

Annual Report

2014-2015



bmtpc

Building Materials and Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation
Government of India

Annual Report 2014-2015



Building Materials & Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation, Govt. of India
Core-5A, First Floor, India Habitat Centre, Lodhi Road
New Delhi – 110003

FOREWORD

It is my proud privilege and pleasant duty to table the Twenty-fifth Annual Report of my organization i.e. the Building Materials & Technology Promotion Council for the year 2014-2015, an autonomous council under Ministry of Housing & Urban Poverty Alleviation, Govt. of India.

Since its inception in 1990, BMTPC has completed 25 years of service to nation with an obligation to promote cost effective, eco-friendly, energy-efficient building materials including disaster resistant construction practices, primarily based on locally available materials and local skills for field level applications. In this expedition of promotion of alternate materials other than conventional brick & concrete construction, BMTPC had to strive really hard with rejuvenated efforts several times so as to change the mind-sets of professionals & users and make them understand the positives of sustainable technologies. With the fast changing demography & continuous urban migration coupled with international exposures, the aspiration of construction sector, professional & users have also taken leapfrog. The terms new to construction industry a few years ago are now in demand such as zero energy building; prefabrication in construction; pre-engineered building; factory made building components; fast track construction etc. Also, looking at the housing shortage and demand & supply scenario especially in urban areas, BMTPC in recent years has made visible strides in identifying and evaluating as many as eight prospective construction systems/technologies for mass housing. Also, a few state governments have already started embracing these new technologies to tackle housing shortage in their respective states. A booklet containing technology profiles of these systems published this year is going to be a game changer and will go a long way in creating better, safe & quality housing stock. There has been good response from public and private agencies and slowly albeit surely, state governments have started incorporating these new systems in their conventional construction tenders. The mass housing projects recently being executed by DSIIDC, DDA & DUSIB in Delhi, KSDB in Karnataka, AHM in Gujarat, APSHCL in AP, MHADA & Pimpri-Chinchwad Municipal Corporation in Maharashtra stand testimony to BMTPC's efforts.

One of the important components of technology transfer is demonstration construction using alternative materials and technologies. BMTPC since beginning has been instrumental in constructing model demonstration houses in different parts of the country. This year, BMTPC is also embarking upon demonstration housing projects using emerging construction systems in different states. A few states have already given their consent in participating and promoting these technologies. BMTPC is also helping actively states for identification & selection of new housing technologies for their respective states. The state level sensitization programmes & workshops are being organized along with hand holding of state engineers so that emerging technologies can be mainstreamed.

In addition, BMTPC also evaluates and certifies prospective construction systems & new materials and products so as to bring economy, quality, environmental protection and speed in housing construction. Several emerging technologies have been awarded certificate under the Performance Appraisal Certification Scheme (PACS) of BMTPC and number of them are being evaluated namely Speed Floor System, Light Gauge Framed Steel Structure, Glass Fibre Reinforced Gypsum Building (Gypwall) Panel System, QuickBuild 3D Panels, Modular Tunnelform, Waffle-Crete, Walltec Hollowcore Concrete Wall, Plastic Honeycomb Toilet Structure and Aluminium Formworks etc. Till date, BMTPC has issued Performance Appraisal Certificates (PAC) for 30 products/systems covering various items.

BMTPC has been proactively supporting and work as a technical resource Centre for Ministry of Housing & Urban Poverty Alleviation's Mission schemes such as JNNURM, RAY, 10% Lump sum Provision for NER, NULM & Housing for All etc. This year also, the Council continued its involvement in the implementation of Rajiv Awas Yojna (RAY) by way of appraising and monitoring the projects in addition to ongoing BSUP and IHSDP schemes under JNNURM. The Council has also been involved in handholding of ULBs, consultant in the area of project preparation, appraisal & monitoring and quality assurance & control. Third Party Inspection & Monitoring (TPIM) reports for BSUP and IHSDP under JNNURM are also being reviewed by BMTPC for subsequent releases.

One of the strength of BMTPC has been Disaster Mitigation & Management. BMTPC is committed to establish the proactive approach towards it and has been in the forefront in educating professionals and creating mass awareness amongst various stakeholders including common man. Recognizing BMTPC's effort & it's widely used publication Vulnerability Atlas of India 1997 & 2006, the National

Disaster Management Authority (NDMA) entrusted BMTPC for the development of updated Earthquake Hazard Zoning Maps up to district level based on IS:1893-2002. The state & district wise seismic zoning Maps for the entire country are ready to print. The maps also contain some useful layers on ArcGIS platform and attributes such as roads, railway network, water bodies, housing and population data besides earthquake history & fault mapping. In order to provide Training of Trainers in earthquake resistant design and construction, the Council has joined hands with Bihar Institute of Public Administration & Rural Development (BIPARD), Bihar State Disaster Management Authority (BSDMA), Government of Bihar. Under the programme, a series of training programmes have been organized for the engineers and architects of Government of Bihar. BMTPC, IIT Roorkee and NORSAR, Norway also organized two Indo-Norwegian Training Programmes on Seismic Design of Multi-storey Buildings: IS 1893 vs. Eurocode 8 at New Delhi. Besides, during the year, BMTPC brought out a publication entitled "Guidelines on Rapid Visual Screening of Buildings of Masonry and Reinforced Concrete as Prevalent in India". Rapid Visual Screening is a simple rapid procedure for evaluation of the vulnerability profile of a building.

The Council also participated in the HUDCO BuildTech 2014 and put up exhibition on Alternate and Emerging Building Materials and Construction Systems during India International Trade Fair at Pragati Maidan, New Delhi. BMTPC exhibition also included participation by various technology providers/companies in the area of emerging housing technologies by putting up their display within the BMTPC area. Like preceding years, on the occasion of World Habitat Day 2014, the Council brought out the Special Issue of "Nirman Sarika" on the theme "Voices for Slums" chosen by the UN-Habitat for the year and organized a painting competition for Differently Abled Children and the winners were felicitated during the World Habitat Day celebrations.

With varying geo-climatic conditions hazard scenario and availability of building materials, it is required to develop regions specific Standard & Specification of dwelling units with different alternate technologies, which may serve as useful guidelines for designers while planning the dwelling units. BMTPC initiated the exercise, in consultation with State Governments to develop such guidelines. In the area of skill development, the Council continued its efforts to provide training to the professionals and artisans for the use of alternate building materials and disaster resistant technologies. Also, BMTPC has brought out "Building Artisan Certification System" under an initiative entitled 'Evolving Building Artisan Certification Program at National Level' for skill up-gradation of the existing building artisans. This document contains the details of the Certification System for 8 modules i.e. Assistant Mason, Mason, Disaster-Resistant Construction, Shuttering Certificate, Concreting, Bar-Bender, Repairs of Masonry and RC Elements in Masonry Building & Appropriate Building Materials and Construction Systems. With a focus on development and promotion of innovative building technologies, specific R&D projects have also been initiated. The website of the Council is being updated regularly for inclusion of latest activities and information. There is good response on website in the form of general enquiry about product and services.

It is my privilege to acknowledge the valuable guidance, support and encouragement received from the President and Members of the Board of Management, the Chairperson and Members of the Executive Committee and Ministry of Housing & Urban Poverty Alleviation for various programmes undertaken and executed by the Council. BMTPC is grateful to Planning Commission, Parliamentary Standing Committee on Urban Development, JNNURM & RAY Mission Directorate, MoHUPA, various State Govts., Municipal Corporations and Urban Local Bodies, Ministry of Home Affairs, Ministry of DONER, NDMA, NIDM, MOS&PI, DST, CSIR, IITs, CEPT, IPIRTI, CBRI, SERC, ICI, IIHRD, SEP, SPA, HUDCO, BIS, NHB, NCHF, HPL, CGEWHO, CPWD, NSIC, CIDC, BIPARD, UNDP, UNIDO, RICS school of Built Environment, TAC and UN-Habitat for their continued support and interest in strengthening and supporting the efforts of the Council over successive years.

I would also like to place on record my deep appreciation for the cooperation of officers of BMTPC and its staff members for timely implementation of the Council's activities. The Council acknowledges the support and cooperation received from all officers and staff members of the Ministry of Housing & Urban Poverty Alleviation, which helped the Council to meet its mandate and further its objectives.

(Dr. Shailesh Kr. Agrawal)
Executive Director

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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.”

INTRODUCTION

Building Materials & Technology Promotion Council (BMTPC), established in 1990, is an autonomous organisation fully supported by the Ministry of Housing & Urban Poverty Alleviation, Govt. of India. BMTPC is entrusted to promote cost-effective, environment-friendly and energy-efficient building materials and housing technologies including disaster resistant construction practices for large scale field application.

To realise various objectives enshrined within the mandate of the BMTPC, the Council initiated several multi-disciplinary activities so as to create enabling environment for sustainable building construction. The Council in recent years has reoriented its approach towards promotion of not only sustainable technologies through intensive evaluation, dissemination but also identifying emerging prefabricated housing technologies from abroad for social mass housing. Over the years, the Council has been striving for the successful transfer of the innovative, cost-effective, environment-friendly and energy-efficient alternate building materials and technologies at grass-root level. The Council also initiated the field level application of these materials and technologies through demonstration construction of model houses and other structures such as informal markets, community centre, etc. in different parts of India. In its technology development, promotion and dissemination efforts, the Council developed various technologies for use in housing and building construction including bamboo based housing technologies.

The Council also constructed demonstration structures in the North Eastern Region and helped in setting up Bamboo Mat Production Centres to make available the bamboo mats for the production of bamboo mat related products such as corrugated sheets, bamboo boards, etc. leading to employment generation. Apart from bringing out the first ever Vulnerability Atlas of India in 1997 and then in 2006, the Council regularly publishes valuable guidelines/manuals on disaster resistant construction. In order to create awareness regarding seismic retrofitting, the Council has undertaken retrofitting of few MCD schools in Delhi. The Council has also been designated as one of the Appraisal and Monitoring Agencies for Projects under BSUP and IHSDP under the Rajiv Awas Yojana (RAY) and Jawaharlal Nehru National Urban Renewal Mission (JNNURM) which are mission mode programmes of Ministry of Housing & Urban Poverty Alleviation.

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.

Thrust Areas

- Identification, evaluation and promotion of proven and emerging housing technologies available for housing sector nationally and internationally.
- Promoting speed, economy, efficiency and quality in construction.
- Creating enabling eco-system for mass application of technologies through upscaling of technologies, know-how acquisition, absorption and dissemination.
- Field level application of environment-friendly, energy-efficient and disaster resistant technologies for proven, locally available and emerging technologies, through demonstration construction.
- Formulation of Specifications, Schedules, Standards on proven building materials/technologies including emerging technologies/systems.
- Development of design packages using alternate technologies for affordable housing.
- Documentation of benefits, durability and acceptability of cost effective and innovative building materials and technologies.
- Skill upgradation of professionals and construction workers through capacity building programmes, training programmes, seminars, conferences, workshops, exhibitions nationally as well as internationally.
- Promoting disaster resistant construction technologies.
- Appraisal, monitoring and third party inspection of housing projects including undertaking project management and consultancy services.
- Publication of user manuals, guidelines, compendiums, directories, brochures, techno-feasibility reports, video films, demonstration CDs, interactive website, blogs including documentation of success stories.

Administration and Management

BMTPC discharges its administrative and technical duties following three-tier system which is as follows:

- i. Board of Management headed by Hon'ble Minister of Housing & Urban Poverty Alleviation
- ii. Executive Committee headed by Secretary, HUPA
- iii. Executive Director

The Board of Management of the Council consists of 14 Members from Ministry of Housing & Urban Poverty Alleviation, Planning Commission, Ministry of Science & Technology, Ministry of Micro, Small & Medium Enterprises, Ministry for the Development of North Eastern Region, National Disaster Management Authority, Council of Scientific & Industrial Research, Central Public Works Department (CPWD) and Housing & Urban Development Corporation (HUDCO).

The Executive Committee consists of 10 Members from Ministry of Housing & Urban Poverty Alleviation, Planning Commission, Housing & Urban Development Corporation (HUDCO), Central Building Research Institute (CBRI) and Technical Experts.

Board of Management

S.No.	Members	
1	Shri. M. Venkaiah Naidu Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs, Government of India	President
2	Shri Babul Supriyo Hon'ble Minister of State for Housing & Urban Poverty Alleviation and Urban Development Government of India	Vice-President
3	Dr. Nandita Chatterjee Secretary Ministry of Housing & Urban Poverty Alleviation, Government of India	Vice-President
4	Senior Advisor (HUD) Planning Commission Government of India	Member
5	Prof. Ashutosh Sharma Secretary, Ministry of Science & Technology Government of India	Member
6	Dr. Anup K.Pujari Secretary, Ministry of Micro, Small & Medium Enterprises, Government of India	Member
7	Shri Naveen Verma Secretary, Ministry for the Development of North Eastern Region, Government of India	Member
8	Secretary National Disaster Management Authority, Government of India	Member
9	Dr. Girish Sahni Director General Council of Scientific & Industrial Research	Member

S.No.	Members	
10	Shri Divakar Garg Director General Central Public Works Department	Member
11	Dr. M. Ravi Kanth Chairman & Managing Director, Housing & Urban Development Corporation	Member
12	Shri Harish Kumar Arora D 6&7, Lajpat Nagar-III New Delhi-110024	Expert Member
13	Shri Rajiv Ranjan Mishra Joint Secretary (Housing) Ministry of Housing & Urban Poverty Alleviation, Government of India	Member
14	Ms. Jhanja Tripathy Joint Secretary & FA, Ministry of Housing & Urban Poverty Alleviation, Government of India	Member
15	Dr. Shailesh Kr. Agrawal Executive Director, Building Materials & Technology Promotion Council	Member - Secretary

Executive Committee

S.No.	Members	
1	Dr. Nandita Chatterjee Secretary, Ministry of Housing & Urban Poverty Alleviation, Government of India	Chairperson
2	Shri Rajiv Ranjan Mishra Joint Secretary (Housing) Ministry of Housing & Urban Poverty Alleviation, Government of India	Member
3	Ms. Jhanja Tripathy Joint Secretary & FA, Ministry of Housing & Urban Poverty Alleviation, Government of India	Member
4	Shri. Sanjeev Kumar Joint Secretary (HFA) Ministry of Housing & Urban Poverty Alleviation, Government of India	Member
5	Senior Advisor (HUD) Planning Commission Government of India	Member
6.	Dr. M. Ravi Kanth Chairman & Managing Director, Housing & Urban Development Corporation	Member
7	The Director Central Building Research Institute Roorkee	Member
8	Prof. A. S. Arya Professor Emeritus and Former National Seismic Advisor, Ministry of Home Affairs	Member
9	Shri. Kuldeep Singh Channa C-119/ D/S Ramesh Nagar, New Delhi-110015	Co-opted Member
10	Dr. Shailesh Kr. Agrawal Executive Director, Building Materials & Technology Promotion Council	Member - Secretary

MAJOR INITIATIVES AND ACTIVITIES DURING THE YEAR 2014-2015

I. DEMONSTRATION BUILDINGS USING ALTERNATE TECHNOLOGIES

1. Demonstration Housing Projects using Green/Emerging Technologies in different parts of the country

Housing for All by 2022 is one of the important agenda of Government of India. The Government is planning to adopt an approach to act as a 'facilitator' and 'enabler' by developing suitable instruments to be used by the State Government for promotion of housing for the Economically Weaker Section (EWS) and Low Income Group (LIG) serviced with basic amenities.

In the context of the massive housing initiatives by the Government of India and various State/ UT Governments under various schemes / programme, an urgent need is now felt around the country to propagate and popularize the proven / green and emerging technologies vigorously and introduce appropriate interventions to close the gap between availability of these technology options and application of the same increasingly in large scale Housing initiatives.

The Council has been promoting proven and emerging building materials & technologies in different regions of the country through identification, evaluation, standardization, certification, capacity building & training and field level application of such technologies. The council, during recent past, has constructed a number of demonstration houses in various parts of the country. 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.

In a fresh bid to popularize and mainstream the Proven / Green and Emerging technologies, as a part of the effort to make housing affordable, the Council has initiated a demonstration housing project for construction of demonstration houses with these technologies in various parts of the country. Through demonstration housing construction, BMTPC will also provide training to local construction workforce and organize capacity Building programmes for the state professionals so as to create awareness and sensitize public in the region.

The Council has formulated guidelines for undertaking the Demonstration Housing Project with the State Governments. Each Demonstration Housing Project will comprise around 40 houses in each cluster in a single storey or in G+1 to G+3 having minimum carpet area of 25

sq.mts. including on site infrastructure development like internal roads, pathways, boundary wall, UG tank, electrification etc. The cost of Demonstration Housing Project will be fully borne by BMTPC. The State Governments will provide suitable land measuring approximately one acre free of cost for the demonstration construction with all necessary outside infrastructure support.

The Council through the Ministry of Housing & Urban Poverty Alleviation has requested the State Governments of Maharashtra, Kerala, Andhra Pradesh, Telengana, Odisha, Haryana, Rajasthan, West Bengal, Karnataka and Sikkim to undertake Demonstration Housing Project in their respective State. The States that are willing to participate and partner in the Demonstration Housing Project would be expected to commit to adopt these technologies for construction of houses in their mainstream public works agencies and departments.

II. DISASTER MITIGATION - REPAIR, RECONSTRUCTION AND RETROFITTING

1. 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.

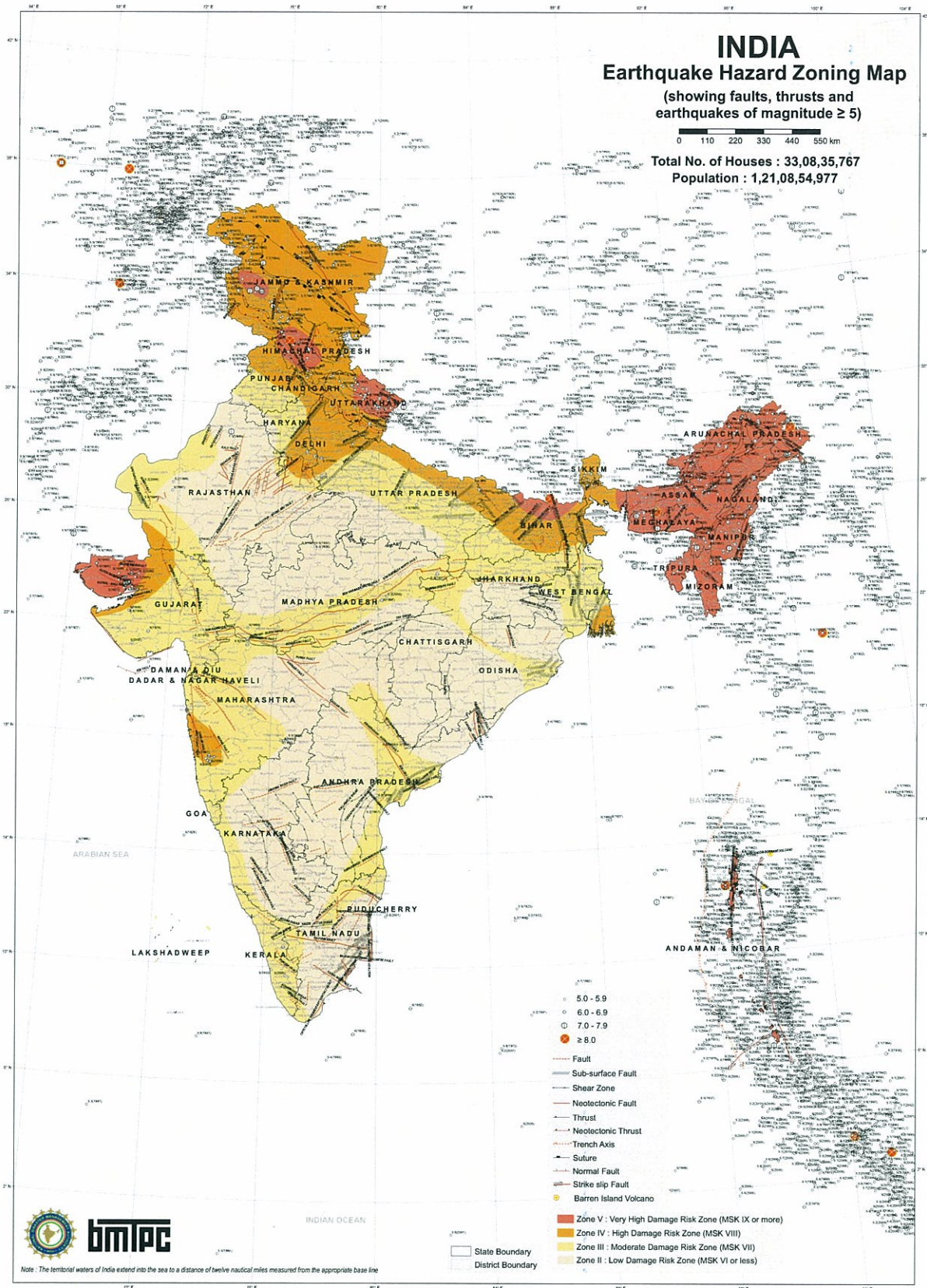
2. Preparation of Updated Earthquake Hazard Zoning Maps and Atlases

Looking at the recurrent earthquakes and associated risks in Indian context during recent years, the National Disaster



Capacity Building Programme on Earthquake Resistant Structures and Retrofitting of Buildings for NCR Region from 12-13 February, 2015 at New Delhi





NDMA - BMTPC Earthquake Hazard Zoning Map: Map is Based on digitised data of SOI, GOI; Seismic Zones of India Map IS: 1893 (Part I) - 2002, BIS, GOI; Earthquake Epicentre from IMD, GOI; Selsmotectonic Atlas of India and its Environs, GSI, GOI; Houses/Population as per Census 2011. "(First Edition, 2015) " Disclaimer: The maps are solely for thematic presentation.

Note: For commercial use of the map, permission is required from NDMA. For other purposes, acknowledgement is to be given.

Updated Earthquake Hazard Zoning Map prepared under NDMA Project

Management Authority (NDMA), Government of India entrusted BMTPC the task of preparing updated earthquake hazard maps up to district level incorporating latest data as available from Survey of India, Census of India, Geological Survey of India, India Metrological Department etc. based on Seismic Zoning Map of India as per IS:1893-2002.

The Council has completed preparation of updated Earthquake Hazard Zoning Map for the whole country up to district level based on the Survey of India administrative boundary data. Subsequently, it was desired by NDMA that boundary data of sub-division (blocks) to be taken from Census of India Atlas 2011. Recently, the Census of India has uploaded the boundary data on the server created with NIC. Now NIC will provide VPN account to share data with BMTPC and NDMA. After the VPN account is made operational the updated Earthquake Hazard Zoning Maps will be prepared based on Census data.

3. Training of Trainers (TOT) Programme on Earthquake Resistant Design & Construction for State Engineers and Architects

The Bihar Institute of Public Administration and Rural Development (BIPARD), Government of Bihar at the behest of the Bihar State Disaster Management Authority requested BMTPC's assistance in conducting Training of Trainers (TOTs) on Earthquake Resistant Design and Construction. In order to impart training, standardized Resource material for Training of Engineers and Architects in earthquake resistant design and construction was prepared in association with Deptt. of Earthquake Engineering, IIT Roorkee in form of a book entitled "Design & Construction of Earthquake Resistant Structures : A Practical Treatise for Engineers & Architects".

During the year, two batches of TOTs were imparted training from 11-14 November, 2014 and another two batches from 18-21 November, 2014 at BIPARD Campus, Patna.

So far eleven batches of the TOTs have been given training at Patna as per request from BIPARD. The resource persons were from IIT Roorkee, IIT Mumbai, NIT Patna, BMTPC including other experts in the field. At the end of training of each batch, evaluation of trainees is also being done through conduction of examination.

4. Indo-Norwegian Training Programme on Seismic Design of Multi-storey Buildings : IS 1893 vs. Euro Code 8

As per its mandate, BMTPC has always been in the forefront in educating and creating mass awareness amongst common men and professionals through training courses, symposia, conferences and publishing manuals, Guidelines, brochures, etc. on disaster resistant design and construction including safe construction practices in collaboration with various technical and academic institutions.

Since 2006, BMTPC has been organizing Training Courses jointly with IIT Roorkee on regular basis. IIT Roorkee is one of the premier organization having excelled in the area of earthquake resistant design and construction and one of the first School of Earthquake Engineering in India.

In 2014, NORSAR, Norway under Indo-Norwegian Collaboration Project “EQRisk” supported by the Norwegian Embassy to India, New Delhi collaborated with IIT Roorkee for the project. NORSAR, Norway is an independent research foundation specialized in seismological research and engineering services relevant for the society and their efforts have over the past years included seismic hazard and risk projects in many earthquake exposed countries. They are also instrumental in imparting training to professionals in India on design and earthquake resistant structures.

BMTPC, IIT Roorkee and NORSAR, Norway initiated the three-days Indo-Norwegian Training Programme on Seismic Design of Multi-storey Buildings: IS 1893 vs. Eurocode 8. The first Indo-Norwegian Training Programmes was organized from May 26 to 28, 2014. The programme was attended by around 100 participants from various parts of the country as well as from Nepal. Although initially it was planned to accommodate 45 participants but due to overwhelming response to the Course, the number of seats had to be increased twice. The course is specifically targeted to Structural & Geotechnical Engineers and Designers in public and private sectors with emphasis on real-life problems and tackling them through hands-on training. Since the programme become popular, another programme was organized from 13-15 October, 2014 at New Delhi wherein 80 engineers including students participated.



First Indo-Norway Training Programme on Seismic Design of Multi-storey Buildings : IS 1893 vs. Eurocode 8 organised by BMTPC from May 26-28, 2014 at New Delhi



Second Indo-Norway Training Programme on Seismic Design of Multi-storey Buildings : IS 1893 vs. Eurocode 8 organised by BMTPC from October 13-15, 2014 at New Delhi

5. Seismic Retrofitting of Katha Lab School Building at New Delhi having Double Storey Masonry Structure

A team of Ministry officials alongwith BMTPC and HUDCO visited Katha Lab School, Govindpuri, a building constructed by Building Centre funded by HUDCO with alternate technologies to see the building and its design and also the activities which relate to entrepreneurship and skill development of women of the Area. During the visit, it was decided that BMTPC may undertake retrofitting of this school building and a retrofitting plan alongwith the detailed estimates may be prepared. It was suggested that project may be undertaken in two phase. The first phase will include preparation of as-built drawings, as the same were not available with Katha Lab School, for assessment of building and preparation of retrofitting plan duly vetted by experts in the field. The second phase will include actual retrofitting of building based on retrofitting plan prepared in first phase. It was decided, BMTPC initially would undertake first phase of the project and will prepare retrofitting plan alongwith estimates. Accordingly, BMTPC prepared the retrofitting plan alongwith the detailed estimates. The retrofitting plan has been vetted by Dr. A.S.Arya, Professor Emeritus IIT Roorkee and former National Seismic Advisor, Ministry of Home Affairs. A tender document for execution of the work was also prepared during the year.

III. ACTIVITIES IN NORTH-EASTERN REGION

1. Significant Activities in North-Eastern Region

BMTPC is actively involved in developing and promoting bamboo based technologies in the North-Eastern Region and other bamboo growing areas. The major activities encompasses setting up of Bamboo Mat Production Centres for processing of bamboo, encouraging commercial production of bamboo based products, and construction of demonstration houses/structures. The Council is constantly imparting training to the local artisans as regards use of bamboo in building construction. The activities undertaken in the North Eastern Region during the year are:

- The Council organized a Training Programme on Bamboo Structures for Housing and Construction at Haflong, Assam from 29th October to 1st November, 2014 jointly with Dima Hasao Forest Department, Government of Assam. During the programme, training was provided to 20 participants and a Bamboo Toilet was constructed by the participants under the guidance of master crafts mason in Haflong for hands-on practical training.



**Training Programme on Bamboo Structures for Housign and Construction
“Building with Bamboo” organised by BMTPC
on October 29 to November 1, 2014 at Haflong, Assam**



IV. STRENGTHENING THE INFORMATION AND DATABASE IN THE CONSTRUCTION SECTOR

1. Publication of the “Nirman Sarika” – Special Issue of BMTPC Newsletter

The Ministry of Housing & Urban Poverty Alleviation celebrated the World Habitat Day 2013 on 9th October, 2014 at New Delhi. To mark the occasion, BMTPC brought out a Special Issue of its Newsletter “Nirman Sarika” on the theme “Voices for Slums”, chosen by United Nations. This special publication focused on the various issues related to the theme of the World Habitat Day besides highlighting the activities of the Council. The “Nirman Sarika” was released by Shri M.Venkaiah Naidu, Hon’ble Minister for Housing & Urban Poverty Alleviation, Urban Development and Parliament Affairs, during the celebration ceremony of World Habitat Day 2014 held on 9th October, 2014.

2. Publication of “Building Artisan Certification System”

There is dire need to create a skilled human resource so as to have quality, sustainable and safe construction. There have been number of institutes involved for the purpose but still the system of artisan training is not formalised. BMTPC in pursuit to promote alternate building materials and construction technologies imparts training to engineers, architects, supervisors, artisans, etc.

Today when it comes to the day to day construction using conventional building technologies, a lot needs to be done on the skill development front. In our country there are millions of artisans working on different facets of conventional construction. Barring rare exceptions, none of them have received either formal training or formal recognition. All their learning has been on-site, and that too in bits and pieces, from individuals who themselves possess inadequate know-how.

So the need of the hour today is to pull up this huge lot to a desired level of skill and know-how, so that what they build performs well, and when they teach the other upcoming semi-skilled individuals on-site, they teach the right skills and give them right know-how. A certification system that is friendly to the existing artisans and that does not un-nerve them could provide a ladder that our artisans need to climb up in order to rise and contribute towards nation building.

BMTPC has brought out “Building Artisan Certification System” under an initiative entitled ‘Evolving Building Artisan Certification Program at National Level’ for skill upgradation of the existing building artisans. This document contains the details of the Certification System including 8



Shri M.Venkaiah Naidu, Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs, releasing the Special Issue of “Nirman Sarika” brought out by BMTPC during the World Habitat Day on October 9, 2014



Shri M.Venkaiah Naidu, Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs, releasing the Book entitled “Building Artisan Skill Certification System” brought out by BMTPC during the World Habitat Day on October 9, 2014

following certificate modules, their hierarchy, eligibility requirements, assessment procedure and required training.

Building Artisan Skill Certification Modules:

1. Assistant Mason Certificate
2. Mason Certificate
3. Disaster-Resistant Construction Certificate
4. Shuttering Certificate
5. Concreting Certificate
6. Bar-Bender Certificate
7. Repairs of Masonry and RC Elements in Masonry Building Certificate
8. Appropriate Building Materials and Construction Systems Certificate

The publication was released by Shri M.Venkaiah Naidu, Hon'ble Minister for Housing & Urban Poverty Alleviation, Urban Development and Parliament Affairs, during the celebration ceremony of World Habitat Day 2014 held on 9th October, 2014.

3. Guidelines on Rapid Visual Screening of Buildings of Masonry and Reinforced Concrete as Prevalent in India

Four great earthquakes of magnitude 8.0 and above in different parts of the country and in recent times earthquakes of different magnitudes [Uttarakhashi (1991), Killari (1993), Jabalpur (1997), Chamoli (1999), Bhuj (2001) and Jammu & Kashmir (2005)] at regular interval have resulted in large number of deaths and huge property losses. These devastating earthquakes have exposed the vulnerability of our housing stock in earthquake prone regions of the country. A comprehensive earthquake disaster risk management is, therefore, necessary to mitigate the effects of earthquake.

Earthquake do not kill people, it is the collapse of buildings which kills people. Unfortunately both load bearing and Reinforced concrete framed structures, which collapsed during these earthquakes, have been found to be deficient from earthquake safety point of view. While newer buildings may be found vulnerable due to poor design and construction; the older buildings, designed and constructed based on provision of prevalent codes at that time may also be found deficient vis-à-vis more stringent provisions of latest earthquake resistant buildings codes.

For earthquake mitigation, it is not only necessary to build earthquake safe structures but also ensure safety of existing buildings. For this assessment of existing buildings is necessary. Detailed seismic vulnerability analysis is an expensive procedure and in case of RCC framed structures

is also technically complex, which may not be necessary for all buildings. A simpler procedure, therefore, is called for which can help in rapid evaluation of the vulnerability profile of a building. The Rapid Visual Survey (RVS) is used for this purpose, so as to prioritize the buildings for more complex and expensive evaluation.

Rapid Visual Screening of Buildings for potential seismic hazards, originated in 1988 with the publication of FEMA 154 Report on Rapid Visual Screening of Buildings for Potential Seismic Hazards - A Hand Book. In India, Prof. A.S. Arya, in his capacity as National Seismic Advisor developed a procedure of Rapid Visual Screening of building types prevalent in India. The procedure is also now incorporated in Indian Standard IS 13935:2009, Seismic Evaluation, Repair and strengthening of Masonry Buildings Guidelines.

As a part of our drive to propagate disaster resistant construction practises and mitigation measures, this publication, written by Prof. A.S. Arya, entitled "Rapid Visual Screening of Buildings of Masonry and Reinforced Concrete as Prevalent in India" has been brought out by BMTPC. This document gives the glimpse of earthquake hazard scenario with building typologies prevalent in the country and the detailed procedure of RVS developed by Prof. Arya. The publication also gives in brief, the procedure adopted in FEMA 154 report for information.

The Guidelines was released by Shri M.Venkaiah Naidu, Hon'ble Minister for Housing & Urban Poverty Alleviation, Urban Development and Parliament Affairs, during the celebration ceremony of World Habitat Day 2014 held on 9th October, 2014.

4. Publication of "Prospective Construction System for Mass Housing"

In its endeavour to bring new construction systems for mass housing, BMTPC identified and evaluated a few systems which can help in providing safe, strong and quality housing in quick time. The technical details of the following technologies have been collated in the form of technology profiles:

1. Monolithic Concrete Construction System using Plastic - Aluminium Formwork
2. Monolithic Concrete Construction System using Aluminium Formwork
3. Expanded Polystyrene Core Panel System
4. Industrialized 3-S System using Cellular Light Weight Concrete Slabs & Precast Columns
5. Speed Floor System

6. Glass Fibre Reinforced Gypsum (GFRG) Panel Building System
7. Factory Made Fast Track Modular Building System
8. Light Gauge Steel Framed Structures (LGSF)

The booklet entitled “Prospective Construction System for Mass Housing” containing the Technology Profiles on Emerging Technologies was released by the then Secretary, Ministry of Housing & Urban Poverty Alleviation, Government of India during the one day National Seminar on Green Building Materials & Construction Technologies organized by BMTPC on August 29, 2014 at New Delhi.

5. Information Dissemination through Website of the Council

The Website of the Council (www.bmtpc.org) is being visited by professionals and others globally. It is being used as a reference resource in the area of innovative building materials and construction technologies. The website of the Council acts as a repository on cost-effective building materials and construction in line with its mandate to create enabling environment of affordable housing for all.

There is good response on website in the form of general enquiry about product and services. The website of the Council is regularly updated with latest technical information besides hire and purchase requirements, tender notices, training programmes, Right to Information Act and others as required from time to time.

6. Standardization and Product Evaluation

Performance Appraisal Certification Scheme (PACS)

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.

Since the Scheme is operated for the products/systems where no relevant Indian Standards are available, it is required to first work out the desired specifications for Performance Appraisal. For the items where no Indian codes are available, international practices are also being referred. In few cases the specifications recommended by the manufacturers have to be modified based on global practices to improve the quality and performance.

After due appraisal, assessment and evaluation, the 7th Meeting of the Technical Assessment Committee (TAC) was



**Visit of Technical Assessment Committee of PACS, BMTPC
on September 18, 2014 at Raigarh, Chattisgarh**



**Visit to FRBL for Certification under PACS by officials of BMTPC
on May 29, 2014 at Kochi**

held on 18th & 19th September, 2014 at Raigarh, Chattisgarh in which Performance Appraisal Certificates (PACs) were approved for the following products/systems:

1. Speed Floor System
2. Light Gauge Framed Steel Structure

PAC for the Glass Fibre Reinforced Gypsum Building (Gypwall) Panel System was also renewed during the meeting based on inspection report and feedback from the users.

In last five years, PACS has been given new impetus so that more new systems come in vogue. Performance Appraisal Certificates (PAC) for 30 products/systems have been issued so far covering various items viz. Wooden/FRP/PVC/PUF/Profile Doors & Windows, Block Making Machine, Pan Mixer, Recron Fibre, Gypcrete Wall Panel, Brick Kiln Technology, Plastocrete/Insulated/Sandwich Gypsum Panels, Underground Water Storage/Septic Tanks, FRP Manhole, Monolithic Formwork, Marble Slurry Binder, Factory Made Fast Track Modular Building System, Fluorogypsum Based Anhydrite Binder, Glass Fibre Reinforced Gypsum Panels, Speed Floor System, Light Gauge Framed Steel Structure and Polystyrene Based Insulation Tiles.

In addition, for appraisal of Roof Insulation Tiles-Insulla, Bamboowood Flooring and QuickBuild 3D Panels, visit to the production units of M/s Japewa Engg. Pvt. Ltd., Chennai; M/s Mutha Industries Pvt. Ltd., Agartala and M/s Beardsell Ltd., Chennai respectively were made by the BMTPC. Draft PACS for these products and Modular Tunnelform manufactured by M/s Outinord International Ltd., France has also been prepared based on the details and circulated to the TAC members for their comments.

Moreover, fresh applications for issue of PACs for Reinforced EPS Core Panel System, SRPL Building System (Waffle-Crete), Walltec Hollowcore Concrete Wall, Ultrasound Pipes & Fittings, Plastic Honeycomb Toilet Structure, Composite Plumbing Pipes and Aluminium Formworks, USA were received during the period and are under process.

Many agencies involved in manufacturing/developing/marketing of new materials/ systems to be used in construction have approached BMTPC for PAC for their new emerging product/system.

Technical Inputs to Sectional Committees of BIS

Apart from PACS, the Council is providing technical inputs to various Sectional Committees of Bureau of Indian Standards for formulation of Indian Standards on various subjects related to Civil Engineering such as Cement and Concrete; Flooring, Wall Furnishing and Roofing Materials; Earthquake Engineering; Housing Prefabricated Construction; Hill Area Development; National Building Code; etc.

V. PROMOTIONAL AND CAPACITY BUILDING ACTIVITIES AT NATIONAL AND INTERNATIONAL LEVEL

1. Organization of National Seminar on Green Building Materials & Construction Technologies at New Delhi

BMTPC organized a one day National Seminar on Green Building Materials & Construction Technologies on August 29, 2014 at New Delhi to deliberate on the various impending issues related with promotion of green building materials and technologies, its applications in mass housing including emerging trends.

The use of green building materials and products helps in conservation of non-renewable resources and reducing the environmental impacts associated with the manufacturing, reuse, recycling, disposal, etc. of the building materials. Most importantly, energy efficient green building materials used in construction of buildings can reduce maintenance and operating costs to large extent. There are number of green building materials and systems which can help in sustainable development/construction. Awareness, importance and implementation of green initiative for construction of various buildings is gaining importance due to its substantial benefits to the environment.

The Seminar provided an opportunity to comprehend the new developments taking place in the construction sector as regards emerging materials and construction system and raised issued related to mainstreaming the Green Building Materials & Construction Technologies.

The Seminar was inaugurated by the then Secretary, Ministry of Housing & Urban Poverty Alleviation, Govt. of India. On the occasion, a publication brought out by BMTPC entitled "Prospective Construction System for Mass Housing" containing Technology Profiles of Emerging Technologies was also released. Besides the experts in the field, Technologists and Scientists working in the area of green building materials and construction technologies,



National Seminar on Green Building Materials & Construction Technologies organised by BMTPC on August 29, 2014 at New Delhi



Release of booklet entitled “Prospective Construction Systems for Mass Housing” containing Technology Profiles of Emerging Technologies released by the then Secretary, Ministry of Housing & Urban Poverty Alleviation during the National Seminar on Green Building Materials & Construction Technologies organised by BMTPC on August 29, 2014 at New Delhi

Technology providers, Academicians from various engineering and architectural colleges and students, product manufactures, builders, real estate developers, etc. participated in the Seminar.

2. Round Table with the Technology Providers to formulate the Concept of Building Technology Park

In order to formulate the concept of Building Technology Park and to assess the involvement of various technology/system providers, an interactive meet was organised under the Chairmanship of Joint Secretary (RAY & JNNURM), Ministry of Housing & Urban Poverty Alleviation, Government of India on 4th August, 2014 at New Delhi. Around ten Technology Providers participated in the meeting besides few experts in the field. Most of the technology providers agreed to provide full support in setting up the Building Technology Park. A tentative design of the Building Technology Park was drawn. It was decided during the interactive meet that a Working Group may be constituted to work out the further modalities. Accordingly, a Working Group was constituted by the Ministry of Housing & Urban Poverty Alleviation. After a series of the meeting of the Working Group, a planning document has been prepared and submitted to the Ministry.

3. Meeting with Vice Chairman of Delhi Development Authority and senior officials of DDA

A meeting cum interaction with Vice Chairman and senior officials of DDA was held, where a presentation was made by BMTPC on emerging housing technologies. DDA showed keen interest in adopting the emerging technologies in their future projects. Vice Chairman also offered to provide land for showcasing of these technologies. The Ministry has received a letter from DDA for identification of land in Rohini for development of Technology Park. After the visit by BMTPC to the sites identified by DDA, a suitable site having an area of 12850 sq.mts has been selected in Rohini. A concept plan for setting up Building Technology Park has also been submitted to DDA for allotment of said land to BMTPC.

4. Organization of Brain Storming Session on Understanding the Bottlenecks in use of Emerging & Alternate Housing Technologies in Housing Schemes for providing Housing for All at New Delhi

The Council organized a Brain Storming Session on Understanding the Bottlenecks in use of Emerging & Alternate Housing Technologies in Housing Schemes for providing Housing for All on 17th September, 2014 at New Delhi. The Brain Storming Session was chaired by



Brain Storming Session on Understanding the bottlenecks in use of Emerging & Alternate Housing Technologies organised by BMTPC on September 17, 2014 at New Delhi



Secretary, Ministry of Housing & Urban Poverty Alleviation in the presence of Joint Secretary & Mission Director (JNNURM & RAY). The Brain Storming Session was attended by 34 participants from various R&D institutions, State Housing Deptts./Boards, Academicians, Technology Providers and Experts in the field.

The major recommendations of the Brain Storming Session were as under:

- Preparation of a Concept Note for setting up a Technology Sub-Mission on new emerging building technologies in Ministry with BMTPC.
- Finalization of Multi-attribute evaluation matrix for selection of new technologies.
- Preparation of model tender for technology neutral construction.
- Preparation of Directory of technologies, technologies providers, Engineers, Architects involved in emerging technologies.
- Creating a portal, where technology providers can place information on new emerging technologies.
- Documentation of success stories of emerging technologies.
- Working on a proposal on fiscal and policy intervention to bring level playing field between emerging new technologies and conventional system.
- Hand holding of professional engineers, architects and skill up gradation of artisan

Based on the recommendations, various activities have been initiated by the Council.

5. Organization of Workshop on Emerging Building Materials and Construction Technologies at Hyderabad

BMTPC in association with Andhra Pradesh State Housing Corporation Limited organized one day Workshop on Emerging Building Materials and Construction Technologies on October 11, 2014 at Hyderabad. The aim of the workshop was to present Indian and global perspective on emerging technologies and to disseminate up-to-date information, knowledge and experience on design, production, certification and application of alternate building materials and to promote and encourage adoption of emerging technologies for mass housing by various construction agencies. Around 150 engineers of Andhra Pradesh and Telangana State Housing Corporations participated in the Workshop. Ten Technology Providers presented their technologies and building systems and interacted with the engineers as well as other stake holders.



Workshop on Emerging Building Materials & Construction Technologies organised by BMTPC on October 11, 2014 at Hyderabad



The workshop provided an opportunity to understand the difficulties and requirement of State engineers including user's perspective while implementing new technologies.

6. Skill Development and Capacity Building in the area of Alternate and Cost Effective Building Materials & Construction Technologies

The Council has organised following Capacity Building Programmes during the year:

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, Trichy, organised a Training Programme on Cost-Effective and Disaster Resistant Technologies for civil engineers and architects from 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 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) an Institute of 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 sector 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 and Disaster Resistant Technologies for civil engineers and architects from 26 – 27 February, 2015 at Trichy



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

A two days Training Programme was organized by BMTPC 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.

Similarly, a three days training programme for masons was organised on Cost-effective, Environment Friendly & Disaster Resistant Construction Techniques from 13th to 15th March, 2015 at Village Paithani, Tehsil Chakisain, Thailisain Block of District Pauri Garwal at Rath Mahavidhalaya Paithani, Uttrakhand. A group of 25 masons participated in the training programme.

Training cum Orientation Programmes for Construction Workforce

Training cum orientation programmes for two to three days duration were conducted for artisans from various trades such as (1) Bar Bending, (2) Concreting, (3) Shuttering, (4) Masons & (5) Assistant Mason throughout the year at Aryan Building, Unicon Engineers Ahmedabad; Jesana Muvada village, Dist. Ahmedabad; Chekhala Pagi village, Dist. Ahmedabad; Vastral, Ahmedabad; Navanagar village, Dist. Ahmedabad; and AMC Water tank, Memnagar, Ahmedabad. A total number of 57 participants participated from the various trades. Some of the training programmes have been organised at an actual construction site and the rest have been done within close vicinity of a construction site. Efforts were made to get the sites where the particular activity focused by the assessment was under way. The materials were procured mostly from the sites. Generally, when the event was conducted at the site, the artisans that participated in the program were working at the same site. The Training cum Orientation programme comprised of classroom sessions as well as hands-on sessions. The assessment in the form of written test and calculation tests were conducted first. Next the group was divided in teams



Training Programme for masons on Cost effective, Environment Friendly & Disaster Resistant Construction Techniques on March 16-17, 2015 at Village Oraiya, Dist. Hazaribagh, Jharkhand



of two individuals to take up the hands-on exam. This was accompanied simultaneously by the oral exam.

Training Programme on Bamboo Structures for Housing and Construction

The Council in association with Kerala State Bamboo Mission and Auroville Bamboo Centre & South Asian Bamboo Foundation organised a training programme on construction of bamboo toilets during Kerala Bamboo Fest 2014 at Kochi from 1-5 December, 2014. During the programme, training were provided to 44 participants. A Bamboo Toilet was constructed by the participants under the guidance of master crafts mason for practical training.

7. World Habitat Day 2014 Celebrations

On the occasion of World Habitat Day 2014, the Council conducted the following activities:

Painting Competition for Differently Abled Children

As a part of the World Habitat Day Celebrations 2014, BMTPC organised Painting Competition for Differently Abled Children on the theme "Voices from Slums" in the categories viz. (i) Mentally Challenged, (ii) Hearing Impaired and (iii) Visually Impaired children.

In invited 32 schools, 18 schools have taken part in the Painting Competition. From the 177 selected entries sent by the respective Schools, the Jury in BMTPC selected the best entries for prizes. The prizes were awarded to winning entries by Shri M.Venkaiah Naidu, Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs during the celebrations of World Habitat Day on 9th October, 2014 at New Delhi.

Release of Publications

- i. Special Issue of Newsletter "Nirman Sarika"
- ii. Building Artisan Certification System, and
- iii. Rapid Visual Screening of Buildings of Masonry and Reinforced Concrete as prevalent in India.

These publications were released by Shri M.Venkaiah Naidu, Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs during the World Habitat Day function.



Shri M.Venkaiah Naidu, Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs, giving away the Prizes to the winners of Painting Competition of Differently Abled Children organised by BMTPC during the World Habitat Day on October 9, 2014



Shri M.Venkaiah Naidu, Hon'ble Minister of Housing & Urban Poverty Alleviation, Urban Development and Parliamentary Affairs, giving away the Prizes to the winners of Painting Competition of Differently Abled Children organised by BMTPC during the World Habitat Day on October 9, 2014

8. Participation in India International Trade Fair, 2014, Pragati Maidan, New Delhi from 14-27 November 2014

BMTPC participated in HUDCO BuildTech 2014 and put up exhibition on Alternate and Emerging Building Materials and Construction Systems during India International Trade Fair from 14-27 November, 2014 at Pragati Maidan, New Delhi. BMTPC exhibition included participation by six technology providers/ companies in the area of emerging housing technologies by putting up the display within the BMTPC area. Having wide range of products and housing technologies for individual houses to mass housing solutions, the exhibitions attracted large number of visitors.

VI. TECHNOLOGY DEVELOPMENT, DIFFUSION AND TRANSFER

1. Identification and Evaluation of Emerging Housing Technologies

Conventional construction practices of burnt clay bricks and reinforced concrete have so far served well the construction industry but with the increasing shortages of basic building materials, depleting natural resources, threat to environment by energy intensive manufacturing practices as well as shortage of skilled manpower in urban areas, it is imperative to look for new alternate building materials and technologies.

The Council has been studying the practices adopted world over to identify, evaluate and promote suitable technologies suiting Indian condition. In the process, during the year, following five technologies were identified, which have potential to be used for mass housing in the country:

Wafflecrete Technology

"Waffle-Crete" was first developed in 1976 by a precasting firm in Kansas. Since then, the concept has evolved into a building system with a large number of producers across North America that are licensed by "Waffle-Crete International Inc.". The standard "Waffle-Crete" panel is 8' [2.438m] wide and can be cast in any length up to a maximum of 40'-0" [12.192m]. This can be used for single story to multistory buildings. Panel to Panel connections are made using welding at the top and mid height of the panels, as well as grout tubes to connect to the foundation.

When compared to conventional brick & block construction, the wafflecrete precast concrete building system will reduce material & labour cost, slash construction time, eliminate the need of skilled labour and will have low maintenance cost. Being lightweight, Wafflecrete panels can be cast right at



Waffle Crete System – a Technology under evaluation



Aluminium Profile based Structure – a Technology under evaluation



Light Gauge Steel Structure System - an Emerging Technology approved under Performance Appraisal Certification Scheme (PACS) by BMTPC



Speed Floor System - an Emerging Technology approved under Performance Appraisal Certification Scheme (PACS) by BMTPC

the job site and can be cast in one day and used the next day. An entire side of a house can be cast in one panel with door & windows openings. The vertical ribs acts like column & horizontal ribs act like beam. In India, Gujarat has taken initiative to introduce the technology in their housing projects under JNNURM.

IRIS KOTO Low Cost & Affordable Houses

IRIS KOTO IBS is a smart, green high speed, energy efficient, sustainable fully integrated building system for commercial, high rise, important and affordable housing projects. IRIS KOTO components are light weight and made from fire resistant, rigid cellular insulation and fibre reinforced mineral components. This building system requires minimal tools, unskilled labour, uses far less concrete and steel, no connections or fixing and no timber work is required. It is suitable for affordable housing. Their main office is located in Malaysia. There have been correspondence with the agency for detail. It has been informed that they are working for Indian market and will contact shortly.

Rapid Panel for Slabs & Walls

Rapid Panel is a pre-fabricated / cast – in- site product for fast economical and strong load bearing and partition walls by M/s World House, Bangalore. The evaluation under PACS has been initiated.

Aluminum Profile based Structure

Hitech Architectural (I) Fabricates Pvt. Ltd., indigenously developed aluminum profiles to be used as structural section for construction of buildings. Being lighter and better corrosion resistant, the technology appears to be good, specially in coastal areas. However, the jointing details, behaviors of the system under different loading needed further study.

Moladi Building System

Moladi Building System was founded in South Africa in 1986 as a method of building cast in place reinforced monolithic. It constitutes the use of a removable, reusable, recyclable and lightweight plastic formwork mould, which is filled with an aerated concrete to form the wall structure of a houses in as little in one day. Each panels can be reused 50 times making the technology cost effective due to its repeat time application scheme, reducing the cost of construction and transportation significantly. Based on the technology M/s Sintex Industry has developed plastic – aluminum formwork

which have been evaluated and certified by BMTPC. The Technology is now being used in the country by many agencies.

2. Multi-Attribute Evaluation Methodology for Selection of Emerging Housing Technologies

BMTPC has been identifying and evaluating new materials and construction technologies, not covered by any Indian Standard under Performance Appraisal Certification Scheme (PACS). PACS generally addresses mandatory requirements. During the process of appraisal under PACS, it is realized that it will be convenient if all the criteria are listed at one place to avoid referring to different sections of NBC to know these requirements.

Realizing the above, it was felt necessary to develop a multi-attribute evaluation methodology for selection of alternate emerging technologies, giving both mandatory criteria and other desirable criteria. The multi-attribute criteria have been prepared in active consultation with experts in this field and has also been circulated to all the States and UTs for comments.

Any technology, for acceptance under PACS or otherwise, is required to fulfill mandatory criteria. The other desirable criteria may be considered for taking appropriate decision regarding use of emerging technology by the State construction agency, based on the specific requirements for any region or project. These mandatory and desirable criteria should be studied and adapted by implementing agencies to suit their needs.

3. Preparation of Technology neutral Model Tender using Alternate Technology

A number of alternate technologies, developed both within the country and abroad, have been found to be suitable for mass housing projects in the country. Some of the States have taken initiative to introduce these technologies in their projects. The Council has also identified, evaluated and recommended few technologies for mass housing. There are other technologies which are awaiting technical approval for use.

From identification to actual field application, new alternate technology has to face a number of impediments both technical & operational. One of the major bottlenecks is lack of clarity about the requirements of technology to be considered and guidelines for change from conventional tendering system based on item rates as per CPWD or PWD Schedule of Rates to other suitable system such as

design and built basis, to facilitate use of alternate construction systems and technologies for which no standard SOR is available.

The State Governments like Gujarat and Andhra Pradesh have taken lead to frame their own methodology for introducing alternate technologies in their projects. The need to develop a Model Tender document for selection of agencies for technology-neutral construction of houses has been emphasized in various discussions with the State Governments as also during the Brain Storming Session organized by the Ministry of Housing & Urban Poverty Alleviation and BMTPC on the subject.

After deliberating on various options and considering practices adopted by some States, it was felt that to introduce new emerging technologies, the State Governments could consider prequalifying / empanelment of alternate technology providers using technical and functional parameters in different capabilities depending upon the size of proposed project. In order to facilitate inclusion of new technologies into tender by State Govts, a Technology neutral model tender for construction has been prepared and is being finalized.

4. Conceptualization of a Portal on Emerging Technologies

The Council is striving to create a platform which will facilitate sustainable faster construction, using new prospective emerging construction systems being practiced globally. In this direction, the Council has conceptualized and prepared a document for creation of Web Portal on emerging technologies. The portal displaying all the information about emerging technologies and building materials, such as detailed description, case studies, expert opinions, cost, life cycle, 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. The interlinked cataloguing system for the proposed web portal will fill this gap by connecting design related information, standards and codes, public opinion and reviews backed by case studies, 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 portal 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.

5. Directory of Emerging Technologies

The Council has initiated preparation of a Directory on Emerging Technologies for the use of Engineers and Architects, Contractors and State Governments, developers and policy makers. A format for submission of data by the technology/system providers was prepared and uploaded on the website of Council. The Directory includes complete details about the technology, certification, advantages, limitations, projects completed, performance characteristics, availability of Standards, etc. Data from technology/system providers has been collected from 45 manufacturers on different emerging technologies.

6. Preparation of Design Packages for Affordable Housing for All

With different geo-climatic & hazard conditions and living pattern of people, the planning of dwelling units also differs. In order to develop design packages for different regions of the country, BMTPC along with the expert organizations initiated an exercise of developing design packages for (i) Western region, (ii) Central region, (iii) Kolkata, (iv) Coastal region of AP and (v) Hilly Areas of Uttranchal & Himachal Pradesh.

Before starting the exercise, existing practices were studied. Concepts were formulated and workshops were held at Vijaywada on 4th July, 2014 at School of Planning & Architecture for coastal region of the Andhra Pradesh and for Kolkata region on 23rd December, 2014 at Kolkata. Based on the discussion and suggestion received from local engineers, planners and architects, the design package has been prepared.

The final report contains Details of the region; Design consideration; Technological options; and Architectural drawings LIT of typical EWS and LIG cluster.

7. Promotion of Glass Fibre Reinforced Gypsum (GFRG) Panel System as an Emerging Technology

The Council has initiated preparation of Schedule of Rates including Rate Analysis for GFRG Panel / Building System with IIT Madras. It is being developed based on the

available information / data collected by IIT Madras during construction of buildings in and around Madras and Bangalore. The draft is circulated to CPWD and other for comments also.

In order to mainstream, the GFRG Panel system, a draft Indian Standard Code of Practice for Design of GFRG Building Panel system has been prepared in association with IIT madras and submitted to Bureau of Indian Standards for consideration. The Draft was considered by the concerned Technical Committee of BIS and was approved for wide circulation, the stage before finalization of the code, for comments.

The Council has initiated preparation of model designs for cluster of houses using GFRG Building Panel System. Drawings for typical plan have been given to IIT Chennai to develop the design manual with all detail.

8. Promotion of Monolithic Concrete Construction as an Emerging Technology

BMTPC initiated preparation of Schedule of Rates for Monolithic Concrete Construction with Indian Building Congress. Field visits were made to construction sites in New Delhi with the representatives of Indian Building Congress. Extensive discussions were held with engineers of Delhi State Industrial and Infrastructure Development Corporation and Delhi Urban Shelter Improvement Board, who are using the technology, contractors, to work out the details for Schedule of Rates.

9. Development of Fly Ash based Advanced Ligno-Silico-Aluminous Geo-polymeric Binder useful for making Cement Free Green Concrete

The Council has initiated a Project with CSIR-AMPRI, Bhopal on "Development of Fly Ash based Advanced Ligno-Silico-Aluminous Geo-polymeric Binder useful for making Cement Free Green Concrete". The objective of the project proposed is to develop Fly Ash based Advanced Ligno-Silico-Aluminous Geo-polymeric Binder useful for making Cement Free Green Concrete and Characterization and Evaluation of Engineering Properties of developed materials.

Fly ash and additives will be optimized to develop advanced lignin based Geo-polymeric binder. The developed binder will be used for development of Cement Free Green Concrete. The quality of Cement Free Green Concrete will be assured by evaluation of physical and engineering properties such as density, compressive strength and flexural strength.

The project activity will be carried out by utilizing huge availability of fly ash through a wider spectrum potential in the form of geo-polymeric approach. This will find application in construction and development of Advanced Ligno-Silico-Aluminious Geo-polymeric Binder useful for making Cement Free Green Concrete. The proposed material can be made with significantly less CO₂ emissions. The other benefits envisaged are:

- Bulk utilization of Fly ash.
- Savings of huge capital investments (machineries) otherwise required in cement production.
- Saving of fuel and energy - can be made at ambient temperature (35-40°C approximately) and obviates calcinations step at 1450°C as required in conventional cement
- Saving of water, as the developed fly ash based binder will not require water curing for strength development.
- Conservation of cultivable land and forests otherwise required for its Fly Ash dumping.
- The proposed process of making fly ash based binder will helps in tackling the alarming global warming problem thus earning, economic benefits through carbon credit trade.
- A novel process for making advanced fly ash based cement free binder will provide long term benefits to the rural and urban masses.
- By the proposed process advanced green concrete can be made on site.

10. Development of Discarded Fishnet Reinforced Hybrid FRP sheet for Indoor Partitions: A Low Cost housing Solution

The Council has initiated a Project on “Discarded Fishnet Reinforced Hybrid FRP sheet for Indoor Partitions: A Low Cost housing Solution”. The project is being executed by University College of Engineering, Anna University, Nagercoil.

India is a peninsula in which fishing activities are carried out throughout the year using various type of fishnets which get damaged after certain time. The discarded fishnet is being accumulated in huge quantity along the sea-shore causing environmental issues. Fishnet is made up of nylon which has good weathering, sunlight resistance, high melting point, excellent abrasion resistance, high impact resistance, etc. It has high resistance to insects, fungi etc. The another property of Nylon is that it melts instead of burning and therefore it can be used for making partition walls with fire

proof attributes. Similarly, polyester is a thermoplastic polymer that tends to shrink away from flames and self-extinguish upon ignition. Polyester has excellent strength, lightweight and hydrophobic. Both the polyester matrix along with the use of discarded nylon fishnet reinforcement are very much suitable for making panels for indoor and external applications.

The proposed project focus on the reuse of discarded fishnet as reinforcing material in polyester matrix for the manufacturing of Hybrid Fish Net Reinforced Plastics (HFNRP) and fabrication of flat panels and hollow framework.

The objectives of the project are:

- i. To assess the mechanical properties of discarded fishnet thread and comparison with the glass fibre
- ii. To prepare four different hybrid composite specimen with polyester mix reinforced with discarded fishnet and glass fibre
- iii. To make HFNRP hollow framework to hold on the flat specimens as a substitute for partition wall in houses and offices.
- iv. To evaluate and compare the mechanical, thermal, optical and acoustic properties
- v. To predict the delamination failure of flat specimens and framework by ASTM standards
- vi. To analyze and compare the cost factor of HFNRP of specific size with the conventional partition wall systems.

11. Development of Commercial Process for Utilization of Pond Ash in manufacture of Cold Setting Building Brick and Block

The Council has undertaken a project on the “Development of commercial process for utilization of pond ash in manufacture of cold setting building brick and block” jointly with CSIR-Institute of Minerals & Materials Technology (IMMT), Bhubaneswar. The objectives of the project is to develop a commercial process for the use of pond ash as a raw material along with sand and mineral cementation binder in manufacture of cold setting building brick and block conforming to BIS specification IS: 12894:2002 of Class-7.5 & above.

Water mixture of fly ash and bottom ash disposed in slurry form to pond is termed as pond ash. Due to pre-hydration, the pozzolanic property of ash disposed in pond is lost in comparison to the dry fly ash collected in hoppers of the thermal power plant. Pozzolanic property is an essential requirement for the use of thermal plant ash in the building

material industry. Due to the poor pozzolanic property of pond ash, its utilization in building material industry is less significant. Therefore the use of pond ash in manufacture of building brick by conventional manufacturing process (Cement-Lime-Gypsum) is not very effective.

CSIR-IMMT, Bhubaneswar has developed an innovative process of mineral polymerization for effective utilization of various industrial and mining wastes in manufacture of cold setting building brick and block at laboratory level. In the present work efforts will be made to develop commercial building brick manufacturing process for the utilization of pond ash by adopting the mineral polymerization technique. Keeping in view of the commercial brick manufacturing process, the project work will be carried out in the similar line to develop the commercial process. The process optimization will be carried out to use 40 to 70 % by weight of pond ash along with sand and mineral cementation additives in manufacture of cold setting brick and block. Water curing procedure will be adopted for development of strength in the product. Finally the commercial process will be developed for pond ash brick and block as per strength meeting to Class-7.5 and above (IS: 12894:2002).

12. Guidelines for Selection of Alternate Technology for inclusion in the National Building Code of India of BIS

Based on evaluation of technologies under Expression of Interest floated earlier, inviting technology providers to present details about their technologies before a Technology Advisory Committee and also through voluntary Scheme of Performance Appraisal Certification Scheme being operated by BMTPC; few technologies have been identified, evaluated and recommended for mass Scale housing:

The various performance parameters addressed and verified through lab test reports and field visits to manufacturing units and construction sites, as applicable, inter alia, include the following:

- Structural safety against loading condition including seismic and wind forces
- Water penetration and resistance
- Fire safety
- Thermal behaviour
- Acoustic behaviour
- Fixing of service connections like plumbing and electricity
- Material specifications
- Durability

Similar to the practices adopted in UK (British Board of Agreement), South Africa (Agreement South Africa), New Zealand and Australia (Building Technology Ltd /Branz) and many other countries, Performance Appraisal Certification Scheme, through a gazette notification No I-16011/5/99-H-II in the gazette of India No 49 dated 4 December 1990, authorizes BMTPC to evaluate based on lab and field tests any material, product, components or system in related to building construction, on which there is no Indian Standard exists and issue Performance Appraisal Certificate(PAC).

The process encompasses the following:

- i) Establishing criteria of performance of the material /product/component / system based on their uses
- ii) Verifying the conformance of the material/product/ component/system to the identified requirements through lab test report and field reports including production unit, if applicable
- iii) Operation of quality assurance Scheme by the manufacturer /installer or supplier
- iv) Consideration by the Technical committee of PACS for approval.
- v) Once approved, PAC, providing, among other things, the specification, code of practice, limitation, if any, process of evaluation etc., is issued.

The National building Code, brought out by Bureau of Indian Standards, serves as a model code for construction of buildings for planning and design of buildings in the country. In order to list out all the necessary parameters required to be addressed for selection of new emerging technologies, a draft guideline for selection of new emerging alternate technologies, based on multi-attribute evaluation matrix, has been prepared for inclusion in the National Building Code. The guideline has been sent to Bureau of Indian Standards for the consideration of the concerned Sectional Committee of BIS.

VII. JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM), RAJIV AWAS YOJANA (RAY) AND PROJECTS UNDER 10% LUMP-SUM PROVISION FOR NER STATES INCLUDING SIKKIM

1. BMTPC's Role in Rajiv Awas Yojana (RAY) and Affordable Housing in Partnership (AHP)

The Ministry of Housing & Urban Poverty Alleviation, Govt. of India, is implementing Basic Services to Urban Poor (BSUP) and Integrated Housing & Slum Development Programme (IHSDP) under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM), Rajiv Awas Yojana (RAY), Affordable Housing in Partnership (AHP) and projects under 10% Lump-sum Provision for NER States including Sikkim. BMTPC has been as one of the Appraisal Agency for projects under Pilot as well as implementation Phases of Rajiv Awas Yojana (RAY) and Affordable Housing in Partnership (AHP).

Appraisal of Detailed Project Reports (DPRs) under RAY

During the year, the Council appraised 30 DPRs under Rajiv Awas Yojana (RAY) received from various States such as Assam (1), Gujarat (4), Karnataka (9), Madhya Pradesh (8), Odisha (1) and Uttarakhand (7). The proposals were worth Rs.1082.85 crores with Government of India share of Rs.666.33 crores covering 21011 Dwelling Units.

S. No	City/Town	Location	No. of Projects
ASSAM			
1.	Guwahati	Detailed Project Report for In-situ redevelopment of Harijan Colony, Uzanbazar	1
GUJARAT			
2.	Morbi	DPR of Morbi Municipality 1600 Dus	4
3.	Palanpur	DPR of Palanpur Distt. Banaskantha - 1776 Dus	
4.	Surendernagar	DPR for relocation of seven slums to Meldipara and Vahanvatinagar for construction of 960 DUs	
5.	Rajkot (Modinagar)	Scheme for Relocation of New Modinagar Slum (136 DU) to FP-19C, TP-9, Motamava-Mujaka In RUDA	
KARNATAKA			
6.	Bangalore	DPR for Gandhinagar (933 DUs)	9
7.	Bangalore	DPR for Rajajinagar & Mahalakshmpuram (893 DUs)	
8.	Bangalore	DPR for Yeshwanthapura (860 DUs)	
9.	Madhugiri	DPR for Madhugiri (450 DUs)	
10.	Bangalore	DPR for Sarvagannagara (762 DUs)	
11.	Bangalore	DPR for T. Dasarahalli, (457 DUs)	
12.	Sira	DPR for Sira City (450 DUs)	
13.	Bangalore	DPR for Yalahanak (759 DUs)	
14.	Gadag	Construction of 504 New housing units (G+1) with allied infrastructure for Urban Poor at Gangimadhi Nagar Ph-I, Gadag	
MADHYA PRADESH			



Monitoring of Projects under JNNURM by BMTPC





Monitoring of Projects under JNNURM by BMTPC



S. No	City/Town	Location	No. of Projects
15.	Rewa	DPR for 5 Slums (Naya talab basti, Mahajan tola, Amarhiya tola, Rental at Gole quarter and Narayan Chakki)	8
16.	Satna	DPR for 5 Slums (Adarsh Nagar, Badkar basti,Basor Basti,Sangam basti and Uchwa tola)	
17.	Katni	DPR for 4 Slums (Panni Mohalla, Basor Mohalla, Premnagar and Jhinjiri)	
18.	Khandwa	DPR for 3 Slums (Cheera Khadan I & II and Bengali colony)	
19.	Dewas	DPR for Dewas Town under RAY	
20.	Sagar	DPR for SagarTown (Madhya Pradesh) under RAY	
21.	Burhanpur	DPR - Pragati Nagar Slum under RAY for Burhanpur Municipal Corporation	
22.	Vidisha	DPR for the Vidisha town	
ODISHA			
23.	Puri/ Tridev Nagar slum	DPR of Tridev Nagar Slum of Puri Municipality (384 DUs)	1
UTTARAKHAND			
24.	Uthimath	DPR for construction of 270 DUs under RAY at Uthimath Town	7
25.	Sitarganj	DPR for construction of 576 DUs under RAY at Sitarganj City.	
26.	Haridwar	DPR for relocation of 906 households from six slums of Haridwar to a site at Jagjeetpur under RAY	
27.	Barkot	Construction of 396 (200 G.F & 196 G+1) Du's Housing at 3 selected slums (In-Situ Development) Including Infrastructure	
28.	Bhimtal	Construction of 107 (G.F) Du's Housing at 7 selected slums (In-Situ Development) Including Infrastructure	
29.	Kelakheda	Construction of 638 (G.F) Du's Housing at 7 selected slums (In-Situ Development) Including Infrastructure	
30.	Shaktigarh	Construction of 504 (G.F) Du's Housing at 4 selected slums (In-Situ Development) Including Infrastructure	

Appraisal of Detailed Project Reports (DPRs) under AHP

The Council appraised 9 DPRs under Affordable Housing in Partnership (AHP) received from State of Gujarat. The proposals were worth Rs.1133.62 crores with Government of India share of Rs.123.59 crores covering 16476 Dwelling Units.

S. No	City/Town	Location	No. of Projects
GUJARAT			
1.	Ahmedabad	Scheme for Economical Weaker Section under Affordable Housing in partnership (AHP) for 5082 Dwelling Unit at 15 locations	9
2.	Ahmedabad	Scheme For Economically Weaker Section (256 Du's) & Lower Income Group (256 Du's) Under Affordable Housing In Partnership (Ahp) At Chenpur	
3.	Ahmedabad	Scheme For Economically Weaker Section (448 Du's) & Lower Income Group (560 Du's) Under Affordable Housing In Partnership (Ahp) At Hathijan	
4.	Rajkot	Affordable Housing for 2770 Units in East and Central Zone of the City by Rajkot Municipal Corporation (RMC) Under Affordable Housing Partnership (AHP) Scheme	

S. No	City/Town	Location	No. of Projects
5.	Rajkot	Scheme For Economically Weaker Section And Lower Income Group Under Affordable Housing In Partnership (AHP) For 1020 Dwelling Unit At TP-9, FP- 31/A In RUDA Area	
6.	Surat	Scheme For Affordable Housing In Partnership (AHP) For Economically Weaker Section (336 D.U's) & Lower Income Group (512 D.U's) at 3 Locations In SUDA Limit	
7.	Ahmedabad	Scheme For Affordable Housing In Partnership (AHP) For Economically Weaker Section (1652 D.U's) & Lower Income Group (812 D.U's) at 4 Locations In AUDA Limit, Ahmedabad	
8.	Bhavnagar	DPR of the EWS houses for construction of 1506 DUs at Bhavnagar under AHP	
9.	Rajkot	Affordable Housing for 1266 Units of EWS Category by Rajkot Municipal Corporation (RMC) Under Affordable Housing Partnership (AHP) Scheme	

2. BMTPC's Role in Implementation of JNNURM

The activities undertaken by BMTPC in implementation of the JNNURM are as given below:

Appraisal of Detailed Project Reports (DPRs) under JNNURM

BMTPC has been involved in the implementation of the JNNURM sub-components Basic Services to Urban Poor (BSUP) and Integrated Housing & Slum Development Programme (IHSDP) for Appraisal of DPRs, Monitoring of Projects, Third Party Inspection & Monitoring (TPIM) Reviews, and organization of capacity building programmes. The projects appraised by the Council include housing and other infrastructure services such as roads, water supply, sewerage, storm water drains, community facilities, health centres, education facilities etc.

During the year, the Council appraised 15 revised DPRs of BSUP & IHSDP projects under JNNURM received from Andhra Pradesh (5) Gujarat (3), Maharashtra (3), Rajasthan (1), Uttar Pradesh (2) & West Bengal (1). The proposals worth Rs.947.75 crores with Government of India share of Rs.344.86 crores covering 28816 Dwelling Units. The BSUP & IHSDP Sub component is under extension phase & no new projects are being sanctioned.

S. No	City/Town	Location	No. of Projects
BSUP			
Andhra Pradesh			
1.	Vijayawada	Revised Vijayawada (Opp. Alankar Industries, Jakkampudi) (Original sanction 3200 DUs to 896 DUs)	5
2.	Vijayawada	Revised Vijayawada (Gollapaddi, Jakkampudi) (Original sanction 3200 DUs to 2688 DUs)	

S. No	City/Town	Location	No. of Projects
3.	Vijayawada	Revised Vijayawada(Basic Infrastructure in Circle II), (Reduction in infrastructure quantities)	
4.	Vijayawada	Revised Vijayawada(Basic Infrastructure in Circle II & III), (Reduction in infrastructure quantities)	
5.	Vijayawada	Revised (Rehabilitation of Flood Victims) (Original sanction 15000 DUs to 13760 DUs)	
Gujarat			
6.	Rajkot	Revised DPR (3168 DUs) for Relocation of flood affected slum dwellers at various EWS reserved plots of Town planning Schemes at Rajkot (Original sanction 3400 DUs to 3168 DUs)	3
7.	Rajkot	Revised BSUP housing scheme (1808 DUs) at different EWS Housing proposed at reserved plots of Town planning Schemes at Rajkot (Original 2640 DUs to 1808 DUs)	
8.	Rajkot	Revised In-situ development for Slum dwellers BSUP Housing Schemes -construction of new 1512 dwelling units	
Maharashtra			
9.	Nashik	DPR for Relocation of dwellers, BSUP housing scheme at New Nashik, East West Area, Nashik (Original sanction 2800 DUs to reduced 1460 DUs)	2
10.	Nashik	DPR for Relocation of dwellers, BSUP housing scheme at Satpur Area, Nashik (Original sanctioned 560 DUs curtailed to 400 DUs)	
Rajasthan			
11.	Ajmer	Revised Ajmer-Pushkar(Original sanction 5337 DUs to 1082 DUs)	1
Uttar Pradesh			
12.	Varanasi	Revision in Sanctioned DPR-BSUP project at , Newada, NAT BASTI,(192 DUs to 144 DUs) Varanasi	2
13.	Meerut	Revision in Sanctioned DPR-BSUP project at Kidwai Nagar (225 DUs to 160 DUs), Meerut	
West Bengal			
14.	Chandernagore	BSUP Phase-IV for construction of 154 DUs in three slums of Chandernagore Municipality	1
IHSDP			
Maharashtra			
15.	Mehkar	Revised IHSDP at Mehkar Buldana	1
Total No. of Projects Appraised			15

Monitoring of BSUP and IHSDP Projects

The Council is also designated as Monitoring Agency for monitoring of the BSUP and IHSDP projects. A detailed monitoring mechanism in consultation with the Ministry of HUPA has been evolved for effective monitoring of these projects. During the period, following projects were monitored by BMTPC:

S. No	City/Town	Project Visited	No. of Projects Monitored
Delhi			
1.	DSIIDC	BSUP - Poothkhurd Ph-I (6480 DUs)	4
2.		BSUP - Poothkhurd Ph-III (7720 DUs)	
3.		BSUP - Tikri Kalan (8420 DUs), Delhi	
4.		BSUP - Slum Relocation Project at Baprola,	

S. No	City/Town	Project Visited	No. of Projects Monitored
		Ph-II (2144 DUs)	
5.	DUSIB	BSUP - Construction of 288 DUs at site no. III Sector 16-B DWARKA	4
6.		BSUP - Construction of 736 DUs at site no. II Sector 16-B DWARKA	
7.		BSUP - Construction of 980 DUs at site no. I Sector 16-B DWARKA	
8.		BSUP - Construction of 7620 DUs at Sawda Ghevra Phase-III	
Rajasthan			
9.	Tonk	IHSDP - (384 DUs)	6
10.	Sheoganj	IHSDP - (489 DUs)	
11.	Sanchore, Dist. Jalore	IHSDP - (8420 DUs)	
12.	Pipar City, Jodhpur	IHSDP - (654 DUs)	
13.	Jodhpur, Phase-III	IHSDP - (373 DUs)	
14.	Jaipur	BSUP - (2892 DUs)	
Karnataka			
15.	Bangalore	BSUP - Revised BBMP Slums (Phase-I) 16 Slums	5
16.	Bangalore	Basic Services to the Urban Poor-BBMP pilot slums at(3 Slum locations)	
17.	Bangalore	Construction of 880 Du's BSUP houses	
18.	Bangalore	Construction of 480 Dus at Bangalore City (Phase-III)	
19.	Mysore	Revised scheme at Ekalavyanagar Slum phase-III Mysore.	
Andhra Pradesh			
20.	Tirupati	Construction of 1800 houses under BSUP project at Vikruthamala	6
21.	Tirupati	Construction of 3360 houses with infrastructure facilities in Avilala & Padipeta	
22.	Vijayawada	Housing & Infrastructure facilities for 3200 housing units in 100 blocks for the poor at Gollapudi Jakkampudi in VMC (Phase - 1)	
23.	Vijayawada	Housing & Infrastructure facilities for 3200 housing units in 100 blocks opp. Alankar Industries of Jakkampudi Village in VMC. (Phase II)	
24.	Vijayawada	Construction of 6752 houses in Circle-II and infrastructure facilities in 22 slums in Circle-I	
25.	Vijayawada	Construction of G+3 15000 Houses for Rehabilitation of flood victims of River Krishna and Budameru Vagu	
26.	Visakhapatnam	Revised Detailed Project Report for "Providing 7968 houses and infrastructural facilities to 6 poor settlements under JNNURM in Greater Visakhapatnam Municipal Corporation (Package 0 II)".	7
27.	Visakhapatnam	Revised Detailed Project Report for "Providing 7352 houses and infrastructural facilities to 22 poor settlements under JNNURM in Greater Visakhapatnam Municipal Corporation (Package 0 I)".	
28.	Visakhapatnam	3616 Dus Dpr Providing With Infrastructure Facilities In Aganampudi In Gvmc Area (Andhra Pradesh) Under Jnnurm	
29.	Visakhapatnam	2080 Dus With Infrastructure Facilities In Paradesipalemin Sy. No. 178 Poor Settlement In Gvmc Area (Andhra Pradesh) Under Jnnurm	
30.	Visakhapatnam	1839 Houses with infrastructure facilities in Parwada in GVMC area (Andhra Pradesh) under JNNURM.	
31.	Visakhapatnam	1024 Dus Dpr For Providing 1024 Houses With Infrastructure Facilities In Kommadi In	

S. No	City/Town	Project Visited	No. of Projects Monitored
		Gvmc Area (Andhra Pradesh) Under Jnnurm	
32.	Visakhapatnam	Revised project for providing relocation 544 Houses with infrastructure facilities in PARADESIPALEMIN Sy No. 179 poor settlements in GVMC area (Andhra Pradesh) under JNNURM	
Maharashtra			
33.	Nagpur	BSUP Nagpur PPP (1694 DUs), Maharashtra	4
34.	Tirora	IHSDP Tirora Phase-III , Maharashtra	
35.	Tirora	IHSDP Tirora Phase-IV, Maharashtra	
36.	Bhandara	IHSDP Bhandara Phase –II, Maharashtra	
Madhya Pradesh			
37.	Jabalpur	Revised BSUP Detailed Project Report, Bagra Dafai, Jabalpur, M.P	4
38.	Jabalpur	Revised BSUP Detailed Project Report, Basor Mohalla, Jabalpur, M.P	
39.	Jabalpur	Revised BSUP Detailed Project Report, Chhukhadan, Jabalpur, M.P	
40.	Jabalpur	Revised BSUP Detailed Project Report, Lal Kuan, Jabalpur, M.P	
Gujarat			
41.	Chorwad	1088 Dus Detailed project report of IHSDP Scheme in CHORWAD MUNICIPALITY, Junagadh Distt, Gujarat	8
42.	VERAVAL-PATAN	960 Dus "Detailed Project report of "IHSDP Scheme in VERAVAL-PATAN MUNICIPALITY, Gujarat".	
43.	Kodinar	Detailed project Report of "IHSDP Scheme for construction of 512 dwelling units in KODINAR MUNICIPALITY, Junagadh Distt, Gujarat".	
44.	Porbandar	Detailed Project report for "JnNURM - BSUP Housing Scheme (Construction of new 2448 dwelling units) at RS. No. 603/1 of Bokhira, Porbandar."	
45.	Rajkot	Relocation Of Flood Affected Slum Dwellers BSUP Housing Scheme (Construction Of New 3400 Dwelling Units) At Different Economical Weaker Section At Raj	
46.	Rajkot	BSUP Housing Scheme (Construction Of New 2640 Dwelling Units) At Different Ews Housing Proposed At Rajkot	
47.	Rajkot	In-situ development for slum dwellers BSUP Housing Schemes construction of new 2624 dwelling units at Rajkot	
48.	Chotila	240 Dus Detailed Project report of IHSDP Scheme for construction of 240 dwelling units in CHOTILA MUNICIPALITY, Gujarat	
Total No. of Projects Monitored			48

Review of TPIM Reports

The Council has been undertaking review of Third Party Inspection & Monitoring (TPIM) reports for BSUP and IHSDP projects. During the year, TPIM Review of the following projects were undertaken and submitted to the JNNURM Mission Directorate:

S.No	Name of State	TPIM Review Reports Submitted to Mission Directorate
1.	Arunachal Pradesh	1
2.	Assam	4
3.	Bihar	2

S.No	Name of State	TPIM Review Reports Submitted to Mission Directorate
4.	Chandigarh	4
5.	Chattisgarh	15
6.	Delhi	13
7.	Gujarat	50
8.	Haryana	17
9.	Himachal Pradesh	1
10.	Jammu & Kashmir	25
11.	Jharkhand	18
12.	Karnataka	1
13.	Kerala	17
14.	Maharashtra	13
15.	Madhya Pradesh	7
16.	Meghalaya	16
17.	Orissa	19
18.	Punjab	1
19.	Rajasthan	65
20.	Sikkim	1
21.	Tamilnadu	32
22.	Tripura	5
23.	Uttarakhand	3
24.	Uttar Pradesh	43
25.	West Bengal	63
Total		436

3. BMTPC's Role in Implementation of projects under 10% Lump-sum Provision for NER States including Sikkim

The Ministry of Housing & Urban Poverty Alleviation, Govt. of India, is implementing projects under 10% Lump-sum Provision for NER States including Sikkim. The Council has been designated as one of the Appraisal Agencies for appraising the projects received under 10% Lump-sum Provision for NER States including Sikkim. The following projects has been appraised during the year:

S. No	State	Project Name	No. of Projects
1.	Arunachal Pradesh	DPR for "Construction of Vendors Market and Working Women Hostel at Dumporijo	3
2.		Construction of Multi-Utility Complex at Ziro, Town	
3.		Construction of Multi Utility Complex at Seppa Town	
4.	Mizoram	Slum Area Development Scheme for Biate Town	1
5.	Nagaland	Construction of State urban Resource Centre for Poverty Alleviation cum Skill Training Centre at Kohima	2
6.		Construction of Working Women Hostel at Dimapur	
Total No. of Projects Appraised			6

ORGANISATION

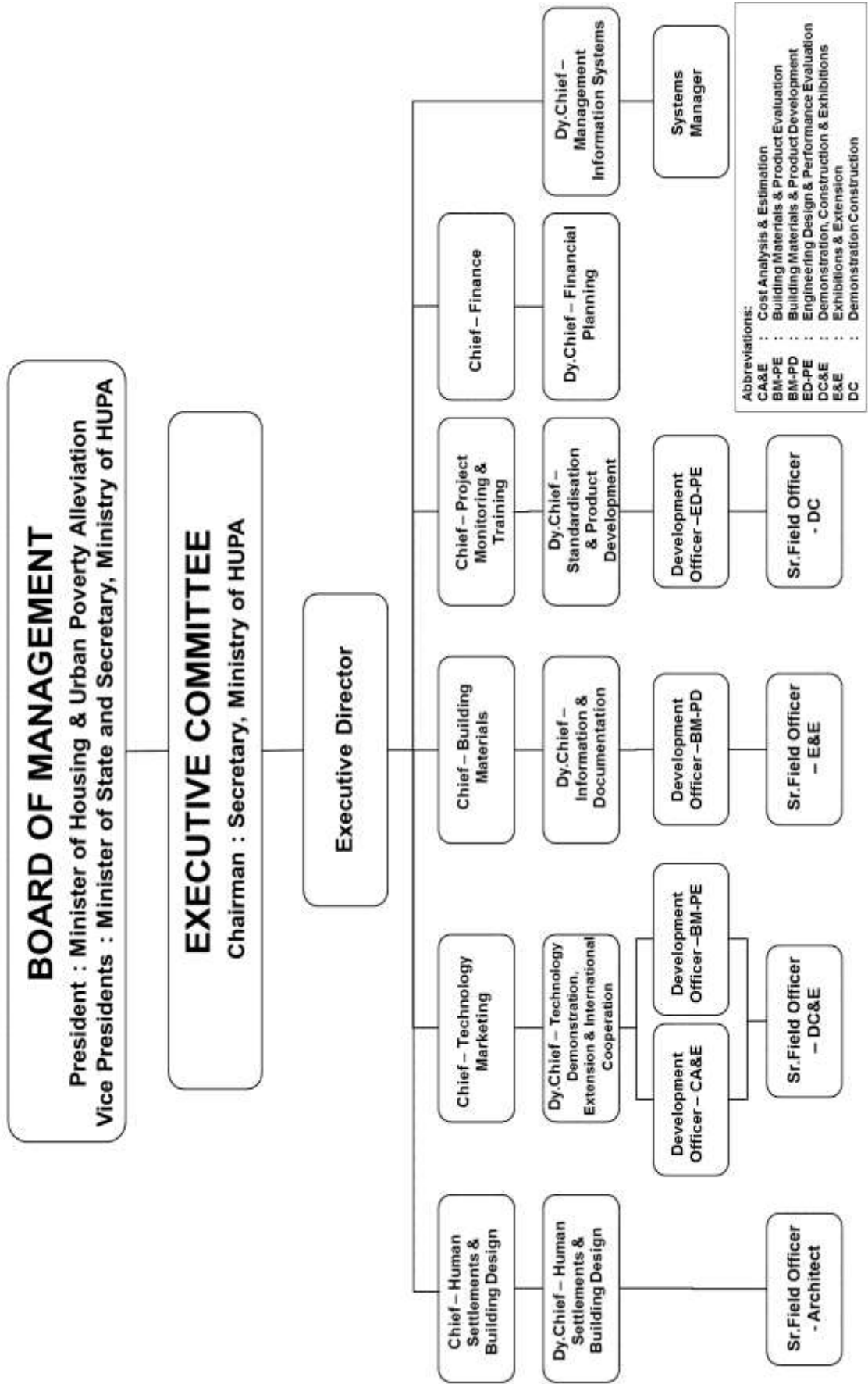
The organizational structure of the Council is depicted at next page. As on 31st March, 2015, BMTPC had a staff strength 39 comprising 21 officers and 18 supporting staff. Also technicians/professionals are hired on contract on project and need basis.

The Council has continued following administrative and financial measures for bringing transparency, responsiveness and greater participation of the employees:

- Implementation of modified Byelaws, Recruitment-cum-Promotion Rules and Delegation of Power.
- Internal Committee for smooth and harmonious functioning of the Council:
 - Investment Committee
 - Advertisement Committee
 - Printing Committee
 - Local Purchase Committee
 - Store Purchase Committee
 - Transport Committee
 - Contractual Payment Committee
- To redress citizen grievances, online handling of the public grievances through centralized public grievances redress and monitoring system has been initiated.
- Nominated an officer as the Director of grievances and an officer as Welfare Officer for smooth functioning of the organization and to find out the solution of the grievances of the staff members.
- SCs & STs Cell for welfare and development of Scheduled Casts & Scheduled Tribes
- Implementation of RTI Act, 2005
- Committee for Prevention of Sexual Harassment of women at workplace.
- Independent audit of implementation of Citizen's Charter.
- Independent audit of implementation of public grievance redressal system.

BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL

ORGANISATION CHART



STAFF STRENGTH (as on 31.3.2015)

<u>S.No.</u>	<u>Name & Designation</u>	<u>Date of Joining</u>
1.	Dr. Shailesh Kr. Agrawal <i>Executive Director</i>	17.01.08
2.	S.Balasrinivasan <i>Chief-Finance</i>	08.04.92
3.	J.K.Prasad <i>Chief-Building Materials</i>	01.09.03
4.	M. Ramesh Kumar <i>Chief- Human Settlements & Building Design</i>	01.04.93
5.	Arun Kumar Tiwari <i>Chief-Project Monitoring & Training and Administration</i>	22.07.03
6.	S.K.Gupta <i>Deputy Chief- Technology, Demonstration Extension & International Cooperation</i>	26.10.93
7.	Arvind Kumar <i>Deputy Chief- Management Information Systems</i>	15.04.99
8.	Dr. Amit Rai <i>Deputy Chief (On Lien to UNIDO)</i>	05.11.98
9.	Chandi Nath Jha <i>Deputy Chief- Standardization & Product Development</i>	09.09.99
10.	Pankaj Gupta <i>Deputy Chief-Information & Documentation</i>	14.10.99
11.	D.P.Singh <i>Development Officer-Engineering Design & Product Evaluation</i>	05.10.98
12.	Dalip Kumar <i>Senior Field Officer- Demonstration Construction & Exhibition</i>	04.03.91
13.	Alok Bhatnagar <i>Senior Field Officer- Exhibition & Extension</i>	05.10.98
14.	Akash Mathur <i>Senior Field Officer- Architect</i>	01.01.02
15.	Anita Kumar <i>Sr. Programmer</i>	03.10.96
16.	M.Ramakrishna Reddy <i>Liaison Officer</i>	29.10.03
17.	Pankaj Gupta <i>Personnel Officer</i>	01.03.94
18.	Praveen Suri <i>Systems Analyst</i>	01.09.94
19.	S.S.Rana <i>Library Officer</i>	01.04.98
20.	D.Prabhakar <i>Field Officer</i>	29.01.04
21.	Ashwani Kumar <i>Asstt. Field Officer</i>	01.01.02

ACCOUNTS

The Council received grants of Rs.499 lakhs from the Ministry of Housing & Urban Poverty Alleviation, Government of India during the FY 2014-15. In addition, receipts from other sources like Fees, Consultancy, Training, JNNURM, RAY, Interest, Publications, etc. were Rs.350 lakhs. The total expenditure incurred was Rs.821 lakhs during the year, as per Receipt & Payment Account Statement. A summary of expenditure is given below:

Major Heads	Amount (in Rs.)
• Construction of Demonstration Housing Projects in different parts of India, Expenditure on Financial Assistance for technology development/application and Sponsored Studies	1,49,93,940
• Organisation and participation in various Seminars, Conferences, Workshops in India and abroad, Dissemination of technical know-how in form of brochures leaflets, manuals, guidelines, etc. Capacity Building-cum-Hands-on Training Programmes for professionals as well as construction workforce	62,61,485
• Expenses towards Appraisal, Monitoring, Capacity Building and Training Programmes, Monitoring Cell and other activities relating to JNNURM, RAY, BIPARD and others	1,87,17,563
• Expenditure on Salary, Establishment & Administration expenses including office equipments, computer peripherals, etc.	4,21,44,138
TOTAL	8,21,17,126

The accounts have been audited by M/s A.N.Garg & Company, Chartered Accountants. The balance sheet and the statement of accounts of the year 2014-15 is placed in the report.



INDEPENDENT AUDITOR'S REPORT

To

The Members,
Building Materials & Technology Promotion Council
NEW DELHI

Report on the Financial Statements

We have audited the accompanying financial statements of **BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL** ("the SOCIETY") registered under the Societies Registration Act 1860, which comprise the Balance Sheet as at March 31, 2015 and statement of Income and Expenditure for the year ended and a summary of significant accounting policies and other explanatory information.

Management Responsibility for the Financial Statement

Management is responsible for the preparation of these financial statements that give a true and fair view of the financial position, financial performance in accordance with the Accounting Principles generally accepted in India. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those Standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Society's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.



Contd....2.....



A.N. Garg & Company

CHARTERED ACCOUNTANTS

We believe that the audit evidences we have obtained are sufficient and appropriate to provide a basis for our unqualified audit opinion.

Basis for Opinion:

Opinion

In our opinion and to the best of our information and according to explanation given to us, the financial statements give the information required in the manner so required and give true and fair view in conformity with the accounting principles generally accepted in India:

- (a) In case of Balance Sheet, of the state of affairs of the Society as at March 31, 2015;
- (b) In case Statement of Income and Expenditure Account, of the Surplus for the year ended on that date; and
- (c) In case of Receipts and Payment Account of Receipts and Payments for the year ended on that date.

Report on Other Legal and Regulatory Requirements:

We report that:

- (a) We have obtained all the information and explanation, which to the best of our knowledge and belief were necessary for the purpose of our audit.
- (b) In our opinion, proper books of accounts as required by the law have been kept by the Society so far as it appears from our examination of the books.
- (c) In our opinion, the Balance Sheet & Statement of Income & Expenditure account dealt with by the report complies with the Accounting Standards issued by the Institute of Chartered Accountants of India.
- (d) The Balance Sheet and Statement of Income & Expenditure account dealt with by this Report are in agreement with the books of accounts.
- (e) The Receipts and Payment Account dealt with by this report are in agreement with the books of accounts.

FOR A N GARG & COMPANY
Chartered Accountants
(FRN: 004616N)

A. N. GARG
(FCA, Partner)
M. No. 083687

Place: DELHI
Date: 18-09-2015

BALANCE SHEET AS ON 31 MARCH 2015

		Amount (₹)	
	Schedule	2014-15	2013-14
<u>CORPUS/CAPITAL FUND AND LIABILITIES</u>			
CORPUS/CAPITAL FUND	1	10,00,000	10,00,000
RESERVES AND SURPLUS	2	19,45,80,742	19,40,01,939
EARMARKED FUNDS	3	13,35,014	29,28,030
CURRENT LIABILITIES AND PROVISIONS	4	20,61,111	18,42,297
TOTAL		19,89,76,867	19,97,72,266
<u>ASSETS</u>			
FIXED ASSETS	5	3,89,20,484	3,96,64,141
CURRENT ASSETS, LOANS & ADVANCES ETC.	6	16,00,56,383	16,01,08,125
TOTAL		19,89,76,867	19,97,72,266
SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS	14		

S.B. Srinivasan
(S. Balasrinivasan)
Chief - Finance

Dr. Shailesh Kr. Agrawal
(Dr. Shailesh Kr. Agrawal)
Executive Director

As per our report of even date attached.

A.N. GARG & COMPANY
Chartered Accountants

A.N. Garg

A.N. GARG, FCA
PARTNER
M.No.-083687
FIRM No.004616N



Place : Delhi
Date : 18.09.2015

INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 2015

	Schedule	Amount (₹)	
		2014-15	2013-14
INCOME			
Grants / Subsidies	7	4,99,00,000	5,00,00,000
Jnnum Monitoring/Appraisal Fees/Seminar & Training Programmes Receipts	8	1,63,51,190	1,05,71,250
Income from Publications and PAC's Fee etc.	9	11,12,361	10,48,686
Interest Earned	10	1,35,64,560	1,27,18,336
TOTAL (A)		8,09,28,111	7,43,38,272
EXPENDITURE			
Expenditure on Salary, Establishment & Administration	11	4,09,21,145	4,08,78,799
Expenditure on Dissemination / Seminars/Workshops, Training Programmes, JNNURM etc.	12	2,33,02,997	2,87,86,819
Expenditure on Financial Assistance, Sponsored Studies etc.	13	1,49,89,940	2,13,16,833
Depreciation	5	11,35,226	11,19,530
TOTAL (B)		8,03,49,308	9,21,01,981
Excess of expenditure over income (B-A)		-	1,77,63,709
Excess of income over expenditure (A-B)		5,78,803	-
BALANCE BEING SURPLUS/DEFICIT CARRIED TO BALANCE SHEET		5,78,803	(1,77,63,709)
SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS	14		

S. Balasrinivasan
(S. Balasrinivasan)
Chief - Finance

Dr. Shallesh Kr. Agrawal
(Dr. Shallesh Kr. Agrawal)
Executive Director

As per our report of even date attached.

A.N. GARG & COMPANY
Chartered Accountants

A.N. Garg

A.N. GARG, FCA
PARTNER
M.No.-083687
FIRM No.004616N



Place : Delhi
Date : 18.09.2015

RECEIPTS & PAYMENT ACCOUNT FOR THE YEAR ENDED 31 MARCH 2015

	Amount (₹)	
	2014-15	2013-14
RECEIPTS		
1 Opening Balance		
Cash Balances in hand	75,930	1,50,685
Bank Balances		
With Scheduled Banks:		
- On Deposit Account	13,05,78,008	13,14,52,624
- On Savings Accounts:		
- Canara Bank (Parliament Street)	15,85,808	3,25,89,749
- Canara Bank (Hauzkhass)	3,65,479	3,51,287
- Canara Bank, Bangalore	49,544	1,99,087
- State Bank of Hyderabad (Scope Complex)	73,57,212	43,62,461
2 Grants-in-aid from Central Government (Ministry of Housing & Urban Poverty Alleviation)	4,99,00,000	5,00,00,000
3 Receipts towards Fees/Consultancy & Training/Conferences/JNNURM	2,01,53,524	53,96,250
4 Security Deposit etc.	3,00,000	3,39,163
5 Loan & advances(Net)	-	37,18,909
6 Income from Publications etc.	11,12,361	10,48,686
7 Interest Earned	1,34,56,316	1,31,11,806
TOTAL	22,49,34,182	24,27,19,787
PAYMENTS		
1 Purchase of Fixed Assets	3,91,589	12,59,216
2 Expenditure on Salary, Establishment & Administration	4,09,15,296	4,28,31,417
3 Expenditure on Training Programmes, Seminars/Workshops, etc.	62,61,485	88,09,632
4 Expenditure on Financial Assistance, Sponsored Studies, etc.	1,49,93,940	6,25,62,290
5 Loan & advances(Net)	8,37,273	-
6 Earmarked funds		
Capacity Building Training Programme on IPOMS, Quality Assurance and TPM	11,96,763	6,308
BIPARD	1,78,560	5,85,668
Vanday	50,000	-
NDMA	-	1,60,630
Rejuvenation and strengthening of Building Centers	2,43,000	6,91,675
Establishment of Bamboo Mat Production Centres in North-Eastern States	-	18,41,598
Construction of Demonstration Houses in Mizoram	-	-
Opening Balance	-	3,14,343
Construction of Demonstration Buildings with cost effective technologies and technology Demonstration cum-Production Centre in Tripura	-	16,68,323
7 Expenditure on JNNURM	1,70,49,240	2,30,58,613
8 Closing Balance		
Cash Balances in hand	31,744	75,930
Bank Balances		
With Scheduled Banks:		
- On Deposit Account	12,96,34,094	13,05,78,008
- On Savings Accounts:		
- Canara Bank (Parliament Street)	1,06,21,207	15,85,808
- Canara Bank (Hauzkhass)	3,80,345	3,65,479
- Canara Bank, Bangalore	1,88,552	49,544
- State Bank of Hyderabad (Scope Complex)	19,61,214	14,27,85,312
TOTAL	22,49,34,182	24,27,19,787

S.B. Srinivasan
(S. Balasrinivasan)
Chief - Finance

Dr. Shailesh Kr. Agrawal
(Dr. Shailesh Kr. Agrawal)
Executive Director

As per our report of even date attached.

A.N. GARG & COMPANY
Chartered Accountants



Place : Delhi
Date : 18.09.2015

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2015

	Amount (₹)	
	2014-15	2013-14
SCHEDULE 1- CORPUS/CAPITAL FUND		
Balance as at the beginning of the year	10,00,000	10,00,000
TOTAL	10,00,000	10,00,000
SCHEDULE 2- RESERVES AND SURPLUS		
1. Capital Reserve		
Opening Balance	8,73,71,404	8,61,12,188
Addition during the year	3,91,569	12,59,216
2. Excess of Income over Expenditure		
Opening Balance	10,66,30,535	12,56,53,460
Less : Amount transferred from Income & Expenditure A/c	-	1,77,63,709
Add : Amount transferred from Income & Expenditure A/c	5,76,803	-
	10,72,09,338	10,78,89,751
Less transferred to Capital Reserve	3,91,569	12,59,216
TOTAL	19,45,80,742	19,40,01,929
SCHEDULE 3- EARMARKED FUNDS		
1 BIPARD PROJECT		
Opening Balance	4,05,942	1,64,882
AMOUNT RECEIVED DURING THE YEAR	-	7,50,000
Less : Utilisation/Expenditure during the year	1,53,253	2,52,689
	2,52,689	5,08,940
2 Rejuvenation and strengthening of Building Centers		
Opening Balance	13,25,325	20,17,000
AMOUNT RECEIVED DURING THE YEAR	-	-
Less : Utilisation/Expenditure during the year	2,43,000	10,62,325
	10,62,325	6,91,675
3 Capacity Building Training Programme on IPOMS, Quality Assurance and TPIM		
Opening Balance	11,96,763	12,03,091
Less : Utilisation/Expenditure during the year	-	6,328
Add : Amount Refunded during the year	11,96,763	-
	11,96,763	11,96,763
4 Construction of Demonstration Buildings with cost effective technologies and technology Demonstration-cum-Production Centre in Tripura		
Opening Balance	-	17,78,430
Less : Utilisation/Expenditure during the year	-	3,29,120
Less:amount refunded during the year	-	14,49,310
	-	-
5 Establishment of Bamboo Mat Production Centres in North-Eastern States		
Opening Balance	-	18,41,598
Less : Utilisation/Expenditure during the year	-	-
Less:amount refunded during the year	-	18,41,598
	-	-
6 Construction of Demonstration Houses in Mizoram		
Opening Balance	-	3,14,343
Less:amount refunded during the year	-	3,14,343
	-	-
7 NDMA PROJECT		
Opening Balance	-	1,60,630
AMOUNT RECEIVED DURING THE YEAR	-	-
Less : Utilisation/Expenditure during the year	-	1,60,630
	-	-
TOTAL	13,35,014	29,28,030
SCHEDULE 4- CURRENT LIABILITIES AND PROVISIONS		
CURRENT LIABILITIES		
- Outstanding Liabilities	5,62,862	5,94,048
- Security Deposit	14,78,277	11,78,277
- Balance of funds received for developing building bye-laws	19,972	19,972
- Liability towards Bilaspur project under VAMBAY	-	50,000
TOTAL	20,61,111	18,42,297



SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2015

	GROSS BLOCK				DEPRECIATION			Amount (₹)		
	2013-14		2014-15		2013-14		2014-15		2013-14	
	Cost as at 1.4.14	Additions	Total	Upto 1.04.14	Current year	Upto 31.03.15	NET BLOCK	NET BLOCK	As at 31.03.14	As at 31.03.15
Office Building at IHC (Lease hold)	3,43,19,817	-	3,43,19,817	-	-	-	3,43,19,817	3,43,19,817	3,43,19,817	3,43,19,817
Furniture and Fixtures	35,76,651	72,000	36,48,651	25,46,831	1,08,326	26,55,157	9,93,494	10,29,820	10,29,820	10,29,820
Office Equipments	1,90,03,139	-	1,90,03,139	1,70,57,148	2,91,899	1,73,49,047	16,54,092	19,45,991	19,45,991	19,45,991
Computers/ Peripherals	1,68,95,871	3,13,750	1,72,09,621	1,62,63,146	4,73,760	1,67,36,906	4,72,715	6,32,725	6,32,725	6,32,725
Air conditioners	10,35,166	-	10,35,166	5,67,848	70,098	6,37,946	3,97,220	4,67,318	4,67,318	4,67,318
Fan & Coolers	75,405	5,819	81,224	39,423	6,270	45,693	35,531	35,982	35,982	35,982
TV and VCR	3,80,450	-	3,80,450	3,01,963	11,773	3,13,736	66,714	78,487	78,487	78,487
Exhibits, Panels, Display Models	1,20,84,905	-	1,20,84,905	1,09,30,904	1,73,100	1,11,04,004	9,80,901	11,54,001	11,54,001	11,54,001
	8,73,71,404	3,91,569	8,77,62,973	4,77,07,263	11,35,226	4,88,42,489	3,89,20,484	3,96,64,141	3,96,64,141	3,96,64,141
Previous Year (2013-14)	8,61,12,188	12,59,216	8,73,71,404	4,65,87,733	11,19,530	4,77,07,263	3,96,64,141	3,95,24,455	3,95,24,455	3,95,24,455





SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2015

		Amount (₹)	
SCHEDULE 6 - CURRENT ASSETS, LOANS, ADVANCES ETC.	2014-15	2013-14	
A. CURRENT ASSETS:			
1. Cash in hand	31,744		75,930
2. Bank Balances			
- On Deposit Account	12,96,34,094	13,05,78,008	
- On Savings Accounts:			
- Canara Bank (Parliament Street)	1,06,21,207	15,85,808	
- Canara Bank (Hauz Khas)	3,80,245	3,65,479	
- Canara Bank (Bangalore)	1,88,552	49,544	
- State Bank of Hyderabad (Scope Complex)	19,61,214	73,57,212	13,99,36,051
B. LOANS, ADVANCES AND OTHER ASSETS			
1. Loans to staff	23,39,104	23,39,104	26,60,839
2. Advances and other amounts recoverable in cash or in kind or value to be received			
a. Income tax, Tds & Other advances Recoverable	35,79,326	12,21,192	
b. Amount due as per sanction order for Jnnurm Monitoring Fee/TPIMA Fee	9,23,540	59,25,000	
c. Security Deposit (space) Recoverable	4,20,000	4,20,000	75,66,192
3. Interest Accrued	99,77,357		98,69,113
TOTAL (A + B)	16,00,56,383		16,01,06,125



**Building Materials & Technology Promotion Council**

Ministry of Housing & Urban Poverty Alleviation, Government of India

**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT
FOR THE YEAR ENDED AS ON 31 MARCH 2015**

	Amount (₹)	
SCHEDULE 7- GRANTS/SUBSIDIES (Irrevocable Grants & Subsidies Received)	2014-15	2013-14
1 Central Government (Ministry of Housing & Urban Poverty Alleviation, Government of India)	4,99,00,000	5,00,00,000
TOTAL	4,99,00,000	5,00,00,000
SCHEDULE 8 - FEES/SUBSCRIPTIONS	2014-15	2013-14
1 Jnnurm Appraisal, TPIMA fee from Ministry of Housing & Urban Poverty Alleviation & Training Programme Fees	1,63,51,190	1,05,71,250
TOTAL	1,63,51,190	1,05,71,250
SCHEDULE 9- INCOME FROM PACS FEE, PUBLICATION ETC.	2014-15	2013-14
1 Receipts towards sale of publications, PACS etc	11,12,361	10,48,686
TOTAL	11,12,361	10,48,686
SCHEDULE 10- INTEREST EARNED	2014-15	2013-14
1 On Term Deposits With Scheduled Banks	1,26,60,156	1,16,81,278
2 On savings Accounts With Scheduled Banks	6,98,723	9,31,605
3 On Loans: Employees/Income Tax Refund	2,05,681	1,05,453
TOTAL	1,35,64,560	1,27,18,336
SCHEDULE 11- EXPENDITURE ON SALARY, ESTABLISHMENT & ADMINISTRATION	2014-15	2013-14
1 Pay and Allowances	3,50,73,458	3,44,34,472
2 Leave Travel Concession	3,16,268	5,58,709
3 Reimbursement of Medical Expenses	13,37,709	9,60,213
4 Honorarium	2,11,000	2,43,000
5 Advertisement expenses towards hiring of personnel	-	18,428
6 Administration Expenses	39,82,710	46,63,977
TOTAL	4,09,21,145	4,08,78,799
SCHEDULE '12' - EXPENDITURE ON DISSEMINATION / SEMINARS/WORKSHOPS, TRAINING PROGRAMMES, JNNURM ETC.	2014-15	2013-14
1 Exhibition and publicity	19,36,798	26,67,983
2 Seminar and Conference Expenses	23,80,374	25,12,938
3 Printing, Publication & Advertisement	14,23,287	19,07,457
4 Books and Periodicals	1,93,930	93,434
5 Technology transfer and training Programmes	3,19,368	7,96,061
6 JNNURM Expenditure including Administration Expenses	1,70,49,240	2,08,08,946
TOTAL	2,33,02,997	2,87,86,819





**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT
FOR THE YEAR ENDED AS ON MARCH 2015**

SCHEDULE '13' - EXPENDITURE ON SPONSORED STUDIES, FINANCIAL ASSISTANCE, ETC.	Amount(₹)	
	2014-15	2013-14
A Building Materials & Construction Technologies		
1 Brain storming session on understanding Bottleneck in use of emerging, alternate housing technologies	73,712	-
2 Construction of demonstration houses at Bilaspur	60,000	-
3 Workshop on affordable innovative green housing at Kolkata for EWS & LIG	1,20,552	-
4 Workshop on developing guidelines & Specification for affordable housing with focus on western region organised at Ahmedabad	3,42,980	-
5 Workshop on design & planning of affordable, sustainable housing for coastal areas at Vijaywada	1,38,749	-
6 Workshop on emerging building materials and construction technologies at Hyderabad, Telangana	5,42,655	-
7 Workshop on standard & Specification for design & planning of affordable innovative green housing in doaba region at Ramada jalandhar city centre, jalandhar	66,002	-
8 Design & Planning of affordable innovative green social housing (Coastal Region & Plain Region)	5,00,000	-
9 Development of commercial process for utilization of pond ash in manufacture of cold setting building brick and block	5,43,375	-
10 Developing matrix for selection of emerging technologies based on multi attributes as well as evaluation methodology	8,89,891	-
11 Developing portal title knowledge network for sustainable habitat in India	2,99,400	-
12 Documentation of traditional housing typology for the poor, based on building material usage in Andhra Pradesh	2,37,500	-
13 Design of housing options for the poor, for different agro-climate zones in the coastal areas of Andhra Pradesh	2,37,500	-
14 Development of Fly Ash based advanced Logno-Silico-Aluminous Geo-Polymeric Binder useful for making Cement free Green Concrete for Funding	3,95,485	-
15 Project Proposal on discarded fishnet Reinforced Hybrid FRP sheet for Indoor Partitions	3,05,200	-
16 Seismic Retrofitting of school building having double storey masonry store at Govindpuri	2,25,000	-
17 A case study on construction of EWS houses in Baprola, Delhi	1,12,360	-
18 Developing Draft IS code & manual on filler slab	81,910	-
19 Developing Draft IS code & manual on rat trap bond	81,910	-
20 Standard & specification for EWS & LIG Housing scheme(Uttarakhand & Himachal Pradesh)	2,20,000	-
21 Preparation of planning document for Building Technology Park	39,871	-
22 Workshop on standard and specification for affordable Housing organised at Ahmedabad for Western Region	43,322	-
23 Energy efficient construction material for buildings	98,000	2,50,000
24 Construction of demonstration houses at Barwaripur, UP	26,00,868	1,15,25,166
25 Performance appraisal certification scheme	8,19,030	4,53,790
26 Development of concrete column for low cost housing	3,00,000	2,17,268
27 Guidelines for rapid visual screening of building of masonry & reinforced concrete as prevalent in India	1,00,000	24,000
28 Prototype design & planning of low cost innovative housing for doaba region in Punjab and surrounding region	1,50,000	1,89,000
29 Prototype design & planning of low cost innovative housing for kolkata and surrounding region	1,50,000	1,89,000



	2014-15	2013-14
30 Design methodology for chemical treated bamboo reinforced concrete members for low cost Housing	-	4,55,000
31 Construction of community centre at village Khojkipur,Haryana	-	1,88,531
32 Construction of demonstration houses at Pinjore,Haryana	-	6,10,892
33 Setting up of bamboo mat production centre at Dimapur,Nagaland	-	4,23,600
34 Improvement of earthquake resistant capacity of circular columns	-	18,000
35 Brain storming session for possible areas of cooperation with R&D institution	-	2,77,662
36 Construction of demonstration structure using bamboo based technologies	-	1,54,168
37 Consultation on standard specification for affordable housing in Gujarat	-	1,00,000
38 Workshop on emerging building materials & construction technology at Bangalore	-	2,54,584
39 Development of curriculum on sustainable building technology for engineering & architecture education	-	2,50,000
40 Developing works specification & rate analysis for monolithic concrete construction technology	-	1,37,700
41 Project on Hu Motor:A human way to utilize human efforts	-	3,00,000
42 Pilot study for design of Indira Awas Yojna for western region with focus on Gujarat	-	1,15,888
43 Project on representation of GFRG structure using building information model(BIM)	-	3,00,000
44 Design packages for construction of demonstration structure using cost effective technologies at Karnataka	-	1,50,000
45 Development of schedule of rate on GFRG & monolithic concrete construction technologies	-	2,00,000
46 Documentation of demonstration housing project at Raipur Fulwari,UP	-	2,34,800
47 Development of standard specification for plain region e.g.Madhya Pradesh/Bihar & coastal region-Orissa/Andhra Pradesh	-	5,50,000
48 Development of standard & specification including suggestive design for EWS & LIG housing schemes for central India	-	2,75,000
49 Development of work specification and analysis of rates for GFRG buildings	-	1,87,500
Sub-Total (A)	97,75,272	1,80,31,549



**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT
FOR THE YEAR ENDED AS ON 31 MARCH 2015**

		Amount(₹)	
SCHEDULE '13' - EXPENDITURE ON SPONSORED STUDIES, FINANCIAL ASSISTANCE, ETC. (contd.)		2014-15	2013-14
B Capacity Building & Skill Development			
1	Certified training programme for technicians	2,10,113	-
2	Training Programme for building artisan pilot assessment phase II	8,00,000	-
3	Training Programme for masons on filed level application of cost effective technologies at Raebareilly	66,000	-
4	Training Programme for masons on cost effective, Environment friendly & disaster resistant construction techniques at Hazaribagh(Jharkhand)	31,560	-
5	Training Programme on construction on Bamboo Toilets for Private & community at Kochi,Kerala	1,00,000	-
6	Training Programme on seismic design of multi storey building IS 1893 Vs Euro code 8	12,70,969	-
7	Training Programme on cost effective & disaster resistant technology at Jaipur	2,00,000	-
8	Training Programme on cost effective & disaster resistant technology for masons,architect & Engineers at Srinagar(Garhwal)	44,000	-
9	Training Programme on cost effective & disaster resistant technology for masons, architect & Engineers at (Tiruchirappalli)	2,00,000	-
10	Training Programme on using bamboo structure in housing & building construction at Hailong,Assam	4,00,000	-
11	Workshop & Training programme on bamboo structure of housing & construction at Dimapur, Nagaland	3,00,000	-
12	Evolving building artisan friendly certification programmer linked to decentralised modules	3,00,000	12,40,435
13	Development of basic audio-video and still based training module for artisan	-	6,62,160
14	Training programme for supervisors on effective housing technologies at Tehri Garhwal, Uttarakhand	-	50,000
15	Training programme for engineers & supervisors on green building technology at Kanyakumari	-	49,000
16	Training programme for supervisors on low cost technologies at Vidisha,MP	-	1,00,000
17	Training programme for mason on cost effective technology at Amargarh, Gujarat	-	45,824
18	Training programme for construction workers on disaster resistance practice at Ahmedabad,Gujarat	-	34,543
19	Training programme cum work shop on bamboo housing at Shilong,Meghalaya	-	4,12,520
20	Training programme for engineers at Raibareilly	-	49,850
21	Training programme for masons in rural areas on flyash based buildings components at Jamshedpur	-	61,431
22	Training programme cum workshop on bamboo housing at Imphal (Manipur)	-	4,00,000
23	Training programme for masons at Barwaripur,UP	-	66,000
Sub-Total (B)		39,22,642	31,71,763
C Disaster Mitigation & Management			
1	Capacity building programme for engineering & architecture on earthquake resistant structure & retrofitting of building for NCR Region	3,65,889	-
2	Preparation of seismic design manual for earthquake disaster mitigation	8,20,000	-
3	Organisation of training of trainers with BIPARD on earthquake resistant design & construction at Patna	1,06,137	1,13,521
Sub-Total (C)		12,92,026	1,13,521
TOTAL (A+B+C)		1,49,89,940	2,13,16,833





SCHEDULE 14: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS

1 Significant Accounting Policies

a) **System of Accounting** - The accounts have been prepared to comply with all material aspects with applicable principals in India and notified Accounting Standards.

b) **Fixed Assets** - Fixed assets are stated at cost of acquisition and depreciation is provided at written down values rates and in the manner as specified in the Income Tax Act 1961.

c) **Retirement Benefits** -

1.The Council contributes to its own Provident Fund Trust which is recognized by the Income Tax authorities and the contributions paid during the year to Provident Fund Trust are charged to revenue.

2. Liability in respect of Gratuity to employees is provided for by way of annual premium paid to LIC under Group Gratuity Scheme.

3 Liability in respect of Leave Encashment payable to the employees is provided for by way of annual premium paid to LIC of master policy and the premium paid is charged to revenue.

d) **General** - Accounting policies not specifically mentioned are otherwise in consonance with generally accepted accounting practices.

2 **Contingent Liabilities** - Claims against the Council not acknowledged as debts - NIL.

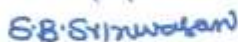
3 In opinion of the Management, the amount on realisation of current assets, loans and advances in the ordinary course of business would not be less than the amount at which they are stated in the Balance Sheet. Further, provision for all known liabilities has been made in the accounts.

4 As there being no taxable income under the Income Tax Act, 1961, provision for Income Tax has not been made in the accounts. The Council is regularly depositing TDS, Service Tax and other statutory liabilities.

5 In respect of office space at India Habitat Centre, Lodhi Road, New Delhi, the exact cost has not been apportioned by IHC amongst the different allottees. As such a sum of Rs. 3.43 crores has been capitalized by the Council on the basis of calls/payment made to IHC.

6 Since the Financial Year 2012-2013, the administration expenditure has been apportioned equally to Grants as well as JNNURM expenditure.

7 Figures have been rearranged & regrouped wherever required and all the above said information has been given by the management and relied upon by the auditors.


(S. Balasrinivasan)
Chief - Finance


(Dr. Shailesh Kr. Agrawal)
Executive Director

As per our report of even date attached.

A.N. GARG & COMPANY
Chartered Accountants




A.N. GARG, FCA
PARTNER
M.No.-083687
FIRM No.004616N

Place :Delhi
Date : 18.09.2015

PARTICIPATION IN NATIONAL AND INTERNATIONAL EVENTS

I. EXHIBITIONS

During the year, the Council actively participated in the exhibitions which have helped in sharing knowledge and experience in cost effective, environment friendly and energy efficient building materials, construction technologies and simple machines for production of building components including emerging technologies:

- 18th National Exhibition on the theme of ‘Service to the Nation for Progress of India’ during 3rd to 7th Sep’2014 at Amarabati Maidan, Kolkata.
- Municipalika 2014, 12th International Conference & Exhibition on Sustainable Habitat & Integrated Cities from 13-15, November, 2014 at Mahatma Mandir Gandhinagar.
- HUDCO BuildTech’14 during India International Trade Fair from 14-27 November, 2014 at Pragati Maidan, New Delhi.
- 102nd Indian Science Congress: Pride of India Expo from 3-7 January 2015 at University of Mumbai, Mumbai.
- 7th Vibrant Gujarat Summit and Trade Show 2015 from 7-13 January 2015 at Near Mahatama Mandir, Gandhinagar, Gujarat.
- 6th Vision Rajasthan 2015, an awareness programme of Cost-Effective Innovative Building Materials and Construction Technologies from 1st – 3rd March 2015 at Krishi Vigyan Kender, Udaipur, Rajasthan.
- 3-days Technical Festival on “Cognizance 2015” from 27th – 29th March, 2015 at IIT-Roorkee organized by IIT-Roorkee, Roorkee.

II SEMINARS/ CONFERENCES/ WORKHOPS/TRAINING PROGRAMMES etc.

- Advanced Training Programme on “IGBC Green Building Rating Systems” Mumbai, March 12-13, 2015.
- World Urban Forum 7 “Urban Equity in Development-Cities for Life” at Medelline, Columbia as part of Indian delegation from April 5-11, 2014.



Visit to BMTPC Display by the then Secretary, Ministry of Housing & Urban Poverty Alleviation in HUDCO BuildTech 2014 during India International Trade Fair, November 14-27, 2014 at Pragati Maidan, New Delhi



- Indo-Norwegian Training Programme - Seismic Design of Multi-Storey Buildings IS 1893 vs Eurocode 8 on May 26-28, 2014 at New Delhi organized by BMTPC.

Meeting with IIT Madras to discuss proposed Code, SOR and design package for GFRP System on 19th June, 2014 at Chennai.

- Workshop on “Design and Planning of Affordable Sustainable Housing for Coastal Areas” on 4th July, 2014 at Vijaywada organized by BMTPC.
- Round Table Meeting with Vice Chairman, Delhi Development Authority and senior officials of DDA regarding Mainstreaming Emerging Housing Technologies on 16th July 2014 at New Delhi.
- National Seminar on Green Building Materials & Construction Technologies organized by BMTPC on August 29, 2014 at New Delhi.
- Interactive meet with Technology Providers of Emerging Housing Technologies under the Chairmanship of Joint Secretary (RAY & JNNURM), Ministry of Housing & Urban Poverty Alleviation on 4th August, 2014 at New Delhi.
- Brain Storming Session on Understanding the Bottlenecks in use of Emerging & Alternate Housing Technologies in Housing Schemes for providing Housing for All organized by BMTPC on 17th September, 2014 at New Delhi.
- Workshop on Emerging Building Materials and Construction Technologies on October 10, 2014 at Engineering Staff College of India, Hyderabad.
- Workshop on Emerging Building Materials and Construction Technologies organized by BMTPC in association with Andhra Pradesh State Housing Corporation Limited on October 11, 2014 at Hyderabad.
- Seminar on “Green Affordable Housing: Lessons from Practice” from on 13-15 October 2014 at Thiruvananthapuram, Kerala organized by Development Alternatives, New Delhi.
- Indo-Norwegian Training Programme - Seismic Design of Multi-Storey Buildings IS 1893 Vs Eurocode 8 from October 13-15, 2014 at New Delhi organized by BMTPC.

- Training Programme on Bamboo Structures for Housing and Construction at Haflong, Assam from 29th October to 1st November, 2014 organised by BMTPC jointly with Dima Hasao, Forest Department, Government of Assam.
- International Seminar and Exhibition on Recent Developments in Design and Construction of 'Precast Concrete Technology' from 09th to 13th November, 2014 at NIMHANS Campus, Hosur Road, Bangalore organised by Association of Consulting Civil Engineers (India), Bangalore.
- Two batches of Training of Trainers (TOTs) Programme on Earthquake Resistant Design and Construction from 11-14 November, 2014 at BIPARD Campus, Patna
- Two batches of Training of Trainers (TOTs) Programme on Earthquake Resistant Design and Construction from 18-21 November, 2014 at BIPARD Campus, Patna
- 7th National Conference on Wind Engineering (NCWE-2014) from 21-22 November, 2014 at Patiala organized by Department of Civil Engineering.
- International Training Programme on Construction on "Bamboo Toilets for Private and Community" during Kerala Bamboo Fest 2014 from 1-5 December 2014 at KEID, Kochi, Kerala organised by Auroville Bamboo Centre & South Asian Bamboo Foundation in collaboration with Kerala State Bamboo Mission.
- Capacity Building Programme for Engineers and Architects on Earthquake resistant structures and retrofitting of buildings for NCR region from 12-13 February 2015 at New Delhi organized by BMTPC.
- Workshop on "Standards and Specifications for Design and Planning of Affordable Innovative Green Housing in Doaba Region" on 21st March, 2015 at Jalandhar organized by BMTPC.
- India-UK Scientific Seminar on "Green Construction Materials for Sustainable Build" from 28th – 29th March, 2015 at India Habitat Centre, Lodhi Road, New Delhi organised by CSIR-Central Building Research Institute, Roorkee.

III TECHNICAL COMMITTEE/ WORKING GROUPS /MEETINGS ETC.

- Meeting regarding review of progress under the scheme of shelters for urban homeless and implementation of National Urban Livelihoods Mission (NULM) on 2nd April 2014 under the Chairmanship of Secretary (HUPA).
- Meeting on Monitoring of Projects by DSIIDC on 25th April 2014 at Poothkhurd, Tikri Kalan, Baprola.
- Meeting of Fourteenth Finance Commission (FFC) with Ministry of Housing & Urban Poverty Alleviation on 29th April 2014 at New Delhi.
- Meeting on Monitoring of Delhi Projects by DUSIB on 1st May 2014 at New Delhi.
- Monitoring of BSUP Projects under JNNURM from 5th to 8th May 2014 at Bangalore and Mysore.
- 150th Meeting of CSC under JNNURM on 20th May 2014 at New Delhi.
- 154th Meeting of CSMC under JNNURM on 20th May 2014 at New Delhi.
- 8th Meeting of CSMC under RAY - AHP of Ministry of Housing & Urban Poverty Alleviation under the Chairmanship of Secretary (HUPA) on 20th May, 2014 at New Delhi.
- 5th meeting of Sub-Committee TIFAC - Technology Vision 2035 Habitat on 22nd May, 2014 at TIFAC, New Delhi.
- Meeting on Task Force for States of Bihar and Tamil Nadu on provision of water supply or intervention with JS (JNNURM/RAY) on 6th June 2014 at New Delhi.
- Monitoring of four IHSDP and BSUP Projects at Gujarat from 9-13 June, 2014.
- Meeting of Monitoring Committee to monitor the implementation of provisions of the notification on Fly Ash Utilization held on June 18, 2014 at Indira Paryavaran Bhawan, New Delhi.
- National Conclave of Ministers and Workshop of Secretaries of State and UT's on Urban Governance and "Housing for All" opportunities and challenges on 2nd-3rd July 2014 at Vigyan Bhawan, New Delhi.

- 44th meeting of Executive Committee of BMTPC on 10th July 2014 at New Delhi.
- 9th Meeting of CSMC under RAY on 15th July 2014 at New Delhi.
- 156th Meeting of CSMC under JNNURM on 15th July 2014 at New Delhi.
- 152nd Meeting of CSC under JNNURM on 15th July 2014 at New Delhi.
- Meeting with Director, Precast India Infrastructure Pvt. Ltd. on 24 July 2014 at New Delhi.
- 10th Meeting of CSMC under RAY on 13th August 2014 at New Delhi.
- 157th Meeting of CSMC under JNNURM on 20th August 2014 at New Delhi.
- 153rd Meeting of CSC under JNNURM on 20th August 2014 at New Delhi.
- Meeting on Rehabilitation Package for Refugees/ Displaced Persons in J&K on 2nd September 2014 under JS (FFR Division) at MHA, New Delhi.
- 12th National convention on Housing for All 2022' and Real Estate Awards, 2014 on 12th September 2014 at New Delhi.
- 7th Meeting of the Technical Assessment Committee (TAC) of Performance Appraisal Certification Scheme PACS on September 18-19, 2014 at Raigarh, Chhattisgarh.
- Meeting on Examinations of Demand for Grants of Ministry of Housing & Urban Poverty Alleviation for the year 2014-15 held on 25th September, 2015 at New Delhi.
- World Habitat Day Celebration function on 9th October 2014 organized by Ministry of Housing & Urban Poverty Alleviation at New Delhi.
- Meeting with JS (RAY) regarding establishment of Building Technology Park on 16th October 2014 at New Delhi.

- Meeting with Mr. Mohammad Abu Sadeque, Peng. Director, (HBRI) Housing and Building Research Institute Bangladesh (M/o Housing and Public Works) on 20th October 2014 at New Delhi.
- 11th Meeting of CSMC under RAY on 21st October 2014 at NBO, New Delhi.
- 158th Meeting of CSC under JNNURM on 21th October 2014 at New Delhi.
- 154th Meeting of CSC under JNNURM on 21th October 2014 at New Delhi.
- Meeting regarding presentations by technology providers on pre fab technology organized by Urban Development Department on 5th November, 2014 at Shimla.
- 45th meeting of Executive Committee of BMTPC on 20th November 2014 at New Delhi.
- Meeting on 'Emerging Technologies in Infrastructural Works' on 3rd December 2014 at DUSIB, New Delhi.
- Round Table meeting of the Asia Europe (ASEM) /East Asia Summit (EAS) countries on 4-5th December 2014 at New Delhi.
- Meeting regarding organization of training programmes for Engineers and Architects by BMTPC & BIPARD on 27th December, 2014 at BIPARD, Patna.
- Visited the factory of Beardsell Limited, Chennai and factory of JAPEVA Engineering Pvt. Ltd., Thrimurugam Nagar, Chennai for inspection of their products under PACS from 5 – 7 January, 2015 at Chennai.
- 157th meeting of CSC under JNNURM on 21th January 2015 at New Delhi.
- 161st Meeting of CSMC under JNNURM on 21st January 2014 at New Delhi.
- Meeting the State officials regarding mainstreaming Emerging Technologies in Housing Projects at Pune and Mumbai on 22rd -23rd January 2014.
- Meeting with Secretary, HUPA regarding Housing Mission "Housing for All by 2022" on 9th February 2015 at New Delhi.

- Meeting with JS (RAY) regarding Model Tender alongwith other officers of BMTPC on 23rd February 2015 at New Delhi.
- Meeting of R&D Committee of BMTPC to discuss the progress of various projects on 27th February 2015 at New Delhi.
- 158th Meeting of CSC under JNNURM on 21th February 2015 at New Delhi.
- 162nd Meeting of CSMC under JNNURM on 21st February 2014 at New Delhi.
- Meeting to discuss various aspects of construction of earthquake resilient building in India organised by NDMA on 4th March 2015 at New Delhi.
- 46th meeting of Executive Committee of BMTPC on 12th March 2015 at New Delhi.
- 159th Meeting of CSC under JNNURM of M/o HUPA on 12th March 2015 at New Delhi.
- Visited production factory of EPS Panels and houses constructed using EPS Panels under PACS from 16 – 17 March, 2015 at Angul, Orissa.
- Meeting for Tender Evaluation with Urban Development Department of Himachal Pradesh on 23rd March, 2015 at Shimla.
- Meeting of Standing Committee on Urban Development and Housing regarding demands for grants on 27th March 2015 at New Delhi.

IV OTHER ACTIVITIES

- A draft of the Technology Sub Mission under the proposed new Housing for All Mission has been prepared and submitted to Ministry of HUPA. Under the technology Sub Mission it is proposed that BMTPC would be working in the areas of emerging technologies, proven/green technologies and good construction practices along with safer construction. A core group with the participation of Ministry of HUPA is proposed to be constituted for facilitating emerging technologies in different states and other related matters. The Terms of Reference (TOR) of the core group has been prepared and submitted to Ministry.
- 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.

- As per the direction of Ministry, the scrutiny sheets for the projects to be implemented under various mode of Housing for All Mission were prepared jointly with HUDCO. The sheets comprise the concise check lists for information related to the important aspects of the projects under likely modes of Viability Gap funding, Up front Govt contribution etc. Further, the draft monitoring agreement comprising details related to site monitoring parameters, desk review of identified DPRs were prepared. The scrutiny sheets & draft monitoring agreement have been submitted to the Ministry.
- A comprehensive self-contained note was prepared on making provision of incentives for construction of Green homes involving green technology, materials & energy saving designs under Affordable housing scheme. The note included the importance of Green building & integration of green designs in DPRs, the prominent Green Rating agencies operating in the Country & details of their Rating system, proposed incentives for green design in affordable housing projects, work done by CPWD in sustainable habitat area & likely role of BMTPC.
- As part of team, assessed the claim of M/s Jumbo Roofing Ltd., Guwahati under Central Capital Investment Subsidy Scheme (CCIS), 2007 of Department of Industrial Policy and Promotion, Ministry of Commerce and Industry.

PAPERS PRESENTED/PUBLISHED

- Paper entitled “Emerging Building Materials and Technologies for Sustainable Built Environment” published in proceedings of National Seminar on Green Affordable Housing, organized by NAREDCO, June 13, 2014, New Delhi.
- Presentation on Emerging Technologies for Housing & Building Construction before the senior engineers and architects of DDA organized by DDA on July 16, 2014 at New Delhi.
- Paper entitled “Use of Bamboo in Building Construction” published in Special Issue of Newsletter of NCHF, October 6, 2014, New Delhi.
- Paper entitled “Quality and Inspection Manual for Housing Projects” published in Special Issue of Nirman Sarika, BMTPC on the occasion of World Habitat Day-2014, October 2014, New Delhi.
- Paper entitled “Harit Bhawan: Pravatiyan, Awasar Avam Chunotian (Hindi)” published in Special Issue of Nirman Sarika, BMTPC on the occasion of World Habitat Day-2014, October 2014, New Delhi.
- Paper entitled “Urban Renewal through Slum Rehabilitation – JNNURM Experience” published in Special Issue of Nirman Sarika, BMTPC on the occasion of World Habitat Day-2014, October 2014, New Delhi.
- Presentation on Mainstreaming Alternate Emerging Technologies for Mass Housing during the Workshop on Emerging Building Materials and Construction Technologies organized by BMTPC on October 11, 2014 at Hyderabad.
- Presentation on Alternate and Emerging Technologies for Housing & Building Construction during the Seminar on "Role of Consulting Engineers, Contractors, Developers and Authorities in Infrastructure Sector organized by Consulting Engineers Association of India (CEAI) on November 28-29, 2014 at New Delhi.
- Presentation on Emerging Technologies for Housing & Building Construction was made before the Hon'ble Chief Minister of Andhra Pradesh in order to mainstream the emerging technologies for mass housing on March 26, 2015 at Hyderabad.

PUBLICATIONS BROUGHT OUT DURING THE YEAR

1. Prospective Construction Systems for Mass Housing - Technology Profiles
2. Guidelines on "Rapid Visual Screening of Buildings of Masonry and Reinforced Concrete as Prevalent in India"
3. Building Artisan Certification System
4. "Nirman Sarika" - Special Issue of Newsletter highlighting issues related to the theme "Voices from Slums" of World Habitat Day 2014.

Brochures Updated/Reprinted:

1. Corporate brochure - Creating Enabling Environment for Affordable Housing for All
2. Demonstration Construction using cost-effective and disaster resistant technologies
3. Disaster Mitigation and Management – Initiatives by BMTPC
4. Bamboo in Housing & Building Construction – Initiatives by BMTPC
5. Brochure on Performance Appraisal Certification Scheme (PACS)

**BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL
(BMTPC)**

**ACTION PLAN FOR THE YEAR
2015-2016**

VISION, MISSION, OBJECTIVES AND FUNCTIONS

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, standardisation, mechanisation and large scale field application of 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.

Functions:

1. Identification, evaluation of innovative and emerging technologies available globally and encouraging joint venture in building materials and construction sector.
2. Promoting economy, efficiency and quality in construction.
3. Upscaling of technologies, know-how acquisition, absorption and dissemination.
4. Field level application of environment-friendly, energy-efficient and disaster resistant technologies for innovative, locally available and emerging technologies.
5. Formulation of Standards on innovative building materials/technologies including emerging technologies/systems and incorporation in the schedule of specifications/rates.
6. Formulation of Standards/Specifications for Affordable Housing
7. Documentation of benefits, durability and acceptability of cost effective and innovative building materials and technologies.
8. Skill upgradation of professionals and construction workers through capacity building programmes, training programmes, seminars, conferences, workshops, exhibitions nationally as well as internationally.
9. Promoting disaster resistant construction technologies.
10. Appraisal, monitoring and third party inspection of housing projects including undertaking project management and consultancy services.
11. Publication of user manuals, guidelines, compendiums, directories, brochures, techno-feasibility reports, video films, demonstration CDs, interactive website, blogs including documentation of success stories.

ANNUAL ACTION PLAN OF BMTPC FOR FY 2015-16

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
1. To promote development, standardisation, mechanisation and large scale field application of innovative and emerging building materials and technologies in the construction sector.	58	Action 1 <ul style="list-style-type: none"> Identification, Evaluation and promotion of Emerging / Green Alternate Materials and Housing Technologies for different regions 	<ul style="list-style-type: none"> Study, evaluation, certification under PACS, Preparation of Technology profiles/manuals and advocacy to Govt. agencies, builders professional architects and technology providers 	Nos.	20	8	7	6	5	4	25.00
			<ul style="list-style-type: none"> Publication of Multi-attribute Evaluation Methodology for emerging technologies including its advocacy 	Date	1	30.09.2015	31.10.2015	-	-	-	2.00
			<ul style="list-style-type: none"> Development of model tender for introduction of emerging technology including its advocacy 	Date	1	30.05.2015	31.6.2015	-	-	-	2.00
			<ul style="list-style-type: none"> Launch of portal on alternate and emerging technologies including Directory of Technologies, Technology providers, engineers and architects 	Date	3	29.2.2016	31.3.2016	-	-	-	15.00
			<ul style="list-style-type: none"> Initiation of research on Durability and Service Life Assessment of Buildings using EPS system and submission of mid term report 	Date	1	29.2.2016	31.3.2016	-	-	-	10.00

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
			<ul style="list-style-type: none"> Initiation of research on Development of design guidelines for EPS buildings including earthquake resistant designs and submission of mid term report 	Date	1	29.2.2016	31.3.2016	-	-	-	12.00
			<ul style="list-style-type: none"> International Seminar on Emerging Trends in Construction Technologies 	Date	4	29.2.2016	31.3.2016	-	-	-	10.00
		Action 2 <ul style="list-style-type: none"> Promotion of Green Building Materials and Technologies 	<ul style="list-style-type: none"> Preparation of region-specific detailed list of green technologies, its manufacturers, machines, machine manufacturers including brochures for each technology 	Nos.	8	10	9	8	7	6	30.00
		Action 3 <ul style="list-style-type: none"> Dissemination and propagation of innovative and disaster resistant technologies 	<ul style="list-style-type: none"> Establishment of Resource cum Permanent Display Centres 	Nos.	2	2	1	-	-	-	15.00
		Action 4 <ul style="list-style-type: none"> Utilization of C&D waste in construction 	<ul style="list-style-type: none"> Preparation of guidelines on C&D waste recycling and use in housing sector 	Date	2	29.2.2016	31.3.2016	-	-	-	20.00
		Action 5 <ul style="list-style-type: none"> Organisation of Seminars, Exhibitions, for promotion of emerging/ cost effective technologies 	<ul style="list-style-type: none"> Organisation of one Exhibition on Alternate & Emerging Building Materials & Technologies during IITF 2015 or any other location in NCR 	Date	3	29.2.2016	31.3.2016	-	-	-	40.00

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
		Action 6 <ul style="list-style-type: none"> R&D Projects in the field of housing and building construction 	<ul style="list-style-type: none"> Initiation of sponsored studies leading towards development of alternate building materials and technologies 	Nos.	3	3	2	1	-	-	30.00
		Action 7 <ul style="list-style-type: none"> Establishment of Building Technology Park on the land to be allotted by DDA at New Delhi 	<ul style="list-style-type: none"> Preparation of Detailed Project Report 	Date	2	31.1.2016	28.2.2016	31.3.2016	-	-	30.00
		Action 8 <ul style="list-style-type: none"> Dissemination of information through print & electronic media including website upkeep 	<ul style="list-style-type: none"> Periodic sharing of information through journals (4 nos.), magazines (2 nos.), website update, advts.(3 nos.) and preparation of display material (40 panels) 	Date	2	29.2.2016	31.3.2016	-	-	-	10.00
			<ul style="list-style-type: none"> Publication of Technical Reports / Manuals/ Guidelines/ Handbooks 		Nos.	3	3	2	1	-	-
		Action 9 <ul style="list-style-type: none"> Participation in important Exhibitions related with Building Materials & Construction Technologies 	<ul style="list-style-type: none"> Participation in seminars/ workshops/ exhibitions 	Nos.	2	8	7	6	5	4	12.00

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
2. 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.	14	Action 1	• Publication of five Guidebooks	Date	2	29.2.2016	31.3.2016	-	-	-	9.00
		• Development of complete Guidebook (Margadarshika) for 5 trades i.e. Assistant Mason, Mason, Bar bender, Concreting Artisan & Shuttering Artisan including organisation of skill development programmes in two regions	• Skill upgradation of no. of masons, barbenders concreting artisans and shuttering artisans (five nos. each in two regions)	No.	3	150	135	120	105	90	16.00
		Action 2	• Capacity building of no. of professionals	No.	6	150	135	120	105	90	20.00
• Organisation of capacity building programmes (five nos.) for engineers, architects of state ULBs on good construction practices including emerging technologies											

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
		Action 3 <ul style="list-style-type: none"> Training Programmes (two nos.) on Bamboo based technologies in North Eastern States for engineers, architects and masons 	<ul style="list-style-type: none"> Capacity building and skill upgradation of no. of professionals 	Date	3	50	45	40	35	30	8.00
3. To promote methodologies and technologies for natural disaster mitigation, vulnerability & risk reduction and retrofitting/ reconstruction of buildings and disaster resistant planning for human settlements.	12	Action 1 <ul style="list-style-type: none"> Publication of Earthquake Hazard Zoning Maps (sponsored by NDMA) 	<ul style="list-style-type: none"> Publication of maps 	Date	2	31.7.2015	31.8.2015	30.9.2015	31.10.2015	30.11.2015	0.00
		Action 2 <ul style="list-style-type: none"> Preparation of 3rd edition of Vulnerability Atlas of India 	<ul style="list-style-type: none"> Preparation of Maps for 15 States/UTs 	Nos.	2	15	12	10	8	6	8.00

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
		Action 2 <ul style="list-style-type: none"> Organization of Training of Trainer Programmes for engineers and architects of State Governments 	<ul style="list-style-type: none"> Capacity building of Engineers and Architects 	% of request received from State Govt.	2	100	90	80	70	60	4.00
		Action 3 <ul style="list-style-type: none"> Organisation of two Training Programmes on Disaster Resistant Technologies with IIT Roorkee and NORSAR 	<ul style="list-style-type: none"> Capacity building of no. of professionals 	Nos.	2	100	90	80	70	60	6.00
		Action 4 <ul style="list-style-type: none"> Organisation of two Capacity Building Programmes of Engineers & Architects on Earthquake Resistant Construction and Retrofitting of Buildings 	<ul style="list-style-type: none"> Capacity building of no. of professionals 	Nos.	2	80	70	60	50	40	6.00
		Action 5 <ul style="list-style-type: none"> Retrofitting of existing Buildings to showcase the seismic strengthening techniques 	<ul style="list-style-type: none"> Retrofitting of DDA School Building 	Date	2	29.2.2016	31.3.2016	-	-	-	40.00

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
Preparation of long term Perspective Plan for BMTPC		Perspective Plan	Perspective Plan								5.00
Refurbishment of Office of BMTPC, Upgradation of office automation		Refurbishment of Office of BMTPC, Upgradation of library, office automation etc.									35.00
Committed liabilities on ongoing projects											30.00
Staff Salary and Establishment Expenses		Establishment, Personnel and Office Expenses									500.00
Total											957.00

Column 1	Col 2	Column 3	Column 4		Col 5	Column 6					Budget Estimate other than Grant-in-aid (Rs. In lakhs)
Objective	Wt.	Actions by Outputs	Success Indicators	Unit	Rt Wt.	Target / Criteria Value					
						Excel.	V.G	Good	Fair	Poor	
						100%	90%	80%	70%	60%	
4. To undertake project management and consultancy services including appraisal, monitoring and third party inspection of housing projects under the various Central/State Schemes (funding from other sources)	3	Action 1 <ul style="list-style-type: none"> Appraisal, monitoring, TPIM review of projects under JNNURM / RAY as per Ministry's requirement 	Submission of Reports	% of project received	3	100	90	80	70	60	200.00

SI.No.	Objective	Weight	Actions	Success Indicator	Unit	Weight	Target/Criteria Value					PMD Comments
							Excellent	Very Good	Good	Fair	Poor	
							100%	90%	80%	70%	60%	
*	Efficient Functioning of the RFD System	3	Timely submission of Draft RFD for 2015-16 for Approval	On-time submission	Date	2.00	15/05/2015	16/05/2015	19/05/2015	20/05/2015	21/05/2015	
			Timely submission of Results for RFD for 2014-15	On-time submission	Date	1.00	01/05/2015	02/05/2015	05/05/2015	06/05/2015	07/05/2015	
*	Enhanced Transparency / Improved Service delivery of Ministry / Department	3	Rating from Independent Audit of implementation of Citizens' / Clients' Charter (CCC)	Degree of implementation of commitments in CCC	%	2.00	100	95	90	85	80	
			Independent Audit of implementation of Grievance Redress Management (GRM) system	Degree of success in implementing GRM	%	1.00	100	95	90	85	80	
*	Administrative Reforms	7	Update organizational strategy to align with revised priorities	Date	Date	2.00	01/11/2015	02/11/2015	03/11/2015	04/11/2015	05/11/2015	
			Implementation of agreed milestones of approved Mitigating Strategies for Reduction of potential risk of corruption (MSC)	% of implementation	%	1.00	100	95	90	85	80	
			Implementation of agreed milestones for ISO 9001	% of implementation	%	2.00	100	95	90	85	80	
			Implementation of milestones of approved Innovation Action Plans (IAPs).	% of implementation	%	2.00	100	95	90	85	80	

* Mandatory Objective(s)