



Annual Report 2009-2010



bmtpc

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





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Ministry of Housing & Urban Poverty Alleviation, Govt. of India
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New Delhi 110003



FOREWORD

I have great pleasure in presenting the Twentieth Annual Report of the Building Materials & Technology Promotion Council for the year 2009-2010.

BMTPC in its endeavour to promote the use of innovative and environment-friendly building materials and construction technologies has initiated series of activities for the accomplishment of multi-faceted objects, enshrined in the mandate of the Council. Responding to the problems confronted by the building materials and construction sector, the Council laid emphasis in its activities on identifying the gaps for sustainable development of building materials & construction sector and coordinated its efforts with concerned agencies for developing appropriate strategies for creating better acceptability of proven innovative technologies.

In order to give impetus to alternate technologies, the Council initiated construction of demonstration houses at Amethi, Sultanpur, U.P., Community Centre with facilities such as Community Hall, dispensary, cretch, library, green room, office, etc. at Village Khojkipur-Naggal, Haryana, demonstration housing project at Pinjore, Distt. Panchkula, Haryana and Model Informal Market in Vishakhapatnam, Andhra Pradesh. Besides, the Council has initiated construction of Demonstration houses using Rapidwall technology in Mumbai for industrial workers. The Rapidwall panels are prefabricated panels manufactured using calcined phosphogypsum and is a promising emerging technologies based on waste as a resource. The Council initiated these projects in different regions with the twin objectives of creating awareness and large scale dissemination of alternate, cost effective, green and disaster resistant construction technologies.

The Council through its multi-pronged approach within its core mandate of promotion, development and application of innovative and disaster resistant building technologies continued its involvement in the implementation of Jawaharalal Nehru National Urban Renewal Mission (JNNURM) by way of appraising and monitoring the projects under BSUP and IHSDP. The Council also involved itself in capacity building of the municipal functionaries of ULBs in Project Development for BSUP and IHSDP under JNNURM.

The Council is continuously striving to establish the proactive approach towards disaster mitigation and management and has been in the forefront in educating and creating mass awareness amongst stakeholders and the common man. With the objective of demonstrating retrofitting technologies, BMTPC started seismic strengthening of two more MCD school buildings in Delhi region. During the year, the Council brought out a Common Man's Guide for Building Hazard-Resistant Houses and revised the Guidelines for Improving Flood and Earthquake Resistance of Housing.

The Council continued its thrust on promotion of bamboo based building technologies by construction of demonstration structures in North Eastern Region. The Council has earlier established four Bamboo Mat Production Centres in the North Eastern States. The Council has initiated the establishment of Bamboo Mat Production Centre in Arunachal Pradesh during the year. Apart from this, a Training Programme was organized at Itanagar, Arunachal Pradesh on Bamboo based Community Buildings and Large Span Structures for promotion of bamboo based technologies in housing and building construction.

In order to provide guidance to common man for constructing their houses, the Council has started a series of House Building Digest (Aam Aadmi Series) during last year. During the year, six booklets on various themes were brought out under Aam Aadmi Series. The Council has also brought out the Second Edition of Book titled "Standards & Specifications for Cost-Effective Innovative Building Materials and Techniques including Rate Analysis", which covers detailed specifications so formatted that these can be straight away included in the schedules of specifications by public and private construction agencies. The Guidelines for Technical Training of Masons in Hindi were also brought out on CD. With regular updation, the website of the Council is being visited frequently by professionals of various disciplines globally and is being

used as a reference source in the area of innovative building materials and construction technologies.

Like preceding years, on the occasion of World Habitat Day 2009, the Council brought out the Special Issue of "Nirman Sarika" on the theme "Planning Our Urban Future" chosen by the UN-Habitat for the year. The Council organized a painting competition for Differently Abled Children and a Design Idea Competition on the theme "Housing for Urban Poor" and the winners were felicitated during the World Habitat Day celebrations.

In order to disseminate the knowledge about the cost effective and waste based building materials and technologies all over India particularly for the students of architectural and engineering colleges, the Council is establishing Permanent Display Centres in different parts of the country. During the year, Permanent Display Centre was established at Civil Engineering Department, Indian Institute of Technology, Roorkee, Uttarakhand. With the emergence of new building materials, advancement of technologies and the need for disaster resistant construction to mitigate the effect of natural disasters, it is important that working professionals regularly update their knowledge and the construction workforce is provided hands-on training. BMTPC continued its efforts in organizing structured training programmes on subjects related to advancement in the area of building materials for working professionals and construction workforce on regular basis.

With a focus on development and promotion of innovative building technologies, specific projects have been completed such as Development of Technology for Utilization of Marble Slurry in Self Compacting Concrete, Project on "Lok Awas Yatra - A knowledge journey to facilitate sustainable habitat for the poor", Development of Technology for recycling of Construction and Demolition Wastes, Green Building Guidelines for Sustainable Habitat, Roofing Technology Knowledge Consolidation and Documentation, Development of Guidelines for Habitat Reconstruction in Bihar, Development of Housing System using cellular light weight concrete for EWS, etc. During the year, the Council has also initiated projects for Propagation of Confined Masonry as a preferred building technology in low-rise building constructions, Development of the Building Components from Sponge Iron Wastes, Cost Effective Value Added Thermal Insulation Tiles for Insulation Purpose, Preparation of Draft Indian Standard and Manual on Filler Slab, Detailed assessment and evaluation of the existing building typologies in five severe earthquake zones, Energy Auditing & Carbon in manufacture of Bamboo Mat Corrugated Sheets and Bamboo Mat Ridge Cap, etc.

It is my privilege to place on record the valuable guidance, support and encouragement received from the President, 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. Special thanks are due to Planning Commission, Parliamentary Standing Committee on Urban Development, JNNURM Mission Directorate, MoHUPA, various State Govts., Municipal Corporations and Urban Local Bodies, Ministry of Home Affairs, Ministry of DONER, Ministry of Agriculture, NDMA, NIDM, MOS&PI, DST, CSIR, IITs, CEPT, IPIRTI, CBTC, CBRI, SERC, SPA, HUDCO, BIS, NHB, NCHF, HPL, CGEWHO, CPWD, NSIC, CIDC, UNIDO and UN-Habitat for their continued support and interest in strengthening the efforts of the Council over successive years.

I would also like to place on record my deep appreciation of the cooperation of our officers and staff members in implementing 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

The 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 with the objective of bridging gap between the laboratory development and large scale field application of cost effective, environment-friendly and energy-efficient innovative building materials and disaster resistant construction technologies.

In its endeavour, BMTPC initiated several activities for the accomplishment of its multi-faceted objectives, enshrined in the mandate of the Council and looking at the aspiration of the construction sector. Over the years, the Council has been focussing on the promotion of the innovative, cost-effective, environment-friendly and energy-efficient alternate building materials and technologies. The Council has also embarked upon the field level application of alternate building materials and technologies by way of construction of demonstration housing 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 solutions. The Council also constructed demonstration structures in the North Eastern Region and set up Bamboo Mat Production Centres to make available the quality 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 and guidelines/manuals on disaster resistant construction, the Council also assisted a number of State Governments in modifying their Building Bye-laws for safety against natural hazards in order to strengthen techno-legal regime in the country. In order to take retrofitting technologies of life-line structures further, the Council has undertaken retrofitting of few schools in Delhi and Dehradun. The Council has also been designated as one of the Appraisal and Monitoring Agencies for Projects under BSUP and IHSDP under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The Council in recent years has reoriented its approach towards promotion and marketing of sustainable technologies through intensive evaluation, dissemination.

Objectives

- To promote development, production, standardization and large-scale field application of cost-effective, innovative building materials and construction technologies in housing and building sector.
- To promote new waste-based building materials and components through technical support and encouraging entrepreneurs to set up production units in different urban and rural regions.
- To develop and promote methodologies and technologies for natural disaster mitigation, vulnerability & risk reduction and retrofitting/reconstruction of buildings and disaster resistant planning of human settlements.
- To provide support to professionals, construction agencies and entrepreneurs in selection, evaluation, upscaling, skill-upgradation, and marketing for technology transfer from lab to land in the area of building materials and construction.

Thrust Areas

- Improving the policy environment for sustained growth of cost-effective building materials, production and availability.
- Promotion of production units of building materials/components based on Flyash, Redmud, Phosphogypsum, agricultural residues and other wastes and by-products.
- Modernisation of small scale and village level building materials production units in rural and urban areas.
- Promoting economy in construction costs.
- Formulation of standards for local building materials.
- Strengthening industrial extension services for attracting more investment in building materials sector by working with national and international agencies.
- Upscaling of technologies, know-how acquisition, absorption and dissemination.
- Assessing vulnerability and risk in natural disaster prone areas.
- Promoting disaster resistant construction technologies.
- Global technology search and encouraging joint ventures in building materials and construction sector.

MAJOR INITIATIVES AND ACTIVITIES DURING THE YEAR 2009-2010

I. DEMONSTRATION BUILDINGS USING COST-EFFECTIVE TECHNOLOGIES

1. Field level application of cost effective technologies through Demonstration Housing Projects

The Council has made visible strides in the demonstration housing projects undertaken at various locations to showcase the effective use of cost effective building materials and disaster resistant technologies.

Demonstration Housing Project at Amethi, Uttar Pradesh

Using alternate building materials and techniques such as rat-trap bond in bricks for walling, prefabricated brick panels for roofing, RCC doors/ window frames, precast sunshades, staircases, lintel etc; BMTPC is constructing 24 dwelling units at Amethi, Sultanpur, U.P. having carpet Area – 27.15 sqm. with separate kitchen, bathroom, toilet and 15% green area are being constructed. During the year, construction work has reached upto roof level of first floor. The cost saving compared to conventional construction is about 15%.

Construction of Community Building using alternate construction technologies

Construction of the Community Centre with facilities of a Community hall, dispensary, cretch, library, green room, office etc., initiated on the request of the Haryana State Government, has been commenced at Village Khojkipur-Naggal. The ground floor of the building has been completed and the work has reached upto roof level for first floor.

In this Centre, varieties of alternate cost effective technologies like rat trap bond in bricks; interlocking type compressed earth blocks; flyash bricks; modular bricks for walling; RCC planks and joists; prefabricated panels; prefab brick arch panels; RCC filler slab; doubly curved shell for roofing; precast concrete door/window frames; precast sunshades, lintels, staircases, etc. have been used so that local community visiting the Centre have exposure to such technologies.

Demonstration Housing Project and Establishment of a Technology Demonstration-cum-Production Centre at Pinjore, Distt. Panchkula, Haryana

The land for construction of 24 demonstration houses with community centre & multi-purpose meditation room and



Demonstration Community Centre being constructed by BMTPC at Village Khojkipur-Naggal, Haryana



Demonstration Houses being constructed by BMTPC at Amethi, Sultanpur, Uttar Pradesh





Demonstration Housing Project being constructed by BMTPC at Pinjore, Distt. Panchkula, Haryana



Demonstration Informal Market being constructed by BMTPC at Vishakhapatnam, Andhra Pradesh



establishment of a Technology Demonstration-cum-Production Centre has been identified and handed over at Bitna Road, Pinjore, Distt.Panchkula, Haryana by the State Government. Based on the drawings, estimates were prepared and the work has been awarded for construction after inviting Expression of Interest through open advertisement.

The technology proposed to be used in the housing project are rat trap bond in bricks, RCC filler slab, precast concrete door/window frames, etc. In the Community Centre, the technology being used are concrete blocks for walling, ferrocement roofing channels and micro concrete roofing tiles, precast concrete door/window frames etc. In the beginning construction work was held due to the objection raised by the Department of Forests, Ambala that the land use of the site identified for the project was not for residential purposes. The matter, however, was sorted out and the work started. At the end of the financial year, the foundation work was in progress.

Construction of Model Informal Markets in Gumla, Jharkhand and Vishakhapatnam, Andhra Pradesh

Apart from demonstration housing projects, the Council is also propagating the concept of Informal Market initiated in JNNURM projects. In this effort, the Council recently initiated the construction of model Informal Markets in Gumla, Jharkhand and Vishakhapatnam, Andhra Pradesh. The necessary infrastructure such as water supply, electricity and other public amenities required in the premises will be provided by the State authorities. During the period, the tenders have been invited by the local agencies. The construction work of Informal Market at Visakhapatnam has been started and reached upto plinth level. However, the work at Gumla could not be started due to local administrative problems.

2. Completion of Construction of Demonstration Houses under erstwhile VAMBAY Scheme

The Council earlier completed construction of Demonstration Houses using cost-effective and disaster resistant technologies at Nagpur (Maharashtra – 70 houses), Dehradun (Uttarakhand – 100 houses), Kudalu (Karnataka – 70 houses) and Trichi (Tamil Nadu – 100 houses) under VAMBAY and handed over to the respective State Governments. During the year, the construction of 100 dwelling units in Bilaspur (Chhattisgarh) has also been completed and handed over to the State Government.

3. Construction of Demonstration Structures using Bamboo in Different Parts of Chhatisgarh

The Council had received proposal from Chhatisgarh State Bamboo Mission for construction of Demonstration structures using bamboo based technologies, Training in Bamboo products and establishment of Bamboo Mat Production Centre. In order to promote use of bamboo in bamboo growing regions, the officers of BMTPC visited Raipur in May, 2009 to explore the possibility of construction of bamboo based housing in Chhatisgarh and had discussions with Vice-Chairman, State Planning Board, Chhatisgarh. The drawings have been prepared for construction of bamboo structures. Further response from Chhattisgarh Planning Board is awaited.

4. Construction of Demonstration Structure using Rapidwall Panels

BMTPC visited Rashtirya Chemicals & Fertilizers (RCF) Ltd. to study the production of Rapidwall panels for its usage in mass-scale construction of housing projects. Possibility of putting up demonstration structures using the panels was discussed with CMD, RCF. The RCF has agreed to provide land and infrastructure. An MoU has been signed with M/s RCF for construction of 32 demonstration houses using rapidwall technology at Chembur, Mumbai on cost sharing basis (BMTPC 75: RCF 25) as approved by the Executive Committee. The drawings and estimates have been finalised for construction of demonstration houses.

Rapidwall panels are prefabricated panels manufactured using calcined phosphogypsum (a waste product of fertilizer company and glass raving). Panels have been tested at SERC Chennai & IIT, Chennai for various performance parameters including structural strength, water resistance, thermal behaviour etc. The system has also been tested against hazardous forces for safety against earthquake. Complete design manual for the system has been developed with the help of IIT Chennai.

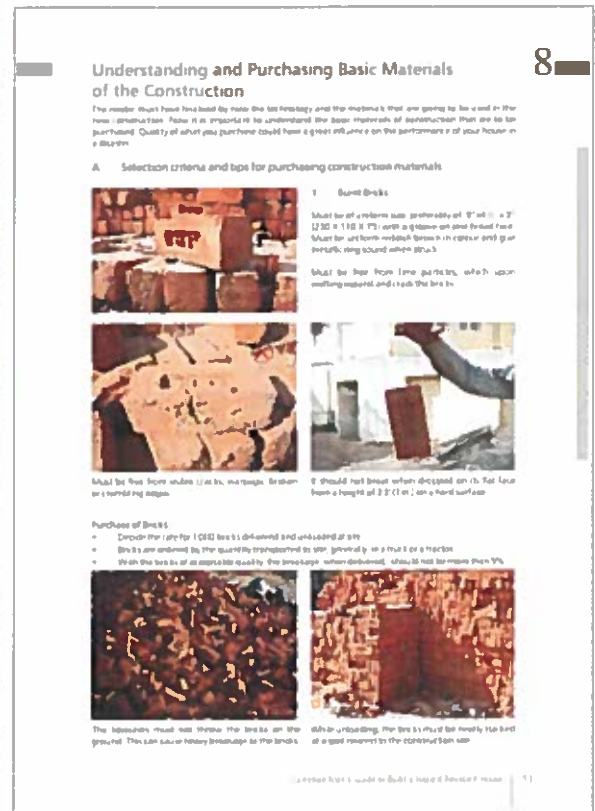
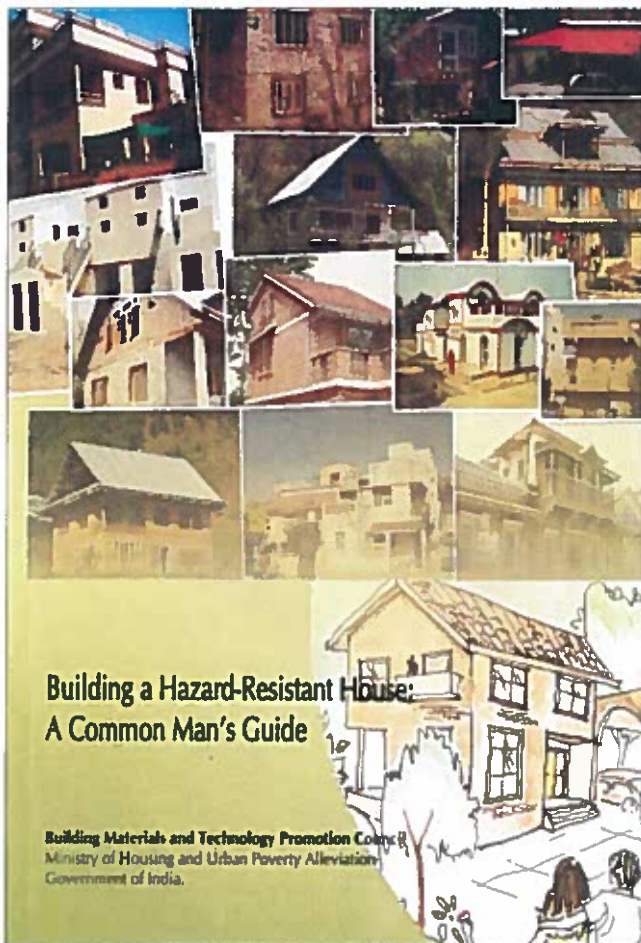
II. DISASTER MITIGATION - REPAIR, RECONSTRUCTION AND RETROFITTING

1. Capacity Building Programme on Codal Practices on Earthquake Resistant Design and Construction", New Delhi

As a part of conducting pragmatic training programmes on various issues of building construction and related fields, the Council jointly with Indian Institute of Technology, Roorkee planned series of training courses on Disaster Resistant Construction for professionals, engineers and architects. The first training course (Residential) in this series was organized on "Codal Practices on Earthquake Resistant



Training Course (Residential) on "Codal Practices on Earthquake Resistant Design and Construction" organised jointly with IIT Roorkee on 28-30 January 2010 at IHC, New Delhi



Guide Book titled "Building a Hazard-Resistant Houses: A Common Man's Guide" published by BMPCT



Design and Construction" on 28-30th January 2010 at New Delhi. Participants from various National Institute of Technologies, NTPC, State Housing Boards, public construction agencies, etc. participated in the three days event in Delhi. The faculty included senior professors of earthquake engineering deptt, IIT Roorkee, Dr. A.S. Arya, former National Seismic Advisor MHA, ED and officials of BMTPC.

2. Guidelines on Earthquake, Flood and Cyclone resistance of Housing

The Council had brought the Guidelines for Improving Earthquake Resistance of Housing and Improving Cyclone Resistance of Housing earlier. During the year, the Council has initiated a project for revising the Guidelines on Improving Earthquake, Flood and Cyclone Resistance of Housing. So far, the Council has revised the Guidelines for Earthquake Resistance of Housing and new Guidelines on Improving Flood Resistance of Housing. This work has been undertaken under the guidance of Dr.A.S.Arya, Professor Emeritus, IIT Roorkee.

3. Demonstration of Retrofitting Techniques for Seismic Strengthening in MCD School Buildings

After completion of retrofitting of five MCD schools, the Council has initiated retrofitting of two more MCD school buildings. After conducting soil investigation at two sites i.e. Vivek Vihar and Lajpat Nagar, identified in consultation with MCD, the retrofitting plan and estimates have been prepared. The agency for carrying out the retrofitting work under the guidance and supervision of BMTPC has been finalized through open tenders. The work on both the schools is being started very shortly.

4. Study and Retrofitting of one building of Bara Hindu Rao Hospital in Delhi

A request was received from Municipal Corporation of Delhi for retrofitting of existing hospital building of Hindu Rao Hospital. In this connection, several meetings were held with MCD and Medical Superintendent of the hospital. The hospital authority has informed that their priority for retrofitting of buildings would be either 250 bedded ward or block of OPD building. Since the buildings under consideration are framed buildings, it requires detailed analysis especially when the structural details are not available. It was proposed to involve Earthquake Engineering Department of IIT Roorkee for this project to carry out non-destructive tests for which they have agreed in principle. Based on the design, the building will be retrofitted to demonstrate the technique.

5. Damage Assessment after cyclone 'Aila' in West Bengal as a Central Team Member

As a part of Central Team to visit Darjeeling area in West Bengal for the recent cyclone 'Aila' to assess on the spot damage assessment of the housing stock in the area BMTPC official visited Darjeeling and adjoining areas alongwith officials of the State Government in June 2009. A report on the damages of houses was prepared and submitted to the leader of the Central Team for finalizing the Team Report for the consideration of the Home Ministry, Govt. of India.

III. ACTIVITIES IN NORTH-EASTERN REGION

1. Significant Activities in North-Eastern Region through Demonstration Structures

BMTPC is actively involved in developing and promoting bamboo based technologies in the North-Eastern Region and other bamboo growing areas, by 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 in processing of bamboo and making them aware regarding bamboo based construction. The progress of the various activities in the North Eastern Region are:

- The construction of demonstration structures i.e. Multipurpose Facilitation Centre at Sri Aurobindo Art & Cultural Institute Shillong (3200 sq.ft.) using Bamboo based Technologies has been completed.
- Setting up a Bamboo Mat Production Centre at Nongchram, East Garo Hills, Meghalaya has been initiated. An MoU has been signed between BMTPC and local agency for implementation of the project. The construction of shed for the Centre is nearing completion.
- The Bamboo Technology Park is being set up alongwith Cane & Bamboo Technology Centre (CBTC), Guwahati. The possession of land has been taken by CBTC. The drawings and estimates have also been prepared. The work has been started on the project. The Bamboo Technology Park will provide facilities in processing of bamboo for different application and training for artisans in the North East.



Bamboo Demonstration Structure at Aurvindo ashram, Shillong



Training Programme organized at Itanagar, Arunachal Pradesh during 24-26th August 2009 on "Bamboo based Community Buildings and large Span Structures" by BMTPC



- A Training Programme was organized at Itanagar, Arunachal Pradesh during 24-26th August 2009 on "Bamboo based Community Buildings and Large Span Structures" jointly by BMTPC in collaboration with Cane and Bamboo Technology Centre, Guwahati and State Forest Research Institute (SFRI), Itanagar. About 30 participants including Engineers, Architects, from different local Govt. departments, construction organizations, farmers etc. participated in the training programme.

IV. STRENGTHENING THE INFORMATION AND DATABASE IN THE CONSTRUCTION SECTOR

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

On the occasion of World Habitat Day 2009 celebrated by the Ministry of Housing & Urban Poverty Alleviation on 5th October, 2009, BMTPC brought out a Special Issue of its Newsletter "Nirman Sarika" on this occasion. Responding to the theme of "Planning Our Urban Future", 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 Kumari Selja ji, Hon'ble Minister for Housing & Urban Poverty Alleviation and Tourism.

2. House Building Digest – Aam Aadmi Series

In order to provide easy-to-understand concept of various housing & construction technologies, disaster resistant features etc. the Council decided to bring out "Aam Aadmi Series" in simple booklets format. The Council brought out following publications in the series during the current year:

Series 4: Construction Specifications-Foundations

The information given in this booklet pertains to provision of foundations for houses commencing from setting out of lines for laying the foundations to the actual provision of foundations. Information has been given on the various types of foundations that can be provided including those in bricks, stones, concrete, pile foundations etc. The aspects of Anti-termite treatment, provision of Damp Proof Course as well as good practices for providing the foundations have also been given in the booklet. The text is supported by a number of explanatory sketches.

Series 5: Construction Specifications-Superstructure

In this booklet information has been given of construction of superstructure of the house, including columns, walls, slabs, beams and staircases. The most common methods of constructing a superstructure for the house have been highlighted in the booklet. This primarily include the brick load bearing method of construction and the column and beam construction method, known as framed construction. The methods adopted for providing a floor/roof slab have also been given. The text is supported by sketches and photographs.

Series 6: Doors and Windows

The aspect of provision of doors and windows, which are a crucial element in the house, has been covered in the booklet. Information has been given on the various types of doors which can be provided, including single shutter, double shutter, paneled shutter, paneled and glazed shutters have been given in the booklet. Information has also been given on the basis of materials for doors and windows, including wood, steel, PVC, Fiberglass, bamboo, aluminum has also been provided. Figures and photos have also been included in the booklet.

Series 7: Flooring

Various types of floors which are commonly being adopted in the house have been highlighted in the booklet. These include the mud floors, brick floors, concrete floors, terrazzo floors, Marble floors, tile floors, wooden floors etc. The methods of laying these floors including the relative advantages have been highlighted in the booklet. The aspect of proper maintenance of floors and the good practices in the provision of floors have also been given in the booklet. The text is supported by photographs.

Series 8: Plastering

The booklet includes information on various types of plaster that a common man can apply for giving a finish to various surfaces in the house. It also gives details of materials, the methods of preparation of plaster as also the system of application. It also gives good plastering practices to be followed while plastering. Photographs have also been included to make it illustrative.

Series 9: Painting

The booklet deals with the various aspects of carrying out

painting in a house by a common man. It includes the methods of making of paints, the advantages and efficacy of different types of paints, availability of readymade paints in the market as also the methods of application. The defects in painting as also the remedial measures also form a part of the booklet. Illustrative photographs have also been included in the booklet.

Booklets on other aspects of house construction are being brought out and efforts are continuing in this direction by BMTPC.

3. Publication of Book on "Standards & Specifications for Cost-Effective Innovative Building Materials and Techniques Including Rate Analysis"

BMTPC has brought out the Second Edition of its Book titled "Standards & Specifications for Cost-Effective Innovative Building Materials and Techniques including Rate Analysis", which covers detailed specifications so formatted that these can be inducted in the schedules of specifications by public and private construction agencies. While formulating specifications on the identified technologies, an attempt has been made to gather technical information from various sources and to compare the same with existing relevant Indian and/or International Standards. It is hoped that this book will help the construction agencies in promoting and adopting these new and proven technologies in their housing and building projects. The book was released by Kumari Selja, Hon'ble Minister for Housing & Urban Poverty Alleviation and Tourism, on 5th October, 2009 on the occasion of World Habitat Day 2009 at New Delhi.

3. Publication of Book on "Building a Hazard-Resistant House: A Common Man's Guide"

BMTPC has been working towards educating and creating mass awareness amongst common man and publishes Guidelines, brochures, pamphlets etc. for Improving Earthquake and Cyclone/Wind Resistant Housing at regular intervals. These documents have served as important tool for safety against natural hazards for all stake holders involved in disaster management.

During the year, a Guide Book titled "Building a Hazard Resistant House: a Common Man's Guide" has been published through a Publishing agency for wider dissemination. This Guide was jointly prepared by BMTPC alongwith NCPDP Ahmedabad and covers the load-bearing masonry structures. The Guide does not cover the RC frame structure. The main reason for this being that even from the technical angle, to build a load-bearing masonry

structure with the help of the local artisans is acceptable, whereas it is not advisable to build a RC structure without appointing an experienced engineer for design and construction.

The book is primarily meant to help the house owner get constructed a safer house to live in, and to ensure the safety of his family in case of a likely future disaster. This Guide will be useful especially where the house-owner does not seek the guidance of an architect or an engineer, and depends fully on the technical services of a local contractor or artisan, starting from preparation of the house design, selection of the technology to be used, and execution of the construction without supervision by a third party. No doubt the guide gives tips on the non-technical aspects such as material procurement, appointment of a contractor and the like: but the major portion of the book focuses on various technical aspects that have a direct bearing on the performance of the structure in case a disaster strikes.

This Guide is prepared with view to help the "house owners of tomorrow" in ensuring that the houses that they are going to get built are going to be hazard-resistant and long lasting. The guide follows the relevant Bureau of Indian Standards (BIS) codes. The information provided in the first part of the book is useful in planning and designing of the house as well as in the material procurement and appointment of the building agency, be it a contractor or an artisan. The information provided in the later part is useful during and after the construction.

The Book was released by Hon'ble Minister for Housing & Urban Poverty Alleviation and Tourism, Kumari Selja ji on 5th October, 2009 on the occasion of World Habitat Day 2009.

4. Preparation of CD on Guidelines for Technical Training of Masons in Hindi

BMTPC in close collaboration with Grasim Industries Ltd. (Cement Marketing Division) has brought out the Guidelines for Technical Training of Masons on CD. The Guidelines covers following areas in easy-to-understand language and has been brought out in Hindi to help Masons in learning the basics of the trade in two Modules:

Module 1:

- Basic Building Materials
- Cement Mixing
- Drawings and Marking
- Main tools for masons

- Masons Training Certification – Questionnaire

Module 2:

- Concrete Block Masonry
- Different types of floorings
- Different types of roofing
- Plastering
- Mud Plaster
- Waterproofing
- Technical Problems
- Masons Training Certification – Questionnaire
- Case Studies

These Guidelines are being used in providing training to the masons on various related aspects of construction in different parts of the country. The Guidelines on CD released by Hon'ble Minister for Housing & Urban Poverty Alleviation and Tourism, Kumari Selja ji on 5th October, 2009 on the occasion of World Habitat Day 2009.

5. Information Dissemination through Website of the Council

The Website of the Council (www.bmtpc.org) is being visited by professionals of various disciplines globally. It is being used as a reference source 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.

The website of the Council is regularly updated to effect latest information such as hire and purchase requirements, Tender Notices, training programmes, Right to Information Act and others as required from time to time. On seeing the impressive response on website in the form of general enquiry about product and services, now a section called compendium of technologies for common man have been developed. The Council has also created a new link titled "Pick your construction technologies as per your region", wherein the country has been divided into six zones and depending upon the zones, housing technologies and building materials to be used for construction of houses/buildings have been recommended.

During the year, the Council's website in Hindi has been uploaded and was launched by Hon'ble Minister for Housing & Urban Poverty Alleviation and Tourism, Kumari Selja ji on 5th October, 2009 on the occasion of World Habitat Day 2009.

6. Standardization and Product Evaluation

Performance Appraisal Certification Scheme (PACS)

The Council is operating a Third Party Assessment Scheme namely Performance Appraisal Certification Scheme (PACS) for new products, building materials, systems etc., not covered by any Indian Standard, after due process of assessment. Under PACS, following major activities have been undertaken:

- The 2nd meeting of the Technical Advisory Committee (TAC) was held on 4th June 2009 for considering approval of PACS for ten products including different types of plastic doors, wooden door, underground storage tank, septic tank, plastocrete panel, insulated roof panel. The product manufacturers also made presentations of the innovative products/materials & technologies before the TAC members. PACs have been issued for eight products viz. Plastocrete panel, Insulated roof panel, Underground water tank (sump), Endura door, Frontura door, PVC profile door, PVC Flush door and Fomura door in July 2009.
- Four more firms have forwarded Detailed Application Forms for issue of Performance Appraisal Certificate for their products. Two firms have been requested to provide test reports of the products through accredited laboratory.
- Inspection of the factory and taking samples of the product 'Veneer Laminated Lumber (VLL)' for making frames & doors at Tanjavur, Tamil Nadu have been carried out recently.
- Seven new Preliminary Applications for the following products/ components have been received and are under process:
 - Monolithic formwork
 - Monolithic concrete construction
 - Continuous sandwich panels
 - PVC windows
 - FRP manholes
 - Recycled roofing sheet
 - Aluminium formwork
- M/s CIPET, Ahmedabad, National Test House, Kolkata and other testing laboratories have been requested to provide detailed terms & conditions alongwith necessary charges/fees for conducting tests on different products/materials as testing is required to be carried out for many products under the scheme.

हिन्दी में वेबसाइट देखें

- Home
- Objectives
- Background
- Thrust Areas
- Major Services Offered
- Disaster and Mitigation
- Performance Appraisal Certificate Scheme (PACS)
- Machines developed by BMTPC
- Environment Friendly Materials & Technologies
- Building Materials from Recycled Waste
- Photo Gallery
- Publications
- Newsletters
 - June 2008
 - October 2008
 - December 08

INVITING PROPOSALS under "Alternate House Building Technologies" Scheme for PREPARATION OF DESIGN CONCEPT OF CL

OUR VISION	OUR MISSION
'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.'	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.

ACTION PLAN 2010-11

<p>Earthquake Tips Simple ways to learn about earthquakes (BMTPC - HTK initiative)</p> <p>Choose Disaster Resistant Technology as per Zone</p> <p>Pick your construction technologies as per your Region</p>	<ul style="list-style-type: none"> Building Materials and Technologies Identified, Assessed and Promoted Technologies Commercialized Construction Cost Planning Projects Endeavour through construction of model demonstration houses 	<p>Cost - Effective Technologies For Common Man (Single window to know about construction technologies)</p>	<p>BMTPC - Dr. FIXIT INSTITUTE TRAINING SERIES 2010-11 Second Programme "High Performance Concrete & Advances in Concrete Technology"</p> <p>Programme Dates: 04th to 08th November 2010 Venue: Jyoti Institute, Jhansi Course Fee: Rs. 2000/- per participant</p>
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ED AND REPUTED AGENCIES TERMS FOR HIRING TA

World Habitat Day Celebrations Release of Publications

विश्व पर्यावरण दिवस
5th October 2009
WORLD HABITAT DAY
5th October 2009, New Delhi

Dr. Shalish Kr. Agrawal
Executive Director

NOTICE INVITING GLOBAL EXPRESSION OF INTEREST (EOI) for introducing Alternate/Emerging Housing Technologies in Different parts of India

Dissemination of Information through demonstration construction using Cost Resistant and Disaster Resistant Technologies

Learn about construction through our building digest series - Aam Aadmi Series

HOUSE BUILDING DIGEST Series

1. From 10 to 20
2. Roles of Different Phases
3. Procedures and Innovations

BMTPC website : www.bmtpc.org



Visit to Production Process for Wood and Flush Doors for awarding PACS in Thanjavur, December 2009.



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. Consultative Meet on Knowledge Network on Innovative Housing Technologies

At the behest of the Ministry of Housing & Urban Poverty Alleviation, BMTPC organised a Consultative Meet on Knowledge Network of Innovative Housing Technologies on June 12, 2009. About 80 architects/builders, R&D institutions, Academic institutions, NGOs, Building Centres, State Govt. Agencies, Professionals participated in the Meet. The Consultative Meet was chaired by Joint Secretary (Housing), Ministry of Housing & Urban Poverty Alleviation, GOI.

The main objective of the Meet was to deliberate and share view point on the following issues so as to identify potential technological options in different regions and framing time-bound action plan on various aspects:

- i. Drawing up technical Specifications for formulation of Indian Standards for region specific for better known alternative materials
- ii. Collaboration with State PWDs and CPWD to draw up State specific and central Schedule of rates for such materials and for the labour components.
- iii. Drawing up curricula for introduction of courses in collaboration with Colleges of Architecture and Civil Engineering, National Council for Vocational Training and CIDC on cost-effective technologies with content that impart knowledge of the materials and techniques of construction.
- iv. Collaboration with selected institutions to encourage Academic research into aspects of techniques and materials that would provide the answers to the questions raised by builders and create confidence that they are indeed durable, cost effective alternate materials.

- v. Training modules and skill development for artisans.
- vi. Dissemination of information through web.

2. International Seminar "Waste to Wealth" on green building materials and construction technologies using agricultural and industrial wastes

BMTPC organised an International Seminar "Waste to Wealth" on green building materials and construction technologies using agricultural and industrial wastes during 12-13th November 2009 at New Delhi. Around 110 delegates from R&D institutions, public and private sector, technocrats, experts, professionals, architects, engineers etc. both from within and outside the country deliberated in the two days event. On the occasion, a publication comprising of Technical Papers on the various issues connected with green building materials and construction technologies was released by Joint Secretary (Housing), Ministry of Housing & Urban Poverty Alleviation.

3. Cooperation with Ministry of Rural Development

The Ministry of Rural Development has requested BMTPC to act as Consultant for Rural Housing by signing an MoU with the following terms of references:

- To provide technical assistance and guidance in respect of Rural Housing sector.
- To promote/disseminate information and encourage large scale application of cost-effective innovative and environmental friendly building materials and construction technology in respect of housing and building sector in rural areas.
- To develop, promote as well as encourage application of methodologies and technologies for natural disaster, mitigation and management and application of disaster resistance, design and planning practices in rural human settlements.
- To assist Ministry of Rural Development and provide consultancy whenever required.

The Council work towards 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 for housing. Many of the technologies developed and propagated by the Council like stabilised mud blocks, bamboo structures, stone masonry blocks, filler slabs etc. are well suited to rural areas.



Consultative Meet on Knowledge Network of Innovative Housing Technologies on June 12, 2009



International Seminar "Waste to Wealth" on Green Building Materials and Construction Technologies using Agricultural and Industrial Wastes organised by BMTPC during 12-13th November 2009 at New Delhi



The issue was later approved in the meeting of Executive Committee of BMTPC. The Council has sent its consent and requested the Ministry of Rural Development for further action in the matter.

4. Establishment of Permanent Display Centres by BMTPC

In spite of sincere efforts by promoting and implementing agencies including BMTPC, actively working in the area of building materials and housing technologies, the new and alternate building materials and technologies are not being adopted and utilized in various housing projects and schemes, as it was expected. The main reasons for non-adoption of these technologies are less awareness about these technologies among implementing agencies, practicing engineers & architects, prospective engineers and users. To fulfill these gaps and to disseminate the knowledge about the cost effective and waste based building materials and technologies all over India, the Council is establishing Permanent Display Centres (PDC) in different parts of the country. These PDCs act as a knowledge resource centre and disseminate the knowledge by organization of seminars, training courses and field studies for the students, engineers, architects and academicians to share the research and development in the area of cost effective building materials and technologies.

In continuation of the above, the Council established One Permanent Display Centre at Civil Engineering Department, Indian Institute of Technology Roorkee, Uttrakhand.

5. Preparation of "Global Expression of Interest (EOI) for for Introducing Alternate/ Emerging Housing Technologies in Different Parts of India

The fast changing demographic and migratory trends are leading to the ever increasing levels of urbanization in the country exerting additional pressure on the construction sector thereby calling improvement in efficiency, productivity and delivery systems to meet the housing needs and demands of building construction. With the changing economic and globalization trends, a number of new building materials, construction systems and technologies are entering the construction sector in India.

BMTPC has been promoting cost-effective, environment-friendly, energy-efficient and disaster resistant technologies developed in India. In order to bring in speed, quality and durability in the construction, it has been felt that there is a need to identify and adopt well proven emerging technologies available within and outside the country. BMTPC invited Global Expression of Interest (EOI) from Construction System/Technology Developers/Providers for

introducing emerging and alternate cost effective housing technologies suitable to Indian geo-climatic and hazard conditions through construction of demonstration houses at various parts of the country. The Global EOI has been invited in two stages. The first stage of Global EOI includes selection and evaluation of suitable technologies which the technology developers/providers are willing to bring to India for mass housing, as a cost effective substitute for conventional system. The technologies/systems will be selected by a Committee of Experts. After evaluation the technologies will be ranked for suitability in Indian condition for mass housing. The second stage includes construction of demonstration houses using selected technologies/systems in different parts of country.

6. Preparation of "Guidelines for Scheme for Confidence Building in Alternate Housing Technologies"

On the direction of the Ministry of Housing & Urban Poverty Alleviation and after various brainstorming meetings with the policy makers, stake holders, private entrepreneurs etc., the Council has drafted "Guidelines for Scheme for Confidence Building in Alternate Housing Technologies". The objective of the scheme is to reconnect the entire process of dissemination of information on cost-effective and sustainable building technologies in a manner that will promote knowledge, confidence and create enabling environment for large scale adoption of such materials and building techniques in different parts of the country. The scheme focuses on developing design concept for different region of the country for houses, community centre, primary schools using cost-effective technologies and involving State Govts. with commitment to take it forward through centrally funded demonstration construction, training of artisans, necessary modifications in PWD specifications to incorporate alternate cost-effective technologies. The scheme covers various roles of agencies at both Central and State level. The draft document has been submitted to the Ministry of Housing & Urban Poverty Alleviation.

7. Capacity Building Programmes

With the emergence of new building materials, advancement of technologies and the need for disaster resistant construction to mitigate the effect of natural disasters, it is important that working professionals regularly update their knowledge and understanding. Realising this need of capacity building of professionals, BMTPC has continued its efforts in organizing structured training programmes on subjects related to advancement in the area of building materials for professionals and construction workforce on regular basis.

Brief on the Training Programme organized during the year are as follows:

- BMTPC, in association with Dr.Fixit Institute, a Not for Profit Institute, organised a series of four Training Programmes in different regions of the country. The details are as follows:

Training Course on "Structural Diagnosis & Condition Analysis of RC Structures" was organized on August 12-13, 2009 at New Delhi. 24 officials/professionals from public, private and government sector participated in the training course. The second training course in the series was organized on "Building Maintenance & General Repairs" from September 24-25, 2009 at Bhopal, MP. About 45 participants representing various government, public and private sector, educational as well as R&D institutions etc. from all over the country. The third training programme in the series titled "Advances in Concrete Mix Design & usage of Admixtures" was held during December 17-18, 2009 at Bangalore. About 34 participants of various disciplines from all over the country attended the two days Training Programme. The last programme in the series on 'Structural Protection, Repair & Rehabilitation of Buildings' was held on 18-19 March, 2010 at Guwahati, Assam. The broad themes included are: distress in concrete structures, health monitoring of concrete, repair methodologies, modern repair materials and their applications including earthquake resistance.

- Two Training Programmes for masons in Gujarat was organized by the Council in association with Kesarjan Building Centre Pvt. Ltd. at Umata, Distt. Anand from 1-5 April, 2009 and at Vidhyanagar Distt. Anand from 14-18 September, 2009. About 50 masons from two different districts participated in the above training programmes. The eminent experts delivered lectures on Masonry principles and methodology, various kinds of binders and understanding cement as material, Understanding steel and use of reinforcement/ detailing of reinforcement in practice, Cantilever reinforcement system, practical on reinforcement works, Introduction to productivity and rate analysis systems, Method of measurement system, Retrofitting of Non-engineered structures etc.
- As a part of imparting hands-on training for manufacturing process of Flyash bricks, the Council in

collaboration with M/s Balaji Brick Udyog, Jharkhand organized a three days Training Programme on Brick Making using Flyash for the local masons from 6-8 May 2009 at Village Shankarda, Distt. Singhbhum, Jharkhand. Besides officers of BMTPC, the faculty included senior officers from Jharkhand State Pollution Control Board, Bureau of Indian Standards, NIT Jamshedpur, Usha Martin Ltd., Hydraform India Pvt Ltd., JUSCO Ltd., Tara etc. About 40 participants mainly comprising of women entrepreneurs from the remote villages undertook the training and benefited from the Programme. A set of safety tools used by workers in Flyash Brick plant were also shown & distributed among participants.

- A Training programme for Architects and Engineers on "Green Architecture" was organized by the Council jointly with Vivekananda Kendra, Nardep, Kanyakumari from 9 – 11 August, 2009. During the training programme various topics were covered such as Climate changes and carbon credits, Embodied energy, operational energy and life cycle assessment, Energy Audit and survey, Eco-friendly construction practices, Renewable energy systems for efficient home, Roof water harvesting, Waste water harvesting, Solid waste management etc. About 40 practicing Architects and Engineers from Kanyakumari district participated in the training programme.
- BMTPC alongwith Grasim Industries has initiated Training Programmes for Masons in different regions of the country. For this, different course content (Module 1 and Module 2) have been developed. In Module 1, basic materials, mortar were covered. Module 2 covers plastering, paneling, flooring, concrete, water proofing, damp proofing etc. A CD containing two Modules has been prepared for standardizing the course contents for training in different regions. During August 2009 training of masons has been organized in different parts of U.P., Uttrakhand and Madhya Pradesh. About 750 masons have been trained in these programme.
- The Council has started organizing sensitization programmes at the Demonstration Housing Projects under execution so that the emerging technologies are popularized at the local level. One such programme was organized on 6th February, 2010 at Demonstration Project site at Village Khojkipur-Naggal, Ambala wherein the students from Deptt. of Civil Engg., NIT Kurukshetra, Deptt. of Architecture,



Training Programme on “Building Maintenance & General Repairs” from September 24-25, 2009 at Bhopal, Madhya Pradesh organised by BMTPC jointly with Dr. Fixit Institute.



Training Programme on “Structural Protection, Repair & Rehabilitation of Buildings”, from March 18-19, 2010, Guwahati organised by BMTPC jointly with Dr. Fixit Institute.





Training Programme on Brick Making using Flyash for the local masons on 6th May, 2009 at Village Shankarda, Distt. Singhbhum, Jharkhand.



BMTPC alongwith Grasim Industries initiated Training Programmes for Masons in different parts of Uttar Pradesh, Uttarakhand and Madhya Pradesh in August 2009





Awareness Programme on Cost Effective Building Materials & Construction Technologies on February 6, 2010 at BMTPC Demonstration Project site at Village Khojkipur-Naggal, Ambala for students of architecture and engineering colleges



Training Programme for Architects and Engineers on "Green Architecture" from 9 - 11 August, 2009 at Kanyakumari was organized the Council jointly with Vivekananda Kendra, Nardep, Kanyakumari



Deen Bandu Chotu Ram University of Science and Technology, Murthal, Sonapat and other polytechnic colleges participated in the programme. During this one day event, hands-on training to local masons on the Demonstration Project site was also organized.

- A workshop on Construction Project Management was organised in association with Rajasthan State Real Estate Development Council (RAJREDCO) on 18-19th March, 2010 at Jaipur. The main objective of the programme was to empower the professionals working in the State to undertake the construction work under JNNURM and other State-owned scheme more efficiently and effectively.

8. Participation in VIII World Bamboo Congress 2009, Bangkok, Thailand, 16-18th September 2009

BMTPC participated in the VIII World Bamboo Congress 2009 organized by World Bamboo Congress in Bangkok, Thailand from 16-18th September, 2009. India was represented by about 30 delegates both from private and public agencies/departments, NGOs etc. In addition to big Indian delegation, the event was attended by delegates from France, Thailand, USA, Philippines, Vietnam, Netherlands, Bulgaria, Japan, Columbia, Australia, China, Nepal, Sudan, New Zealand, Bhutan, Malaysia, Brazil. The Council also participated in the Congress and presented a paper on use of bamboo in housing and construction in India. An exhibition was also arranged using panels describing the activities of the Council on the subject.

9. Celebrations of World Habitat Day 2009

On the occasion of World Habitat Day 2009, the Council undertook the following activities:

Painting Competition for Differently Abled Children

Organised Painting Competition for Differently Abled Children on the theme: "Planning our Urban Future". These children included special children (under 15 years of age) in the categories namely (i) Mentally Challenged. (ii) Visually impaired, (iii) Deaf and dumb and (iv) Spastic children at 14 schools in NCR region. About 54 children participated in the competition. The prizes were awarded to winning entries by the Hon'ble Minister of Housing & Urban Poverty Alleviation & Tourism on 5th October, 2009 at Vigyan Bhawan, New Delhi.

Design Idea Competition

A Design Idea Competition was organized on the theme "Housing for Urban Poor" providing cost-saving, energy & time efficiency and disaster resistant construction techniques thereby leading to improving quality of life of rural masses. The entries were invited from architecture, engineering, planning students/ practicing engineers, architects /consultancy firms/government, public & private sector institutions, for designing of a house of 25 sqm. built-up area for plain and hilly area at a cost of Rs. 1.00 lakh (excluding land, external development). About 15 entries were received. The Jury consisting of the eminent experts in the field adjudged the best entries for prizes. The prizes were distributed by the Hon'ble Minister of Housing & Urban Poverty Alleviation & Tourism.

Release of Publications

- i. Special issue of Newsletter of BMTPC "Nirman Sarika"
- ii. Book on "Standards & Specifications for Cost-Effective Innovative Building Materials and Techniques Including Rate Analysis"
- iii. Book on "How to Build A Hazard-Resistant House? - a Common Man's Guide"
- iv. CD on Guidelines for Technical Training of Masons
- v. Launching of BMTPC website in Hindi by the Hon'ble Minister for Housing & Urban Poverty Alleviation and Tourism.

The publications were released by Kumari Selja, Hon'ble Minister of Housing & Urban Poverty Alleviation & Tourism during the celebrations of World Habitat Day 2009.

10. Visit of Foreign Delegations to BMTPC

A French delegation led by Ms Madleine Houbart and Ms Sophie Dieboid, visited BMTPC on 14th January 2010 to discuss cooperation between India and France on promoting low cost disaster resistant construction technologies.

Delegation from British Columbia led by Mr. Michael de Jong, Attorney General and Govt. House Leader of British Columbia visited BMTPC office on 14th January 2010 at New Delhi.

11. Participation in India International Trade Fair, 2009, Pragati Maidan, New Delhi from 14-27 November 2009

BMTPC participated in Techmart pavilions during India International Trade Fair (IITF) from 14-27 November, 2009.



Workshop on “Construction Project Management”, on 18-19 March, 2010 at Jaipur in association with Rajasthan State Real Estate Development Council (RAJREDCO)



BMTPC display during the VIII World Bamboo Congress 2009 organized by World Bamboo Congress in Bangkok, Thailand from 16-18th September, 2009. India



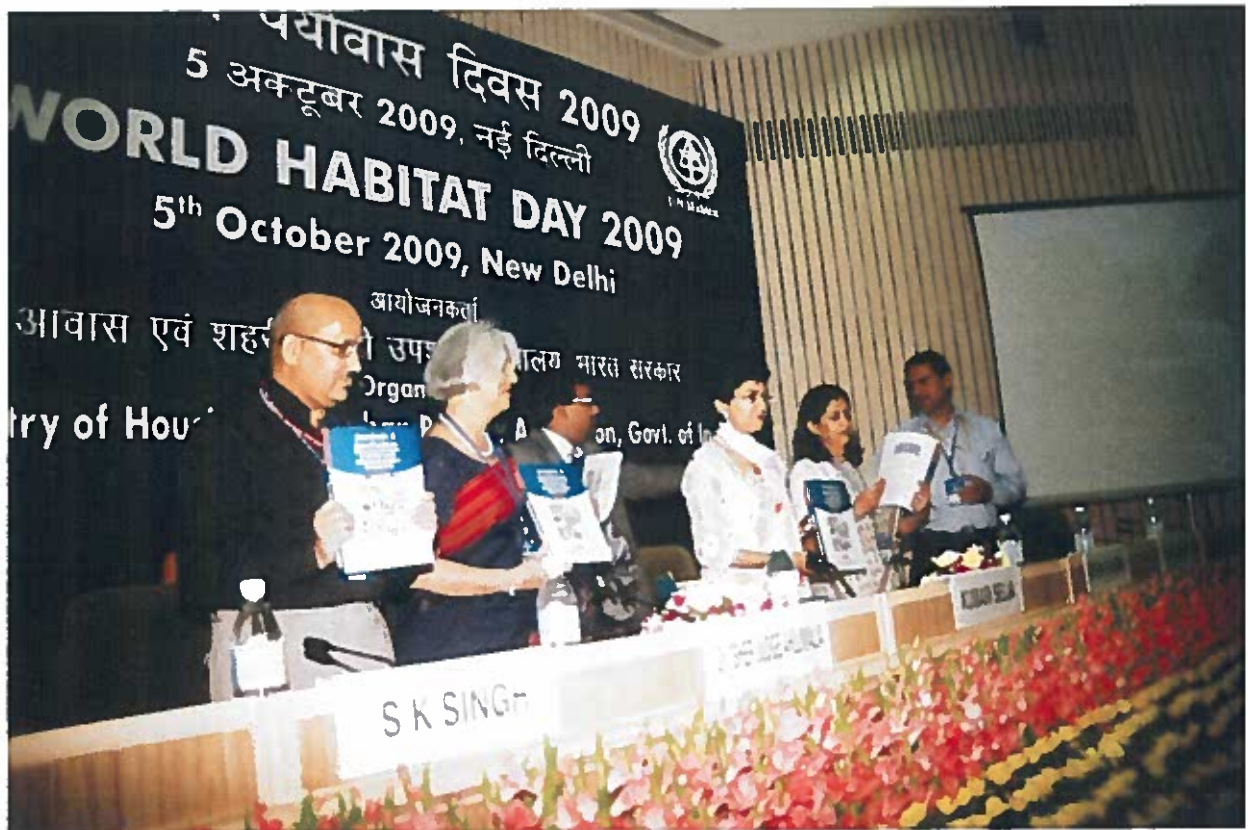


Kumari Selja, Hon'ble Minister of Housing & Urban Poverty Alleviation, giving away the prizes to the award winners of Painting Competition for Differently Abled Children organised by BMTPC during World Habitat Day 2009.

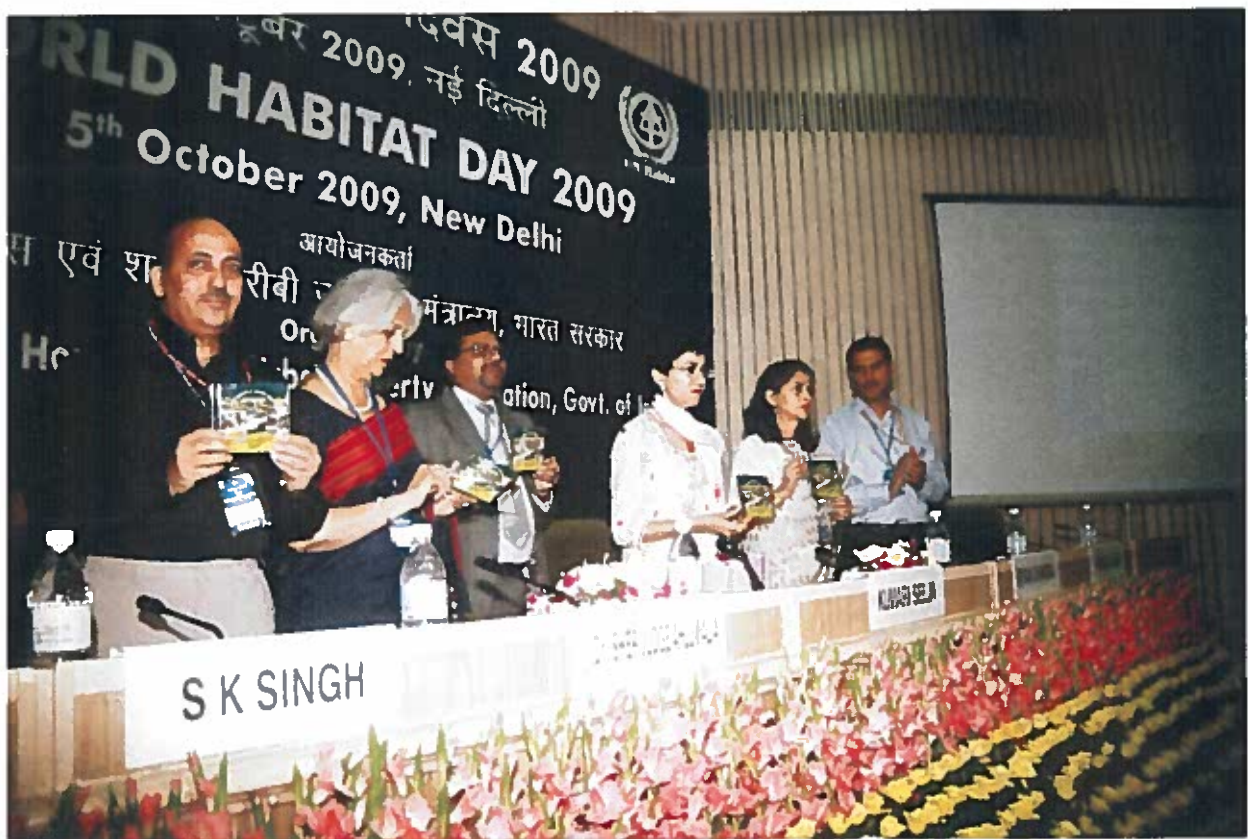


Kumari Selja, Hon'ble Minister of Housing & Urban Poverty Alleviation visiting the exhibition of paintings of Differently Abled Children organised on the occasion of World Habitat Day 2009 on 5th October, 2009.



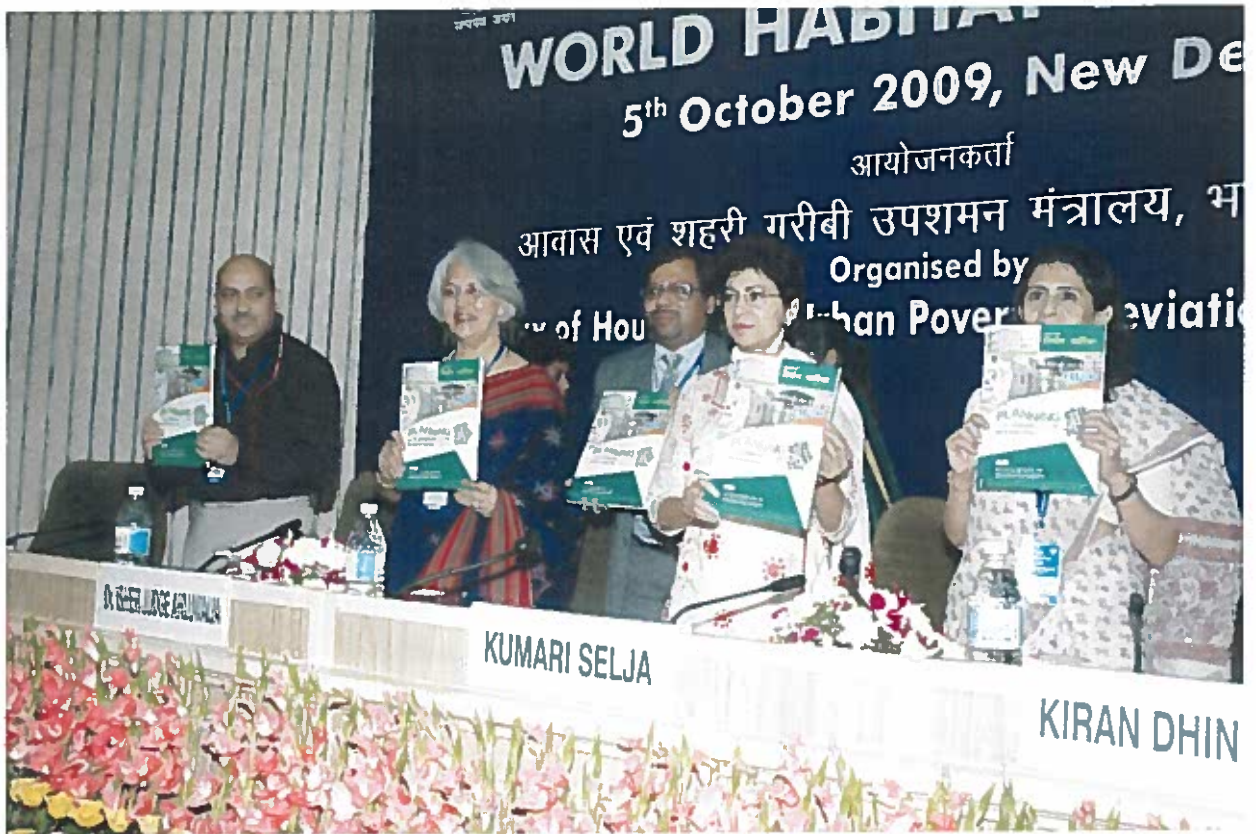


Kumari Selja, Hon'ble Minister of Housing & Urban Poverty Alleviation, releasing the Book on "Standards & Specifications for Cost-Effective Innovative Building Materials and Techniques Including Rate Analysis" during the World Habitat Day on 5th October, 2009.

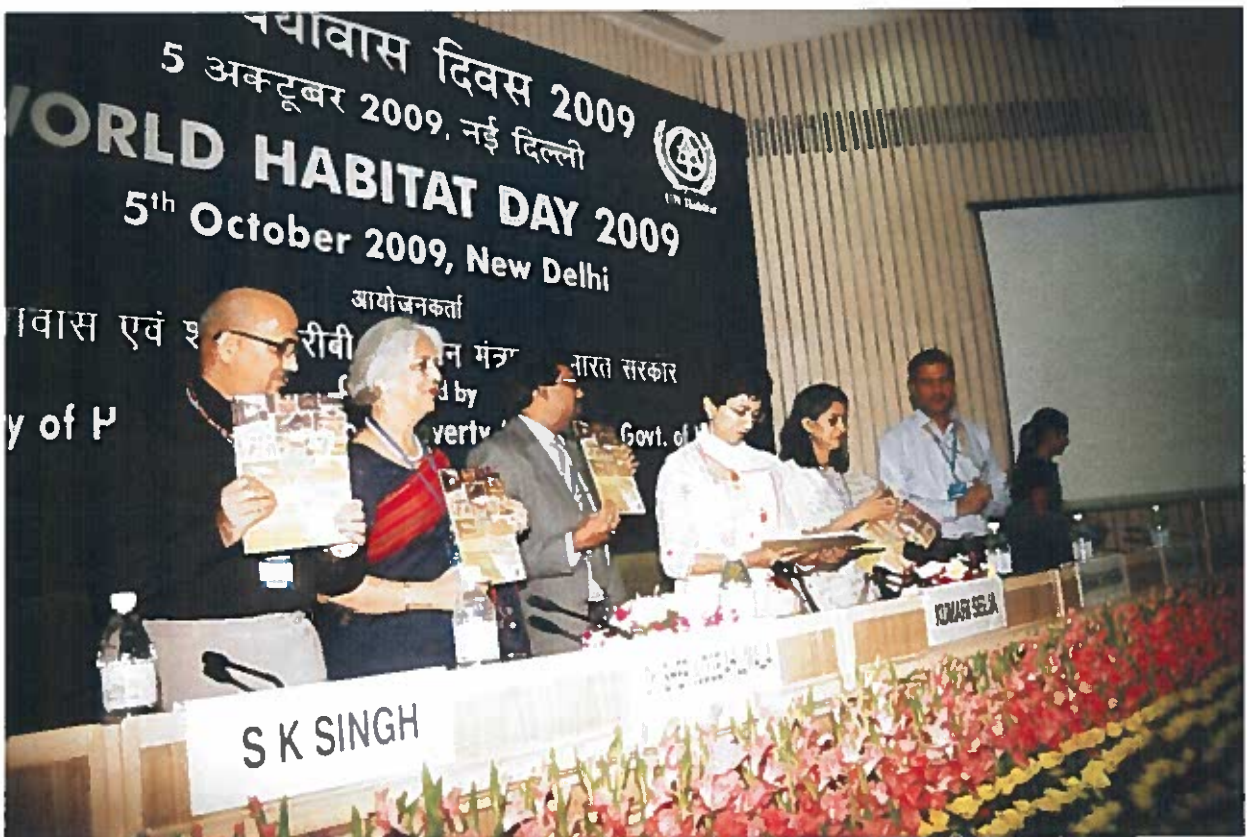


Kumari Selja, Hon'ble Minister of Housing & Urban Poverty Alleviation, releasing the CD on "Guidelines for Technical Training of Masons" during the World Habitat Day on 5th October, 2009.





Kumari Selja, Hon'ble Minister of Housing & Urban Poverty Alleviation, releasing the Special Issue of "Nirman Sarika" during the World Habitat Day on 5th October, 2009.



Hon'ble Minister of Housing & Urban Poverty Alleviation, Kumari Selja releasing the Guidebook on "Common Man's Guide to Build A Hazard-Resistant House" during the World Habitat Day on 5th October, 2009.



BMTPC stall attracted large number of professional, VIPs, foreign delegation and general public which evinced interest in the various innovative building materials and technologies being promoted by the Council. Large number of foreign delegations visited BMTPC stall.

VI. TECHNOLOGY DEVELOPMENT, DIFFUSION AND TRANSFER

1. Development of Technology for Utilization of Marble Slurry in Self Compacting Concrete

In order to provide an environment friendly solution for marble slurry utilization, a project was undertaken jointly with IIT Delhi for utilization of marble slurry in self compacting concrete. The study has been completed and the final report has been received. The report presented in two parts, covers Part A - Environmental Analysis of Marble Waste Management options and Part B - Utilisation of Marble Slurry in Self Compacting Concrete. Marble Powder was used in self compacting concrete as fine filler. Two different approaches were adopted. In the first, fly ash was replaced upto 20% by volume with marble and secondly sand was replaced by two varieties of marble powder. The results can be summarized as below:

Using marble powder

Dry marble powder should not be used as marble powder absorbs water from concrete and affects workability and strength. Marble powder should be soaked in water for at least 24 hours in water before using and water correction done.

Replacing fly ash with marble powder

1. Flowability (Workability) decreases with addition of marble powder replacing fly ash.
2. Segregation Resistance of self compacting concrete increased with marble powder on replacing fly ash. This was due to the fact that marble powder being heavier increases the density of mortar.
3. Slight decrease in strength (upto 3 MPa) was observed when fly ash was replaced with marble powder. Over all not much change in strength was observed.
4. Cohesiveness and Viscosity of the concrete increased with addition of marble powder while replacing fly ash.

Replacing sand with marble powder

1. Flow increased when marble powder was added in partial replacement of sand upto 20%.
2. Segregation index decreased with higher percentage

- of marble powder. Marble powder upto 10% is recommended limit of replacing sand. Above this segregation resistance decreases drastically.
3. Passability (V-funnel) of self compacting concrete increased when sand was replaced by marble powder.
 4. Strength of SCC was observed to decrease by maximum 5MPa.
 5. Adding marble powder in lieu of sand decreases segregation resistance.

Effect of different types of marble powder

1. Fine marble powder decreases the viscosity more than rough/coarser marble powder.
2. Density is clearly not the only determining factor. The texture and fineness of the powder also have a large effect.

Considering the above results following conclusions have been drawn about usage of marble powder in self compacting concrete:

- Marble powder can be used to stabilize the segregating mix by replacing fines, with limitation of 20% of marble powder of total fines by volume. Though slight decrease in strength (upto 3 MPa) could be experienced.
- Marble powder can be utilized to increase the passability (decrease V-funnel time) of Self compacting concrete by replacing sand upto 10% by volume.
- Marble powder can be utilized to make economical self compacting concrete with lower s/a ratio. This can be done by incorporating marble powder as fine filler by replacing sand upto 10%. This will increase the fine proportion of concrete and will have higher passability and workability.
- Marble powder should not be used in dry form. It should be moist (above SSD condition).
- The texture of the marble powder used should be chosen according to the decrease in viscosity desired.

2. Project on "Lok Awas Yatra - A knowledge journey to facilitate sustainable habitat for the poor"

The Council undertook a project on "Lok Awas Yatra- A knowledge journey to facilitate sustainable habitat for the poor" in collaboration with Development Alternatives, New Delhi. The project envisages to bring together participants from various fields ranging from the local community members, masons, PRIs, NGOs, professionals, students,

environmentalists, architects, consumers, and others interested in the area of climate change and rural habitat adaptation practices. The group of people would come at common platform in selected regions and will be exposed to different models of safe habitat practices that also contribute towards conservation of the environment. The Yatra would be undertaken in western, central, southern eastern and northern parts of India in five phases. The Yatra would connect with the concerns of natural disasters and share knowledge on low cost disaster resistant houses, ecological sanitation and waste management solutions clean drinking water models, rural housing finance possibilities, livelihood in the habitat sector and clean domestic energy solutions. The Yatra would act as an impetus to make people aware about their options, rights, and means of safe sustainable habitat using environmental and climate friendly techniques.

The Lok Awaas Yatra - a journey for habitat for the people, intends to mobilize the rural masses, ULBs and other stakeholders towards understanding the impact of climate change and the alternative habitat technologies available for adapting safe habitat. The Yatra will include, Group orientation workshop, Active sharing and learning, Computation of energy consumption, Group sharing regional seminar and will culminate with a Lok Awaas Karmi Sammelan at Delhi.

The project addresses the following existing constraints:

- Lack of understanding and sharing on issues of climate change and required adaptive measures for rural housing and habitat.
- Lack of documented knowledge, awareness and exposure to existing efficient technologies for safe habitat practices and utilization.
- Lack of skills/training to operate at higher levels of productivity and efficiency in use of available resources.
- Lack of proper advocacy and networking among key stakeholders to address the issues of safe rural habitat.

The Yatra will include a face-to-face dialogue between different actors especially the local government functionaries of the Yatra regions and the participants to encourage the multiplication of the good practices identified and influence policies on housing and habitat issues. The Lok Awaas Yatra will be divided into 5 phases across India. Each Phase will cover the following:

- Day 1: Group orientation Workshop on the geo-climatic aspects of the region and the local issues of climate change and need for adaptation for

- sustainable rural habitat technologies
- Day 2: Active sharing and learning through exposure to the identified models of habitat practices in safer affordable structures/sanitation/water. Detailed documentation of the whole process.
- Day 3: Computation of energy consumption by the rural and peri-urban community using carbon calculator and spreading awareness on the need for low carbon consumption.
- Day 4: Active sharing and learning through exposure to other identified models of habitat practices in safer affordable structures/sanitation/water. Detailed documentation of the whole process.
- Day 5: Group sharing regional seminar and documentation of discussions on new appropriate, affordable technology on green habitat practices by the rural areas, empowering the PRIs and communities.

The first phase of the Project has been completed successfully. The Regional Yatra - Eastern Region was held between 26th – 30th March 2010 in the eastern regions of India covering Bihar and Orissa. The Yatra consist of three trails from Bihar, Orissa and Sunderban. The focus in this yatra was on visit to projects on sustainable habitat development, people's participation, water and sanitation and integrated habitat development models. The trails concluded in a regional seminar at Patna on 30th March 2010 that identify key enablers for enhancing the quality of rural habitats in the eastern region.

The first two Yatras covering in the rural areas of the central and western part of India have already been successfully conducted in September 2009 and January 2010 respectively where more than 350 yatris including women – practitioners like masons, artisans, Sarpanches, Self Help Group members, architects, students, district level officers, technical institutes and civil society organisations participated.

A dedicated website www.lokawaasyatra.net has been created for the project.

3. Study for Utilization of Industrial Waste Materials as Inexpensive Adsorbents having Applications in Building Materials

The Council initiated a project for "Utilization of Industrial Waste Materials as Inexpensive Adsorbents having Applications in Building Materials" in association with Central Building Research Institute (CBRI), Roorkee. The aim of this project is to develop low cost adsorbent from waste materials for removing aqueous pollutants from water

and waste water. The following are the expected outcome of this study:

- To develop effective adsorbents from waste products viz. flyash; red mud, blast furnace slag, dust, sludge etc.
- To study kinetics and capacity of such adsorbents for removing important aquatic pollutants (viz. toxic metal ions, dyes, phenols, pesticides etc.) from natural and wastewater.
- To perform pilot studies
- To develop a model for simulating and predicting adsorption column performance
- To carry out immobilization and leaching studies with pollutants-laden adsorbents by fixing them into cement or building materials.

The interim progress report has been received wherein the following areas have been covered:

1. Solidification/ Stabilization of Cr. (VI) using OPC and flyash.
2. Physico-chemical analysis of cement (43 grade)
3. Chemical Analysis of flyash
4. Solidification/ Stabilization of Pb. (VI) using OPC and flyash
5. Solidification/ Stabilization of Zn. (II) using OPC and flyash
6. Determination of consistency of various branded cements, their leaching properties, setting time with and without binders, compressive strength, bulk density and solidification property of the mixers.

4. Development of the Building Components from Sponge Iron Wastes

The Council initiated a project for "Development of the Building Components from Sponge Iron Wastes" in association with Central Building Research Institute (CBRI), Roorkee. The objective of the project is to develop building bricks utilizing sponge iron waste. Sponge Iron contains 8-10% unburnt carbon. This unburnt coal can gainfully be used in the manufacturing of fired clay bricks. It is expected that addition of optimized quantity of sponge iron in clay will add to huge quantity fuel saving required for the manufacture of burnt clay bricks.

The interim progress report has been received wherein the following areas have been covered:

1. Raw materials and their availability
2. Availability of Sponge Iron in India
3. Utilization Prospects of Sponge iron in developing building products and components.

4. Characterization of the Sponge iron waste & clay sample and determination of particle size, mechanical composition, plasticity properties and chemical properties is reported in the report.
5. Environmental hazards such as pollution due to road side disposal of the waste and air pollution during the process of the sponge iron is reported.

5. Development of Technology for Construction and Demolition Wastes Recycling

The Council has undertaken a project for development of commercial level technology for recycling and utilization of debris for production of building components in association with CIDCO-YUVA Building Centre, Mumbai. The objective of the project is to develop plant and machinery having capacity to recycle 12 tonnes of debris per day and standardization of the developed technologies and the products manufactured.

The Pilot Plant Facility has been established at Kharghar, Navi Mumbai and recycling of construction and demolition waste on a commercial basis has been started. The Executive Director, BMTPC inaugurated the Pilot Plant Facility developed under this project for recycling of debris waste on 11th February 2010.

With the present production capacity of 1300 blocks per day, it is one of its kind in India backed by sound and innovative technology. The products such as Blocks, Interlocks, bricks etc meet the standard specifications and quality and are available in much cheaper than the prevailing market prices. The training module/guidelines under this project are under preparation and will be used for further dissemination of this technology.

6. Cost Effective Value Added Thermal Insulation Tiles for Insulation Purpose

The Council has initiated a project on 'Cost Effective Value Added Thermal Insulation Tiles for Insulation Purpose' in collaboration with Central Building Research Institute, Roorkee on the above subject. The objectives of the project are:

- To develop roofing tiles using exfoliated vermiculite, cement and polymer binder.
- Characterization and optimization of develop tiles as per IS specifications.
- Optimization of operating parameters and to make prototype for field trials.

It is proposed in the project to work for achieving the following targets:

- Product i.e. Thermal insulated tiles
- Process know-how for commercialization
- Research papers and patent

The work has been started and the first Progress Report has been received wherein the following work has been undertaken:

- Procurement of raw materials – Raw materials such as vermiculite, polymer and cement has been procured from local and Delhi market.
- Fabrication of moulds of different sizes required for casting tiles from local market
- Characterization of raw materials – The characterization of cement, polymer and vermiculite has been done.
- Use of Vermiculite plaster and its advantages
- Physical and Chemical Properties
- Vermiculite concrete roof deck systems
- Vermiculite Industrial Applications etc.

7. Development of Reinforced Interlocking Hollow Block System for Earthquake Resistant Construction Using Industrial Waste

The Council has initiated a project on Development of Reinforced Interlocking Hollow Block System for Earthquake Resistant Construction Using Industrial Waste. Several attempts have been undertaken to develop mortar less hollow blocks in different parts of the world in the recent past. Researchers & Developers have developed interlocking blocks, which were used to construct a single-storey house for faster construction. Interlocking hollow block system, for the construction of load bearing walls, three types of blocks needs to be developed. The alignment in blocks is achieved by providing interlocking at the sides, while the interlocking between the blocks is ensured by providing a projection at the ends of the blocks in addition to inside web acts as a support to the ends to interlock the block system. This interlocking mechanism should be efficient to ensure self-alignment and easy construction. Both horizontal and vertical reinforcement System embedded in grout for load bearing walls.

During the manufacturing process, the blocks are passed through a machine that grinds the top and bottom surfaces to a tolerance of 0.12 mm. These parallel and smoothly ground surfaces allow the blocks to be laid up with ease without mortar. The blocks also have male and female interlocking mechanism at their sides to help align and secure them during placement. Grouting is used to finally fill all the cores.

Recently, Block system has been developed in which no interlocking is provided so that the blocks are simply stacked on each other. All the voids provided in the blocks are then grouted after the placement of the horizontal and vertical reinforcement in their positions. However, proposed inter-locking block must have accurate dimensions and smoothness with a tolerance of 0.5 mm through moulding under pressure. The shape of the blocks allows two-way hollow cores for introducing the reinforcement. The horizontal reinforcement is placed during stacking of the blocks while the vertical reinforcement is placed after stacking the blocks for the complete wall. The hollow cores are then filled with concrete grout to complete the reinforced masonry wall. The concrete grout ingredients are the same as those used in normal concrete with the extra requirement that the grout must have a high degree of workability

The two interim reports have been received and the status of the activities undertaken under the project is as follows:

- i. Analyses the cost-effectiveness of accelerated masonry construction process with interlocking blocks has been completed.
- ii. Development of profile for simple and structurally efficient innovative interlocking hollow & solid blocks (Stretcher block, corner block and half block) has been completed.
- iii. Development of optimum Mix Design for proposed interlocking hollow block using industrial wastes is in progress.
- iv. Literature survey has been completed on the above system.

8. Preparation of Guidelines for Green Habitat

The Ministry of Housing & Urban Poverty Alleviation, Govt. of India constituted a Task Force for formulation of Guidelines for Green Habitat. The Guidelines have been formulated and the report has been submitted to the Ministry. The Guidelines tries to indicate the levels where public intervention is necessary and where individual voluntary compliance will achieve the objectives of Green Habitat. In order to address the vast issue of Green Habitat and need for action at different levels, the Report has been divided into two parts.

Part I deals with the general Planning Paradigms to ensure overall sustainable development at State, District and Town level. The responsibility of preparation of necessary database and Plans at different levels will rest on both central, State and Local Governments as applicable. Although all Plans should be prepared with public



Inauguration of Pilot Plant Facility for Recycling of Construction and Demolition Waste at Kharghar, Navi Mumbai on February 11, 2010





participation, the responsibility of delivery will remain with Public Offices.

Part II deals with the guidelines which deal with Development form neighbourhood (approx 15000 people) to about 50 households, or 1 ha, whichever is less. This would be applicable to developments undertaken by public/ private agencies, and provide guidelines for voluntary compliance and monitoring.

A series of easily applicable matrix of parameters with values have been provided in tabular form where the cumulative values determine the Greenness of a proposed development which can be calculated and evaluated by the developer, examined by consenting Authority and monitored by open public scrutiny.

A special feature for evaluating Construction Management, Post-Occupancy Management and User Satisfaction has been added to ensure that the Greenness of development continues through the life of the development.

The report does not include any guide for design of buildings and internal infrastructure of a building. It is assumed that provisions of environmental conditions made in the National Building Code and GRIHA would be followed in Building Regulations and controls and developments will conform.

9. **Project on "Roofing Technology Knowledge Consolidation and Documentation"**

Construction of flat roofs predominantly involves casting reinforced cement concrete slabs. Other options such as pre-cast techniques are limited by availability of adequate knowledge and implementation support tools. This is a critical gap in the 'building technology' and 'knowledge' arena, specially in the rural housing arena where flat roof is an increasingly preferred roofing option. To address this gap, a training programme was organized for roofing technology demonstration in Pahunj, U.P.

As part of the programme, four roofing technologies were demonstrated as part of the construction of a resource centre – Ferrocement channel roof, Arch panel roof, Funicular roof and Plank and Joist roof. A team of masons from Bundelkhand, Orissa and Rajasthan were trained in the above roof construction techniques. Importantly, the masons have been active in propagating these systems through interaction with their clients. It is critical, at this stage, to ensure that the techniques are documented to strengthen their dissemination. Importantly, the

documentation will include information and knowledge generated during the training programme.

Following the demonstration of roofing technologies, in order to consolidate the application and learnings into a well documented package, following were prepared:

1. Technology Brochures

- Ferrocement channel roof,
- Arch panel roof,
- Funicular roof and
- Plank and Joist roof

2. Construction manuals

- Ferrocement channel roof,
- Arch panel roof,
- Funicular roof and
- Plank and Joist roof

3. Newsletters

- Basin-South Asia and Development Alternatives Newsletters

10. Project on "Development of Housing System using cellular light weight concrete for EWS"

The Council undertook a project for Development of Housing System using cellular light weight concrete for Economically Weaker Sections (EWS). The project envisages deployment of an innovative construction technology with the use of a new environment friendly building material. The outcomes of the project are summarized as below:

The new material used is a type of self compacting Light-weight Concrete, which can be produced at project site itself under ambient conditions, by making use of cement, sand, water and a preformed stable foam. This Cellular Lightweight Concrete (CLC) has already been used elsewhere in the World for such applications, but a novel alternative feature, for Indian conditions, is the incorporation of FLY ASH - an industrial waste product - as another primary constituent material forming over 25% of the total input materials, thereby resulting in a saving of around 35% - 40% in the consumption of cement in comparison with the normal cement, sand mixes. This retards the initial hardening of the final product, but the 28 test results are the same.

CLC is not only lighter than alternative building materials like dense concrete and bricks, but also has far superior thermal and acoustic properties. The incorporation of Fly

Ash as a constituent in its production makes it far more environment friendly.

The innovative methodology proposed for the construction is the use of Monolithic Technology warranting use of storey high room sized assembly of shuttering panels and in-situ casting of nominally reinforced load-bearing walls using structural grades of self compacting Cellular Lightweight Concrete. Another merit of this technology is that the door/window frames, other inserts and any conduits for any type of concealed service lines are placed in position along-with the reinforcement, prior to pouring of concrete and are in place, when shutters are removed. The suspended slabs can be cast as a second operation using large area slab forms or these could be cast simultaneously with the walls if a closed system with room sized forms or tunnel forms are used.

The formwork system could be selected considering the number of houses being put-up in a scheme and time constraints. The alternative choices can be deployment of: -

- Assembly of manually handle-able standard storey high wall panels forming inside and outside shuttering of complete house for casting of walls and similar panels forming the slab forms during the second stage of casting the suspended floors
Or
- Large area room sized forms for external and internal walls, as also for the floors handled mechanically using small capacity cranes.
Or
- Deployment of closed system for casting of entire house in one go using manually handle-able lightweight shuttering panels providing a cycle time of 4-6 days.
Or
- Tunnel-form shuttering system necessitating deployment of cranes for simultaneous casting of walls and slabs in a single operation but providing a major advantage of daily casting cycle.

The shutter finished walls and ceilings are good enough to directly receive white/ colour wash or painting, thereby saving on the cost of plastering. The integral casing of door/window frames and service line conduits etc. saves on skilled manpower for subsequent fixing and does away with necessity of cutting chases and refilling the same.

It is evident that the proposed scheme results in: -

- Much faster pace of construction,

- Ensures superior quality and accuracy in output
- Saves on consumption of basic raw materials
- Provides possibility of use of a nuisance Industrial waste product as a main constituent material, thereby assisting in reducing environmental pollution
- Provides superior thermal and sound insulation performance.
- Economizes on consumption of Energy for production and during life cycle of the finished building.

VII. JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)

1. BMTPC's Role in Implementation of JNNURM

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).

Appraisal of Detailed Project Reports (DPRs)

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) as an Appraisal Agency and Monitoring agency. During the year, 20 numbers of Central Sanctioning & Maintaining Committee (CSMC) meeting took place to consider the sanction of Detailed Project Reports under BSUP. Total 8 numbers of proposals from 3 States namely Gujarat, Puducherry and Uttarakhand appraised by BMTPC were sanctioned in these meetings. The proposals were worth Rs.426.67 crores having Government of India (GoI) share of Rs.248.30 crores & covered 13553 Dwelling Units.

The Council also appraised 25 DPRs of Integrated Housing & Slum Development Programme (IHSDP) received from Bihar (4 No.), Uttarakhand (19 No.) and Manipur (2 No.). The proposals were worth Rs.251.94 crores with Government of India share of Rs.138.06 crores and covered 8916 Dwelling Units and other infrastructure services such as roads, water supply, sewerage, storm water drains, community facilities, health centres, education facilities etc.

The appraisal activity also included framing of Administrative & Technical Check lists, DPR Preparation formats etc. and extensive discussion/ interaction with State Government officials on regular basis to ensure that the

DPRs submitted were in compliance with Mission Guidelines.

Monitoring of BSUP and IHSDP Projects

The Council is also being designated as a 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, monitoring visits were undertaken at the following sites:

					(Rs.in lakhs)
S. No	State	City/Town	Location	No. of Projects	Total Project cost
BSUP Projects					
1	Andhra Pradesh	Hyderabad	Hyderabad	1	4900.00
2	Haryana	Faridabad	Dabua Colony	2	12845.36
			Bapu Nagar		
			Dabua Colony	2	
			Bapu Nagar		
3	Gujarat	Vadodra	Vadodra	2	82826.53
			Vadodra		
		Ahmedabad	Ahmedabad	3	
		Rajkot	Rajkot	2	
			Rajkot		
4	Madhya Pradesh	Indore	Indore	2	30235.18
		Bhopal	Bhopal	6	
		Ujjain	Ujjain	1	
5	Tamil nadu	Mijnur	Distt Thiruvallur	1	25996.93
		Ezhil Nagar	Ezhil Nagar	1	
6	Kerala	Cochin	BSUP projects of ph-I corporation of Cochin	1	
7	Meghalaya	Shillong	Shillong	2	3044.09
8	Chattisgarh	Raipur	Raipur	1	39144.61
9	Maharashtra	Pune	Hadapsar	3	18937.67
			Warje		
			Street Vendor		
10	Manipur	Imphal	Imphal	1	5123.00
11	Nagaland	Kohima	Kohima	1	11734.00
12	Sikkim	Gangtok	Gangtok	2	831.41
			Gangtok		
13	U.P	Kanpur	Kanpur	1	32184.51
			Meerut	Meerut	
		Lucknow	Lucknow	1	
			Lucknow	1	
			Simra Gouri	1	
			Vasant Kunj	1	
		Meerut	Meerut	1	
14	West bengal		Rani ganj	3	13649.00
			Jamuria		
			Chandannagore		

S. No	State	City/Town	Location	No. of Projects	Total Project cost
		Rishra	Rishra	4	
		Kalyani	Kalyani		
		Gayeshpur	Gayeshpur		
		Baruipur	Baruipur		
15	Karnataka	Bangalore	Ph-1	4	41458.91
			Ph-2		
			BBMP Project 1		
			BBMP Project 2		
		Bangalore	4		
		Mysore	3		
		Mysore			
Mysore					
		Mysore	Mysore	1	
16	Delhi	Delhi	Bawana, Narela and Bhorganh	10	151325.22
			Poothkhurd		
			Khanjawala, Ghogha & Baprola		
			Deramandi		
			Samaspur		
			Jonapur		
			Neb Sarai		
			Baprola Phase-II		
			Bawana		
			Nangli Sakravati, Najafgarh		
			Bawana, Narela & Bhorganh (Bawana -II)	1	
<i>Sum Total Cost of the Projects Visited & Monitored</i>				289581.33	Lakhs
<i>or</i>				2895.81325	Crores
<i>Total No. of Mission Cities Visited</i>				24	
<i>Total No. of BSUP Project sites monitored</i>				72	

S. No	State	City/Town	Location	No. of Projects	Total Project Cost
<i>(Rs. in Lakhs)</i>					
IHSDP Projects					
1	Andhra Pradesh	Andhra Pradesh	Manhboobnagar	10	9908.41
			Gadwal		
			Rayachoty		
			Rajampet		
			Buggavanka		
			Mruthnjayakunta		
			Produtur		
			Suryapeta		
			Miryalguda		
			Nalgonda		
2	Haryana	Ambala & Panchkula	Kalka	4	6507.34
			Pinjore		
			Panchkula Ph-1		
			Bandhu Nagar		
		Ambala	1		
		Ambala sardar	1		
		Naraingarh	1		
3	Madhya Pradesh	Sironji	Distt Vidisha	5	657.42
		Kurwai	Kurwai		

S. No	State	City/Town	Location	No. of Projects	Total Project Cost
		Lateri	Distt Vidisha		
		Vidisha	Distt Vidisha		
		Ganj Basoda	Ganj Basoda		
4	Tamil nadu	Namakkal	Namakkal	5	3578.20
		Alampalayam	Alampalayam		
		Edappadi	Edappadi		
		Tiruchirappall	Tiruchirappall		
		Sivagangai	Sivagangai		
5	Kerala	North Paravoor	North Paravoor	3	1413.33
		Innjalakudal	Innjalakudal		
6	Chattisgarh	Shornapur	Shornapur	1	3931.41
		Abhanpur	Abhanpur	1	
		Bemetara	Bemetara	3	
		Durg	Durg		
		Bhillai	Bhillai		
7	Maharashtra	Jagdarpur	Jagdarpur	1	1252.39
		Buldana	Buldana		
8	Rajasthan	Pali	Pali	4	5640.43
		Bali Nagar	Bali Nagar		
		Sojat City	Sojat City		
		Bikaner	Bikaner		
		Bhilwara	Bhilwara		
		Sikar	Sikar		
9	Manipur	Bishnupur	Bishnupur	1	1083.19
10	Nagaland	Dimapur	Dimapur	1	8774.00
		Unnao	Lodhan Har		
11	Uttar Pradesh	Unnao	Ugoo	2	5012.81
		Gorakhpur	Gorakhpur		
			Sehejanwa		
		Bhikhampura	Bhikhampura		
		Babarpur	Babarpur		
		Biduna	Biduna		
		Achalda	Achalda		
		Phaphoond	Phaphoond		
		12	West bengal		
Bolpur	Bolpur				
Dubrajpur	Dubrajpur				
Nalhati	Nalhati				
13	Karnataka	Savdati	Savdati	7	11774.93
		Betegeri	Gadag		
		Gajendragada	Gajendragada		
		Siddlaghatta	Siddlaghatta		
		Koppal	Koppal		
		Hubli	Hubli		
		Doddaballapur	Doddaballapur		
		Hassan	Hassan	4	
		Holenarasipura	Holenarasipura		
		Nagmangla	Nagmangla		
		Nanjangudu	Nanjangudu		
		14	Bihar	Doddaballapur	
Sidlagatta	Sidlagatta				
Kanti	Kanti				
14	Bihar	Purnea	Purnea	4	4667.47
		Kishanganj	Kishanganj		
		Bhagalpur	Bhagalpur		
Sum Total Cost of the Projects Visited & Monitored or Total No. of IHSDP Towns Visited Total No. of IHSDP Projects monitored				62422.10 624.221 60 74	Lakhs Crores

Capacity Building Programmes/Review Meetings

Besides, the Council has actively taken part in the capacity building programmes organized by the Ministry of Housing & Urban Poverty Alleviation for the capacity building of the

municipal functionaries in preparation of DPRs for the BSUP and IHSDP projects. In addition, a number of visits were made to various mission cities in connection with bringing additional DPRs and hand-holding of implementing agencies and review of various projects:

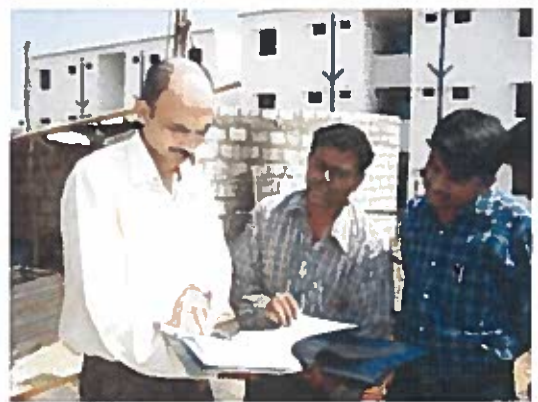
- Workshop on "Project Monitoring & Quality Assurance of BSUP & IHSDP Projects under JNNURM" was organized at IIT, Roorkee during May 29-30, 2009
- State Review Meeting of Uttar Pradesh in Lucknow on 13-14th November, 2009
- Regional Review Meeting of BSUP and IHSDP projects in the state of Bihar during 14-15th Nov. 2009, Patna, Bihar.
- Regional Review Meeting of BSUP and IHSDP projects in the North-eastern States during 20-21st Nov. 2009, Guwahati, Assam.
- State Review meeting of Rajasthan on 27th November 2009 and Monitoring visit to IHSDP Sikar on 27.11.2009.

Consultative Meet on "Manual for Quality Assurance of BSUP/IHSDP projects under JNNURM"

To facilitate the State Govt/ULBs/Implementing agencies, follow proper quality assurance plan during execution of BSUP/ IHSDP projects, Ministry of HUPA had desired that a Quality Assurance Manual may be prepared. Accordingly, a one day Consultative Meet on "Manual for Quality Assurance of BSUP/ IHSDP Projects under JNNURM" was organized on 17th June 2009 at New Delhi which was attended by senior technical officers from States and ULBs/implementing agencies dealing with Quality control/assurance of JNNURM projects, experts from organizations like CPWD, IIT, CBRI, NBCC, RITES, NCCBM, HUDCO etc and other technical organizations/institutions/industry. After the presentation on draft Manual prepared by BMTPC, detailed discussion were held on all aspects of the quality manual covering the scope, applicability based on size and type of project etc. Due to prevailing local practices, norms and site conditions, it may not be practical to formulate a document which is applicable in all the States, therefore, there is need to formulate the document in the form of Guidelines which could cover all major Checks and Controls for Quality Assurance with flexibility of modification for local conditions. It was agreed that based on the Draft Manual prepared by BMTPC, a suitable document in the form of the Guidelines incorporating CPWD specifications & BIS Standards may be prepared for which a small Technical Group was constituted to study the draft manual in detail and suggest suitable



BMTPC Monitoring Teams visiting various BSUP and IHSDP project sites under Jawaharlal Nehru National Urban Renewal Mission (JNNURM)







Regional Review Meeting of BSUP and IHSDP projects in the North-eastern States during 20-21st Nov. 2009, Guwahati, Assam.



Ms. Kiran Dhingra, Secretary, Ministry of Housing & Urban Poverty Alleviation during Regional Review Meeting of BSUP and IHSDP projects in the North-eastern States, Guwahati, Assam.



modifications before its submission to the JNNURM Mission Directorate, MoHUPA, Govt. of India. In order to finalise Quality Control Guidelines – a document to help State agencies in implementing BSUP and IHSDP projects, a meeting of the Technical Group was held on 24th September 2009 at BMTPC office IHC New Delhi with experts from CBRI, NCCBM etc. The guidelines are expected to be released shortly.

VIII. HIGHLIGHTS OF SOME OF THE PROJECTS/STUDIES DURING THE YEAR

1. Preparation of Draft Indian Standard and Manual on Filler Slab

The Council has initiated a Project entitled "Draft IS Code and Manual on Filler Slab" in association with Society for Environment Protection, Ahmedabad.

Filler slab technology is one of the technologies which is used in India and BMTPC & HUDCO are pioneers in promoting this technology. The filler slab works on the basic principle of removing concrete from the tensile zone of slab and substituting it with filler material which is low cost compared to concrete. Wide range of materials is used as filler material in slab which includes Mangalore tiles, earthen pots, hollow blocks etc. Although the slab is widely used in many parts of India, the base data and research work has been done on the technology, still a separate Indian Standard on Filler slab covering all details has not been prepared. The objective of the project is to:

- i. Develop draft IS Code specific to Filler Slab
- ii. Develop a comprehensive design and construction manual for Filler Slab.

The above study will help in preparation of IS code of the Filler slab technology and its usage in the construction projects.

2. Detailed assessment and evaluation of the existing building typologies in five severe earthquake zones

The Council has initiated a study with Indian Institute of Technology, Hyderabad to conduct a detailed assessment and evaluation of the existing building typologies in five severe earthquake zones of the country. These will include:

- Sample from the North-east India
- Sample from the Bihar-Nepal border
- Sample from the U.P
- Sample from the Uttrakhand
- Sample from the H.P.
- Sample from the J&K
- Sample from the Kachchh.

The study will be carried out in urban and rural areas. The focus of this study will be on documenting and describing the various housing typologies found in each of the above regions and deliberate their respective construction technologies, seismic resistance, delivery system, agencies involved, financial mechanism, uses and occupations, transformations (additions, alterations) etc.

The study will identify data regarding buildings, construction technologies adopted, influence of climatic and social factors on the technologies, influence of external methodologies, and effort in vulnerability reduction and also suggest simple means of strengthening these types of buildings.

As part of the project, housing practices are being studied at seven locations across the country, namely Guwahati (Assam), Shantiniketan (West Bengal), Darbhanga (Bihar), Tehri (Uttarakhand), Srinagar (J&K), Mohali (Punjab) and Gandhidham (Gujarat). The methodology for documenting housing typologies have been prepared.

3. **Project on Seismic Retrofitting of Bara Hindu Rao Hospital, Delhi**

The Council has initiated a project on the request of Municipal Corporation of Delhi for seismic retrofitting of existing hospital buildings of Bara Hindu Rao Hospital, Delhi. In this connection, several meetings were held with MCD and with Medical Superintendent of the hospital. The hospital authority has informed that their priority for retrofitting of buildings would be either 250 bedded ward or block of OPD building. Since the buildings under consideration are framed buildings and structural drawings are not available, it would be required to prepare detailed drawings, carry out some NDT tests as required for structural analysis. Based on the data generated, detailed seismic retrofitting design will be prepared. Earthquake Engineering Department of IIT Roorkee has been involved for this project.

The scope of the work to be carried out by IIT Roorkee consists of and is limited to evaluation of expected seismic performance of the existing 250 bedded ward block building and design of suitable retrofit schemes for the intended 'Immediate Occupancy' performance levels for the MCE level of ground shaking as per current Indian seismic code. In case the Immediate Occupancy performance level is not technically or economically viable, the retrofit design will be carried out for a performance level decided mutually with the BMTPC. The scope of the work excludes the seismic safety of operational and functional components, such as hospital equipment and services. However, the seismic safety of URM in-fills will be addressed. As the seismic safety of equipments and services is crucial for the operational performance of a hospital, this work may be taken separately, at a later stage.

Based on the design prepared, the building will be retrofitted to demonstrate the technique.

4. Preparation of Manual for Restoration & Retrofitting of Rural Structures in Uttarakhand & Himachal Pradesh”

The Council has undertaken a project for preparation of a “Manual for Restoration & Retrofitting of Rural Structures in Uttarakhand & Himachal Pradesh” for reducing vulnerability of existing buildings made with vernacular building technologies of masonry construction in the States of Uttarakhand and Himachal Pradesh of India. The Manual has been prepared in association with National Centre for Peoples’ Action in Disaster Preparedness (NCPDP), Ahmedabad.

The manual covers the most popular building systems other than the reinforced concrete frame, which the people are likely to continue using for decades to come. It will also include the local natural hazards, primarily earthquake, alongwith wind and flood that could be withstood through retrofitting of the existing building.

The manual will provide valuable information to those who wish to repair their houses and to those who wish to strengthen their existing building for ensuring their safety against future earthquakes. This will help them save their scarce resources. In addition, this will also help those who for mere want of safety, are ready to replace their comfortable traditionally built house with not so comfortable house built with bricks, cement and steel.

5. Development of Guidelines for Habitat Reconstruction in Bihar

The Council undertook a project for development of guidelines for Habitat Reconstruction in Bihar. Over 380,000 houses in over 1598 villages need to be reconstructed in Bihar in the wake of the recent floods. Given the scale of reconstruction, it is imperative that a framework be developed that promotes environmentally sustainable and socially acceptable reconstruction. The Guidelines for Habitat Reconstruction covers the following aspects:

- i. Energy Efficiency and Climate change
- ii. Sanitation, Hygiene and community level solid waste management
- iii. Shelter typology and construction system
- iv. Settlement planning
- v. Drinking Water

The main objective of the project is to enable faster recovery of the affected population in five districts of Bihar by means of development of guidelines for socially

appropriate and ecologically responsible habitat reconstruction in Bihar. The guidelines will contribute to reduce climate change implications of reconstruction. The initiative will take cognizance of the needs of different groups within the community and their living patterns and address needs of the different functions within the community as well as the individual shelter. In doing so, the guidelines will seek to address the needs of the different user groups such as women, children, old and people with special needs.

The study seeks to target affected communities among three of the five most affected areas of North Bihar, namely- Saharsa, Supaul and Madhepura.

6. Project on "Propagation of Confined Masonry as Preferred Building Typology"

The Council has initiated a project on "Propagation of Confined Masonry as Preferred Building Typology" in low-rise building constructions in association with Deptt. of Civil Engineering, IIT Kanpur.

The Confined masonry construction consists of unreinforced masonry walls confined with Reinforced Concrete (RC) tie-columns and RC tie-beams. This type of construction is used both in urban and rural areas, either for single-storey residential construction or for multi-storey construction up to four or five stories in height. The tie-columns and tie-beams provide confinement in the plane of the walls and also reduce out-of-plane bending effects in the walls. The walls are made of different masonry units, ranging from hollow concrete blocks to solid masonry units of either clay or concrete. If properly constructed, confined masonry construction is expected to show satisfactory performance during earthquakes. Under the project, following actions will be taken:

- a. Development/publication of a manual for technicians/masons/contractors
- b. Development of a design guideline (code like document).
- c. Dissemination of the above documentation to the widest possible audience in the country through internet and hard copies
- d. Technical assistance to BMTPC in a demonstration project.
- e. Engagement of international experts in confined masonry for the above including holding meetings/workshops with them.

It is proposed that while international documentation on confined masonry will be consulted, these will be modified in Indian context and for Indian design practices. In the first phase, manual for technicians/masons/contractors and development of design guidelines will be undertaken under the project.

7. Project on Upgradation of Facility for Commercialization of Bamboo Mat Corrugated Sheet (BMCS) with addition of Bamboo Mat Ridge Cap (BMRC)

The Council has initiated a project for Upgradation of Facility for Commercialization of Bamboo Mat Corrugated Sheet (BMCS) with addition of Bamboo Mat Ridge Cap (BMRC). The main objectives of the projects are:

1. Design and development of moulded dies for ridge cap for commercialization
2. Installation and commissioning of BMRC Hydraulic hot press with moulding dies.
3. Trial runs to produce the Ridge Cap and to carry out improvements and modifications if necessary.
4. Performance evaluation.

The project will be located and executed at M/s Timpack (P) Ltd, Meghalaya India. The firm has a complete range of facilities, viz., Laboratory, plants for manufacturing BMB, BMCS and other products. The unit has adequate additional space to equip some of the machines and equipments for the development of Bamboo mat Ridge cap. It has been proposed to carry out production trials of Bamboo Mat Ridge Cap in the unit. M/s Timpack (P) Ltd is presently manufacturing BMCS.

BMCS has been in use in various projects including Railways. Presently, in the absence of bamboo based ridge cap, metallic ridge cap is used, which does not give proper aesthetic look to the roof. Therefore, development of Bamboo Mat Ridge Cap become a necessity. Accordingly, IPIRTI jointly with BMTPC has successfully developed technology for manufacture of Bamboo Mat Ridge Cap (BMRC) on a pilot plant scale. This technology can now be commercialized. Establishment of this facility will help in promotion of bamboo based technologies in the North Eastern region and also attracting more number of entrepreneurs for manufacturing of Bamboo Mat Corrugated Sheet (BMCS) with addition of Bamboo Mat Ridge Cap (BMRC).

8. Project on Energy Auditing & Carbon in manufacture of Bamboo Mat Corrugated Sheets and Bamboo Mat Ridge Cap

The Council in past developed a technology for manufacture of Bamboo Mat Corrugated Roofing Sheets (BMRC) in association with Indian Plywood Industries Research & Training Institute (IPIRTI), Bangalore. A commercial plant for manufacture of BMCS was established at Byrnihat, Meghalaya. This plant is manufacturing BMCS on large scale and supplying to the various government departments, public etc. Later on the Council in association with IPIRTI, Bangalore developed a technology for manufacture of Bamboo Mat Ridge Cap (BMRC) to cover the ridge portion of the sloping roof.

On the advise of the Executive Committee, the Council has initiated a project on "Energy Auditing & Carbon in manufacture of Bamboo Mat Corrugated Sheets and Bamboo Mat Ridge Cap" in association with Indian Plywood Industries Research & Training Institute (IPIRTI), Bangalore. The objectives of the projects are as under:

1. To study energy requirement in different stages of production of BMCS in terms of electrical energy, fossil and other organic fuel.
2. To asses the entire route of processing of BMCS from harvesting of bamboo to ready to use product by the consumers to assign the BMCS as eco-friendly product.
3. To investigate whether any harmful pollutant is discharged during processing of BMCS and the extent of pollution of environment due to such discharge.
4. Formulate standard process for manufacture of BMCS with minimum energy and least discharge of harmful emission and pollutant.

The expected outcomes of the project will be as under:

1. Energy inventory of BMCS production will be a power tool which can assist regulator to formulate environmental regulations, help manufacturers to analyse their product and also help consumers to make more informed choices.
2. The study will provide useful and factual information about the impact of production of BMCS on the environment. It will help to integrate environmental concern into decision making and form basis for product and process Improvement.
3. Study on energy inventory and impact on environment for manufacture of BMCS for which fast growing bamboo is being used lessens

environmental burden by minimizing wood use. The study will assess the impact of the energy and material uses and identify and evaluate opportunities to affect environmental improvement. The study will address issues associated with designs, manufacturing, maintaining and disposing of system while adhering to environmental laws, budgetary constraints and minimizing risk.

ORGANISATION

The organizational structure depicting different functional units in the establishment of the Council is shown in form a chart at next page. As on 31st March, 2010 BMTPC had a staff strength 42 comprising 18 officers and 24 support staff and technicians/professionals hired on contract on project basis.

With the opening of economy and consequent rising investments in industrial sector, building materials and construction industry has also gradually attracted investments both from Indian and foreign entrepreneurs higher than before during recent years. In keeping with the mandate of BMTPC to stimulate and facilitate action at various levels, the Council has been learning from the rising demands on its tasks from different segments of users. Such tasks, interalia, include domestic and foreign investment, stimulating information flows and developing support functions and improving infrastructure to meet the changing needs of housing and building construction sector. On the pursuance of the Ministry, draft amendments in Bye-laws, delegation of powers of the Council have been proposed along with employees conduct rules and recruitments rules. These are under active consideration of the Ministry of Housing & Urban Poverty Alleviation.

BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL

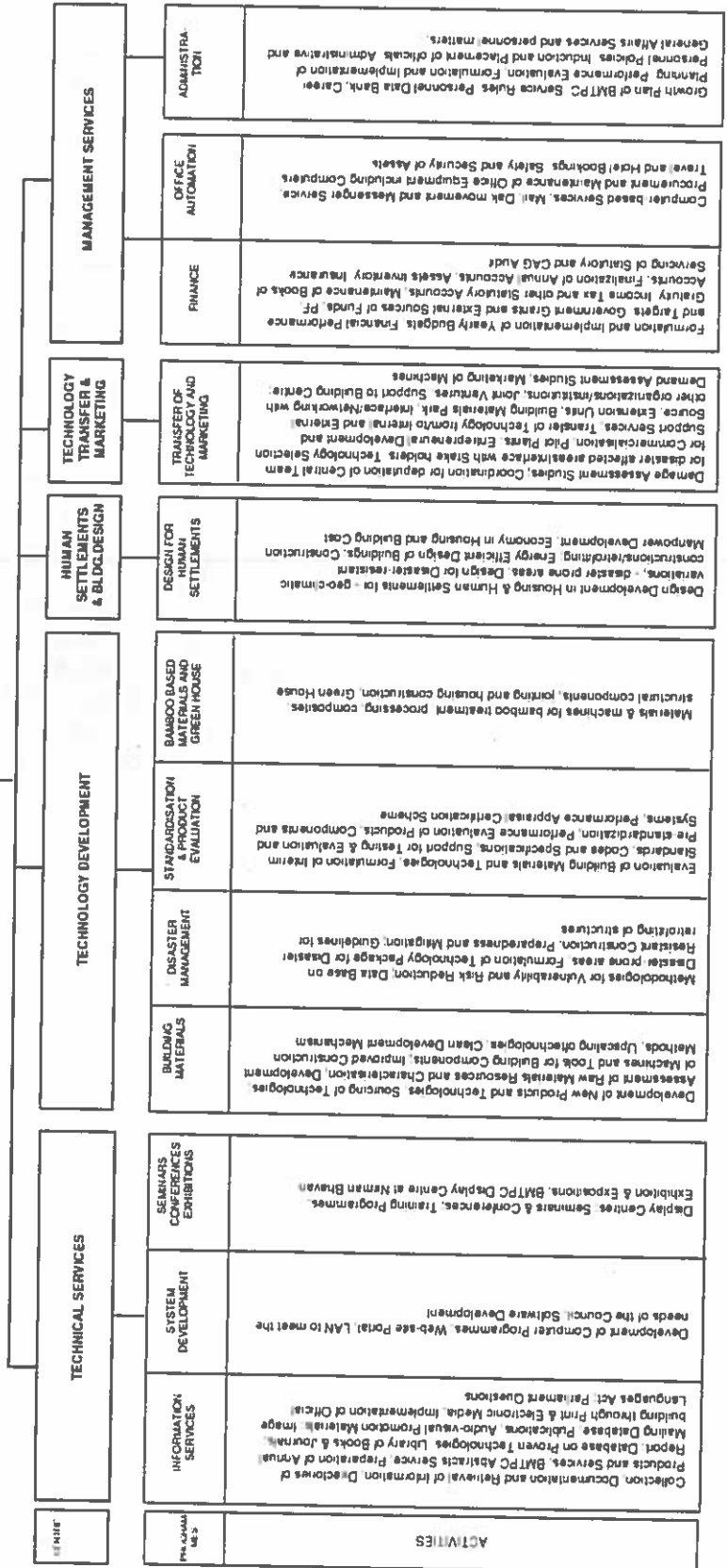
ORGANIZATIONAL STRUCTURE

PRESIDENT
Minister of Housing & Urban Poverty Alleviation

VICE-PRESIDENTS
Minister of State and Secretary, Ministry of HUPA

EXECUTIVE COMMITTEE
Chairman : Secretary, Ministry of HUPA

EXECUTIVE DIRECTOR



STAFF STRENGTH (as on 31.3.2010)

<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>Deputy Chief-Management Information Systems</i>	01 .04.93
5.	Arun Kumar Tiwari <i>Deputy Chief-Standardization & Product Development & 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>Systems Manager</i>	15.04.99
8.	Dr. Amit Rai <i>Development Officer- Building Materials-Product Development</i>	05.11.98
9.	Chandi Nath Jha <i>Development Officer- Building Materials -Product Evaluation</i>	09.09.99
10.	Pankaj Gupta <i>Development Officer- Engineering Design & Performance Evaluation</i>	14.10.99
11.	D. P. Singh <i>Development Officer – Demonstration, Construction & Exhibition</i>	05.10.98
12.	Richpal Singh <i>Personnel Officer</i>	23.02.94
13.	Dalip Kumar <i>Systems Analyst</i>	04.03.91
14.	Alok Bhatnagar <i>Library Officer</i>	05.10.98
15.	Akash Kumar Mathur <i>Field Officer -Product Evaluation</i>	01.01.02
16.	S. M. Malhotra <i>Principal Private Secretary</i>	09.04.99
17.	Anita Kumar <i>Sr. Programmer</i>	03.10.96
18.	M.Ramakrishna Reddy <i>Liaison Officer (On deputation to Ministry of Law & Justice)</i>	29.10.03

ACCOUNTS

The Council received grants of Rs.550.00 lakhs from the Ministry of Housing & Urban Poverty Alleviation, Government of India during FY 2009-2010. The Council has also brought forward specific projects fund and grants to the tune of Rs.271.38 lakhs from the previous year.

The total expenditure incurred during the period from April, 2009 to March, 2010 was Rs.7,88,81,194 as detailed below:-

Major Heads	Amount (In Rs.)
• Expenses towards Infrastructure facilities, computers, softwares, printers & other peripheral devices, office automation systems	12,13,380
• Personnel Expenses	2,58,71,590
• Administration and Other Expenses	75,36,923
• 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	62,55,700
• Construction of Demonstration Housing Projects and other Structures in different parts of India, expenditure on Financial Assistance for technology development/application and Sponsored Studies	2,45,74,599
• Construction of Demonstration buildings with bamboo based technologies & Demonstration-cum-Production Centre in Tripura	2,84,449
• Construction of demonstration houses under Valmiki Ambedkar Awas Yojana (VAMBAY)	14,89,399
• Expenses towards Appraisal, monitoring, capacity building and training programmes, Monitoring Cell and other activities relating to JNNURM and others	1,16,55,154
TOTAL	7,88,81,194

The Accounts have been audited by M/s Dinesh Jain & Associates, Chartered Accountants, the balance sheet and the statement of accounts of the year 2009-2010 is placed later in the report.

DINESH JAIN & ASSOCIATES
CHARTERED ACCOUNTANTS

A-115, VIKAS MARG – II FLR,
SHAKARPUR, DELHI - 110092
Off. : 225 09061, 220 58439
FAX: 22017204, M-98100 92750
Email- dkjain44@yahoo.com

AUDITOR'S REPORT

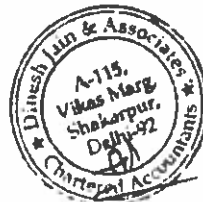
The Members
Building Materials & Technology Promotion Council
New Delhi

1. We have audited the annexed Balance Sheet of '**BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL**' a Society Registered under the Societies Registration Act, 1860, as on 31st March, 2010 together with the Income and Expenditure Account and Receipts & Payment Account for the year ended on that date. These financial statements are the responsibility of the Council's management. Our responsibility is to express an opinion on these financial statements based on our audit.
2. We conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.
3. We further report that:
 - a. The Council has not maintained Fixed Asset Register showing quantitative details and situation of Fixed Assets and no physical verification has been conducted during the year.
 - b. The internal control system on procurement of goods & services needs to be strengthened.

Subject to above:

- (i) We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purposes of our audit;
- (ii) In our opinion, proper books of account have been kept by the Council, so far as appears from our examination of the books of the Council;
- (iii) The Balance Sheet, Income & Expenditure Account and Receipts & Payment Account dealt with by this report are in agreement with the books of account;
- (iv) In our opinion and to the best of our information and according to the explanations given to us, the said accounts read with the Accounting Policies and Notes forming part thereof give a true and fair view;
 - (a) in the case of the Balance Sheet, of the state of affairs of the Council as at 31st March, 2010;
 - (b) in the case of Income & Expenditure Account of the excess of expenditure over income for the year ended on that date; and
 - (c) in the case of the Receipt & Payment Account, of the receipts and payments made during the year ended on that date.

PLACE : DELHI
DATED: 13/7/10



For **DINESH JAIN & ASSOCIATES**
CHARTERED ACCOUNTANTS

(Dinesh Kr. Jain) FCA.
PARTNER
M.No. 082033
F.R.N: 004885N



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

BALANCE SHEET AS ON 31 MARCH 2010

	Schedule	2009-2010	2008-2009
CORPUS/CAPITAL FUND AND LIABILITIES			
CORPUS/CAPITAL FUND	1	10,00,000	10,00,000
RESERVES AND SURPLUS	2	18,05,55,150	18,22,22,208
EARMARKED FUNDS	3	65,80,107	83,41,911
CURRENT LIABILITIES AND PROVISIONS	4	1,68,93,237	40,42,657
TOTAL		20,48,28,494	19,56,06,776
ASSETS			
FIXED ASSETS	5	4,28,30,755	4,37,75,557
CURRENT ASSETS, LOANS, ADVANCES ETC.	6	16,19,97,739	15,18,31,219
TOTAL		20,48,28,494	19,56,06,776
SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS	15		

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
for DINESH JAIN & ASSOCIATES
Chartered Accountants



Dinesh Kr. Jain
Dinesh Kr. Jain, FCA
Partner
M.No.-082033

Place: Delhi
Date: 13/9/10



INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 2010

	Schedule	2009-2010	2008-2009
INCOME			
Grants / Subsidies	7	4,66,55,591	7,66,00,000
Fees/Subscriptions	8	2,13,72,900	98,93,734
Income from Publications and PAC's Fee etc.	9	5,39,121	24,43,914
Interest Earned	10	1,30,02,453	1,14,22,921
TOTAL (A)		8,15,70,065	10,03,60,569
EXPENDITURE			
Establishment Expenses	11	2,92,11,665	2,39,22,938
Administrative Expenses etc.	12	78,78,382	1,72,21,137
Expenditure on Training Programmes, Seminars/Workshops & JNNURM etc.	13	1,94,09,155	2,54,08,545
Expenditure on Financial Assistance, Sponsored Studies etc.	14	2,49,95,293	3,24,04,111
Depreciation	5	21,58,182	19,52,648
TOTAL (B)		8,36,52,697	10,09,09,379
Excess of Expenditure over Income		(2082632)	(548810)
Prior Period Adjustments		4,35,574	
BALANCE BEING DEFECIT / SURPLUS CARRIED TO BALANCE SHEET		(1647058)	(548810)
SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS	15		

SBSrinivasan
(S. Balasrinivasan)
Chief - Finance

(Dr. Shailesh Kr. Agrawal)
Executive Director

Place Delhi
Date: 13/9/10



As per our report of even date attached,
for DINESH JAIN & ASSOCIATES
Chartered Accountants

Dinesh Kr. Jain- FGA
Partner
M No.082033



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

RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31 MARCH 2010

	2009-2010	2008-2009
RECEIPTS		
1 Opening Balance		
Cash Balances in hand (including cheques/drafts and imprest)		
- Cash in hand		
Bank Balances	3,04,878	2,12,304
With Scheduled Banks:		
- On Deposit Account		
- On Savings Accounts	12,09,90,004	13,88,28,514
- Canara Bank (Parliament Street)		
- Canara Bank (Hauzkhass)	1,18,34,092	1,75,86,142
- Canara Bank, Bangalore	21,375	4,40,875
- Canara Bank Parliament Street (VAMBAY Project)	2,78,048	4,35,877
- Canara Bank, Tripura	23,08,932	38,57,302
- State Bank of Hyderabad (Scope Complex)	5,05,852	1,82,125
2 Grants-in-aid from Central Government (Ministry of Housing & Urban Poverty Alleviation)	83,88,917	14,41,25,220
3 Receipts towards Fees/Subscription/Consultancy & Training/Conferences	5,50,00,000	61,95,848
4 Income from Publications etc.	2,18,72,900	7,88,00,000
5 Amount received towards Sale of Machines/Security Deposits etc.	5,39,121	99,34,134
6 Interest Earned	2,97,100	3,03,514
7 Loan & advances(Net)	34,81,803	11,41,500
8 Total	18,83,880	1,19,07,705
PAYMENTS		
1 Purchase of Fixed Assets		
2 Establishment Expenses	12,13,380	22,72,94,882
3 Administrative Expenses, etc.	2,58,71,590	27,48,32,111
4 Expenditure on Training Programmes, Seminars/Workshops, etc.	75,38,923	48,40,397
5 Expenditure on Financial Assistance, Sponsored Studies, etc.	79,19,580	2,10,81,749
6 earmarked funds	2,46,74,598	1,74,32,385
Construction of Demonstration Buildings with cost effective technologies and technology Demonstration-cum-Production Centre in Tripura	2,84,448	1,79,02,644
Construction of Demonstration Houses Under Valmiki Ambedkar Awas Yojana	14,89,399	2,97,02,644
Model amendements in Town and Country Planning Act, Zoning Regulations		3,24,28,388
7 Expenditure on JNNURM activities and amount received from MOH & others		9,34,83,521
8 Closing Balance		
Cash Balances in hand		
- Cash in hand		
Bank Balances	2,08,108	3,04,878
With Scheduled Banks:		
- On Deposit Account		
- On Savings Accounts	11,17,19,834	12,09,90,004
- Canara Bank (Parliament Street)	4,48,716	1,18,34,092
- Canara Bank (Hauzkhass)	33,18,483	21,375
- Canara Bank, Tripura		5,05,852
- Canara Bank, Bangalore	2,69,771	2,78,048
- Canara Bank Parliament Street (VAMBAY Project)	1,98,279	23,08,932
- State Bank of Hyderabad (Scope Complex)	3,05,89,439	83,88,917
8 Total	14,65,43,522	14,41,25,220

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

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

Place: Delhi
Date: 13/9/10



As per our report of even date attached for DINESH JAIN & ASSOCIATES Chartered Accountants

Dinesh Kr. Jain, FCA
Partner
M.No.082033



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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2010

SCHEDULE 1- CORPUS/CAPITAL FUND	2009-2010	2008-2009
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	2009-2010	2008-2009
1 Capital Reserve		
Opening Balance	8,37,52,197	7,91,11,800
Addition during the year	12,13,380	48,40,397
Less: Prior Period Adjustments	20,000	-
		8,37,52,197
2 Excess of Income over Expenditure		
Opening Balance	9,84,70,011	10,38,59,218
Add: Amount transferred from Income & Expenditure A/c	(16,47,058)	(5,48,810)
	9,88,22,953	10,31,10,408
Less transferred to Capital Reserve	12,13,380	48,40,397
		9,84,70,011
TOTAL	18,05,55,150	18,22,22,208





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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2010

SCHEDULE 3- FARMARKED FUNDS		2009-2010		2008-2009	
1 Construction of Demonstration Buildings with cost effective technologies and technology Demonstration-cum-Production Centre in Tripura					
<i>Opening Balance</i>					
	28,14,181		37,53,238		28,14,181
<i>Less : Utilisation/Expenditure during the year</i>					
	<u>2,72,405</u>	25,41,778	<u>9,38,057</u>		
2 Construction of Demonstration Houses Under Valmiki Ambedkar Awas Yojana					
<i>Opening Balance</i>					
	18,34,399		3,00,43,914		
<i>Less : Refunded During the year</i>					
	-		2,75,00,000		
<i>Utilisation/Expenditure during the year</i>					
	<u>14,89,399</u>	1,45,000	<u>9,09,515</u>		18,34,399
3 Model amendments in Town and Country Planning Act., Zonning Regulations					
<i>Opening Balance</i>					
	8,98,990		10,03,921		
<i>Less : Utilisation/Expenditure during the year</i>					
	<u>-</u>	8,98,990	<u>3,08,931</u>		8,98,990
4 Establishment of Bamboo Mat Production Centres in North-Eastern States					
		28,81,998			28,81,998
5 Construction of Demonstration Houses in Mizoram					
		3,14,343			3,14,343
TOTAL		85,80,107		83,41,911	





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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2010

SCHEDULE 4- CURRENT LIABILITIES AND PROVISIONS	2009-2010	2008-2009
CURRENT LIABILITIES		
- Outstanding Liabilities	9,32,729	2,50,316
- Security Deposit	12,08,165	9,11,065
- Balance of Grants carried forward	83,44,409	
- Balance of funds received for developing building bye-laws	19,972	19,972
PROVISIONS		
- For Gratuity	48,51,713	23,80,766
- For Leave Encashment	13,36,249	4,80,538
TOTAL	1,66,93,237	40,42,657





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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2010

	GROSS BLOCK			DEPRECIATION			2009-10		2008-09	
	Cost as at 1.4.08	Additions	Total	Upto-1.04.09	Current year	Upto 31.03.10	NET BLOCK	NET BLOCK	As at 31.03.09	As at 31.03.10
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
Furniture and Fixtures	32,86,681	25,423	33,12,104	19,59,283	1,34,011	20,93,294	12,18,810	12,18,810	13,27,398	13,27,398
Office Equipments	1,88,64,153	1,15,786	1,89,79,939	1,46,46,301	6,41,362	1,52,87,663	36,92,276	36,92,276	42,17,852	42,17,852
Computers/ Peripherals	1,42,57,500	10,34,171	1,52,91,671	1,32,41,997	9,42,860	1,41,84,857	11,06,814	11,06,814	10,15,503	10,15,503
Air conditioners	5,05,775	38,000	5,43,775	3,91,130	22,887	4,14,027	1,29,748	1,29,748	1,14,645	1,14,645
Fan & Coolers	32,916	-	32,916	30,291	394	30,685	2,231	2,231	2,625	2,625
TV and VCR	3,60,450	-	3,60,450	2,03,560	26,534	2,30,094	1,50,356	1,50,356	1,76,890	1,76,890
Exhibits, Panels, Display Models	1,20,84,905	-	1,20,84,905	94,84,078	3,80,124	98,74,202	22,10,703	22,10,703	26,00,827	26,00,827
	8,37,32,197	12,13,380	8,49,45,577	3,99,56,640	21,58,182	4,21,14,822	4,28,30,755	4,28,30,755	4,37,75,557	4,37,75,557
Previous Year (2008-09)	7,90,81,800	46,40,397	8,37,32,197	3,80,03,992	19,52,648	39,96,640	4,37,75,557	4,37,75,557	-	-





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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2010

SCHEDULE 6 - CURRENT ASSETS, LOANS, ADVANCES ETC.	2009-2010	2008-2009
A. CURRENT ASSETS:		
1. Cash in hand	2,06,106	3,04,878
2. Bank Balances		
- On Deposit Account	11,17,19,534	12,09,90,004
- On Savings Accounts:		
- Canara Bank (Parliament Street)	4,46,710	1,16,34,092
- Canara Bank (Hauz khas)	33,19,483	21,375
- Canara Bank, Bangalore	2,69,771	2,78,048
- Canara Bank, Tripura		5,05,852
- Canara Bank Parliament Street (VAMBAY Project)	1,96,279	23,08,932
- State Bank of Hyderabad (Scope Complex)	<u>3,05,89,439</u>	<u>14,65,43,522</u>
	14,65,43,522	83,86,917
		14,41,25,220
B. LOANS, ADVANCES AND OTHER ASSETS		
1. Loans to staff	38,34,289	38,38,648
2. Advances and other amounts recoverable in cash or in kind or value to be received		
a. Amount recoverable, TDS & other advances	3,58,911	20,18,112
b. Security Deposit (Rent)	<u>4,20,000</u>	<u>7,76,911</u>
		4,20,000
	1,06,36,811	24,36,112
3. Interest Accrued on FDR's		11,26,061
TOTAL (A + B)	18,19,97,739	15,18,31,219





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 2010**

SCHEDULE 7- GRANTS/SUBSIDIES (Irrevocable Grants & Subsidies Received)	2009-2010	2008-2009
Central Government (Ministry of Housing & Urban Poverty Alleviation, Government of India)	5,50,00,000	7,66,00,000
Less: Unutilised grant carried forward to FY 2010-11	83,44,409	
TOTAL	4,66,55,591	7,66,00,000

SCHEDULE 8 - FEES/SUBSCRIPTIONS	2009-2010	2008-2009
1 Seminar/Programme Receipts	3,14,000	10,00,000
2 a) Appraisal Fees from Ministry of Housing & Urban Poverty Alleviation	99,71,400	88,93,734
b) Monitoring Fees from Ministry of Housing & Urban Poverty Alleviation	1,10,87,500	-
TOTAL	2,13,72,900	98,93,734

SCHEDULE 9- INCOME FROM PACS FEE, PUBLICATION ETC.	2009-2010	2008-2009
Receipts towards sale of publications, PACS etc	5,39,121	24,43,914
TOTAL	5,39,121	24,43,914

SCHEDULE 10- INTEREST EARNED	2009-2010	2008-2009
1 On Term Deposits With Scheduled Banks	1,22,69,512	1,08,60,163
2 On savings Accounts With Scheduled Banks	7,23,106	5,21,613
3 On Loans: Employees/Staff	9,835	41,145
TOTAL	1,30,02,453	1,14,22,921

SCHEDULE 11- ESTABLISHMENT EXPENSES	2009-2010	2008-2009
1 Pay and Allowances	2,27,30,708	1,74,37,346
2 Contribution to Provident Fund	17,99,997	24,42,853
3 Gratuity	24,70,947	23,80,768
4 Eamed Leave Encashment	8,55,711	4,80,538
5 Leave Travel Concession	2,94,688	1,48,935
6 Medical Expenses	10,22,134	8,27,625
7 Consultancy/Retainership & Honorarium	37,500	2,04,875
TOTAL	2,92,11,685	2,39,22,938





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 2010**

SCHEDULE 12- ADMINISTRATIVE EXPENSES, ETC.	2009-2010	2008-2009
1. Travel and Local transport	34,03,433	31,79,136
2. Postage, Telephone and Fax	8,86,759	8,34,188
3. Office Expenses	3,29,070	6,17,302
4. Printing and stationery	5,60,436	8,96,868
5. Office maintenance	16,35,688	11,67,342
6. Rates & Taxes	2,69,247	2,68,229
7. Professional charges	73,768	54,869
8. Membership Fee	16,133	10,336
9. Office rent	3,35,328	98,53,530
10. Electricity Charges	3,64,033	3,27,107
11. Bank Charges	4,489	12,232
TOTAL	78,78,382	1,72,21,137

SCHEDULE '13' - EXPENDITURE ON DISSEMINATION / SEMINARS/WORKSHOPS, TRAINING PROGRAMMES ETC.	2009-2010	2008-2009
1. Advertisement	4,08,106	8,97,588
2. Exhibition and publicity	15,66,965	44,31,331
3. Seminar and Conference Expenses	10,24,712	43,55,146
4. Printing & Publication	22,32,139	8,49,014
5. Books and Periodicals	73,648	1,88,570
6. Technology transfer	11,64,859	68,65,033
7. Training Programmes	17,49,244	15,64,390
8. Monitoring and other Expenses for JNNURM Project	1,11,89,482	62,57,475
Total	1,94,09,155	2,54,08,545

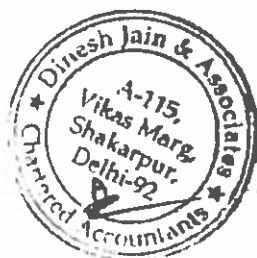




Building Materials & Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation, Government of India

SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR
ENDED AS ON 31 MARCH 2010

SCHEDULE '14' - EXPENDITURE ON FINANCIAL ASSISTANCE, SPONSORED STUDIES ETC.	2009-2010	2008-2009
1 SPONSORED STUDIES		
Preparation of State wise Vulnerability Atlas of India	-	22,040
IITK Earthquake Tips	-	8,49,930
Seismic Vulnerability analysis of brick masonry Buildings	4,00,000	6,00,000
Testing of Thermal Performance of Rapidwall	-	1,51,875
Environmental impacts of marble Slurry	-	1,53,000
Preparation of Techno Feasibility Report on various technologies	-	1,80,900
Preparation of Quality assurance Manuals for Constructions	-	2,50,000
Preparation of seismic design Manuals for earthquake Disaster Mitigation	-	12,30,000
Guide for Common Man	67,802	2,03,401
Preparation of Templates for Affordable Houses for Poor	-	1,54,498
Development of Reinforced Interlocking Hollow block system using Industrial Waste	-	6,73,500
Manual for Restoration and Retrofitting of structures in Ultrakhand & Himachal Pradesh including Retrofitting of Cement Buildings	5,47,590	5,47,593
Developing an urban Housing Project at Rai Bareilly, U P	1,06,706	26,880
Developing a Rural House	30,000	15,000
Study of Multi-hazards Typologies	-	15,000
Documentation of Green Building Guidelines for Sustainable Habitat	30,000	30,000
Training Manual for Masons & Supervisors	-	2,20,000
Utilization of Industrial Waste Material as Inexpensive Adsorbents having Application in Building materials	5,10,000	2,40,000
Preparation of Manuals for Bar Benders & Bar fixers and for formwork Carpenters & Supervisors	-	1,92,360
Improvement of Earthquake Resistant Capacity of Circular Columns	3,60,000	2,80,000
Development & evaluation of Techno economica through pilot scale Demonstration of Value added bldg material for high volume flux banded flyash	-	2,10,600
Preparation of Model for Panchkula Project	-	72,000
Development of guidelines for habitat reconstruction in Bihar	2,04,600	2,72,800
Innovative Building Material Technology	-	42,022
Preparation of Geo-technical Guidelines for Disaster Resistant Structures	2,42,000	
Revision of Guidelines on Earthquake Safety, Cyclone Safety, & Flood Safety	3,59,848	
Preparation of draft IS Code & Manual on filter Slab	1,78,400	
Documentation of Housing Typologies in India	19,50,000	
Development of Cost Effective Value added Thermal Insulation tiles for Insulation Purpose	2,88,000	
Development of Monolithic technology for Housing using Cellular Light Weight Concrete	1,20,000	
Lok Awas Yatra "A Knowledge journey to facilitates sustainable habitat for the poor"	2,00,000	
Film on BMTPC's Activities	1,27,484	
Retrofitting of Bara Hindu Rao Hospital, Delhi	5,00,000	
Development of Building components from Sponge Iron Waste	6,85,000	
Development of Confined Masonry System for Walling	16,54,500	
Retrofitting of Existing Hospital Building of Hindu Rao Hospital	6,870	
Project on Energy Auditing & Carbon in manufacture of Bamboo Mat Corrugated Sheets & Bamboo mat Ridge Cap	4,32,500	
Development of Design methodology for Chemically treated Bamboo Reinforced Concrete Members for Low Cost Housing	3,85,000	
Upgradation of Facility for commercialization of Bamboo Mat Corrugated sheets with addition of Bamboo Mat ridge Cap	13,50,000	
Sub-Total	1,07,36,280	66,33,377



SCHEDULE '14' - EXPENDITURE ON FINANCIAL ASSISTANCE, SPONSORED STUDIES ETC.		2009-2010	2008-2009
2	FINANCIAL ASSISTANCE FOR TECHNOLOGY DEMONSTRATION AND APPLICATION		
	Retrofitting Plan & cost Estimates for Retrofitting of MCD Schools	8,43,969	79,895
	Setting up of Community Bamboo Mat Centre	-	5,45,750
	Preparation of Compendium of Cost Effective Technology	-	4,00,000
	Development Technology for Debris Recycling	5,28,000	9,00,000
	Considering that Internal Plastering & white washing will Improve the efficiency of Houses	1,53,901	2,13,901
	Training Programme on Modular Bamboo Structures & Housing	-	1,25,000
	Setting up Model Bamboo Restaurant at Kisama	-	5,78,000
	Construction of Demonstration Structures in Meghalaya	-	5,87,637
	Directory of Construction equipments & Machinery Manufactured in India	-	4,52,110
	Construction of Houses for Scavengers & sweepers, Chhattisgarh	-	21,22,627
	Training Manuals on "construction Technologies"	80,000	2,20,000
	Development of innovative Technology to set up Services & production unit for building & sanitary Material	-	1,98,400
	Three days training programme for upgradation of skill for Masons	-	80,000
	Conducting Training programme in the field of cost effective building materials technology in Bihar	-	30,000
	Training for Masons and Engineers	98,423	3,30,000
	Promotion of a unit in Andhra Pradesh for gainful utilization of granite slurry	-	7,00,000
	Setting up of a BMTPC sponsored Demonstration, Training & Incubation Centre at Composite Technology Park, Bangalore	-	50,000
	Training Programme for Disaster resistant Cost effective Innovative housing solutions at Saupaul, Bihar	-	91,850
	Organizing Research Conference on Housing & Disaster Mitigation	-	1,00,000
	Development of Bamboo mat Ridge Cap for Roofing with Bamboo Mat Corrugated sheets	-	2,00,000
	Setting up of a Bamboo Mat Production Centre in Nongchram, Meghalaya	-	10,37,000
	Setting up of a Bamboo Technology Park at Byrnihat, Assam	-	24,00,000
	Roofing Technology Knowledge Consolidation & Documentation	-	90,000
	Training Programme for Generating Employment	55,000	55,000
	Training Programme for Architects & Engineers on "Green Architecture"	55,000	55,000
	Training Programme on Earthquake Resistant Construction technology for Masons	-	55,000
	Training Programme for Villagers of Potka Block of Jharkhand on Production of Flyash Bricks	55,000	55,000
	Construction of demonstration houses at Amethi	22,17,548	57,57,616
	Construction of Model Informal market at Gumla	-	20,00,000
	Construction of Model Informal market at Vishakhapatnam	21,90,000	38,50,000
	Construction of community centre at Naggai-Khokipur, Ambala	23,80,574	3,90,838
	Construction of 24 Demonstration Houses using green & disaster resistant technology at Bhopal	-	20,54,400
	Construction of Demonstration Housing Project at Pinjore	7,36,878	1,87,410
	Construction of G+7 model building using Rapid wall panels	43,75,000	-
	T.P. on Bamboo Technologies in North eastern Region at Itanagar, Arunachal Pradesh	2,40,000	-
	Setting up of Permanent Display Centre at IIT, Roorkee	74,700	-
	Entrepreneurship Development Programme at Bhopal	50,000	-
	T.P. on 'Bamboo Housing At Majuli River Island, Assam'	1,25,000	-
	Total	1,42,59,013	2,57,70,734





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

SCHEDULE 15: SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS

1 Significant Accounting Policies

- a) **System of Accounting** - The financial statements are prepared on the basis of historical cost convention on accrual basis and are in accordance with generally accepted accounting practices.
 - b) **Fixed Assets** - Fixed assets are stated at cost of acquisition and depreciation is provided at the 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 recognised 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 and Leave Encashment provided on Accrual basis.
 - d) **Foreign Currency Transactions** - Transactions denominated in foreign currency are accounted at the exchange rate prevailing on the date of the transaction.
 - e) **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 Hitherto it has been the policy of the Council to recognize the Grant received during the year as income of that year irrespective of the year in which it is actually utilized. From current year onwards it has been decided to recognize the income from Grant only to the extent to which the same is actually utilized during the year and un-utilized amount to be shown as liability to be refunded/adjusted in future years and has been shown as liability in schedule 7 as directions has been since received from MHUPA that amount will have to be refunded/ adjusted in F.Y. 2010-11. Due to this change in accounting policy the income of the Council for current year has decreased by Rs.83,44,409/-.
- 4 In the opinion of the Management, the value 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.
- 5 In view of there being no taxable income under the Income Tax Act, 1961, provision for Income Tax has not been made in the accounts.
- 6 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.
- 7 Deposits with Banks include a fixed deposit of Rs. 84,236/- pledged with Canara Bank in connection with Bank Guarantee issued by it in favour of Department of Value Added Tax, Govt. of NCT of Delhi.
- 8 The Council has taken Policy with Life Insurance Corporation Of India under Group gratuity scheme for payment of Gratuity and Master policy for payment of leave Encashment to Employees. No premium has been paid by the Council during the financial year 2008-09 and 2009-10 in respect of aforesaid policies. Liability for Gratuity and Leave Encashment has been provided taking into account the fund value of the policies as on 31st March 2010.
- 9 Figures have been rounded off to the nearest rupee.

S. Balasrinivasan
(S. Balasrinivasan)
Chief - Finance

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

As per our report of even date attached.
for DINESH JAIN & ASSOCIATES
Chartered Accountants

Dinesh Kr. Jain
Dinesh Kr. Jain, FCA
Partner
M No. 082033



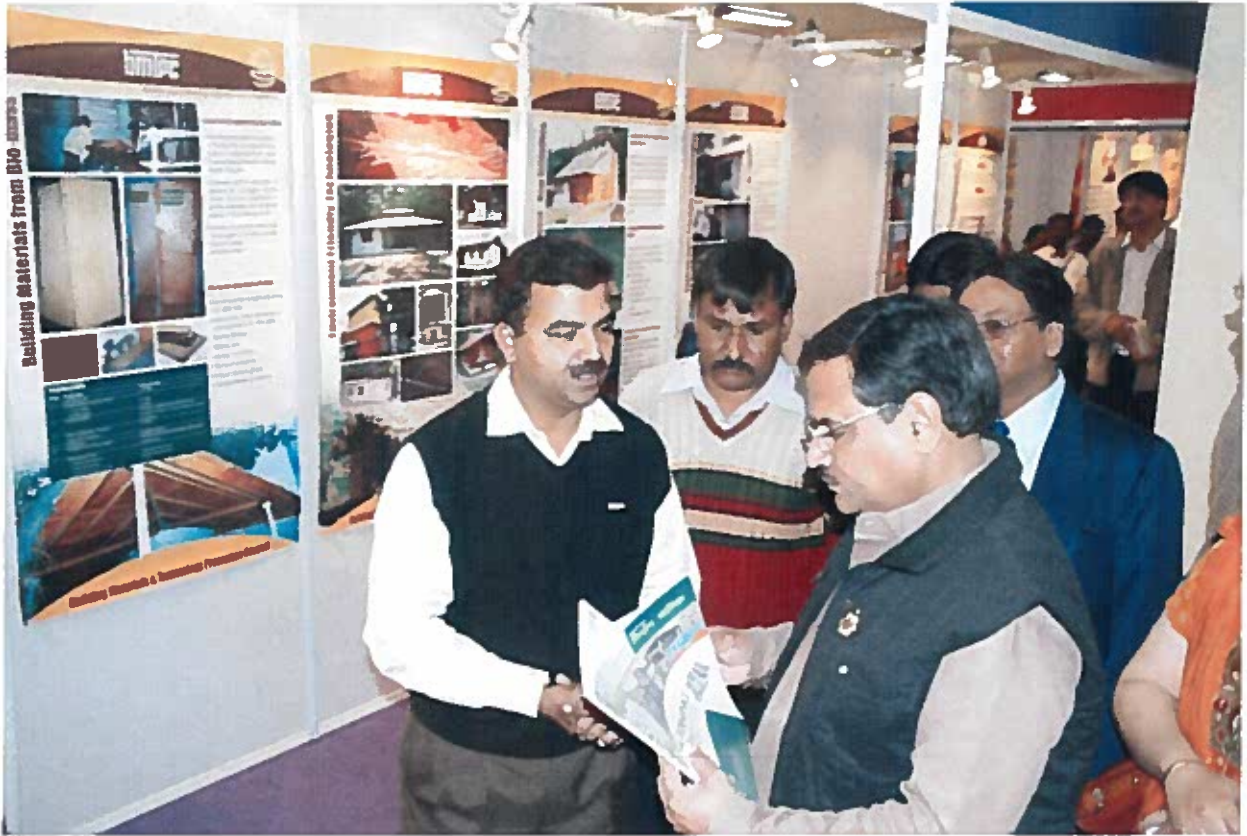
Place Delhi
Date: 13/9/10

PARTICIPATION IN NATIONAL AND INTERNATIONAL EVENTS

- I. EXHIBITIONS** During the year, the Council actively participated in the following 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:
- INTERNATIONAL**
- VIII World Bamboo Congress 2009 organized by World Bamboo Congress in Bangkok, Thailand from 16-18th September, 2009
- NATIONAL**
- "Asia Megacities Forum 2009 – Mainstreaming Disaster Risk Management" at Mumbai organized by Municipal Corporation of Greater Mumbai, Govt. of Maharashtra at IIT, Mumbai from April 22 – 24, 2009.
 - "7th India Education 2009" – a complete Education Fair at Pragati Maidan, New Delhi on June 20-21, 2009 organised by Friends Exhibitions & Promotions Pvt. Ltd. The display included employments opportunities in the manufacture of innovative building materials.
 - National Conclave & Exhibition on "Future Directions for Capacity Development in Construction Industry" at India Habitat Centre, New Delhi on 12–14 August, 2009 organized by Construction Industry Development Council.
 - National Expo XIII on the theme of 'Advancement and Overall Progress of India' held at Kolkata from 2-6 September, 2009 organised by Central Calcutta Science and Culture Organization for Youth, Kolkata
 - "Techmart 2009" at Indian International Trade Fair held on November 14-27, 2009.
 - "Enviro 2009" held on December 11-14, 2009 at New Delhi.
 - Second "Vision Rajasthan 2010" – a Mega International Exhibition & Seminar on February 19-21, 2010 at Jaipur organised by Friends Exhibitions & Promotions Pvt. Ltd.

II SEMINARS/ CONFERENCES/ WORKHOPS/TRAINING PROGRAMMES/ PRESENTATIONS etc.

- Conference on "Asia Megacities Forum 2009 – Mainstreaming Disaster Risk Management" at Mumbai organized by Municipal Corporation of Greater Mumbai, Govt. of Maharashtra at IIT, Mumbai from 22 – 24th April 2009...*Dr. Shailesh Kr. Agrawal, J.K. Prasad, S.K.Gupta*
- Workshop on Seismic Retrofitting of Lifeline Structure at Dehradun, Uttarkhand on 18th June 2009 organised by Disaster Mitigation and Management Centre, Dehradun. ED, BMTPC made a presentation on "National policies and the possible role of BMTPC in furthering the efforts of the State Government in Seismic Retrofitting".... *Dr. Shailesh Kr. Agrawal*
- Workshop on Pre-engineering Buildings organised by ISCMS in collaboration with BMTPC on 30-31st July 2009 at New Delhi...*D.P. Singh, C.N. Jha*
- National Conclave & Exhibition on Construction "Future Directions for Capacity Development in Construction Industry" at India Habitat Centre, New Delhi held during 12 to 14th August, 2009 ...*Dr. Amit Rai, C.N. Jha, Pankaj Gupta, D.P.Singh*
- NAREDCO's National Conference on "Public Private Partnership on Public Private Partnership in Housing" held on 9th October 2009.. *Dr. Shailesh Kr. Agrawal, J.K. Prasad*
- Presentation on the topic "New Construction Technologies promoted by BMTPC" on 29th October 2009 in the Training Programme on Human Resource Management for the senior personnel of housing cooperative organized by NCHF at Gangtok, Sikkim... *Pankaj Gupta*
- Disaster Management Congress during 4-6th November 2009 at Vigyan Bhawan New Delhi and a technical paper titled "Requirements of Building Materials for Earthquake Resistant Building" was contributed jointly by *Dr. Shailesh Kr. Agrawal and Shri J.K. Prasad.*
- 4th Anniversary Celebration of Jawaharlal Nehru National Urban Renewal Mission on 3rd December 2009 at Vigyan Bhawan... *Dr. Shailesh Kr. Agrawal, Pankaj Gupta*



BMTPC's Display during Second "Vision Rajasthan 2010" - a Mega International Exhibition & Seminar on February 19-21, 2010 at Jaipur



BMTPC's Display during "7th India Education 2009" - a complete Education Fair at Pragati Maidan, New Delhi from June 20-21, 2009



- Workshop at VIT Vellore and addressed on the topic "Health Monitoring of RCC" at Centre for Disaster Mitigation & Management on 22nd January 2010...*Dr. Shailesh Kr. Agrawal*
- Participation in the HPL programme on "Presentation of Prefab Construction Expertise through Innovative Technologies", January 2010, New Delhi...*Dr. Shailesh Kr. Agrawal*
- Foundation Day Conference on "Extension Strategy for Innovative Housing Technologies" at CBRI and delivering a talk during 8-10th Feb. 2010... *Dr. Shailesh Kr. Agrawal*
- Presentation on cost effective technologies to the students of B.Tech/M.Tech at IIT Roorkee on 10th Feb. 2010 ... *Dr. Shailesh Kr. Agrawal.*
- Participation in Capacity Building Programme under JNNURM project at Chandigarh, 20th Feb. 2010 ... *Dr. Shailesh Kr. Agrawal, Pankaj Gupta.*
- Institute-Industry Meet 2010 – Commercialization/ Technology Transfer of Wood Substitute organized by Advanced Materials & Processes Research Institute, Bhopal, M.P. on 21-22nd February 2010... *Dr. Shailesh Kr. Agrawal, Dr. Amit Rai*
- Workshop on Construction Management organized by Rajasthan State Real Estate Development Council (RAJREDCO), at Jaipur on 18-19th March, 2010... *Pankaj Gupta, D.P. Singh*
- 5th World Urban Forum, Rio De Janeiro, Brazil. ED, BMTPC participated as a member of the Indian Delegation led by Hon'ble Minister for Housing & Urban Poverty Alleviation, 22-26th March 2010...*Dr. Shailesh Kr. Agrawal*
- 1st International Conference on Structural and Non-Structural Retrofitting of Buildings – Health care facilities organized by National Disaster Management Authority and DDF Consultants Pvt. Ltd. at New Delhi on 13th March 2010. A Presentation on "Seismic Retrofitting" was also made. ...*Dr. Shailesh Kr. Agrawal*

III TECHNICAL COMMITTEE/ WORKING GROUPS MEETINGS ETC.

- 8th meeting of the Housing Sectional Committee CED:51 of the Bureau of Indian Standards...*J.K. Prasad*

- Meeting with JS(JNNURM), MoHUPA regarding Capacity Building Programmes at IIT Roorkee, 20th April 2009....Dr. Shailesh Kr. Agrawal
- Participation in the 20th meeting of the C.P.E.C at CPWD office on 19th May 2009.
- Meeting with senior technical representative of Research Management Solution regarding retrofitting of existing buildings especially in urban areas in May 2009.
- The 32nd meeting of the Executive Committee of BMTPC was held on 23rd June 2009 under the chairpersonship of Secretary (HUPA).
- Visit to VIT University Vellore in connection with preparation of Geo-technical Guidelines for Disaster Resistant Structure and setting up of BMTPC's Display Centre at their premises during 7-9th July 2009... *Dr. Shailesh Kr. Agrawal, A.K. Tiwari.*
- Participated in 40th Research Committee meeting of the CBRI at Roorkee on 11th September 2009... *Dr. Shailesh Kr. Agrawal*
- Meeting with the Suptd. of Bara Hindu Rao Hospital Delhi regarding seismic retrofitting of two blocks of the building on 11th November 2009 *Dr. Shailesh Kr.Agrawal, J.K. Prasad.*
- The 33rd Executive Committee meeting of BMTPC was held on 11th December 2009 in the chamber of Secretary (HUPA), Nirman Bhawan New Delhi.
- Review Meeting taken by Hon'ble Minister for Housing & Urban Poverty Alleviation on 31st December 2009. The Council made a detailed presentation on the activities being undertaken and projects likely to be taken up in the near future in the field of housing and building material sector.
- Visit to Trichi, Tamil Nadu for evaluation & inspection of Veneer Laminated Door Frame and Shutters for PACS during 6-8th December 2009... *Dr. Shailesh Kr.Agrawal, A.K. Tiwari*
- The 34th Executive Committee meeting of the Council chaired by Secretary (HUPA) was held on 3rd February 2010 at BMTPC office at India Habitat Centre New Delhi.

- Meeting on Joint Action Plan of African Union Commission along with officials of Ministry of Housing & Urban Poverty Alleviation at Hotel Ashok New Delhi on 10th March 2010.
- Meeting of Committee on Prefab/Pre-engineering for construction work using innovative technologies at Hindustan Prefab Ltd. on 15th March 2010.
- Meeting with Jt. Secretary (E&SA), Ministry of External Affairs regarding Joint Action Plan, 2nd February 2010...*Dr. Shailesh Kr. Agrawal*
- Visited CIDCO Yuva Building Centre Mumbai in connection with project entitled "Construction and Demolition Waste" 11-12th February 2010. ...*Dr. Shailesh Kr. Agrawal, Dr. Amit Rai.*
- Meeting of the Joint Action Plan of African Union Commission alongwith officials of Ministry of Housing & Urban Poverty Alleviation, New Delhi, 10th March 2010... *Dr. Shailesh Kr. Agrawal.*
- A series of Meetings on National Bamboo Mission...
Dr. Shailesh Kr. Agrawal, S.K.Gupta.

IV OTHER ACTIVITIES

- A team of the officers visited COSTFORD Trivendrum along with Secretary (HUPA) for review of appropriate technologies from 27-29th April 2009. A meeting was also organized and deliberations were held with the officials of National Institute for Interdisciplinary Science and Technology, Trivendrum to review progress of ongoing projects and also to identify new area of sustainable building materials and construction technologies.
- In order to promote use of bamboo in bamboo growing regions, the officers of BMTPC visited Raipur on 4th May 2009 to explore the possibility of construction of bamboo based housing in Chhatisgarh and had discussions with Vice-Chairman, State Planning Board, Chhatisgarh. The Council had received proposals from State Bamboo Mission for construction of Demonstration Houses, Training in Bamboo products and establishment of Bamboo Mat Production Centre.
- Visited Building Centre and JNNURM projects at Bhopal on 24-26th July 2009 *Dr. Shailesh Kr. Agrawal.*

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- ED and senior officer of BMTPC visited Kerala State Nirmithi Kendra (KESNIC) alongwith Jt. Secretary (H) and Director (H), MoHUPA on 8-9th September 2009 to oversee the projects being executed by it and to see the implementation of innovative building materials & construction technologies in their projects. Officer of BMTPC also visited COSFORD Trivendrum, alongwith Director (H), MoHUPA to see the demonstration of new technologies.

 - Participated in the HPL programme on "Presentation of Prefab Construction Expertise through Innovative Technologies" New Delhi on 9th January 2010... *Dr. Shailesh Kr. Agrawal,*

SPONSORED STUDIES/PROJECTS AND VIDEO FILMS COMPLETED DURING THE YEAR

A. SPONSORED STUDIES COMPLETED

- Development of Technology for Utilization of Marble Slurry in Self Compacting Concrete
- Project on "Lok Awas Yatra - A knowledge journey to facilitate sustainable habitat for the poor"
- Development of Technology for Construction and Demolition Wastes Recycling
- Green Building Guidelines for Sustainable Habitat
- Roofing Technology Knowledge Consolidation and Documentation
- Development of Guidelines for Habitat Reconstruction in Bihar
- Development of Housing System using cellular light weight concrete for EWS

B. PROJECTS COMPLETED

- Setting up of a "Demonstration and Training Incubation Centre for Mechanized Bamboo Mat Production – A National Facility" at the Composites Technology Park, Bangalore
- Construction of Demonstration Houses at Bilaspur, Chhatisgarh under erstwhile VAMBAY Scheme
- Preparation of Manual for Restoration & Retrofitting of Rural Structures in Uttarakhand & Himachal Pradesh"
- Training Programme on production of Flyash Bricks in Potka, Jharkhand
- Training Programme for Masons and Engineers and development of training aids in Gujarat
- Training Programme on "Bamboo based Community Buildings and large Span Structures" at Itanagar, Arunachal Pradesh
- Three-Days Training Programme for Architects and Engineers on Green Architecture at Kanyakumari
- Training Programme for Masons on Earthquake Resistant cost effective building materials and construction techniques at Pauri Garhwal, Uttarakhand

SPONSORED PROJECTS AND STUDIES FILMS INITIATED DURING THE YEAR

A. SPONSORED STUDIES INITIATED DURING THE YEAR

- Propagation of Confined Masonry as a preferred building typology in low-rise building constructions
- Project on "Lok Awas Yatra - A knowledge journey to facilitate sustainable habitat for the poor"
- Development of the Building Components from Sponge Iron Wastes
- Cost Effective Value Added Thermal Insulation Tiles for Insulation Purpose
- Preparation of Draft Indian Standard and Manual on Filler Slab
- Detailed assessment and evaluation of the existing building typologies in five severe earthquake zones
- Propagation of Confined Masonry as Preferred Building Typology
- Energy Auditing & Carbon in manufacture of Bamboo Mat Corrugated Sheets and Bamboo Mat Ridge Cap
- Development of Guidelines for Habitat Reconstruction in Bihar
- Detailed assessment and evaluation of the existing building typologies in five severe earthquake zones
- Development of Housing System using cellular light weight concrete for EWS

B. PROJECTS INITIATED DURING THE YEAR

- Upgradation of Facility for Commercialization of Bamboo Mat Corrugated Sheet (BMCS) with addition of Bamboo Mat Ridge Cap (BMRC)
- Project on Seismic Retrofitting of Bara Hindu Rao Hospital, Delhi
- Workshop on issues related to Retrofitting of Buildings for framing a Policy Guidelines at Gandhinagar
- Training Programme for Masons and Engineers and development of training aids in Gujarat

- Training Programme on “Bamboo based Community Buildings and large Span Structures” at Itanagar, Arunachal Pradesh
- Three-Days Training Programme for Architects and Engineers on Green Architecture at Kanyakumari
- Training Programme for Masons on Earthquake Resistant cost effective building materials and construction techniques at Pauri Garhwal, Uttarakhand
- Construction of Demonstration Houses using Bamboo in Chhatisgarh
- Design and Construction of 7-storeyed Demonstration Structure using Rapidwall Panels at Mumbai
- Training Programme for Villagers on Production of Fly Ash Bricks at Potka Block, Jharkhand
- Training Programme on Cost Effective Technologies at Shahjahanpur, Uttar Pradesh

PAPERS PRESENTED/PUBLISHED

- "Bamboo as a Material for Housing and Buildings – Indian Experience" by Dr. Shailesh Kr. Agrawal and S.K. Gupta for VIII World Bamboo Congress 2009 organized by World Bamboo Congress in Bangkok, Thailand from 16-18th September, 2009.
- "Planning Sustainable Building Materials for Our Urban Future" by Dr. Shailesh Kr. Agrawal and Shri J.K. Prasad published in Special Issue of Nirman Sarika on the occasion of World Habitat Day -2009, October 2009.
- "Bhukamprodhi Design Aur Nirman" by Dr. Shailesh Kr. Agrawal and Shri A.K. Tiwari published in Special Issue of Nirman Sarika on the occasion of World Habitat Day -2009, October 2009.
- "Bamboo as a Material for Housing and Buildings - BMTPC's Initiatives" by Dr. Shailesh Kr. Agrawal and Shri Sharad Kumar Gupta published in Special Issue of Nirman Sarika on the occasion of World Habitat Day -2009, October 2009.
- "Requirement of Building Materials for Earthquake Resistant Buildings" by Dr. Shailesh Kr. Agrawal and Shri J.K. Prasad in Disaster Management Congress, 4-6th November 2009.
- "Propagation of Innovative Technologies through Demonstration Construction" by Dr. Shailesh Kr. Agrawal, S.K. Gupta and Dalip Kumar for CDC, December 2009.
- Article on "Building Materials and Technologies for Affordable Housing – Role of BMTPC" by Dr. Shailesh Kr. Agrawal.

PUBLICATIONS BROUGHT OUT DURING THE YEAR

1. Book on "Standards & Specifications For Cost-Effective Innovative Building Materials and Techniques Including Rate Analysis"
2. Book on "How to Build a Hazard-Resistant House? – a Common Man's Guide"
3. "Nirman Sarika" – Special Issue of Newsletter highlighting issues related to the theme, "Planning Our Urban Future" of World Habitat Day 2009.
4. CD on Guidelines for Technical Training of Masons in Hindi
5. Under 'Aam Aadmi Series' brought out following Housing Building Digest both English and Hindi:
 - i. Series 4: Construction Specifications- Foundation.
 - ii. Series 5: Construction Specifications- Superstructure.
 - iii. Series 6: Doors and Windows.
 - iv. Series 7: Flooring.
 - v. Series 8: Plastering.
 - vi. Series 9: Painting.

IMPORTANT VISITORS FROM OTHER COUNTRIES

1. French delegation led by Ms Madleine Houbart and Ms Sophie Dieboid, visited BMTPC on 14th January 2010 at New Delhi.
2. Delegation from British Columbia led by Mr. Michael de Jong, Attorney General and Govt. House Leader of British Columbia visited BMTPC office on 14th January 2010 at New Delhi.
3. Ms. Ashna Mathema, Housing Specialist from World Bank on Cost effective technologies on 8th February 2010 at New Delhi.

ACTION PLAN FOR THE YEAR 2010-11

S. No.	Activities	Outcome/ Deliverable	Likely achievement upto March 2011	Methodology
NEW INITIATIVES				
A. In-house Activities				
1	Development of design packages for construction of demonstration houses	Development of Design Concepts using proven and known cost effective technologies. Designs would be developed for projects of affordable housing of 60 dwelling units each, with a Community Centre, a primary school and shop/kiosk.	Development of Design Concepts of at least 6 clusters with details like technologies to be used, detailed costing, structural analysis, comparison with the conventional construction system covering the six zones.	BMTPC's officials in association with the leading professionals/ agencies working in the area of the cost effective technology (to be identified based on the advertisement on the website of the Council) will prepare region specific plans and layout. Detailed structural drawings and estimates to be prepared based on the technologies identified in-house including Cost comparison with conventional system.
2	Evaluation of emerging and cost effective technologies suitable for Indian geo-climatic and hazard conditions	Evaluation of emerging cost effective technologies from across the world and short-list these technologies found to have potential in the Indian context through Technical Advisory Group (TAG).	Identification of emerging technologies suitable for Indian geo-climatic and hazard conditions. Development of design package for construction of demonstration houses in different regions.	Design concept to be finalized with the approval of Technology Advisory Group (TAG). Formation of Technology Advisory group by the Ministry Evaluation of technologies by TAG Testing in recognized laboratories with the approval of TAG Identification and selection of suitable technologies Complete documentation of selected technologies
3	Development of work specifications on cost effective technologies and their analysis of rates	Work specifications of different items of construction and analysis of rates facilitates State agencies in executing construction works through tendering process.	Atleast 5 States would be approached for inclusion of Work Specification, Code of Practice, Analysis of labour through involvement of identified technical institute.	Work will be carried out in-house with input from experts and projects sites visits Series of meetings and consultation with state authorities, development boards and construction departments etc...

S. No.	Activities	Outcome/ Deliverable	Likely achievement upto March 2011	Methodology
4	Formulation of Indian Standards for inclusion by the Bureau of Indian Standards (BIS) on selected cost effective technologies	Development of Indian Standards on cost effective technologies through BIS.	Preliminary Draft Specifications and Code of Practice for assisting BIS for at least six technologies.	Work will be carried out in-house with input from experts Coordination with BIS and other agencies
5	Development of course curriculum for under-graduate/post-graduate degree/diploma courses on new and cost effective technologies	Development of Course Content on Alternate, Cost Effective and Disaster Resistant Technologies for inclusion in the syllabus of engineering/ architecture colleges for Under-Graduate and Post-Graduate Courses..	Development of Course Content on Cost Effective and Disaster Resistant Technologies.	Collection of Guidelines for introducing the additional subjects. Interaction with technical institutions, universities, AICTE.
6	Development of training modules on cost effective technologies for trainers, artisans etc.	Training Modules for capacity building of Trainers and construction workers.	Training modules would be available for training the Trainers and construction workforce.	Development of course content with Task force Study of Existing training courses/modules run by other organizations. Consultation with Experts for preparation of draft modules Brain storming sessions, interaction etc.
B. Technology Diffusion & Dissemination				
1	Documentation on application of cost effective technologies	Documentation of 4 ongoing demonstration construction projects to help in showcasing the good practices.	Documentation of housing projects using cost effective technologies.	BMTPC's officials in association with the leading professionals/ agencies/R&D Institutions working in the area of the cost effective technology (to be identified based on the advertisement on the website of the Council) will undertake the documentation work. In house
2	National workshop on emerging trends in housing technologies including use of non-conventional energy and green technologies at New Delhi	Identification, selection and information collation of new emerging technologies.	Identification and documentation of emerging technologies.	In house
3	Building materials & technologies Pavilion during IITF 2010 at New Delhi on no profit no loss basis. However initial seed money will be required for organizing the event	Awareness creation amongst the common man about the use and application of cost effective building materials technologies.	The IITF attracts around 2.5 to 3 lakhs visitors during this annual event. To spread awareness and sensitize general public about emerging technologies.	In house

S. No.	Activities	Outcome/ Deliverable	Likely achievement upto March 2011	Methodology
4	Seminar on environmental protection through waste management, cost effective technologies in building materials & construction sector in urban and rural areas (2 nos.)	Effective and gainful utilization of agro-industrial wastes in the construction sector.	Successful organization of the event and identification of good waste management practices.	In house
5	Revision of PWD Manual of Ultrahand Government for inclusion of working specifications on cost effective technologies	Facilitate the State Govt. in preparation of Work Specifications on cost effective technologies.	Preparation of PWD Manual for Govt. of Ultrahand including work specifications on cost effective technologies	In house
C. Disaster Resistant Technologies				
1	Upgradation and preparation of Hindi version of Manual for Hazard Resistant Construction in India published by UNDP	Awareness regarding hazard resistance through Hindi version of the Manual	Preparation of Hindi version of manual	
2	Reprinting of IITK-BMTPC Earthquake Tips in Hindi & Marathi. Translation in other languages will be undertaken later on.	IITK-BMTPC Earthquake Tips in regional languages	Preparation and uploading on the website of the Council and IIT Kanpur	
3	Consultative Meet on retrofitting of buildings at Gandhinagar, Gujarat	Policy paper on retrofitting	Development of guidelines on policy issues for retrofitting of buildings and organization of training programmes.	
ACTIVITIES ON CONTINUING BASIS				
1	Dissemination of information through seminars/workshops/exhibitions	Promotion of cost effective, environment friendly, energy efficient and disaster resistant construction technologies in different regions.	Participation in at least 10 exhibitions, seminars, workshops and exhibitions related to the area of housing and human settlements.	In house
2	Updating of display panels, exhibits and publications of Council including printing	Promotion of cost effective, environment friendly, energy efficient and disaster resistant construction technologies in different regions.	Preparation of Display Panels, Exhibits, Models and Publications of Council including on site demonstration at various on going projects site..	
3	Upgradation of library, computer centre and other office infrastructure	Creation and maintenance of office infrastructure for smooth and effective functioning of the Council.	Upgradation of library and computer centre	

S. No.	Activities	Outcome/ Deliverable	Likely achievement upto March 2011	Methodology
4	Upgradation of website of the Council including upkeeping	To create more awareness about the BMTPC activities, recent development in the field of cost effective technologies, information dissemination, etc.	Updatation of Council's website on continuing basis	
ACTIVITIES IN NORTH EASTERN REGION				
1	Construction of Demonstration Structures/Houses using Bamboo based technologies in Sikkim, Meghalaya and Manipur. (In line with the proposed scheme on Alternate technologies)	The project will result in promotion of bamboo based technologies in housing and building construction in the bamboo growing regions. The State Govts. will be requested to provide suitable land for construction of houses and buildings. After finalization of suitable sites, drawings, estimates, tendering process, the construction work will be started.	Finalization of sites, preparation of drawings, estimates and tender documents. Part Construction of demonstration structures including documentation.	
2	Establishment of a Bamboo Mat Production Centre in North Eastern Region	To create employment opportunities including skill upgradation by mechanized production of bamboo mats.	Establishment of one Bamboo Mat Production Centre at Mopaya Village, Arunachal Pradesh	
3	Organization of training programme on Bamboo based technologies in North Eastern Region	Capacity building of the artisans and professionals in the use of bamboo as construction materials in the North Eastern Region.	Two Training Programmes on Bamboo based technologies.	

MAIN ONGOING ACTIVITIES

S. No.	Activities
1	Construction of demonstration houses including onsite infrastructure development at Amethi, UP
2	Construction of demonstration houses for Safai Karamchari at Durg, Chhattisgarh. <i>Note: The state government will be requested to start the work within a month. In case of non start of work ,the project will be dropped and state govt. will be requested to refund the money.</i>
3	Construction of demonstration houses, community centre with meditation room at Pinjore, Haryana

S. No.	Activities
4	Construction of Community Building at village Naggal-Khoikipur, Ambala, Haryana
5	Construction of Informal Market at Vishakhapatnam, Andhra Pradesh
6	Retrofitting of two MCD school building in Delhi
7	Retrofitting of Bara Hindu Rao Hospital building in New Delhi
8	Construction of demonstration houses using rapid wall technology in Mumbai
9	Establishment of upgradation facility for manufacture of Bamboo Mat Ridge Cap
10	Energy auditing and carbon footing in manufacture of bamboo mat ridge cap and bamboo mat corrugated roofing sheets
11	Setting up of Bamboo Mat Production Centre at Nongchram, Meghalaya
12	Development of building components from sponge iron waste
13	Development of technology for cost effective value added thermal insulation tiles for ceiling purpose
14	Development of design methodology for chemically treated bamboo reinforced concrete members for low cost housing
15	Setting up of Bamboo Technology Park at Byrnihat, Meghalaya
16	Setting up of demonstration facilities for commercialization of technologies for manufacture of bricks from granite industry waste
17	Development of technology for recycling of construction & demonstration waste
18	Development of technology for reinforced interlocking hollow blocks masonry for walling
19	Development of technology package using confined masonry
20	Methodologies for documenting housing typologies in India in the moderate-severe seismic zones of India
21	Improvement of earthquake resistant capacity of circular columns
22	Construction of Informal Market at Gumla, Jharkhand
	<i>Note: The state government will be requested to start the work within a month. In case of non start of work, the project will be dropped and state govt. will be requested to refund the money.</i>

OTHER ACTIVITIES BEING UNDERTAKEN

1	Activities under JNNURM: i) Monitoring of 50 BSUP project sites ii) Monitoring of 100 IHSDP project sites iii) Project Appraisal & Monitoring Unit iv) Augmenting of existing Monitoring Cell v) Establishment of TPIM Cell vi) Capacity Building Programmes at Regional and State levels RAY Project Appraisal and Monitoring
2	

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