD vide OM No.133/SE(TAS)/DSR/2019/376-H dated 17.09.2019:

1. Advanced building system-EMMEDUE
2. Rapid panels
3. QuickBuild 3D panels
4. Concrete panel system
5. Bau Panel system
6. Flyash EPS (Beads) cement sandwich panels
7. Rigid EPS (Cellular plastic material) blocks
8. Light Gauge Steel Framed Structure with infill Concrete panel technology
9. SRPL Building System (Waffle-Crete)
10. Precast Large concrete Panel System
11. Walltech Hollow core concrete panel
12. Robomatic Hollow concrete wall panels
13. Stamping concrete

**CPWD has published Schedule of Rates 2018 for new and innovative technologies.**

# Disaster Mitigation & Management

BMTPC has been front runners in the area of Disaster Mitigation & Management. BMTPC is committed to promote the pro-active approach towards it and has been educating professionals and creating mass awareness amongst various stakeholders including common man through publications, guidelines, vulnerability atlas, retrofitting and handholding.

**Vulnerability Atlas of India, 2019 (Third Edition)** – A Tool to natural disaster prevention, preparedness and mitigation for housing and related infrastructure Building

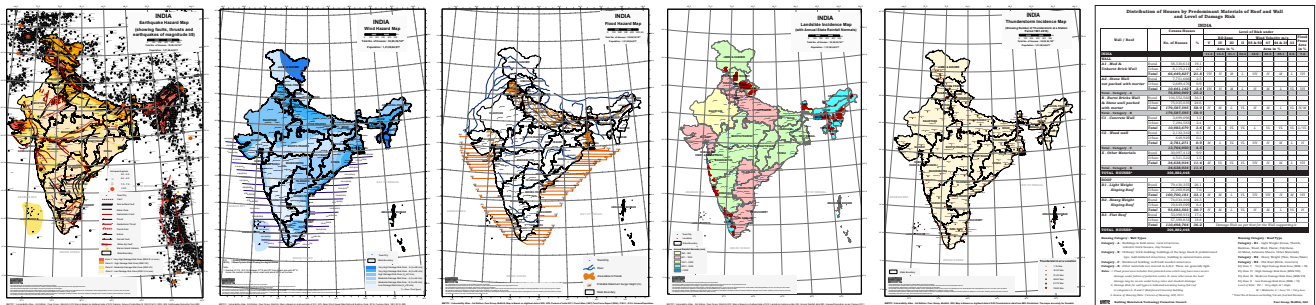


Shri Narendra Modi, Hon'ble Prime Minister, released the digital version of Third Edition of Vulnerability Atlas of India on the occasion of Global Housing Technology Challenge - India (GHTC-India) on 2<sup>nd</sup> March, 2019 at New Delhi

## Assessment of Damage Risk Levels as a Tool for Preparedness

- District-wise identification of Vulnerable Areas
- District-wise Indicative Risk Assessment of existing Housing Stock

The Council brought out the first ever Vulnerability Atlas of India in 1997 and the second edition of the Atlas was brought out in 2006. The Third Edition of Atlas brought out in 2019 presents the digitized State/UT-wise Hazard Maps with respect to Earthquakes, Winds & Floods and Incidence maps for Landslides, Thunderstorms & Cyclones and district-wise Housing Vulnerability Tables as per 2011 Census Housing data for earthquake, wind, flood hazards.



The Atlas is a useful tool not only for public but also for Urban Managers, State & National Authorities dealing with disaster mitigation and management.

## e-Course on Vulnerability Atlas of India



Shri Hardeep S Puri, Hon'ble Minister of State (I/C) for Housing and Urban Affairs and Civil Aviation and Minister of State for Commerce & Industry, Government of India launched the e-Course on Vulnerability Atlas of India on August 29, 2019 at New Delhi

The e-Course on Vulnerability Atlas of India has been launched to provide awareness and understanding about natural hazards, helps identify regions with high vulnerability with respect to various hazards (earthquakes, cyclones, landslides, floods, etc.) and specifies district-wise level of damage risks to the existing housing stock.

The e-Course is being offered jointly by the School of Planning & Architecture, New Delhi and BMTPC.



## Who can Benefit

- Students/ Faculty/ Practitioners/ Researchers/ Individuals
- Defence/ Central Armed Police Forces
- National/ State Disaster Management Authorities
- Central/ State/ Local Government Officials
- Public/ Private Professionals
- Consulting Organisations, Civil Society Organisations
- Construction Agencies/ Organisations



# Disaster Mitigation & Management

## Thematic Workshop on Vulnerability Atlas of India and Disaster Resistant Design & Construction Practices

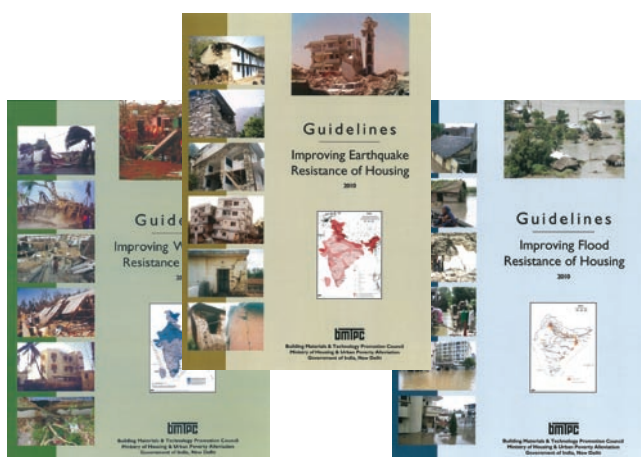
In order to educate about the hazard scenario of the country and indicative risk assessment as given in Vulnerability Atlas of India, the Secretary, Ministry of Housing & Urban Affairs, Govt. of India addressed all Chief Secretaries of State/UTs, IITs, CPSUs and Central Ministries/Deptt. to organize state level one-day workshops. The Council has received overwhelming response for organization of Thematic Workshops. The Thematic Workshops on Vulnerability Atlas of India and Disaster Resistant Design & Construction Practices are being organised across India and so far six such workshops have been organised:

- For stakeholders of Government, Semi-Government, Ministries and PSUs in NCR region at New Delhi.
- For students and faculty members of Architecture & Civil Engineering Colleges at IIT Tirupati.
- For engineers, architects and designers of MECON Ltd. at Ranchi
- For State Govt. officials and students of Architecture & Civil Engineering Colleges with Town & Country Planning Department, Puducherry at Puducherry.
- For engineers of Engineers India Ltd. at Engineers India Ltd. Gurugram Campus.
- For educational institutions under Ministry of Human Resource Development and engineers of Engineering Projects (India) Ltd. at New Delhi.



## Guidelines and Manuals

BMTPC has published a number of Guidelines, Informative Booklets and Manuals relating to housing in disaster prone areas affected by Earthquakes, Floods, Cyclones, Landslides etc., for use by the professionals and the common man.



## Seismic Strengthening of Buildings

Besides, dissemination of earthquake resistant construction technologies and systems, retrofitting of life line buildings undertaken in Jammu & Kashmir, Gujarat, Uttarakhand and Delhi as demonstration projects.



## BMTPC's Role in Pradhan Mantri Awas Yojana (Urban)

The Ministry of Housing & Urban Affairs, Government of India is implementing “Pradhan Mantri Awas Yojana (Urban) - Housing for All” Mission. The Council has been designated appraisal and monitoring agency under Pradhan Mantri Awas Yojana (Urban) for projects in various States/UTs falling in Earthquake Zone IV and Zone V and undertake TPIM review and capacity building of functionaries of state local bodies. The Council is undertaking site visits and scrutinizing the DPR of various projects as per the direction of the HFA Directorate.

### Technology Sub-Mission

A Technology Sub-Mission has been set up under PMAY(U) with the objective of providing “Sustainable Technological Solutions for Faster & Cost Effective Construction of Houses suiting to Geo-Climatic and Hazard Conditions of the Country”. The Sub-Mission facilitates adoption of modern, innovative and green technologies and building material for faster and quality construction of houses. Sub-Mission also assist States/Cities in deploying disaster resistant and environment friendly technologies in collaboration with IITs/ NITs/SPAs. BMTPC is working as Secretariat of the Technology Sub-Mission.

### Participation in Global Housing Technology Challenge - India

BMTPC provided technical support for Global Housing Technology Challenge-India (GHTC-India). The Construction Technology India (CTI) - an Expo-cum-Conference was organized from 2-3 March, 2019 at New Delhi under GHTC-I. CTI is a biennial event to take stock of innovations in construction. Through GHTC-India, Ministry of Housing & Urban Affairs, Government of India seeks to identify cost-effective and speedy construction technologies. The identified technologies with the capability to provide maximum number of houses in minimum time and cost would be mainstreamed into the Indian construction industry and piloted across different climatic conditions of the country. A basket of proven technologies were shortlisted for Light House Projects (LHPs). The proven technologies are being showcased through execution of Light House Projects (LHPs) across six States. These LHPs will be live laboratories to establish clean and green construction practices across India

### Sensitization Programmes on Emerging Technologies for Housing

BMTPC organizes sensitization programmes on regular basis in various States to sensitize the engineers & architects to introduce them the proven and emerging technologies in housing sector for construction of houses under PMAY (Urban) and other schemes of the state/ central Government.



Seminar on Emerging Technologies for Affordable Housing at Amity University, NOIDA Campus



Seminar on New Trends in Building Material & Sustainable Technology with Department of Architecture & Planning, Gautam Buddha University, Greater Noida



Sensitization Programme on “Use of New Technologies in Mass housing” under PMAY (Urban) at Lucknow

and will help in sustainable construction. BMTPC is actively involved in the implementation of Light House Projects.



## BMTPC's Role in Pradhan Mantri Awas Yojana (Urban)

### Mainstreaming Emerging Technologies

BMTPC has been providing technical support and handholding various States/Departments for identifying and finalizing new emerging technologies for their future projects. This includes guiding them in preparation of EoI w.r.t. eligibility conditions for new technologies, suggest use of emerging technologies for their projects and suitable modifications in the tender document, appraisal of DPR and also providing inputs during the pre-bid meetings, etc.

There has been good response from public and private agencies and State Governments e.g. Andhra Pradesh, Chhattisgarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Puducherry, Tamil Nadu, Telangana, Tripura, Uttar

Pradesh, Uttarakhand and West Bengal. They have started using these new systems in their construction projects. Some of Central Govt. Deptts. such as MES, Ministry of Defence, CRPF, BSF, Police Housing Corporation, CPWD, NBCC, HPL, IITs have also started using emerging technologies.

New technologies mainly used are EPS and other Sandwich Panel, Monolithic RCC using Aluminum Formwork, Monolithic RCC using Tunnel Formwork, Precast RCC Technology, Precast RCC (Wafflecrete), SLIP form work, Precast 3D Volumetric Technology, Prefabricated Steel Structure, Structural Stay-in-Place Formwork System, Light Gauge Steel Frame Structure, Glass Fibre Reinforced Gypsum Panel System, etc.





## Capacity Building and Skill Development

With the emergence of new building materials, advancement of technologies and the need for disaster resistant construction to mitigate the effect of natural disasters, it is important that working professionals regularly update their knowledge and understanding of subjects.

Realising this need, the Council organizes Awareness Generation Programmes, Workshops, Exhibitions, Capacity Building and Training Programmes for construction professionals and workforce on continual basis. In addition, BMTPC also participates in exhibitions, conferences, symposiums, seminars, workshop, etc. to disseminate the information. These programmes are being organised by BMTPC in collaboration with Academic, R&D, NGOs and public & private Institutions.



National Workshop on "Processing and Use of Construction & Demolition Waste" at New Delhi



National Seminar on Emerging Building Materials & Construction Technologies at New Delhi



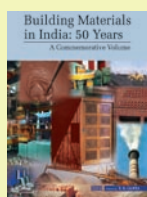
Workshop/ Hands on for Fly Ash Brick Manufacturers organised at Jhajjar, Haryana



Workshop on Use of Bamboo in Housing & Building Construction at Namsai, Arunachal Pradesh



## Priced Publications of BMTPC



**BUILDING MATERIALS IN INDIA : 50 YEARS** - 560 pages, Rs.1500 + 200 postage



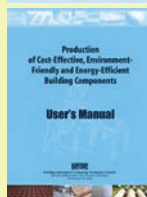
**MANUAL ON WATERPROOFING OF GFRG BUILDINGS**  
70 pages, Rs. 200 + 50 postage



**SCHEDULE OF ITEMS & RATE ANALYSIS FOR GFRG CONSTRUCTION**  
50 pages, Rs. 200 + 50 postage



**STANDARDS AND SPECIFICATIONS FOR COST EFFECTIVE INNOVATIVE BUILDING MATERIALS AND TECHNIQUES INCLUDING RATE ANALYSIS (SECOND EDITION)**  
200 pages, Rs. 250 + 75 postage



**USER'S MANUAL on Production of Cost-Effective, Environment-Friendly and Energy-Efficient Building Components** - 116 Pages, Rs. 250 + 50 postage



**MANUAL ON BASICS OF DUCTILE DETAILING** - 27 pages, Rs. 100+50 postage



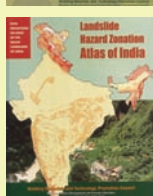
**SUSTAINABLE BUILDING TECHNOLOGIS** - 352 pages, Rs. 995+75 postage



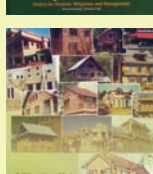
**GUIDEBOOK ON EARTHQUAKE RESISTANT DESIGN AND CONSTRUCTION** - 366 pages, Rs. 1000+200 postage



**VULNERABILITY ATLAS OF INDIA** (First Revision – 2006) - Earthquake, Windstorm and Flood Hazard Maps and Damage Risk to Housing - 900 pages, Rs. 5000 + 200 postage



**LANDSLIDE HAZARD ZONATION ATLAS OF INDIA** - Landslide Hazard Maps and Cases Studies - 125 pages, Rs.2500 + 200 postage



**BUILDING A HAZARD- RESISTANT HOUSE: A COMMON MAN'S GUIDE-** 88pages, Rs. 350+75 postage



**MANUAL FOR RESTORATION AND RETROFITTING OF BUILDINGS IN UTTARAKHAND AND HIMACHAL PRADESH** - 134 pages, Rs.250+ 75 postage



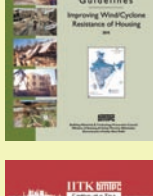
**GUIDELINES FOR IMPROVING EARTHQUAKE RESISTANCE OF HOUSING** - 84 pages, Rs. 350 + 75 postage



**GUIDELINES FOR IMPROVING FLOOD RESISTANCE OF HOUSING** - 36 pages, Rs. 200 + 50 postage



**GUIDELINES FOR IMPROVING WIND/CYCLONE RESISTANCE OF HOUSING** - 50 pages, Rs. 350 + 75 postage



**EARTHQUAKE TIPS – LEARNING EARTHQUAKE DESIGN & CONSTRUCTION** (Third Edition) 76 pages, Rs.200 + 50 postage

Publications can be obtained by making ONLINE payments to the BMTPC Account:

A/c No.: 62054931366  
A/c Name: Building Materials & Technology Promotion Council  
Bank Name: State Bank of India  
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Note:  
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**For Further Details please contact:**

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