

वार्षिक रिपोर्ट Annual Report 2006-2007



bmtpc

निर्माण सामग्री एवं प्रौद्योगिकी संवर्द्धन परिषद्
आवास एवं शहरी गरीबी उपशमन मंत्रालय, भारत सरकार

Building Materials and Technology Promotion Council
Ministry of Housing & Urban Poverty Alleviation, Govt. of India



Annual Report 2006-2007



Building Materials & Technology Promotion Council

Ministry of Housing & Urban Poverty Alleviation, Govt. of India
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FOREWORD

With utmost satisfaction and pleasure, I present the seventeenth Annual Report of the Building Materials & Technology Promotion Council for the year 2006-07.

The Council has achieved yet another era of milestones by a multi-pronged approach through core mandate of the Council in promotion, development and application of innovative and disaster resistant building technologies. It has also emerged as a leading appraisal agency and has been designated as the monitoring agency for projects under JNNURM. A well thought strategy has been put in place to strengthen its promotional activities for projects having tangible benefits for the society at large. It has continued to be a frontal organization in promoting and organizing chain of training programmes and skill development programmes for capacity building of professionals, architects, artisans, construction workers in crucial areas of building construction. BMTPC has entered into a new area of capacity building of municipal functionaries of ULBs in Project Development for BSUP and IHSDP under JNNURM with support of the JNNURM Cell of the Ministry.

BMTPC's field application of innovative and disaster resistant construction technologies has been demonstrated in the Demonstration Housing Projects being implemented in the States of Maharashtra, Uttrakhand, Tamil Nadu, Karnataka and Chhatisgarh, under the erstwhile scheme of VAMBAY, now subsumed in IHSDP of JNNURM. The projects in Uttrakhand (100 units) and Maharashtra (70 units) have been completed and are in the process of being handed over to respective State Governments. The projects in Chhatisgarh, Tamil Nadu and Karnataka are at various stages of construction and will be completed in the next financial year.

Bamboo based building technologies, one of the focus areas of the Council, have been demonstrated in the construction of community structures, in the States of Mizoram and Tripura. In the State of Mizoram these structures have been completed and handed over to the State Government. In case of Tripura, 6 structures have been handed over to State Govt. and the work is under progress in the remaining 4 structures which is likely to be completed within the forthcoming year. BMTPC has successfully completed the first mass housing demonstration project comprising of 252 dwelling units in Bangalore. BMTPC has also provided technical assistance to DSIIDC for constructing 3164 houses for Industrial Workers in Bawana. DSIIDC has now embarked upon another initiative to construct 4300 more such houses. Such cost effective housing initiatives have also been taken by Greater Noida Developing Authority in Greater Noida and Omnibus Industrial Development Corporation in Dadra & Nagar Haveli. These ventures of various agencies are a pointer towards the increasing acceptability of cost effective technologies generating replication and large scale application.

The Council has matched the expectations of the stakeholders by its activities for disaster mitigation and management. Major accomplishment has been the revised, digitised version of the Vulnerability Atlas of India which was first published in 1997. The revised version includes digitized state-wise hazard maps and risk tables as per latest data. The Vulnerability Atlas of India was recognized as "GOOD PRACTICE" amongst the cases received for Best Practices by the UN-HABITAT under Dubai International Awards for the year 2006. The Council has continued as an important resource institution to the Ministry of Home Affairs for dissemination on the Model Building Bye-laws and the subsequent revision of the Building Bye-laws by various State Governments. During the year, the Council organized technical workshops on model Building Byelaws in 7 States across the country. With the objective of demonstrating retrofitting technologies, BMTPC has completed the retrofitting of the popular Sub-Divisional Hospital in Kupwara, J&K.

The Council is preparing, under a Task Force set up by the Ministry of HUPA, Guidelines for Green Habitat which will cover different aspects of Green Habitat exclusively for housing sector. The overall aim of Guidelines for Green Habitat would be to act as a tool for each stakeholder through better or new practices that must be adopted in order to realize the desired goals.


On the occasion of World Habitat Day, the Council brought out the Seventh Edition of the "Directory of Indian Building Materials & Products with Information on Nepal and Bhutan". The yearly publication of "Building Material News" was also brought out on this occasion. BMTPC also organized a painting competition for special (differently abled) children and the winners were given awards during the World Habitat Day celebrations. With constant inputs, the Council's website is a frequently visited site and attracted lot of attention of stakeholders nationally and internationally.

The Council gave adequate importance to the activities in the area of international cooperation by hosting the visit of foreign delegations from South Africa, Russia, Belgium, USA, Mozambique and Australia. A Memorandum of Understanding has been signed for establishment of Technology Demonstration cum Production Centre at Distt. Mongar, Bhutan by BMTPC, between Secretary, HUPA, Gol and Secretary, Works & Human Settlement, Govt. of Bhutan.

With a focus on developing innovative building technologies, specific projects have been taken up such as development of wood substitute from plant fibre based composites, setting up of pilot plant for production of reactive silica from rice husk, development of technology for construction of two storeyed bamboo house, development of bamboo mat ridge cap for roofing, development of prefabricated modular houses using bamboo based composites, 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 Chairman, 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, SERC, HUDCO, BIS, NHB, 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 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.


(J.K. Prasad)
Executive Director

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MISSION STATEMENT OF BMTPC

Develop and operationalise a comprehensive and integrated approach for technology development, transfer and investment promotion to encourage application of environment-friendly & energy-efficient innovative materials, manufacturing technologies and disaster resistant construction practices for housing and buildings in urban and rural areas.

INTRODUCTION

The Building Materials and Technology Promotion Council (BMTPC), established in 1990, is an apex level autonomous organisation under the aegis of the Ministry of Housing & Urban Poverty Alleviation, Govt. of India with the prime 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.

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 objectives, enshrined in the mandate of the Council. Over the years, the Council has focused on the promotion and development of the innovative, cost-effective, environment-friendly and energy-efficient building materials and technologies. With the active support of Ministry of Housing & Urban Poverty Alleviation, Council has also embarked upon the field level application of innovative building materials and technologies by way of implementation of the mass housing projects under the VAMBAY Scheme. In its technology development, promotion and dissemination efforts, the Council developed technologies for use of bamboo in housing and building construction and constructing demonstration structure in the North Eastern Region including setting up of Bamboo Mat Production Centres. Apart from bringing out the first ever Vulnerability Atlas of India, the Council is also assisting the State Governments in modifying their Building Bye-laws for safety against natural hazards. 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 technologies through intensive evaluation, dissemination and demonstration of cost effective building materials and construction techniques.

Objectives

- To promote development, production, standardization and large-scale application of cost-effective innovative building materials and construction technologies in housing and building sectors.

- To promote manufacturing of new waste-based building materials and components through technical support, facilitating fiscal concessions 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 and risk reduction and retrofitting/reconstruction of buildings and disaster resistant design and planning practices in human settlements.
- To provide support services to professionals, construction agencies and entrepreneurs in selection, evaluation, upscaling, design engineering, 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 2006-2007

I. DEMONSTRATION BUILDINGS USING COST-EFFECTIVE TECHNOLOGIES

1. Construction of Demonstration Houses under VAMBAY

As reported earlier, Ministry of Housing & Urban Poverty Alleviation has entrusted BMTPC with Construction of Demonstration Houses using Cost-Effective Building Materials and Disaster Resistant Construction Technologies under Valmiki Ambedkar Awas Yojana (VAMBAY) - *now merged with IHSDP of JNNURM*. Presently, under this project, construction of demonstration houses in five states has been undertaken as mentioned below:

- 70 Demonstration houses in Nagpur, Maharashtra
- 100 Demonstration houses in Dehradun, Uttaranchal
- 100 Demonstration houses in Bilaspur, Chhattisgarh
- 70 Demonstration houses in Kudalu, Karnataka
- 100 Demonstration houses in Trichy, Tamilnadu

The status on various projects is as under:

Nagpur (Maharashtra)

The Council has completed construction of 70 demonstration houses using various cost effective technologies such as Under-reamed piles for foundation, Solid/Hollow blocks using flyash/gypsum for Masonry, Filler slab for floor/roof, Precast RCC door frames, Flyash polymer & ferrocement door shutters, RCC lintel and tie beams at ground level for earthquake resistance at Kalmana, Nagpur. The area of each unit is 181 sq.ft. and the cost of construction achieved is Rs.275/- per sq.ft. The Nagpur improvement Trust, the nodal agency of the State Govt., has been requested to take the possession of the completed houses.

Dehradun (Uttarakhand)

100 houses have been completed at three different locations namely, Ram Kusth Ashram, Tyagi Road (28 units), Rotary Club Kusth Ashram, Bhagat Singh Colony (34 units) and Shanti Kusth Ashram, Bhagat Singh Colony (38 units). The area of each unit is 181 sqft. and the cost achieved is Rs.250/- per sq.ft. The cost effective technologies such as Precast RCC planks and joists for roofing, Solid concrete blocks for walling, RCC door frames, Precast elements like Chajjas, shelves etc. have been used in the project.

Bilaspur (Chattisgarh)

100 houses are being constructed for slum dwellers at Imalibhatta, Bilaspur. There is row type housing with 12 Units in one Block, 8 units at Ground Floor and 4 units at



Demonstration Houses under VAMBAY constructed by BMTPC at Nagpur, Maharashtra





Demonstration Houses under VAMBAY constructed by BMTPC at Dehradun, Uttarakhand





Demonstration Houses under VAMBAY being constructed by BMTPC at Bilaspur, Chhatisgarh



First Floor. The installation of pre-cast roofing components at ground floor roof level in all 8 blocks is nearing completion.

Kudalu (Karnataka)

70 Dwelling Units having Ground+2 structure are being constructed at Kudalu, Bangalore. After completion of the masonry work of first floor level, the casting of first floor Roof Slab is in progress.

Trichy (Tamil Nadu)

100 dwelling units of single storey designed in cluster approach are being constructed at Nagamangalam, Trichy. The masonry work of all 100 units has been completed upto sill level.

2. Demonstration of Bamboo Based Structures in Mizoram and Tripura

BMTPC has undertaken construction of 10 demonstration structures each in Mizoram and Tripura using bamboo based technologies. These structures includes houses, OPD buildings, Library buildings, Picnic huts, Schools, etc.

Nine structures were completed during last year in Mizoram. The tenth structure i.e. school building has also been completed and handed over to State Govt.

Construction of 6 demonstration structures using bamboo based technologies were completed in Tripura and handed over to the State Government. The work on remaining 4 structures is in progress.

The cost of construction is considerably reduced by 25% to 30%, depending upon the carpet area, using bamboo based technologies for different types of structures as compared to conventional construction. During constructing various types of structures local contractors, masons, artisans were provided training on use of bamboo in building construction.

3. Field level application of cost effective technologies in mass housing projects

The Council, during last year, provided technical support for construction of 3164 houses to Delhi State Industrial & Infrastructural Development Corporation (DSIIDC) at Bawana, Delhi. Successful demonstration of environment-friendly and cost-effective technologies at field level has led to new mass housing projects such as construction of 1892 units in Narela, 1200 units in Borgarh and 1184 units in Bawana by DSIIDC. Greater Noida Industrial Development Authority has also initiated new projects of 1848 EWS houses at Omicron-II, Greater Noida and 576 EWS houses

at Dadra & Nagar Haveli by Omnibus Industrial Development Corporation.

II. DISASTER MITIGATION - REPAIR, RECONSTRUCTION AND RETROFITTING

1. Release of Vulnerability Atlas of India – First Revision (2006)

As a follow up of Yokohama strategy for safer world during Mid term review of International Decade for Natural Disaster Reduction (IDNDR) 1990-2000, the then Ministry of Urban Development constituted an Expert Group (1994) to prepare the first ever Vulnerability Atlas of India. This Atlas prepared in 1997 by BMTPC contains hazard maps with respect to earthquakes, cyclones and floods and district wise risk tables of housing stock. Since its publication, the Atlas has proved to be a very effective initial tool for pre-disaster mitigation and preparation planning of the Government.

Considering the formation of new states and districts, changes in earthquake hazard zonation Maps, changes in flood scenario, availability of seismo-tectonic details, updated storm surge data from IMD, changes in housing scenario, Ministry of Housing & Urban Poverty Alleviation set up multidisciplinary Peer Group under the chairmanship of Prof. A.S. Arya, National Seismic Advisor with experts from other concerned organizations to revise and update the Atlas.

The revised Atlas, prepared by BMTPC is the outcome of detailed study of all the available data in a series of meetings and dialogue by the Peer Group. This Atlas contains digitized hazard maps with respect to earthquakes, cyclones, floods and district wise risk tables of housing stocks as per Census 2001. This also includes Landslide hazard maps and a chapter on Tsunami.

The revised Atlas, with latest information on the possible intensities in the event of natural hazards and resulting risk level to housing and buildings will be very useful in our future disaster management planning and preparedness.

The Peer Group constituted by the Ministry of HUPA submitted its report to the Ministry on 9th October, 2006. The revised Vulnerability Atlas of India was printed and the publication was released by Shri S.Jaipal Reddy, Hon'ble Minister of Urban Development in the gracious presence of Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation during the Asia Pacific Ministerial Conference on Housing and Human Settlements on 13th December, 2006 at New Delhi.



Demonstration House at Kailashahar, Tripura constructed by BMTPC using bamboo based technologies.



Demonstration Library Building at Agartala, Tripura constructed by BMTPC using bamboo based technologies.

2. Organisation of One-Day Technical Workshop on Model Building Byelaws - sponsored by Ministry of Home Affairs

As reported earlier, the Council is organizing a series of one-day Technical Workshops on Model Amendments in Town and Country Planning Act, Zoning Regulation, Development & Control Regulation and Building Regulation for safety against natural hazards, as a joint activity with the Ministry of Home Affairs so as to help the States/UTs revise their Bye-laws, Acts vis-à-vis Provisions given in Model Byelaws. During the year BMTPC organized workshops in the following States:

Itanagar, Arunachal Pradesh	April 25, 2006
Imphal, Manipur	August 21, 2006
Aizawl, Mizoram	October 24, 2006
Kohima, Nagaland	November 23, 2006
Port Blair, A&N Islands	January 17-18, 2007
Gangtok, Sikkim	February 16, 2007
Ranchi, Jharkhand	March 12, 2007

Officials from various state Govt. departments including engineers and architects attended these workshops. State Governments are taking actions to modify their respective bye-laws on the basis of recommendations of the Expert Group set by MHA.

The Council will be organizing workshops in remaining States/UTs Chandigarh, Jammu & Kashmir, Delhi and Maharashtra, during the next year.

3. BMTPC's Initiatives after Earthquake in J&K

An earthquake of magnitude 7.6 (Richter Scale) struck on 8th October, 2005 with epicenter located at Muzzafarabad in Pakistan, just near the LOC, only 140 km from Srinagar. The impact of earthquake was so intensive that it caused extensive damages in the State of Jammu & Kashmir and mainly in Baramula and Kupwara districts of Kashmir valley.

BMTPC represented the Ministry of Housing & Urban Poverty Alleviation, Govt. of India, in the Central Team to have on the spot assessment of the situation in the wake of earthquake in Jammu & Kashmir.

A set of 10 posters describing techniques of retrofitting and booklet titled "Simple ways to Earthquake Safety" for earthquake resistant construction of houses using local materials in Jammu & Kashmir region, both in Urdu and English language, were also printed and circulated widely in earthquake affected areas of Jammu & Kashmir.

The Council alongwith IIT Roorkee provided training to 300 engineers in earthquake affected region in disaster mitigation and management techniques.

4. Retrofitting of Sub-District Hospital in Kupwara, J&K for Safety Against Earthquakes

During the visit of the Central Team to earthquake affected area of J&K, it was observed that Sub-District hospital in Kupwara had suffered damage due to earthquake. It was also observed that the hospital had number of deficiencies in so far safety against earthquake is concerned. During the discussion with Divisional Commissioner, Srinagar and Dr.A.S.Arya, National Seismic Advisor, GOI, it was suggested that the hospital being a lifeline building could be taken for seismic strengthening by BMTPC to demonstrate the retrofitting techniques for safety against earthquakes. Accordingly, a study of the building for its seismic evaluation was undertaken with the help of National Centre for Peoples' Action in Disaster Preparedness (NCPDP), an NGO from Ahmedabad, Gujarat, which has undertaken similar works with BMTPC in post-earthquake rehabilitation programme in Gujarat.

The main building of the hospital has two wings, the front one being longish and the rear one being squarish. It has two story brick masonry construction in cement mortar of a reasonably good quality. RC bands exist in all the walls at lintel level in upper and lower storeys, and a couple of feet below the eave level in the upper story of the rear wing where the wall is approximately 4.5m high. In the front wing, the front and rear walls have a series of windows separated only by narrow piers which are nothing but cross walls.

In the recent quake cracks developed in several parts of the front as well as rear wings, notably in the (a) brick piers in between the windows, as well as in the (b) tall walls flanking the staircase. Almost all these cracks classify as Grade 2 damage. Most of these cracks, however, are through out the thickness of wall. Thus the strength of these walls has substantially decreased on account of damage.

Although, on account of the bands the walls have adequate resistance against bending stresses that could result from the out of plane seismic forces, there were other in-built vulnerabilities:

- No vertical reinforcement in the walls that could impart ductility to the main external walls.
- None of the openings in front and rear wings is encased in RCC. Openings could easily develop diagonal or racking shear cracks in the corners of the openings.



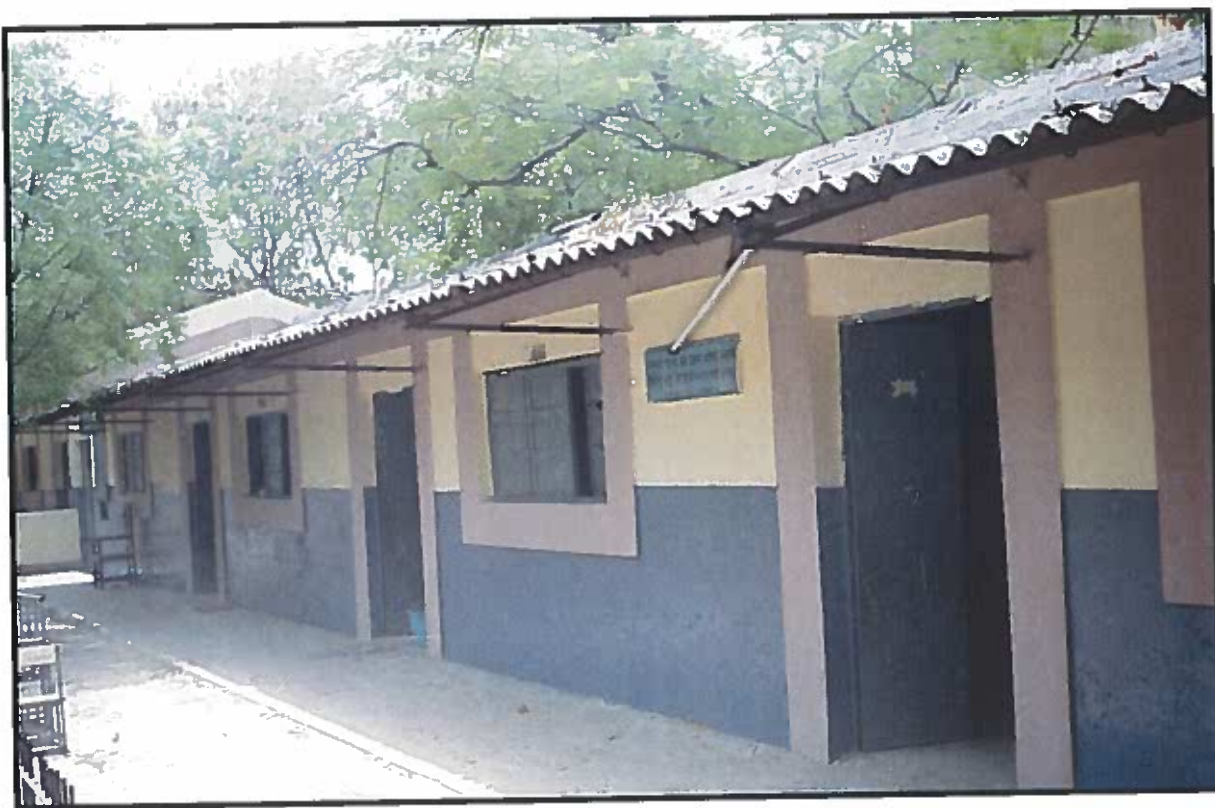
Technical Workshop on Model Amendments in Town & Country Planning Act, Zoning Regulations, Development Control Regulations/Byelaws, October 24, 2006, Aizawl, Mizoram



Technical Workshop on Model Amendments in Town & Country Planning Act, Zoning Regulations, Development Control Regulations/Byelaws, November 23, 2006, Kohima, Nagaland



Retrofitted Sub-Divisional Hospital Building at Kupwara, Jammu & Kashmir



Retrofitted MCD School at Vasant Vihar, New Delhi

- In the front building in north and south exterior walls there is practically no shear wall on account of large windows.
- In the surgical wards the rooms are large and walls are in excess of 5m length.
- The timber deck of the attic that sits on the masonry walls in the front wing is flexible since it has mere decorative false ceiling at the underside. The rear wing has good timber plank floor in attic. But the deck is simply placed on top of the walls and anchored to timber wall plates, which in turn do not have any positive connection with the walls, since no RC bands exist at that level.

It was felt important to retrofit the building to ensure seismic performance level of Building Type D. This called for the following improvements.

- Installation of vertical reinforcement in all corners.
- Encasement of all openings with seismic belts made of welded wire mesh and rebars attached to walls.
- Installation of eave level seismic belt on one face of all walls and on both faces of walls having length greater than 5m.
- Anchoring of roof deck to walls using MS angle brackets or other suitable options
- Improving the diaphragm action of the roof deck of the front wing by installation of diagonal bracing on the top of the bottom chord of roof.

The retrofitting work of Sub Divisional Hospital Building at Kupwara has been completed through its network partner NCPDP, Ahmedabad. Local public, hospital staff, security staff etc. showed keen interest in knowing details of retrofitting techniques. Posters prepared for dissemination of information regarding earthquake resistant construction deployed in hospital building attracted good response from general public. It has generated awareness about safe construction practice in Kupwara.

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

In its efforts to demonstrate the retrofitting techniques for seismic strengthening, the Council has initiated to showcase the technologies through retrofitting of the MCD Schools. Keeping this in mind, BMTPC has taken lead to carry out the retrofitting of 12 MCD school buildings, one in each 12 Municipal wards in Delhi, so that the awareness could be generated among the people as well as various government agencies about the need and techniques of retrofitting. With the help of MCD Officials, schools have been identified for retrofitting.

To begin with, seismic strengthening and retrofitting of MCD School building at Indian Airlines Colony, Vasant Vihar was initiated and the work has been completed. During the retrofitting local MCD engineers and contractors were also trained. For seismic strengthening and retrofitting of identified 4 MCD School building, the working drawing for the execution of retrofitting work of four short listed MCD schools has been finalized. The work on retrofitting of 4 school buildings have been started.

6. Series of Short Term Training Course on Earthquake Resistant Design and Construction

India has witnessed several major disasters due to earthquakes in the current decade such as Bhuj earthquake of Jan.26, 2001, Kashmir earthquake of October 8, 2005. Most of the casualties were due to collapse of the buildings and or due to lack of rescue and relief to the victims under the collapsed buildings. These earthquakes have clearly brought out the need to have a comprehensive strategy for disaster mitigation which should include planning, design and construction of earthquake resistant buildings through strict compliance of Codal provisions for earthquake counter-measures.

An initiative to organize a series of training programs has been taken by the Council in close collaboration with Indian Institute of Technology Roorkee, to train Architects, Town Planners, Builders and Civil/Structural Engineers and to acquaint them about the current practices of earthquake resistant design and Codal provisions. This will also give an opportunity to consolidate all the studies, findings, earthquake data, special features of earthquake, the damage reporting and retrofitting experiences.

In line with the above, a 5 days short term Certificate Training Programme was conducted by the Council jointly with IIT- Roorkee on "Performance Based Design and Retrofitting of Buildings and Structures" from 8th to 12th January, 2007 at NITS Noida. About 25 delegates participated in this training programme. The delegates included representatives from prestigious Organizations like CPWD, NTPC, NHPC, State PWDs, Satluj Jal Vidyut Nigam Ltd., etc. Faculty included Professor from Earthquake Engineering Department, IIT Roorkee and BMTPC officer-Chief (BM).

III. ACTIVITIES IN NORTH-EASTERN REGION

1. Important Activities in North-Eastern Region to Promote Use of Local Resources and Disaster Resistant Construction Practices

BMTPC is actively involved in developing bamboo based technologies and to promote these 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, construction of demonstration houses etc. The Council is also engaged in providing training to the local artisans in processing of bamboo. The Council is undertaking following activities in the North Eastern Region:

Construction of Demonstration structures

BMTPC has undertaken construction of 10 demonstration structures, each, using bamboo based technologies in Mizoram and Tripura. These includes houses, OPD buildings, Library buildings, Picnic huts, Schools, etc. The construction of all ten structures at Mizoram have been completed and handed over to state Govt. Construction of 6 structures using bamboo based technologies were completed in Tripura and handed over to the Tripura Government. The work on remaining 4 structures is in progress. The cost of construction is considerably reduced by 25% to 30% using bamboo based technologies for different types of structures as compared to conventional construction. During constructing various types of structures local contractors, masons, artisans were provided training on use of bamboo in building construction. The specifications used are:

- Treated bamboo columns and beams,
- Ferrocement walls on bamboo grid reinforcement,
- Treated bamboo trusses, rafters and purlins,
- Bamboo mat board in wooden frames for door shutters,
- Bamboo mat corrugated roofing sheets,
- Locally available wood for door & window frames
- IPS flooring, etc.

Establishment of Bamboo Mat Production Centres

BMTPC, in cooperation with Cane & Bamboo Technology Centre (CBTC), Guwahati and State Governments, is establishing two Bamboo Mat Production Centres each in the States of Assam, Tripura, Mizoram and Meghalaya. The main objectives of Bamboo Mat Production Centres are to provide uninterrupted supply of bamboo mats to the

manufacturing units of bamboo based building components for increasing the productivity, quality, to provide training in mat production process and to create employment opportunities in the North Eastern region. In the first phase, the Council is setting up Bamboo Mat Product Centres (BMPC) at Kowaifung, Tripura; Sairang and Bualpui, Mizoram and Sokhar Nongtluh Village, Meghalaya. The Council has already completed establishment of Bamboo Mat Production Centres at Kowaifung, Tripura and Sairang, Mizoram. The establishment of BMPCs at remaining two locations is in final stage of completion.

The Council in cooperation with CBTC is also providing training on bamboo mat production to the artisans from each Bamboo Mat Production Centres. The production capacity of each production centre will be 300 mats per day. It is estimated that the each Centre will be able to produce the mat at the rate of Rs.35 per mat and would be able to sell at the rate of Rs.45 per mat. This will provide employment generation of nearly 150 women/men per day i.e. 45,000 women/men days per year per Centre. Besides the above, the Centres can also generate income by supplying bamboo sticks made out of bamboo waste, to the artisans for making handicraft items. The mats produced by Bamboo Mat Production Centres are likely to utilized by various manufacturers who are producing Bamboo Mat Corrugated Roofing Sheets, Bamboo Mat Boards etc.

Establishment of Technology Demonstration cum Production Centre

The Council is also establishing a Demonstration-cum-Production Centre for promoting cost effective innovative building materials near Agartala for which State Govt. has already identified a site. Action was initiated for setting up Technology Demonstration cum Production Centre in Tripura. The work on construction of shed is in advanced stages.

IV. STRENGTHENING THE INFORMATION AND DATABASE IN THE CONSTRUCTION SECTOR

1. Publication of the Special Issue of Newsletter on the theme "Cities – Magnets of Hope" on the occasion of World Habitat Day, 2006

A Special Issue of Building Materials News was brought out by the Council on the theme of the World Habitat Day "Cities – Magnets of Hope". The Building Materials News was released by Kumari Selja, Hon'ble Minister of State (Independent Charge) for Housing and Urban Poverty Alleviation, on the occasion of the World Habitat Day on 3rd



Model School Building at Aizawl, Mizoram constructed by BMTPC using bamboo based technologies





Bamboo Mat Production Centre at Kowaifung, South Tripura



October, 2006 at New Delhi. The publication contains articles on different aspects related to the theme. This publication has been very widely circulated to all those interested in the subject.

2. Release of Directory of Indian Building Materials & Products with information on Nepal and Bhutan – Seventh Edition : 2006

The Council, in response to fast expanding construction sector and recognizing the need of professionals, has been bringing out a Directory of Indian Building Materials and Products to strengthen the database of the sector. Six editions brought out in 1994, 1996, 1998, 2000, 2002 and 2004 have received excellent response. The 7th Edition of the Directory has been structured to serve as a powerful information store-house in a more use-friendly format. Besides, information on over 4500 Indian manufacturers from various regions, this edition also includes information on building materials and products from Nepal and Bhutan. The Directory has been brought out as a joint publication of BMTPC and STEM, Bangalore and sponsored by HUDCO. The Directory was released by Hon'ble Minister of State (Independent Charge) for Housing and Urban Poverty Alleviation, Kumari Selja on the occasion of the World Habitat Day on 3rd October, 2006 at New Delhi. This time also, the Council has invited the MASTER BUILDER – a professional magazine publisher, to market the publication and enhance its reach amongst practitioners, architects, engineers and building professionals.

3. Information Dissemination through Website of the Council

The Website of the Council (www.bmtpc.org) is very popular among stakeholders including academics and working professionals and is being used as reference source. The Council has been receiving impressive response on website in the form of general enquiry about product and services, marketing leads, trade enquiries, publication sales, joint ventures etc, regularly. During the current year, it has generated the vast amount of traffic and users browsed the contents and downloaded free publications for getting information on cost effective, environment friendly, energy efficient and disaster resistant construction technologies.

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.

4. Standardization and Product Evaluation

Performance Appraisal Certification Scheme (PACS)

The Council is running a Third Party Assessment Scheme namely Performance Appraisal Certification Scheme (PACS) for providing Performance Appraisal Certificate to manufacturers/suppliers/installers of a product which includes building materials, products, components, elements, systems etc after due process of assessment.

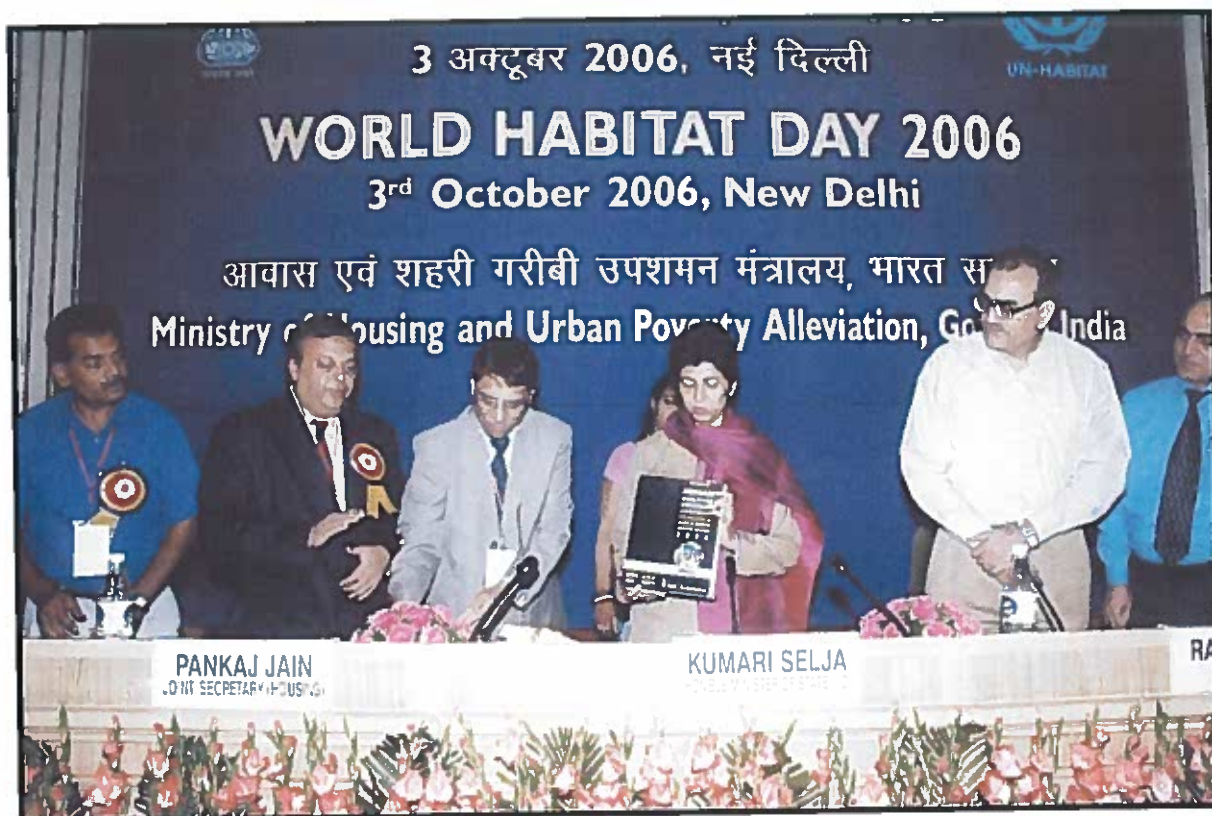
First meeting of the BMTPC Board of Agreement (BMBA) for operationalisation of Performance Appraisal Certification Scheme (PACS) under the chairmanship of President Shri B.Majumdar the then DG, CPWD was held on April 18, 2006. The policy guidelines were approved by of the Board.

Meeting of Technical Assessment Committee (TAC) of Performance Appraisal Certification Scheme (PACS) being operated by BMTPC was held on June 28, 2006 at BMTPC Office. This being the first meeting, the concept of PACS, detailed procedures and role of TAC members were informed to Members.

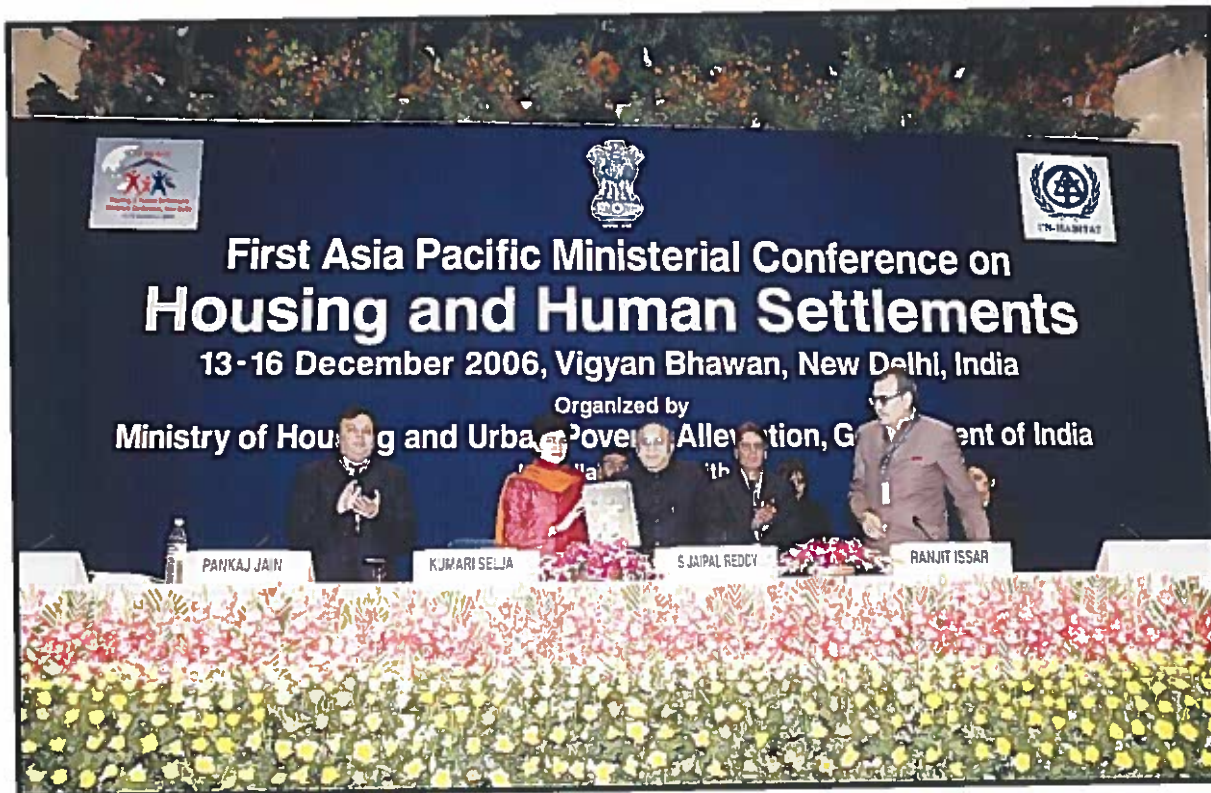
Performance Appraisal Certificate for Vertical Shaft Brick Kiln Technology for brick manufacturing has been issued to Development Alternatives, New Delhi.

During the period of reporting, following companies/ manufacturers have applied and shown their interest for procuring the Performance Appraisal Certificate under the Scheme. The names of the firms and the product for which the certification is desired alongwith status are as under:

Name of Applicant	Product	Status
Development Alternatives, New Delhi	Vertical Shaft Brick Kiln Technology	PAC issued.
Reliance Industries, Ahmedabad	RECRON 3S Fibre to be used in concrete and mortar	PAC Renewal in progress.
Riya Enterprises, Gandhidham, Gujarat	Finger Jointed Wooden Doors	Under testing
V.K.Plastics, Manesar, Haryana	Roofing Sheets	Inspection Over.
Contech Chemicals, Paldi, Ahmedabad	Six products on cementing adhesives	PAF received.
Rightvision (India) Private Limited, New Delhi	HDPE Cover Blocks of various size and shapes	PAF received.



Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation releasing the Eight Edition of BMTPC's "Directory on Indian Building Materials & Products" along with CD



Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation alongwith Dr. Jaipal Reddy, Hon'ble Minister of Urban Development releasing the "Vulnerability Atlas of India (First Revision:2006)" during the Asia Pacific Ministerial Conference on Housing and Human Settlements, December 13-16, 2006, New Delhi.

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. 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 of subjects. 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 working professionals on regular basis. Brief on the Training Programme organized during the year are as follows:

Training Programme on "Use of Chemical and Mineral Admixtures for Concrete Construction" April 27 – 28, 2006, New Delhi

Admixtures are ingredients other than water, aggregates, hydraulic cement, and fibres that are added to the concrete batch immediately before or during mixing. A proper use of admixtures offers certain beneficial effects to concrete, including improved quality, acceleration or retardation of setting time, enhanced frost and sulfate resistance, control of strength development, improved workability, and enhanced finishability. A Two days Training Programme on Use of Chemical and Mineral Admixtures for Concrete Construction was organized from April 27 – 28, 2006 in New Delhi to brush up the knowledge of construction professionals with the aim of facilitating quality construction covering following sub-themes:

- Requirements of Durable Concrete
- Cement – Properties and Applications
- Fundamentals of chemical admixtures
- Compatibility of Admixtures and Concrete
- Mineral Admixtures – their characteristic use in concrete

- High Performance Concrete
- Self compacting concrete – Role of Admixture
- Use of Admixtures for repair and restoration

24 participants participated in the programme from various government and public sector organisations.

Training Programme on "Water Proofing and Damp Proofing Materials and Techniques for Buildings and Structures" May 25 - 26, 2006, New Delhi

Based on feedback and good response received in the last training programme held in Delhi (February, 2006) on "Water Proofing and Damp Proofing Materials and Techniques for Buildings and Structures", a two days Training Programme was organized on the same topic at Pune during May 25 - 26, 2006 for the benefit of professionals in other regions. The topics included in the Training Programme were:

- Fundamentals of Concrete Technology related to Water Proofing
- Good Construction Practices for Water Proofing
- Principles and Mechanism of Water Proofing
- Water Proofing below grade Basement, swimming pools - underground metros, tunnels etc.
- Injection Grouting, Joint fillers, Insulations
- Standards on Water Proofing
- Water Proofing above grades, DPC, Walls
- Water Proofing of wet areas in buildings
- Roof Water Proofing - Philosophy, Materials, Methods and Efficacy

35 participants from various reputed organizations like Public Sector Banks, TN Slum Clearance Board, M/o Water Resources, Bharat Electronics Ltd., NTPC, Birla Cement, CPWD Pune, PWD Pune, MHADA, MES, M/o Defence, Municipal Corporation of Greater Mumbai, Power Grid Corporation, PWD UP, etc and local Builders & Developers attended this programme. The inauguration was attended by Chief Engineer-MES, Director-Trg. Centre, MHADA & the ED-BMTPC. Senior professionals including BMTPC officers made presentations.

Training Programme on "Retrofitting and Repair for seismic strengthening of buildings and structures", 14-16 June, 2006, New Delhi

Three days training programme on "Retrofitting and Repair for seismic strengthening of buildings and structures" was conducted during 14-16 June, 2006 in the Training Centre Nirman Bhawan, New Delhi. The training covered various aspects of retrofitting and repair for seismic strengthening of buildings and structures. Geotechnical aspects, which is

usually neglected was given due attention. The sub-theme covered during the Training Programme were:

- Project Planning Tools and their quality aspect in Indian Construction Industry
- Need and Process of Retrofitting
- Earthquake Vulnerability Scenario in India
- Design Principle and Philosophy of Earthquake
- Case Studies Investigation of AIIMS and other Buildings
- Vulnerability Assessment and Retrofitting of Masonry Buildings
- Vulnerability Assessment and Retrofitting of RCC Buildings
- Evaluation and Retrofitting for Earthquake Damaged Buildings
- Advanced Techniques for Retrofitting of Buildings
- Cost Implication of Retrofitting of Buildings
- Survey of Buildings for Seismic Assessment

47 delegates from PSUs, Central and State PWDs/Agencies, senior executives from private sector registered for the training programme. Acknowledging the need and importance of practical exposure along with imparting knowledge to participants in the training room, a field visit was organized to one of the MCD School buildings recently retrofitted by BMTPC. A visit was also arranged to central Soil and Materials Research Station, to apprise the delegates about testing of soil liquefaction potential. The list of faculties included eminent experts drawn both from research institutions like IIT and professional agencies including BMTPC's own officers. Joint Secretary (Finance) distributed the certificates to participants.

Training Programme on "Repair, Maintenance and Rehabilitation of Buildings & Structures", 22-23 August, 2006, New Delhi

Two days training programme on "Repair, Maintenance and Rehabilitation of Buildings & Structures" was conducted during 22-23 August, 2006 in New Delhi. The training covered various aspects of repairs, maintenance and issues related to rehabilitation of Building and Structures, which are critical issues for engineers and architects. Following aspects were covered during the programme:

- Foundation Cracks – Inspection for Structure Defects, Diagnosis, Causes & Repair
- Corrosion of reinforcement.
- Cracks in Building and Its Repair Techniques.
- Construction Chemicals – Use in Maintenance & Repair of Buildings
- Good Plumbing practices and Repair of Plumbing Services.

- Maintenance of Electrical Works.
- Non Destructive Methods of Testing of Buildings.
- Damage Caused by Earthquake – Repair & Retrofitting of Masonry Buildings.

19 delegates from PSUs, Central and State PWDs/Agencies and private sector including some from far flung areas such as Anadaman etc. attended and benefited from the training programme. The faculty included besides BMTPC's own Officer Chief (BM) Dr. R K Bhandari, Chairman, Centre for Disaster Management and Mitigation, Vellore Institute of Technology, Prof. B Bhattacharjee, IIT Delhi and other experts from field.

Training Programme on "Concrete Making Materials, Mix Design and High Performance Concrete", 6th to 8th September 2006, New Delhi

The Council organised a 3 Days Training Programme on the topic "Concrete Making Materials, Mix Design and High Performance Concrete" at India International Centre, Lodi Estate from 6 to 8 September, 2006 covering the following important sub-themes:

- Types of Cement and their Application
- Chemical Admixtures
- Aggregates and Water
- Mineral Admixtures
- Properties and testing of Fresh and Hardened Concrete
- Quality Control and Quality Assurance in Concrete Construction
- Concrete Mix Design and Acceptance criteria as per Indian Standard
- Durability Requirement as per IS:456
- Concrete Mix Design Method and Examples

The Council received overwhelming response from its stake holders and 40 delegates participated in the training programme. Notable few amongst them were from NTPC, AP Housing Corporation, DuPont India, MECON, MP Warehousing, Delhi PWD and CPWD. The inaugural lecture was delivered by Dr. K.C. Narang of Dalmia Cements Ltd. Other faculty members included Prof. B. Bhattacharjee of IIT Delhi, Shri Murari Ratnam, Jt. Director CSMRS, Dr. A.K. Mullick, Former Director General, NCCBM, Dr.S.C. Maiti, Former Jt. Director NCCBM and Chief –BM, BMTPC.



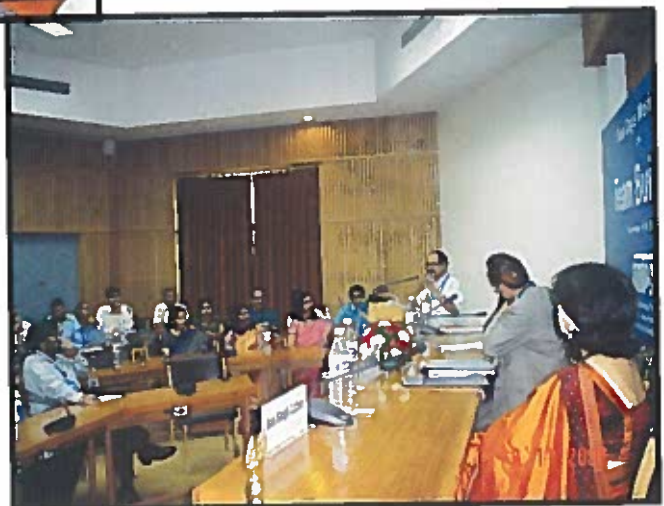
Training Programme on Use of Chemical and Mineral Admixtures for Concrete Construction at New Delhi, April 27 – 28, 2006

Training Programme on Water Proofing and Damp Proofing Materials and Techniques for Buildings and Structures” at Pune, May 25 - 26, 2006



5 days short term Training Course on “Earthquake Resistant Design and Construction of Buildings” at New Delhi during 18th to 22nd September 2006 organised in collaboration with IIT – Roorkee.

Training Workshop on Team Building at New Delhi, November 9-10, 2006.



Training Programme on "Water Proofing and Damp Proofing Materials and Techniques for Buildings and Structures", 22 – 23 January, 2007, New Delhi

A two days training programme on "Water Proofing and Damp Proofing Materials and Techniques for Buildings and Structures" on 22nd and 23rd January, 2007 was conducted at Kolkata in association of program partner - Dr. Fixit Institute of Structural Protection and Rehabilitation. The topics included in the Training Programme were:

- Fundamentals of Concrete Technology related to Water Proofing
- Good Construction Practices for Water Proofing
- Principles and Mechanism of Water Proofing
- Water Proofing below grade Basement, swimming pools - underground metros, tunnels etc.
- Injection Grouting, Joint fillers, Insulations
- Standards on Water Proofing
- Water Proofing above grades, DPC, Walls
- Water Proofing of wet areas in buildings
- Roof Water Proofing - Philosophy, Materials, Methods and Efficacy

About 20 delegates participated in this training programme. The delegates included representatives from prestigious Organizations like CPWD, NTPC, NHPC, State PWDs, Satluj Jal Vidyut Nigam Ltd. etc. faculty included Head of the Departments of Civil Engineering, Jadabpur University, water proofing experts and Chief (BM)- BMTPC.

2. Organisation of a Visit of Technical Delegation of Indian Building Materials Manufacturers to Italy

Under a UNIDO-ICS sponsored programme, BMTPC organized a visit of Technical Delegation of Building Materials Manufacturers to Italy from 13th -17th November 2006 to explore the possibilities for joint ventures, technology transfer and technology upgradation in the areas of alternative building materials and housing technologies. The delegation was represented by seven industrial partners including the representatives from BMTPC and the MoHUPA, Gol.

Visit of important centres included Area Science Park, Trieste, which supports National and International research centres, technology promotion, entrepreneurship development and ICS, Trieste. Meeting with important dignitaries such as Mayor of the Podova province, Italy, Managing Director, UNIDO-ICS, Trieste, Vice-president, Chamber of Commerce, Podova, Industrial Province, Italy were held for possible future cooperation. Some of the Indian industry partners found plastic waste and Debris

recycling plants as highly innovative and expressed their desire to immediately adopt it in India and willingness to work jointly with BMTPC in this regard.

An Italian Delegation of Building Materials Industries is also expected in March-April 2007 to India as an outcome of this visit for further cooperation

3. Signing of MoU for Cooperation Programme with Royal Government of Bhutan

Apropos the visit of Indian delegation to Bhutan last year, the Govt. of Bhutan evinced their interest in setting up of Technology Demonstration-cum-Production Centre (TDPC) for cost effective and innovative building materials in Bhutan so that the demand of the building materials for the housing and building sector can be fulfilled. Subsequently, during the visit of the Secretary-HUPA to Bhutan, BMTPC officials visited Bhutan and an MoU was signed between the Secretary, Ministry of Urban Employment & Poverty Alleviation, GOI and the Secretary, Ministry of Works & Human Settlement, Govt. of Bhutan on May 15, 2006 for establishing a Technology Demonstration cum Production Centre in Gyelposhing, District Mongar, Bhutan with the technical assistance from BMTPC.

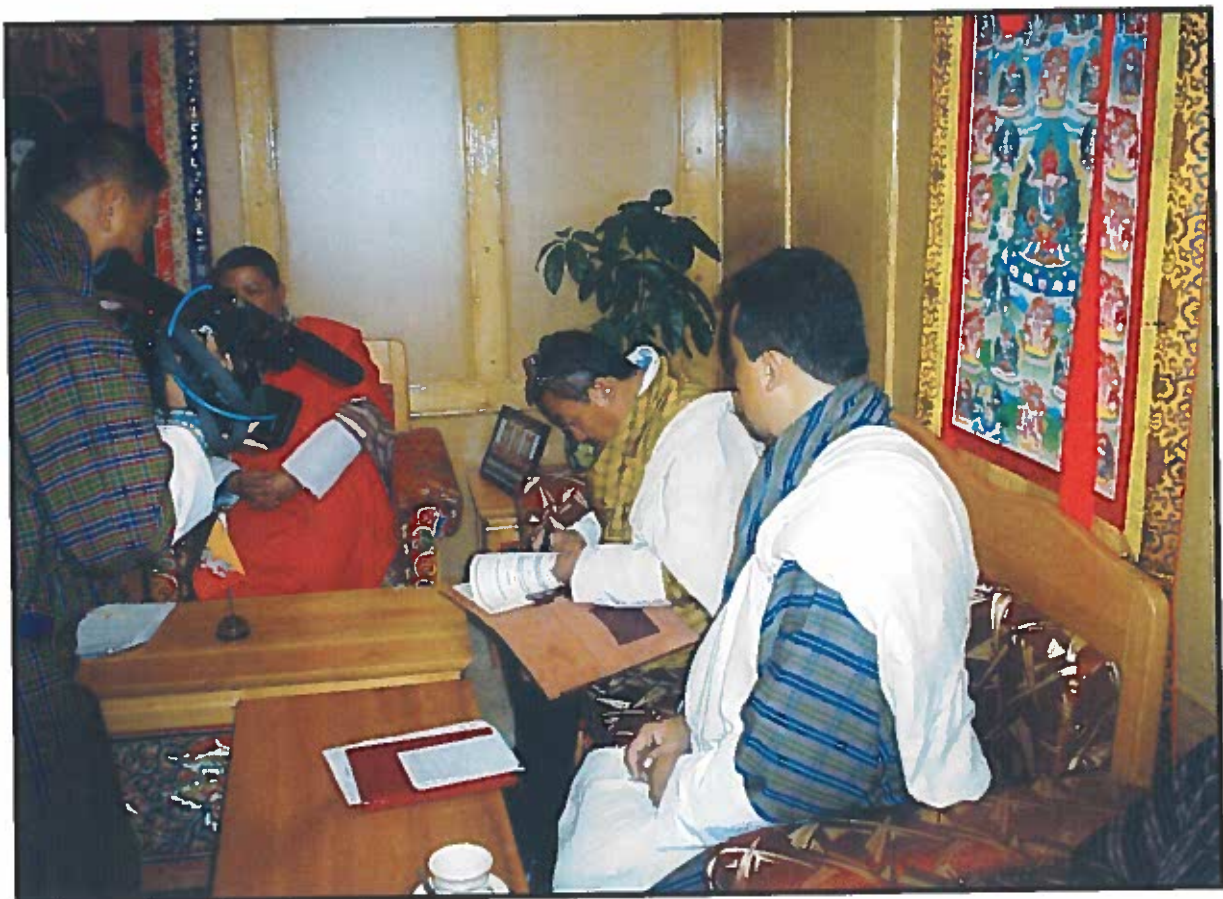
BMTPC organized a 3-days Training Programme on "Standards and Quality Control in Construction" jointly with Standards and Quality Control Authority (SQCA), Ministry of Works & Human Settlements, Royal Government of Bhutan during May 16-18, 2006 which was attended by more than 50 engineers, architects & professionals from various Govt. Departments & private organizations of Bhutan. The Secretary, MoHUPA, Government of India, inaugurated the Training Programme. The inaugural function was also attended by the Secretary, Ministry of Works & Human Settlements, Bhutan, ED-BMTPC, Director-SQCA and Dy. Chief of Mission, Indian Embassy, Thimpu, Bhutan.

4. Skill Upgradation Programme for Semi-skilled Workers at Bhilai, Chhatisgarh

Under the BMTPC's guidance, 7-days Skill Upgradation programme for semi skilled workers was organised at Building Centre, Bhilai in collaboration with Nirman Vikas Anusandhan Sansthan, Raipur (an NGO) which is managing and running 4 building Centres of Chattisgarh Housing Board. The target group "Semi skilled Construction Workers (masons)" was selected from 50 km radius of the training venue. Apart from traditional materials and construction technologies training on alternate materials and technologies were also imparted during the programme. About 70 workers participated in the programme.



Signing of MoU by the Secretary, Ministry of Housing & Urban Poverty Alleviation, GOI and the Secretary, Ministry of Works & Human Settlement, Govt. of Bhutan on May 15, 2006 for establishing a Technology Demonstration cum Production Centre in Gyelposhing, District Mongar, Bhutan with the technical assistance from BMTPC.





Training Programme on Standards and Quality Control in Construction organised by BMTPC at Thimpu, Bhutan during May 16 - 18, 2006.



5. Painting Competition on the occasion of World Habitat Day 2006

To mark the occasion of World Habitat Day, BMTPC organized Painting competition for Special (Differently Abled) Children. More than 60 children under 3 different categories namely Mentally Retarded-Moderate, Mentally Retarded-Severe and Visually Impaired participated in this competition. The best paintings were awarded cash prize and certificates during the celebration of World Habitat Day on October 3, 2006, by Kumari Selja, Hon'ble Minister of State (Independent Charge) for Housing & Urban Poverty Alleviation, distributed prizes to winners of the competition.

6. Visit of Foreign Delegations to BMTPC

A delegation led by Hon'ble Minister for Housing, Government of South Africa visited BMTPC during April, 2006 from South Africa. The delegation visited the Industrial Workers Housing Construction site at Bawana where housing construction has been undertaken on large scale using innovative materials & construction techniques.

The delegation took keen interest in the environment friendly and energy-efficient technologies developed and promoted by BMTPC.

Hon'ble Minister for Construction, Govt. of China also visited the BMTPC's supported industrial Workers Housing Project at Bawana and evinced keen interest in having technical co-operation with BMTPC in the field of low cost housing.

7. Comprehensive Guidelines for Green Habitat

India has six climate types ranging from cold & cloudy to hot & dry. Traditional buildings responded to this climatic diversity through various styles of vernacular architecture that is exhibited all over the country. Increasing urbanization, in absence of guidelines and mandatory provisions, has forced a more pragmatic approach to habitat design which does not include environmental concerns and energy efficiency as the prime goals. These are only weakly addressed by the prevalent norms. This concern is compounded by the fact that India is short of commercial forms of energy whether the forms of delivered electricity, or the more basic oil and gas, and even coal. Resource utilization by the building industry is highly irrational at present because low first cost dominates the design decisions.

The building trade is presently fragmented as many players from both the public and private sectors who participate in

planning, programming, funding, design, construction, and operation of buildings act without much collaboration. Although there have been recently a few limited efforts to promote energy conscious architecture by developing energy related building codes and building rating systems (like efforts by CII and TERI), the focus so far has been on particular types of commercial buildings only.

In reality, there is an urgent need to make similar efforts for not just buildings but habitat as a whole.

Overall Aim

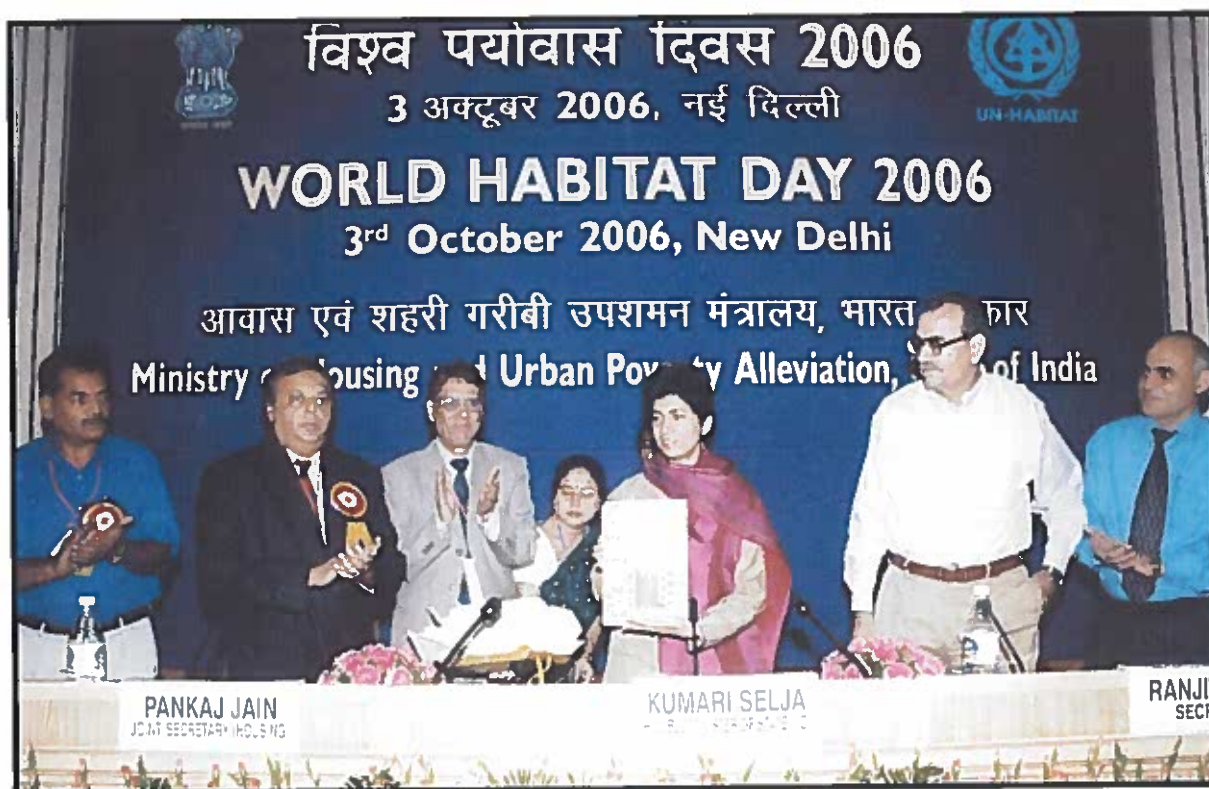
- The overall aim of Guidelines for Green Habitat (GGH) would be to act as a tool for each stakeholder through better or new practices that must be adopted in order to realize these goals and achieve a higher degree of collaboration necessary to reach the targeted sustainable performance objectives.
- GGH would aim to instruct and facilitate input from public agency executives and staff; implementing agencies and elected officials; architects and engineers; contractors; building managers; and the public at large.
- GGH would relate to and build upon the existing standards and codes and the buildings rating systems.

The Goals would be

- Raise awareness and therefore expectations for the optimum performance of habitats among the various stakeholders.
- Promote sustainable habitat design practices to include:
 - Energy and resource conservation through reduced energy and material expenditures, waste disposal costs, and utility bills;
 - Improve the comfort, health and well-being of building occupants and public visitors; and
 - Sustainable design and construction practices resulting in investments that make economic and environmental sense.
- Mainstream these improved practices through:
 - Incremental use of specific Green Habitat strategies on selected projects.
 - Comprehensive pilot building efforts; and
 - Mandating these guidelines through housing boards or schemes (such as JNNURM), or other agencies as appropriate.
- Create partnerships in the design and construction process around environmental and economic performance goals.



Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation giving away the prizes to the Award Winner of Painting Competition for Differently Abled Children on the occasion of World Habitat Day, 2006.



Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation releasing the Building Materials News - Cities of Magnets of Hope, brought out on the occasion of World Habitat Day, 2006.



- Stimulate markets for sustainable habitat technologies and products.

The Ministry of Housing & Urban Poverty Alleviation, Govt. of India, has already constituted a Task Force for formulation of Guidelines for Green Habitat vide OM No.N-16012/9/2006-H.I dated 2nd November, 2006.

1st meeting of Task Force for formulation of Guidelines for Green Habitat (GGH) was held on 21st February 2007 to discuss the terms of reference for the formulation of guidelines for Green Habitat (GGH). The Task Force comprises of members from IIT Delhi, Ministry of Environment & forests, Ministry of Non-conventional Energy Sources, Ministry of Rural Development, Ministry of Science and Technology, Planning Commission, UNDP, etc. with ED-BMTPC as Member Convener. All the members were unanimously of the view that there is a need for comprehensive Guidelines for Green Habitat. It was also suggested that both rural and urban housing are required to be addressed. Subsequently, a Working Group meeting of the key technical members was also held to chalk out the modalities of the Guidelines for Green Habitat.

8. Participation in India International Trade Fair, 2006, Pragati Maidan, New Delhi from 14-27 November 2006

BMTPC participated in Hudco-Buildtech and Techmart pavilions during India International Trade Fair (IITF) from 14-27 November, 2006. BMTPC stalls in Buildtech and Techmart 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 from Panama, Sri Lanka, Nigeria, Dubai, Venezuela, etc., visited BMTPC stalls.

9. Visit of Standing Committee of the Parliament on Urban Development

The Standing Committee of the Parliament on Urban Development undertook on the spot study tour to Leh and Srinagar during last week of May, 2006 and first week of June, 2006. The Parliament Standing Committee visited the Green Houses project constructed by BMTPC for ITBP in Leh for growing of the green vegetables in inhospitable terrain. The Committee highly appreciated the BMTPC project and also desired that these should be replicated all over the State. During the informal discussion with the officials of the State Government, HUDCO, BMTPC, CPWD, etc. in Srinagar, the Committee advised the State Government to take the help of BMTPC for adoption of cost

effective disaster resistant construction and also the construction of Green Houses all over the State.

10. Visit of Sub-Committee of the Committee of Parliament on Official Language

Third Sub-Committee of the Committee of Parliament on Official Language inspected and reviewed the use of Hindi language in official works in BMTPC on September 15, 2006. The Committee Members were satisfied with the progress made by BMTPC in this regard. While reviewing the work of the Council, it suggested the some initiatives in the rural areas are also required to be made.

VI. TECHNOLOGY DEVELOPMENT, DIFFUSION AND TRANSFER

1. Development of Wood Substitute from Plant Fibre based Composites using Needled Felt Technology

Last year, the Council initiated a project for development of wood substitute from plant fibre based composites using needled felt technology. Plant fibres such as jute, sisal, coir, have been used as reinforcements in polymers to produce composites with specific strength properties adequate to replace glass fibre reinforced plastics as well as wood-based products for various applications. However, owing to the high cost of polymers, the fibre content in plant fibre composites (PFC) should be as high as possible to make them economically competitive with wood-based materials.

Fabrication of PFCs using needled felt is a new development. Hence, for commercialization of the process and products, there exists a need for convincing the entrepreneurs the techno-economical feasibility of the process and market potential of the products. The project aims at creating a pilot plant facility in view of facilitating commercialization of the process and products by way of providing technology package, samples for market survey, demonstration of the process and training of technical personnel. Since the process is applicable to all plant fibres, the scope of the pilot plant is long lasting.

The main objectives of the project were to set up a pilot plant by incorporating an indigenous needle felting machine in the composite processing and to generate Process flow sheet, products specifications and techno-economic data for Coir- PF and Sisal-PF composites.

Process know-how and product specification for coir and sisal fibre composites paneling materials for commercial production have been developed and are under testing.



Standing Committee of the Parliament on Urban Development inspected the Green Houses, constructed by BMTPC for Indo Tibetan Border Police, during the on-the-spot-study-tour to Leh during last week of May, 2006.



Third Sub-Committee of the Committee of Parliament on Official Language inspected and reviewed the use of Hindi language in official works in BMTPC on September 15, 2006.



2. Setting up of Pilot Plant for Production of Reactive Silica from Rice Husk

The Phase II activities of this project aims at the micro-pilot plant tests for the production of reactive silica from rice husk/partially burnt rice husk on 'continuous' way and to scale up the process to a commercial level. The data already generated at the laboratory during Phase I was taken as a basis for the present work. The activities planned are Cleaning of the rice husk/partially burnt rice husk, 'Ashing' in a micro-pilot rotary kiln, Cooling, Pulverisation, Industrial application test and Process scale up.

The main objectives of the Phase II of the Project was to carry out micro-pilot scale experiments for cleaning, ashing, cooling and pulverization; Data generation; Bulk production of about 100 Kgs of reactive silica for industrial application test; Process scale up; and To carry out experiments in a suitable fluidised bed reactor.

10 kgs of reactive silica has been produced having potential of application in high performance concrete. Structural Engineering Research Institute, Chennai and Kerala Highway Research Institute, Trivandrum have been approached for industrial application tests of this rice husk ash and based on the facilities available SERC, Chennai has been selected for testing. Rice Mills Owners Consortium based in Kochi, Kerala has evinced interest in this technology to convert their husk to value added product.

3. Development of Technology for Construction of Two Storeyed Bamboo Housing System

The main objectives of the project were to develop an architectural design of a two-storey house with bamboo; design and development of various housing components including jointing system from bamboo to construct two-storey building and develop technology for construction of the two storey house with components.

The technology for construction of two storeyed bamboo housing system has been developed and the prototype structure is being constructed at Bangalore.

4. Development of Bamboo Mat Ridge Cap for Roofing with Bamboo Mat Corrugated Sheets

The Council, earlier, developed and commercialized a technology for manufacture of Bamboo Mat Corrugated Sheets (BMCS). One such unit in Meghalaya is presently manufacturing BMCS. Since use of BMCS have already

started in the housing activities as roofing material, it has become very much necessary to develop Ridge cap for covering the top/comers of roof made out of BMCS.

The objectives of the project were to design and development of appropriate profile and size for Ridge Cap to be produced with BMB out of Bamboo Mats; Fabrication of suitable dies which are to be fixed to a Hydraulic hot press of platen size 1450 mm X 650 mm; Trial runs to produce the Ridge Cap and to carry out improvements and modifications if necessary and Testing and performance evaluation.

The technology for manufacture of bamboo mat ridge cap for roofing has been developed at IPIRTI, Bangalore. The testing of the product is being undertaken.

5. Development of Prefabricated Modular Houses using Bamboo based Composites

The project was undertaken to develop the application of bamboo composite building materials in prefabricated houses alongwith their advantages over the conventional materials. These types of houses can be constructed quite quickly for immediate and long term rehabilitation for post disaster relief.

The design of pre-fab double walled bamboo composite house with attached bath and kitchen has been developed. The construction prototype is under advanced stages in Bangalore.

6. Setting up of Permanent Fly Ash Brick Production cum Technology Demonstration Centre at HPL

With the delivery and installation of Brick & Block Making Machine and Pan Mixer at Hindustan Prefab Ltd.(HPL), BMTPC's supported Fly Ash Brick Production cum Technology Demonstration centre at HPL has been established. Presently various production parameters are being optimized and trial production of Fly Ash bricks is going on.

7. Fiscal Incentives

In order to improve the investment climate for production of cost-effective, eco-friendly and energy efficient building materials based on agro-industrial wastes, the Department of Revenue, Govt. of India was persuaded through the Ministry of Housing & Urban Poverty Alleviation for providing fiscal incentives like excise duty and custom duty exemptions for several items. Based on the recommendations of BMTPC the following Excise and

Custom duty concessions/exemptions have been granted in the Union Budget for the year 2006-07. These concessions have greatly helped wide scale commercialization of innovative material technologies developed in India and abroad.

- Goods in which more than 25% by weight of Red mud or Press mud or blast furnace slag or all is used
- Good in which not less than 25% by weight flyash or phosphogypsum or both is used,
- Ready Mixed Concrete,
- Clay bricks other than fire-clay bricks
- Sand Lime bricks
- Roofing tiles
- Burnt clay tiles
- Good Manufactured at the site of construction of building for use at such site
- Cement bonded Particle Boards
- Jute Particle Board
- Rice Husk Board
- Glass Fibre Reinforced Gypsum Board
- Sisal Fibre Board
- Baggase Board

The above incentives particularly granted at the Central Government level has created a confidence amongst the entrepreneurs and investors at the national level. This has further given a boost to higher investments for setting up production units of new materials in different states.

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), sub-component of recently launched Jawaharlal Nehru National Urban Renewal Mission (JNNURM).

Appraisal of DPRs

The Council has been designated as one of the Appraisal Agencies for appraisal of Detailed Project Reports received under BSUP from identified Mission Cities by the Ministry. As on 31st March 2007, BMTPC has appraised 46 DPRs received from the States of Madhya Pradesh, Andhra Pradesh, Chandigarh, Gujarat, Karnataka, Nagaland, Rajasthan and Himachal Pradesh worth Rs.3325 crores. These were put up for the consideration of Central Sanctioning and Monitoring committee and these projects have been sanctioned. The state wise break up of these

projects are as follows:

State	No. of Projects
Andhra Pradesh	9
Gujarat	10
Karnataka	3
Madhya Pradesh	18
Chandigarh	2
Nagaland	1
Himachal Pradesh	1
Rajasthan	2
Total	46

BMTPC is also helping the Municipal Bodies and State Nodal Agencies in preparation and modifications of DPRs through various workshops, meets, etc. The Council has also received request from Orissa and North Eastern States to prepare DPRs for their States.

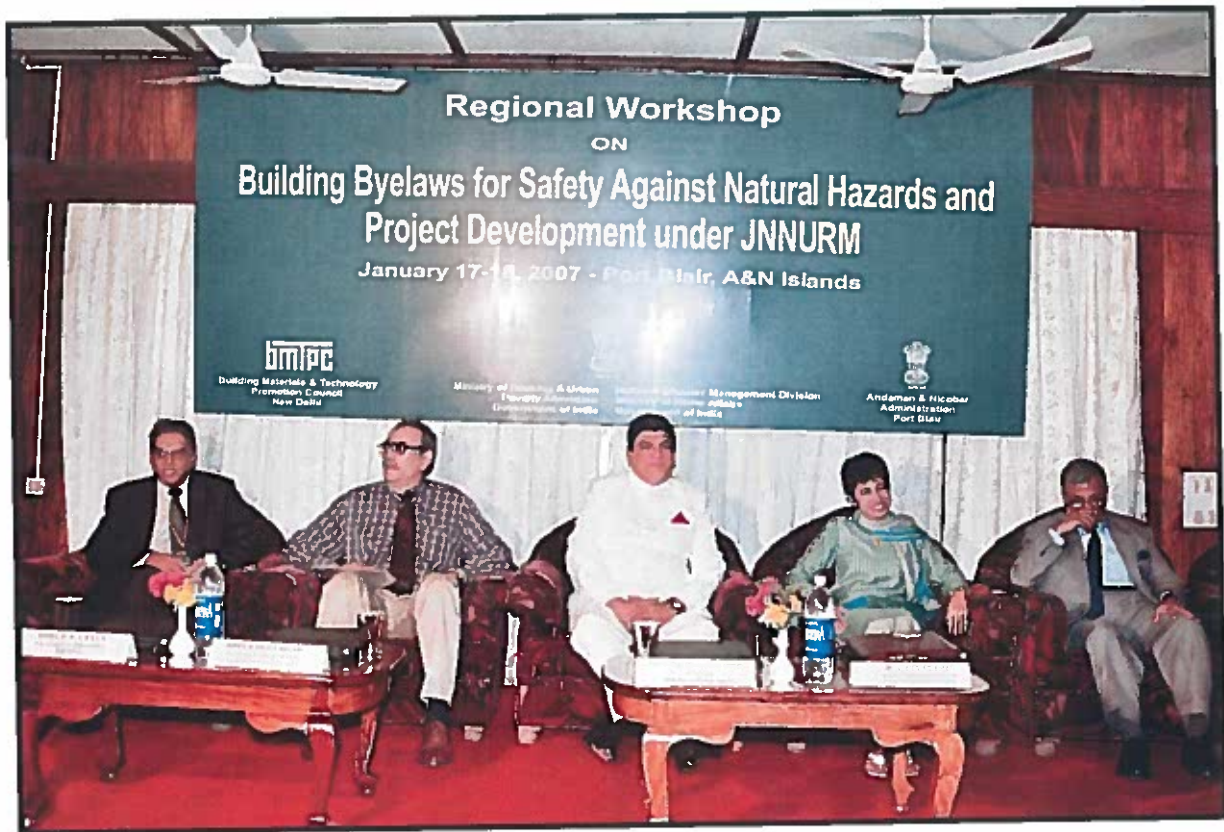
The Council is also being designated as a Monitoring Agency for monitoring of the projects in the States where the projects have been appraised by the Council. A detailed monitoring mechanism in consultation with the Ministry of HUPA is being evolved for effective monitoring of these projects.

Organisation of Capacity Building Programmes

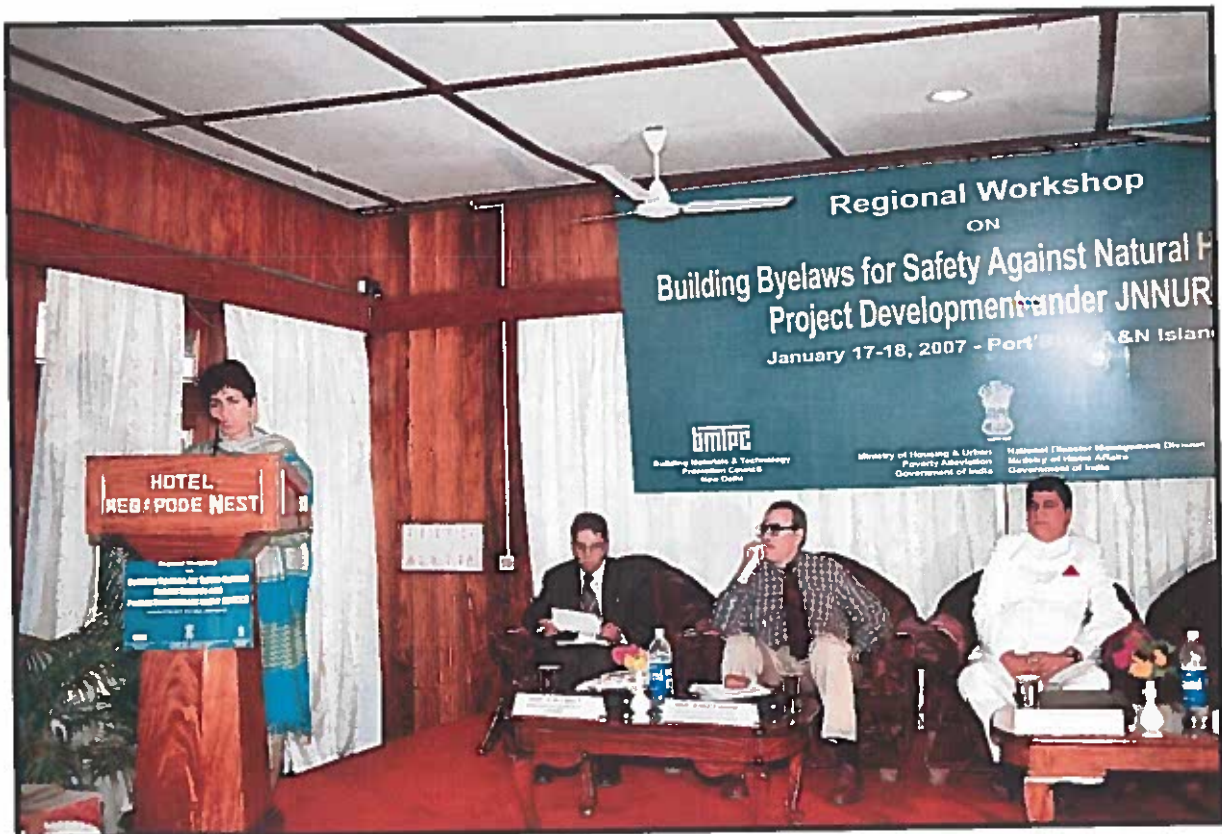
The Council has actively taken part in the capacity building programmes organized by the Ministry of Housing & Urban Poverty Alleviation for the capacity building of the municipal functionaries in preparation of DPRs for the BSUP and IHSDP projects. Presentations were made at following programmes:

- July 7, 2006 at Hyderabad
- July 13 – 14, 2006, at New Delhi
- July 20-22, 2006 at Pune
- July 31, 2006 at Kolkatta
- September 18, 2006 at Shillong
- October 27, 2006 at New Delhi
- October 28, 2006 at Bhubaneswar
- November 13, 2006 at Pune
- January 5-6, 2007 at Bangalore
- January 11-12, 2007 at Patna
- January 15-16, 2007 at Kolkata
- January 17-18, 2007 at Port Blair
- January 23, 2007 at Chandigarh.

BMTPC made all arrangements in connection with the National Consultation on "JNNURM : Developing Inclusive Cities" held from 16-17 March, 2007. This event was organized by the Ministry of HUPA and sponsored by



Hon'ble Minister of State (Independent Charge) for Housing & Urban Poverty Alleviation, Kumari Selja, inaugurated the Regional Workshop on Building Byelaws for Safety Against Natural Hazards and Project Development under JNNURM at Port Blair, A&N Islands on January 17, 2007.



HUDCO, BMTPC, AILSG, YASHDA and CGG Hyderabad. The Expert Group meeting on 16th March 2007 was inaugurated by Secretary, HUPA and the Ministerial Conference was inaugurated by Hon'ble Minister of Housing & Urban Poverty Alleviation on 17th March 2007. The Hon'ble Minister of Urban Development delivered the valedictory address on 17th March. The Conference was attended by more than 250 delegates comprising of State Ministers, Mayors, Chair Persons of Municipal Bodies, Commissioners, NGOs and other officials from Central and State Governments.

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

1. Preparation of Templates for Affordable Houses for the Poor taking into Account the geo-climatic and geographical requirements

A meeting was held in the Ministry of HUPA under the Chairmanship of Joint Secretary (Housing) on 12.2.2007 to discuss the proposal for affordable houses for the poor for Rs.1.00 lakh. It was decided in the meeting that BMTPC would prepare 4-5 templates taking into account the terrain requirements viz. Hilly Areas, Plains, Earthquake Prone areas etc. and these houses would have a built-up area of 25 sq. mtrs. and costing approximately Rs. 1.00 lakh. In order to bring down the cost of the houses, it was desired necessary policy level interventions like providing fiscal concessions, direct supply by the manufacturer etc. should also be explored. These templates are to be then circulated to the States and other stake-holders to elicit their views and comments and subsequently to have a National level Consultation to decide on the final and acceptable versions of the templates.

Scope of Work

- Selection & composition of data for different Geo – Climatic zones.
- Based on above zonal requirements, preparation of house plan, block plan and part cluster plan
- Typical elevation, section, plumbing, sanitation & internal electrification.
- Preparing basic structural drawings with typical foundation & roof structural plans.
- Selection of alternative materials & technologies for cost reduction
- Preparation detailed estimates for different Geo-climatic Zone based on state schedule of rates.
- Preparing cost of comparison for matrix of different bearing capacity of soil (10T/m², 6 T/ m² black cotton soil) for G+2 & G+3 constructions for different earthquake zones and for habitable unit.

- Preparing matrix of Technology option for different Geo-climatic zones & indicate what comes in Rupee 1 lakh house and what comes outside this.

The project for preparation of Templates have been started.

2. **Project Proposal for Industrial Up-scaling of Production of Bamboo Mat Ridge Cap for Roofing with Bamboo Mat Corrugated Sheets**

The Council is actively involved in developing bamboo based technologies and promote these 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, construction of demonstration houses etc.

BMTPC has undertaken construction of 10 demonstration structure, each, using bamboo based technologies in Mizoram and Tripura and faced the problem of putting up Ridge Cap on the top of roofing for avoiding leakage during raining season. The method of using of flat boards of 2 mm thick Bamboo Mat Board has to be avoided as it develops perforations over a period of time due to weathering. Technology have been developed in the pilot plant for production of Bamboo Mat Ridge Cap with dies of size manufactured suitable for BMCS Roofing with close collaboration with IPIRTI, Bangalore.

The demand for suitable Ridge Cap is increasing as use of BMCS is increasing day by day. With the success of development of Ridge Cap on laboratory level, it is felt necessary to further work for upscaling of the process for commercialization. In this connection, it is very much necessary to take up a project for industrial up-sealing by fabricating dies of size 650 mm x 2000 mm and bigger for manufacture of bamboo mat Ridge Cap.

In view of the above, a project has been initiated for fabrication of two sets of dies of size 650 mm X 2000 mm for installation in existing hydraulic hot press and trial runs in the production of the Ridge Cap and its testing and performance evaluation.

The Ridge Cap made with bamboo mats will make it easy and convenient to cover bamboo board roof corners, compatible and suiting to BMCS.

3. **Development of Flattened Bamboo Composites and Laminated Bamboo Lumber Products**

The Council has initiated a project for development of

Flattened Bamboo Composites and Laminated Bamboo Lumber Products. The flattened bamboo board will be an alternative to the existing Bamboo Mat Boards and Bamboo Mat Veneer Composite for structural applications. Lumber would find a place as a substitute for high quality timber now being used for structural purposes. Also wherever laminated veneer lumbars are being used, they can be replaced by bamboo lumber. Bamboo lumber would be cheaper than the class I timber used for structural purpose and that of veneer lumbars.

Objectives

- Optimization of processing parameters viz. machinery, preservation & drying parameters for making flattened bamboo.
- Development of suitable adhesive system for bonding flattened bamboo and bamboo mats.
- Standardization of process parameters for the manufacture of flattened bamboo boards.
- Standardization of process parameters for the manufacture of laminated bamboo lumber.
- Evaluation of strength properties.
- Study on the suitability of the products developed as a housing component.

The project is being undertaken with the IPIRTI Bangalore.

4. Development of Building Components from Granite Industry Waste

The Council has initiated a project for development of building components from granite slurry a waste from granite industry.

The objectives of the project are:

- Characterization of granite slurry
- Development of parameters for commercial production of bricks/pavement tiles from granite slurry
- Technology transfer

This project is being undertaken in close collaboration with Andhra Pradesh Technology Development and Promotion Centre, Hyderabad.

5. Construction of Bamboo Demonstration Structures in Chhatisgarh and Meghalaya

The Council has initiated construction of demonstration houses in Chhatisgarh and Meghalaya using bamboo based technologies. The State Governments were approached for construction of demonstration structures using bamboo

based technologies to promote the use of bamboo in housing and construction. The Council has earlier put up demonstration structures in Mizoram and Tripura and this has created a lot of awareness about the use of bamboo as building material in the region.

Keeping in view the promotion of Bamboo based technology in housing and building construction in both the regions, the Council has undertaken the construction of following demonstration structures:

- | | | |
|------------------|---|------------------------|
| i. Type I House | - | Total Area 26.11 sqmt. |
| ii Type II House | - | Total Area 52.83 sqmt. |
| iii Picnic Hut | - | Total Area 54.35 sqmt. |
| iv. OPD Building | - | Total Area 23.07 sqmt. |

Drawings and estimates have been prepared for construction of demonstration structures. The State Govt. will provide land for putting up these demonstration structures including all infrastructure.

6. Study of Environment Impacts of Disposal of Marble Slurry/Marble Dust and Investigations on its use in Concrete

The Council has initiated the Study of Environment Impacts of Disposal of Marble Slurry/Marble Dust and Investigations on its use in Concrete for gainful utilization of marble industry waste.

The main objective of the proposed research study is to assess environmental cost benefit of various marble waste management options and suggest the environmentally and economically viable utilization of marble slurry and waste marble blocks.

As a part of the proposed research environmental cost benefit analysis of the following activities has been envisaged :

- Installation of Filter Press to separate water from the slurry and thereby reducing the cost of transportation of the slurry;
- Production of building materials using marble slurry;
- Use of marble slurry in road construction and mass concrete work;
- Product made of marble slurry and waste blocks.

Following activities will be undertaken under the project:

- Evaluation, validation of innovative technologies and advice on available cost-effective options;
- Location specific feasibility reports and demand assessment reports for various building material.
- Development of new and environment friendly

standardized materials.

The marble waste can be utilized in concrete to increase the flow. However, the particle sizes of the powder should be available in a consistent manner. Hence this research involve the following:

- Study of the feasibility marble slurry/powder in concrete and its effect on flowability and segregation resistance.
- Study on particle size, and its reactivity related to concrete environment.

The project is being undertaken jointly with IIT Delhi.

7. Strengthening the Technological Base of Building Centres

Strengthening of Technology Demonstration cum Production Units / Building Centre has been a major activity of BMTPC in past years under which many units/centers have been strengthened through assistance in the form of providing machines for production of cost effective building materials and components. In view of the successful past record, it was desired to strengthen more TDPC/Building Centers during the year 2006-07 and was included in the Action Plan.

During the year, the Council strengthened the production base of Uttarakhand Building Centre, Srinagar, Garhwal and Chhatisgarh Housing Board owned Building Centre at Raipur by providing machineries to widespread the awareness of Precast building components through their Building Centres.

8. Preparation of Video Film for propagating Cost Effective Housing Technologies and to generate Large Scale Public Interest

The Council has successfully completed a demonstration project exhibiting field level application of cost-effective, energy efficient and environment friendly building materials and construction technologies by constructing 252 dwelling units at Laggare, Bangalore under for slum dwellers. The project was executed under 'Valmiki Ambedkar Awas Yojna' (VAMAY an initiative launched by the Ministry of Housing and Urban Poverty Alleviation, Government of India) and Kumari Selja, Hon'ble Minister of State (Independent Charge) for Urban Employment & Poverty Alleviation, Government of India, unveiled the plaque and Inaugurated the handing over ceremony on 10th February 2005.

The council is executing five more such similar demonstration projects at following places

- Nagpur (Maharashtra),

- Dehradun (Uttaranchal)
- Bilaspur (Chhattisgarh),
- Trichy (Tamil Nadu),
- Kudalu (Karnataka),

The Council has initiated production of a video film of 10-12 minute of global standards featuring above demonstration projects being executed by BMTPC covering application of innovative, cost-effective, energy efficient and environment friendly Building Materials and Technologies in a highly creative and interesting manner in order to garner large-scale public interest and promote fairly good understanding of the Council. Such a film would be used at various exhibition/ trade fairs, public functions and national and international Road Shows.

9. Setting up of Community Bamboo Mat Weaving Facility at Wayandu, Kerala

The Council is undertaking a project for setting up of a Community Bamboo Mat Weaving Facility at Wayandu, a backward and tribal district in the State of Kerala, with Kerala State Bamboo Corporation (KSBC), a Govt. of Kerala Undertaking, Ernakulam, Kerala.

The activities of the Kerala State Bamboo Corporation are: to develop and promote industries based on bamboo, reeds, cane and rattan; to undertake manufacturing and trading of above products; provide technical and other assistance and guidance. Apart from the above, the main activity of the Corporation is collection of good quality bamboo from Government forests, distribute the bamboo to registered mat weavers of the Corporation on credit basis and to procure woven mats at the fixed price.

The Council will provide bamboo machinery for setting up the Facility. The land and building including other infrastructural facility will be provided by Kerala State Bamboo Corporation (KSBC) at their own cost.

From the above unit 100 workers will get employment. The mats produced at the Centre will be procured by KSBC for production of bamboo boards and ply. Therefore, the Centre will help in creating employment opportunities and promote use of local resources in the State.

10. Organization of Training Programme for Master Masons in Disaster Resistant Construction Technologies in Uttarakhand

The Council has initiated a project for organization of Training Programme for Master Masons in Disaster Resistant Construction Technologies in Uttarakhand

The main objective of the training programme is to acquaint the Master Masons in use of disaster resistant construction technologies, as the Uttarakhand falls in Seismic Zone V. The region has also witnessed major earthquakes in recent past.

Training will be provided to skilled and un-skilled workers on use of concrete block masonry, concrete corner block masonry, MCR tiles, RCC chaukhats, bonds, bands and other prefab technologies. The centre proposes to organize 8 training programmes (2 in each locations) at the following:

1. Srinagar Ganganali, Distt. Pauri Garhwal
2. Gairsain, Distt. Chamoli
3. Sanker, Distt. Pauri Garhwal
4. Badiyargarh, Distt. Tehri Garhwal

Duration of each programme will be of 7 days each with 10 skilled and 10 unskilled masons.

11. Training Programme for Capacity Building of 30 Masons from Rural Areas near Raipur, Chhatisgarh

The Council is organizing Training Programme for capacity building of masons from rural areas near Raipur, Chhatisgarh. This training programme will be in two parts:

Indoor training

25 working days training at the building centre, which will involve theory, demo and basic work training using actual building materials. A training kit having note book, pencil and printed leaflets in the language will be provided to the trainees.

Actual onsite experience

trainees will be placed under the supervision of a master trainer in a batch of 6 masons each. Trainees will be sent to various construction sites of NGO and different activities will be assigned to the trainees to develop their skills. Constant monitoring and quality check shall be exercised by the site engineers of the NGO.

The focus of training programme will be on the following topics:

- Good construction practices
- Reinforcements in building
- Various types of cement mortars
- Walling options
- RCC work, lintel and shuttering
- Ferro-Cement products
- RCC filler slab

The Training Programme will be organized jointly with Building Centre, Nirman Vikas Anusandhan Santhan, (A unit of Chhattisgarh Housing Board), Raipur.

12. Upgradation of Machines for Production of Precast Building Components

BMTPC has been promoting 30 different machineries for production of Cost Effective building components as a part of its Areas of Activity. Certain machines out of these have been working since past ten years and need improvement.

The upgradation is also necessary keeping in view the increasing demand of Precast Building components in the market and competition from other machine manufacturers and to enhance the production capacity, efficiency, durability, etc. of the machines. The research and development activities needed to work out a new design of following machines:

Precast RCC Plank Casting Machine

To increase the production capacity of the machine to 4 planks per cycle from the current 2 planks per cycle. The design would also be changed keeping in view the problem of leakage of slurry during the production process.

Precast RCC Joist Casting Machine

Production of Tapered Joists in addition to plane RCC Joists produced by the machine currently. The demoulding process in the above machine would also be changed.

Precast Door/Window Frame Machine

To produce ventilator frames in addition to concrete door/window frames made by the machine currently. Additional vibrator shall be provided in the machine for the same.

ORGANISATION

The Chart on the next page shows the organization of different functional units in the establishment of the Council. As on 31st March, 2007 BMTPC had a staff strength 45 comprising 20 officers and 25 support staff and technicians/professionals hired on contract.

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, inter alia, 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 have been proposed along with employees conduct rules and recruitments rules and have been sent to the controlling Ministry for consideration.

BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL

ORGANIZATIONAL STRUCTURE

PRESIDENT

Minister of Housing & Urban Poverty Alleviation

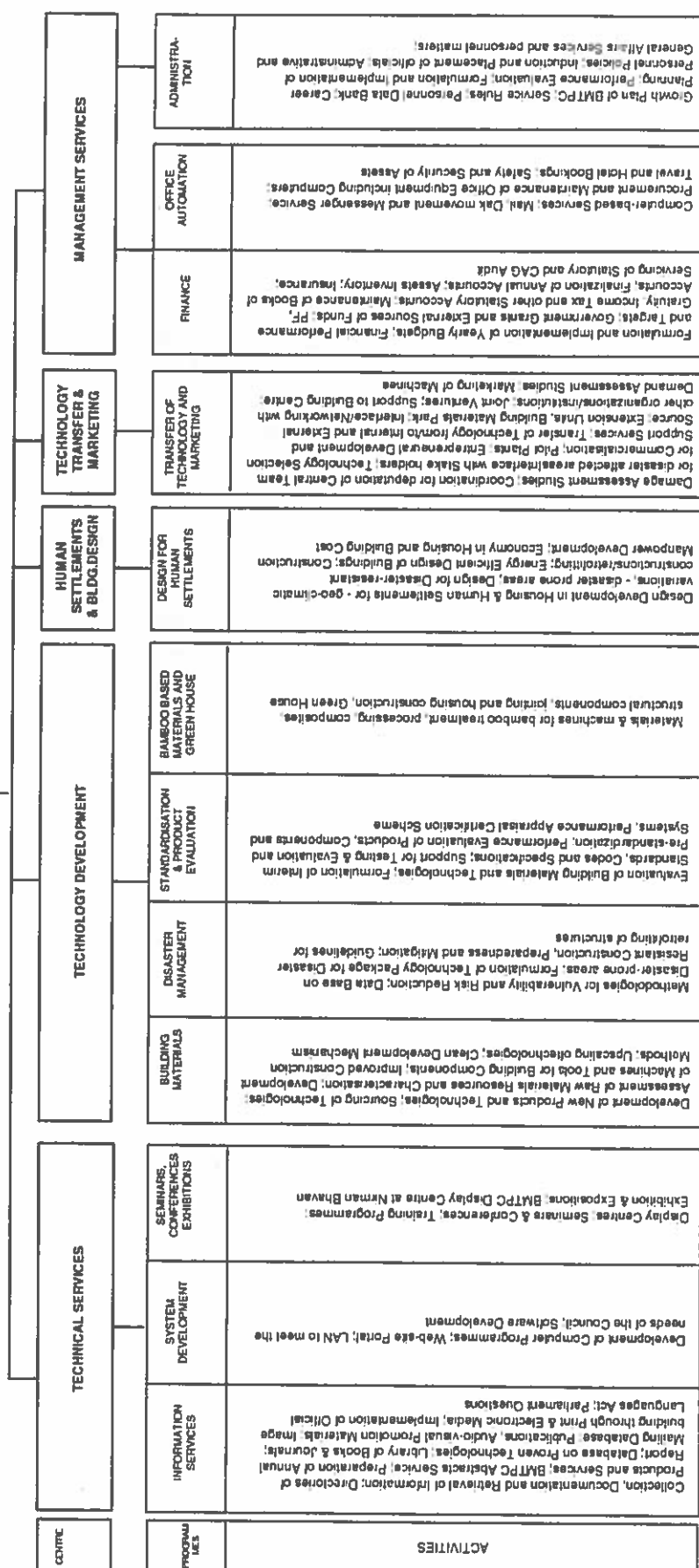
VICE-PRESIDENTS

Minister of State and Secretary, Ministry of HUPA

EXECUTIVE COMMITTEE

Chairman : Secretary, Ministry of HUPA

EXECUTIVE DIRECTOR



STAFF STRENGTH (as on 31.3.2007)

<u>S.No.</u>	<u>Name & Designation</u>	<u>Date of Joining</u>
1.	R.K.Celly <i>Executive Director</i>	01.09.05
2.	S. Balasrinivasan <i>Chief-Finance</i>	08.04.92
3.	J.K. Prasad <i>Chief-Building Materials</i>	01.09.03
4.	I. J.S. Sidhu <i>Chief-Project Monitoring & Training</i>	16.09.99
5.	S. K. Garg <i>Deputy Chief- Financial Planning (On lien to ICAI)</i>	24.03.92
6.	M. Ramesh Kumar <i>Deputy Chief-Management Information Systems</i>	01 .04.93
7.	Arun Kumar Tiwari <i>Deputy Chief-Standardization & Product Development & Administration</i>	22.07.03
8.	S. K. Gupta <i>Deputy Chief- Technology, Demonstration Extension & International Cooperation</i>	26.10.93
9.	Arvind Kumar <i>Systems Manager</i>	15.04.99
10.	Dr. Amit Rai <i>Development Officer- Building Materials-Product Development</i>	05.11.98
11.	Chandi Nath Jha <i>Development Officer- Building Materials -Product Evaluation</i>	09.09.99
12.	Pankaj Gupta <i>Development Officer- Engineering Design & Performance Evaluation</i>	14.10.99
13.	D. P. Singh <i>Development Officer – Demonstration, Construction & Exhibition</i>	05.10.98
14.	Richpal Singh <i>Personnel Officer</i>	23.02.94
15.	Dalip Kumar <i>Systems Analyst</i>	04.03.91
16.	Alok Bhatnagar <i>Library Officer</i>	05.10.98
17.	Akash Kumar Mathur <i>Field Officer -Product Evaluation</i>	01.01.02
18.	S. M. Malhotra <i>Principal Private Secretary</i>	09.04.99
19.	Anita Kumar <i>Sr. Programmer</i>	03.10.96
20.	M.Krishna Reddy <i>Liason Officer (On deputation to Ministry of Coal)</i>	29.10.03

ACCOUNTS

The Council received grants of Rs.430.00 Lakhs from Ministry of Housing & Urban Poverty Alleviation. The Council has also brought forward grants sanctioned by Ministry of Housing & Urban Poverty Alleviation to the tune of Rs.649.17 lakhs from the previous year.

The total expenditure incurred during the period from April, 2006 to March, 2007 was Rs.6,16,19,890 as detailed below:-

Major Heads	Amount (In Rs.)
• Expenditure on Sponsored Studies	58,19,652
• Seminar, Conference, Workshop & Dissemination of Information expenses	1,03,74,476
• Purchase of Fixed Assets	412,738
• Expenditure on Financial Assistance for technology development/application	60,25,464
• Personnel Expenses	1,45,15,169
• Administration and Other Expenses	76,12,502
• Expenditure on construction of demonstration houses under Valmiki Ambedkar Awas Yojana	53,77,440
• Expenditure on Construction of demonstration houses in Mizoram	4,00,000
• Establishment of Bamboo Mat Production Centres in North-Eastern States	66,09,839
• Expenditure on various programmes against receipts from Ministry of Home Affairs and others	16,68,471
• Expenditure for Construction of Demonstration buildings with cost effective technologies & Demonstration-cum-Production Centre in Tripura	28,04,139
TOTAL	6,16,19,890

The Accounts have been audited by M/s M. S. Sekhon & Co., Chartered Accountants, the balance sheet and the statement of accounts of the year 2006-2007 is placed later in the report.

M. S. SEKHON & CO.
CHARTERED ACCOUNTANTS
170, MADHUVAN,
DELHI-110092

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, 2007 together with the Income and Expenditure Account and Receipts and 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.

We conducted our audit in accordance with the accounting 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.

2. We further report that:
- (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 and Expenditure Account and the Receipts and Payment Account dealt with by this report are in agreement with the books of account;
3. 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:
- (i) In the case of the Balance Sheet of the State of Affairs of the Council as on 31 March, 2007;
 - (ii) In the case of the Income And Expenditure Account of the excess of Income over Expenditure for the year ended on that date; and
 - (iii) In the case of the Receipts and Payment Account of the receipts and payments made during the year ended on that date.

PLACE: DELHI
DATED: 10 AUG 2007



FOR M.S. SEKHON & CO.
CHARTERED ACCOUNTANTS



[RAJIV TANDON]
PARTNER
MEMBERSHIP NO. 87343

PHONES AND FAX : 91-11-4244 5194, 4244 5294, 4244 5394 E-MAIL : sekhnms@rediffmail.com • sekhnms@sify.com

BALANCE SHEET AS ON 31 MARCH 2007

		Amount (Rs.)	
	Schedule	2006-2007	2005-2006
CORPUS/CAPITAL FUND AND LIABILITIES			
CORPUS/CAPITAL FUND	1	1,000,000	1,000,000
RESERVES AND SURPLUS	2	111,963,369	87,633,228
EARMARKED FUNDS	3	48,056,651	64,916,540
CURRENT LIABILITIES AND PROVISIONS	4	1,403,714	971,258
TOTAL		162,423,734	154,521,026
ASSETS			
FIXED ASSETS	5	41,356,516	42,469,824
CURRENT ASSETS, LOANS, ADVANCES ETC.	6	121,067,218	112,051,202
TOTAL		162,423,734	154,521,026
SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS	15		

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

[Signature]
(R.K. Celly)
Executive Director

As per our separate Report attached.
for M.S.Sekhon & Co.,
Chartered Accountants



[Signature]
(Rajiv Tandon)
Partner

Delhi
Date: 10 AUG 2007



INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 2007

		Amount (Rs.)	
	Schedule	2006-07	2005-06
INCOME			
Grants / Subsidies	7	43,000,000	45,200,000
Fees/Subscriptions	8	14,416,838	1,224,590
Income from Royalty, Publication and Machines etc.	9	4,722,646	1,420,672
Interest Earned	10	6,203,095	7,042,993
TOTAL (A)		68,342,579	54,888,255
EXPENDITURE			
Establishment Expenses	11	14,515,169	17,260,482
Other Administrative Expenses etc	12	7,594,526	7,160,031
Expenditure on Training Programmes, Seminars/Workshops etc	13	10,360,456	8,951,284
Expenditure on Financial Assistance, Sponsored Studies etc.	14	11,845,118	11,080,722
Depreciation	5	1,526,046	1,912,573
TOTAL (B)		45,841,313	46,365,092
Balance being excess of Income over Expenditure (A-B)		22,501,266	8,523,163
Add: Prior period adjustments		1,828,875	.
Less: Depreciation for earlier years		.	33,241,445
BALANCE BEING SURPLUS CARRIED TO BALANCE SHEET		24,330,141	24,718,282
SIGNIFICANT ACCOUNTING POLICIES AND NOTES TO THE ACCOUNTS	15		

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

(R.K. Cally)
Executive Director

As per our separate Report on the Balance Sheet
for M.S.Sekhon & Co.,
Chartered Accountants



(Rajiv Tandon)
Partner

Delhi
Date : 10 AUG 2007



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

RECEIPTS AND PAYMENTS FOR THE YEAR ENDED 31 MARCH 2007

	Amount (Rs.)	
	2006-07	2005-06
RECEIPTS		
1 Opening Balance		
Cash Balances in hand (including cheques/drafts and imprest)		
- Cash in hand	63,259	292,858
- Cheques in hand	12,013	4,504,941
Bank Balances		
With Scheduled Banks:		
- On Current Account with Canara Bank (Parliament Street)	140,656	6,346
- On Deposit Account with Canara Bank	94,488,602	82,560,000
On Savings Accounts:		
- Canara Bank (Parliament Street)	2,102,375	9,582,093
- Canara Bank (Hauzkhos)	5,732,681	2,395,364
- Canara Bank, Bangalore	466,361	2,211,947
- Canara Bank Parliament Street (VAMBAY Project)	2,271,115	6,890,033
2 Grant-in-aid from Central Government (Ministry of Housing & Urban Poverty Alleviation)		45,200,000
3 Fees/Subscriptions	14,416,838	1,224,590
4 Income from Royalty, Publication etc.	4,633,726	1,345,672
5 Prior period adjustments	1,828,875	-
6 Amount recovered during the year	-	3,384,386
7 Interest Earned	7,253,855	5,452,392
8 Loan & advances (Net)	188,837	-
9 Receipts towards Consultancy, Security Deposit etc	553,372	880,705
Total	177,182,585	165,931,327
PAYMENTS		
1 Purchase of Fixed Assets	412,738	66,437
2 Establishment Expenses	14,515,169	17,260,482
3 Administrative Expenses, etc.	7,612,502	7,207,877
4 Expenditure on Training Programmes, Seminars/Workshops, etc	10,374,476	8,863,876
5 Expenditure on Financial Assistance, Sponsored Studies, etc.	11,845,116	11,080,722
6 Staff Loan & Advances (Net)		840,878
7 Earmarked funds		
Construction of Demonstration Buildings with cost effective technologies and technology	2,804,139	
Demonstration-cum-Production Centre in Tripura		976,954
Establishment of Bamboo Mat Production Centres in North-Eastern States	6,609,839	3,868,033
Construction of Demonstration Houses in Mizoram	400,000	714,721
Construction of Demonstration Houses Under Valmiki Ambedkar Awas Yojana	5,377,440	8,580,805
Model amendments in Town and Country Planning Act, Zoning Regulations	1,668,471	508,330
8 Expenditure on various programmes against receipts from Ministry of Home Affairs & others		685,149
9 Closing Balance		
Cash Balances in hand		
- Cash in hand	18,022	63,259
- Cheques in hand	114,800	12,013
Bank Balances		
With Scheduled Banks:		
- On Current Account with Canara Bank (Parliament Street)	140,856	140,856
- On Deposit Account with Canara Bank	100,126,514	94,488,602
On Savings Accounts:		
- Canara Bank (Parliament Street)	7,762,023	2,102,375
- Canara Bank (Hauzkhos)	5,276,061	5,732,681
- Canara Bank, Tripura	266,485	-
- Canara Bank, Bangalore	501,541	466,361
- Canara Bank Parliament Street (VAMBAY Project)	1,326,573	2,271,115
Total	177,182,585	165,931,327

S.B. Srinivasan

(S. Balasrinivasan)
Chief - Finance

(R.K. Gelly)

(R.K. Gelly)
Executive Director

As per our separate Report on the Balance Sheet
for M.S. Sekhon & Co.,
Chartered Accountants



(Rajiv Tandon)
Partner

Delhi
Date:

10 AUG 2007



SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2007

	Amount (Rs.)	
	2006-07	2005-06
SCHEDULE 1- CORPUS/CAPITAL FUND		
Balance as at the beginning of the year	1,000,000	1,000,000
TOTAL	1,000,000	1,000,000

	Amount (Rs.)	
	2006-07	2005-06
SCHEDULE 2- RESERVES AND SURPLUS		
1. Capital Reserve		
As per last Account	77,623,842	77,557,405
Addition during the year	412,738	66,437
	78,036,580	77,623,842
2. Excess of Income over Expenditure		
Opening Balance	10,009,386	34,794,105
Less: Excess of expenditure over Income transferred from Income and Expenditure Account	-	24,718,282
Add: Excess of Income over expenditure transferred from Income and Expenditure Account	24,330,141	-
	34,339,527	10,075,823
Less transferred to Capital Reserve	412,738	66,437
	33,926,789	10,009,386
TOTAL	111,963,369	87,633,228



SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2007

		Amount (Rs)	
SCHEDULE 3- EARMARKED FUNDS		2006-07	2005-06
1 Construction of Demonstration Buildings with cost effective technologies and technology Demonstration-cum-Production Centre in Tripura			
Opening Balance	9,878,023		10,854,977
Less : Utilisation/Expenditure during the year	<u>2,804,139</u>	<u>7,073,884</u>	<u>976,954</u>
			9,878,023
2 Establishment of Bamboo Mat Production Centres in North-Eastern States			
Opening Balance	11,165,951		15,033,984
Less : Utilisation/Expenditure during the year	<u>3,589,405</u>		<u>3,868,033</u>
: Advance given for purchase of machines	<u>3,020,434</u>	<u>4,556,112</u>	<u>-</u>
			11,165,951
3 Construction of Demonstration Houses in Mizoram			
Opening Balance	714,343		1,429,064
Less : Utilisation/Expenditure during the year	<u>400,000</u>	<u>314,343</u>	<u>714,721</u>
			714,343
4 Construction of Demonstration Houses Under Valmiki Ambedkar Awas Yojana			
Opening Balance	40,256,607		48,862,412
Less : Utilisation/Expenditure during the year	<u>5,377,440</u>	<u>34,879,167</u>	<u>8,605,805</u>
			40,256,607
5 Model amendments in Town and Country Planning Act., Zonning Regulations			
Opening Balance	2,901,616		3,409,946
Less : Utilisation/Expenditure during the year	<u>1,668,471</u>	<u>1,233,145</u>	<u>508,330</u>
			2,901,616
TOTAL		48,058,651	64,918,540





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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2007

	Amount (Rs.)	
	2006-07	2005-06
SCHEDULE 4- CURRENT LIABILITIES AND PROVISIONS		
<u>CURRENT LIABILITIES</u>		
- Outstanding Liabilities	471,237	158,661
- Amount received for Indo Polish Project	60,600	60,600
- Security Deposit	851,065	731,185
- Balance of funds received for developing building bye-laws	20,812	20,812
TOTAL	1,403,714	971,258



SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2007

SCHEDULE 5- FIXED ASSETS										Amount (Rs.)	
	GROSS BLOCK					DEPRECIATION			2006-07		2005-06
	Cost as at 1.4.06	Additions upto 30.9.06	Additions After 01.10.06	Total	Upto 1.04.06	Current year	Upto 31.03.07	NET BLOCK As at 31.03.07	NET BLOCK As at 31.03.06		
Office Building at IHC (Lease hold)	34,319,817		-	34,319,817	-	-	-	34,319,817	34,319,817		
Furniture and Fixtures	3,073,004		-	3,073,004	1,528,005	154,500	1,682,505	1,390,499	1,544,999		
Office Equipments	16,025,546			16,025,546	13,268,201	413,602	13,681,803	2,343,743	2,757,345		
Computers/ Peripherals	12,197,570	236,808	62,868	12,497,246	11,737,423	437,033	12,174,456	322,790	460,147		
Air conditioners	505,775		-	505,775	319,095	28,002	347,097	158,678	186,680		
Fan & Coolers	32,916		-	32,916	28,642	641	29,283	3,633	4,274		
TV and VCR	265,450		-	265,450	136,584	19,330	155,914	109,536	128,866		
Exhibits, Panels, Display Models	11,203,764	57,375	55,687	11,316,826	8,136,068	472,938	8,609,006	2,707,820	3,067,696		
	77,823,842	294,183	118,555	78,036,580	35,154,018	1,526,046	36,680,064	41,356,516	42,469,824		
Previous Year (2005-06)	77,557,405	-	68,437	77,623,842	33,241,445	1,912,573	35,154,018	42,469,824	-		





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

SCHEDULES FORMING PART OF BALANCE SHEET AS ON 31 MARCH 2007

	Amount (Rs.)	
	2006-07	2005-06
SCHEDULE 6 - CURRENT ASSETS, LOANS, ADVANCES ETC.		
A. CURRENT ASSETS:		
1. Cash Balances in hand		
- Cash in hand	18,022	63,259
- Cheques in hand	114,800	12,013
	132,822	75,272
2. Bank Balances		
With Scheduled Banks:		
- On Current Account with Canara Bank (Parliament Street)	140,656	140,656
- On Deposit Account with Canara Bank	100,126,514	94,488,602
- On Savings Accounts:		
- Canara Bank (Parliament Street)	7,762,023	2,102,375
- Canara Bank (Hauzkhas)	5,276,061	5,732,681
- Canara Bank, Bangalore	501,541	466,361
- Canara Bank, Tripura	266,485	-
- Canara Bank Parliament Street (VAMBAY Project)	1,326,573	115,399,853
	2,271,115	105,201,790
B. LOANS, ADVANCES AND OTHER ASSETS		
1. Loans to staff	3,258,881	3,262,574
2. Advances and other amounts recoverable in cash or in kind or value to be received		
a. Amount recoverable & other advances	790,595	1,429,885
b. Security Deposit (Rent)	420,000	420,000
c. Tax deducted at source recoverable	35,570	71,080
	1,246,165	1,920,965
3. Advance for purchase of machines	489,656	-
4. Interest Accrued on FDR's	539,841	1,590,601
TOTAL (A + B)	121,087,218	112,051,202





**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE
YEAR ENDED AS ON 31 MARCH 2007**

	Amount (Rs.)	
SCHEDULE 7- GRANTS/SUBSIDIES (Irrevocable Grants & Subsidies Received)	2006-07	2005-06
Central Government (Ministry of Housing & Urban Poverty Alleviation, Government of India)	43,000,000	45,200,000
TOTAL	43,000,000	45,200,000

SCHEDULE 8 - FEES/SUBSCRIPTIONS		
1 Seminar/Programme Receipts	3,180,838	622,590
2 Consultancy Receipts	11,236,000	602,000
TOTAL	14,416,838	1,224,590

SCHEDULE 9- INCOME FROM ROYALTY, PUBLICATION ETC.		
1 Receipts towards sale of publications, Licence fee, PACS etc	4,722,646	1,420,672
TOTAL	4,722,646	1,420,672

SCHEDULE 10- INTEREST EARNED		
1 On Term Deposits With Scheduled Banks	5,867,500	6,661,305
2 On savings Accounts With Scheduled Banks	298,787	324,085
3 On Loans: Employees/Staff	36,808	57,603
TOTAL	6,203,095	7,042,993

SCHEDULE 11- ESTABLISHMENT EXPENSES		
1 Pay and Allowances	11,591,850	11,824,112
2 Contribution to Provident Fund	991,685	769,108
3 Contribution to LIC Group Gratuity Scheme	282,846	2,507,624
4 Leave Travel Concession	91,071	121,594
5 Contribution to LIC Group Leave Encashment Scheme	372,468	1,297,811
6 Medical Expenses	945,599	695,546
7 Consultancy/Retainership & Honorarium	239,650	44,687
TOTAL	14,515,169	17,260,482



**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 2007**

	Amount (Rs.)	
SCHEDULE 12- ADMINISTRATIVE EXPENSES, ETC.	2006-07	2005-06
1. Travel and Local transport	2,961,465	2,609,178
2. Postage, Telephone and Fax	834,334	856,916
3. Contingency Expenses	532,512	293,998
4. Printing and stationery	430,462	362,120
5. Office maintenance	1,413,050	1,712,543
6. Rates & Taxes	268,229	268,229
7. Professional charges	23,509	58,968
8. Membership Fee	23,394	20,200
9. Electricity charges	418,962	204,113
10. Office rent	671,664	755,496
11. Audit Fee	14,591	14,326
12. Bank Charges	2,354	3,944
TOTAL	7,594,526	7,160,031

SCHEDULE '13' - EXPENDITURE ON DISSEMINATION / SEMINARS/WORKSHOPS, TRAINING PROGRAMMES ETC.	2006-07	2005-06
1. Advertisement	290,150	332,619
2. Exhibition and publicity	2,037,154	1,736,458
3. Seminar and Conference Expenses	4,856,467	1,034,162
4. Printing & Publication	1,148,309	340,149
5. Books and Periodicals	107,283	74,612
6. Technology transfer	756,738	5,111,603
7. Training Programmes	1,164,355	321,681
Total	10,360,456	8,951,284



**SCHEDULES FORMING PART OF INCOME & EXPENDITURE ACCOUNT FOR THE YEAR
ENDED AS ON 31 MARCH 2007**

	Amount (Rs.)	
SCHEDULE '14' - EXPENDITURE ON FINANCIAL ASSISTANCE, SPONSORED STUDIES ETC.	2006-07	2005-06
1 SPONSORED STUDIES		
Upscaling and modernisation of indigeneous production technologies for wider application and commercialisation	1,688,000	1,948,150
Vulnerability reduction, risk assessment and disaster resistant construction technology activities	944,828	482,987
Development of technologies on use of bamboo in housing	2,041,000	1,012,500
Standardisation and product evaluation activities	24,004	-
Strengthening database, technology dissemination and demonstration capabilities	1,121,820	1,343,211
Sub-Total	5,819,852	4,786,848
2 FINANCIAL ASSISTANCE FOR TECHNOLOGY DEMONSTRATION AND APPLICATION		
Promotion of disaster resistant construction and seismic strengthening techniques	2,653,400	1,417,131
Promotion and application of bamboo based technologies in housing and building construction	1,644,006	54,728
Capacity building of construction professionals, workforce etc.	125,000	-
Dissemination and demonstration of cost effective technologies	1,603,058	4,822,015
Sub-Total	6,025,464	6,293,874
Total	11,845,116	11,080,722



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** -
 Liability in respect of gratuity to employees is provided for by way of premium paid to Life Insurance Corporation of India under Group Gratuity scheme.
 Liability in respect of leave encashment payable to the employees is provided for by way of premium paid to Life Insurance Corporation of India for master policy and the premium paid is charged to revenue.
 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.
- 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 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.
- 4 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.
- 5 In respect of office space at India Habitat Centre, Lodhi Road, New Delhi, the exact cost has not been apportioned by IHC amongst the different allottees. As such a sum of Rs. 3.43 crores has been capitalized by the Council on the basis of calls/payment made to IHC.
- 6 Deposits with Banks include a fixed deposit of Rs. 76,514/- 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.
- 7 Figures have been rounded off to the nearest rupee.
- 8 Previous Year figures have been regrouped and rearranged whenever considered necessary to make them correspond to those of the current year.

S.B. Srinivasan

(S. Balasrinivasan)
Chief - Finance

(R.K. Celly)

(R.K. Celly)
Executive Director

As per our separate Report on the Balance Sheet
for M.S.Sekhon & Co.,
Chartered Accountants



(Rajiv Tandon)
(Rajiv Tandon)
Partner

Delhi
Date: 10 AUG 2007

PARTICIPATION IN NATIONAL AND INTERNATIONAL EVENTS

I. EXHIBITIONS

During the year, the Council has actively participated in the following exhibitions which have helped in popularizing cost effective, environment friendly and energy efficient building materials, construction technologies and simple machines for production of building components:

International

- NSIC's Catalogue Show - 27-28th July 2006, East London (South Africa) and - 29-31 August 2006 in Johannesburg

National

- "India International Construction and Contracting (ICON – 2006)" - 2-4 May, 2006 at Greater Noida.
- World Expo Exhibition - 27-30 May, 2006 at Pragati Maidan, New Delhi.
- 10th National Expo - 1-8 September 2006 at Kolkata.
- Exhibition at IITF'06 in a big way by putting up impressive display in "Build tech" and "Techmart". Council got a "Special Appreciation Award" for its display in Techmart 2006 during 14-27 November 2006.
- Constru India 2006 organised by India Tech Foundation - 7-9 December 2006 at Mumbai.
- 3rd International Bamboo Event – BAMFEST 2006 - 16-23 December 2006 at Agartala (Tripura)
- Exhibition organized by National Small Scale Industrial Corporation at Gorakhpur, UP wherein the Hon'ble Union Minister of Small Scale Industries, Shri Mahavir Prasad took keen interest in BMTPC activities during the inaugural function in January 2007.
- Build Expo-2007 held at Coimbatore during January 25-29, 2007.
- Exhibition on Properties ahead-07 at Pragati Maidan, New Delhi during 24-25 February, 2007.
- 4th International Exhibition & Conference BMCT'07 at Pragati Maidan, New Delhi from 24-26 March, 2007.



Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation at BMTPC Display during India International Trade Fair 2006, New Delhi



II SEMINARS/ CONFERENCES/ WORKHOPS/TRAINING PROGRAMMES

- Training Programme on "Effective Hazard Analysis and Risk Assessment", New Delhi, 31 March - 1 April, 2006.... *Pankaj Gupta*.
- One Day Workshop on "NEW KAIZEN", New Delhi, 20 April, 2006*S. Balasrinivasan, S.K. Garg, Arvind Kumar, C.N.Jha*
- One Day Workshop on "5S & 3Rs", 21 April, 2006 – PHD House, New Delhi.... *M. Ramesh Kumar, A.K. Tiwari, Dr. Amit Rai, S.K. Garg*.
- One day Technical Workshop on Model Amendments in Town and Country Planning Act, Zoning Regulation, Development & Control Regulation and Building Regulation for safety against natural hazards - organized by BMTPC in Itanagar, Arunachal Pradesh - April 25, 2006*J.K. Prasad*.
- Training Programme on Marketing Practices in the Global Economy, 25-26 April, 2006, New Delhi.... *I.J.S. Sidhu, S.K. Gupta, D.P. Singh*.
- Training Programme on "Durability of Concrete for Water Resources Sector" 26-28 April, 2006, New Delhi.... *Dr. Amit Rai*
- Participated in the Annual Conference of the Relief Commission of States & UTs organised by Ministry of Home Affairs, 5th May 2006, New Delhi*I.J.S.Sidhu*
- Training Programme on "Project Formulation, Implementation and Evaluation", 8-19 May, 2006 at ASCI, Hyderabad.... *S.K. Garg, D.P. Singh*.
- Annual Conference of the Relief Commissioner of States/UTs organized by the Ministry of Home Affairs on June 5, 2006, New Delhi.....*J.K.Prasad*
- One Day Training Programme on "Effective Written Business Communication" held on June 16, 2006 organised by Delhi Management Association, New Delhi....*A.K.Tiwari*
- Youth Development Programmes : June 2006, Effective Written Business Communication, June 16, 2006, New Delhi *S. K. Garg, M. Ramesh Kumar*.
- Workshop on National Building Code of India 2005:

June 19, 2006, New Delhi *J. K. Prasad, Pankaj Gupta, C. N. Jha.*

- Seminar on "Housing & Civic Infrastructure Development in the state of Bihar" organized by CIDC at Patna - June 24, 2006 *J. K. Prasad.*
- One day consultation on "The National Rural Employment Guarantee Act: Towards Achieving Food Security and Exploring ways to Improving Housing and Habitat of the Rural People, New Delhi *I. J. S. Sidhu.*
- Training Programme on LEED Green Building Rating, New Delhi *J. K. Prasad, I. J. S. Sidhu.*
- One Day Training Programme on "Discover your Hidden Potential" - June 30, 2006 organised by Delhi Management Association, New Delhi *A.K. Tiwari.*
- 12th Annual Convention of the IBC and National Seminar on "Human Resource Management in Building Industry", New Delhi *J.K.Prasad, M. Ramesh Kumar, A.K.Tiwari.*
- State Level workshop of "Municipal Engineers and Functionaries of the various Municipal Corporations and Municipalities" at Hyderabad – 7 July, 2006*I.J.S. Sidhu.*
- Two Day Workshop on BSUP and IHSDP for HUDCO Officers, New Delhi on July 13 – 14, 2006...*I.J.S.Sidhu, C.N.Jha*
- The Training Programme held on "JNNURM for Municipal Functionaries" on July 20-22, 2006 at YASHADA, Pune. ...*I.J.S.Sidhu*
- Technical Workshop on Model Amendments in Town and Country Planning Act, Zoning Regulation, Development & Control Regulation and Building Regulation for safety against natural hazards was organized by BMTPC at Imphal on August 21, 2006. About 50 Engineers and Architects from different departments of the State Government participated in the workshop*J.K. Prasad.*
- Two days Training programme on "Repair, Maintenance and Rehabilitation of Buildings & Structures" organized by BMTPC - 22-23 August, 2006 at New Delhi....*Pankaj Gupta, D.P.Singh*



BMTPC's participation in the Capacity Building Programmes for Project Development under BSUP and IHSDP of JNNURM





- Round Table Conference on "Green Buildings-Mainstreaming Solar Passive Buildings through Rating Systems", organized by Ministry of Non-Conventional Energy Sources, Govt. of India on September 01, 2006....*I.J.S.Sidhu*
- 3 Days Training Programme on "Concrete Making Materials, Mix Design and High Performance Concrete" organized by BMTPC – September 6-8, 2006, Delhi.....*J.K.Prasad, C.N.Jha*
- Safety Convention on "Occupational safety, Health & Environment and Sustainable Economic Development - September 6-8, 2006 New Delhi.....*I.J.S.Sidhu*
- 5th Asian Symposium on Polymers in Concrete from September 11-12, 2006, organized by SERC, Chennai *C. N. Jha.*
- MoHUPA Conference on JNNURM for Housing Ministers, Secretaries and commissioners of North Eastern States at Shillong, September 18, 2006....*R.K.Celly, I.J.S.Sidhu, S.K.Gupta*
- 5 days short term training course on topic "Earthquake Resistant Design and Construction of Buildings" during 18 to 22 September 2006 organized by BMTPC in collaboration with IIT – Roorkee at Delhi*J.K. Prasad, A.K. Tiwari*
- Certificate course on Organisational Methods by Institute of Secretariat Training & Management, New Delhi *A.K. Tiwari, S.M. Malhotra.*
- Two day workshop on "Quantity Estimation, Rate Analysis and Project Planning from Building Plans" by using QE-Pro-software from 22-23 September, 2006 at CDC, New Delhi *Arvind Kumar*
- EDP on HR Practices & Consultancy in Construction Industry - 6 October, 2006, ISTD, New Delhi *I. J. S. Sidhu.*
- National Workshop on "Rural Development through Integration of Agro-Forestry and Wood-Based Industries" 11-12th October 2006, New Delhi.... *R.K.Celly, J.K. Prasad, I. J. S. Sidhu, S. K. Gupta, D. P. Singh.*
- Four days workshop on Preparation of DPRs for Water Resources Sector Projects from October 17-20, 2006 organized by Central Soil and Material Research

Station, New Delhi. ...*I.J.S.Sidhu*

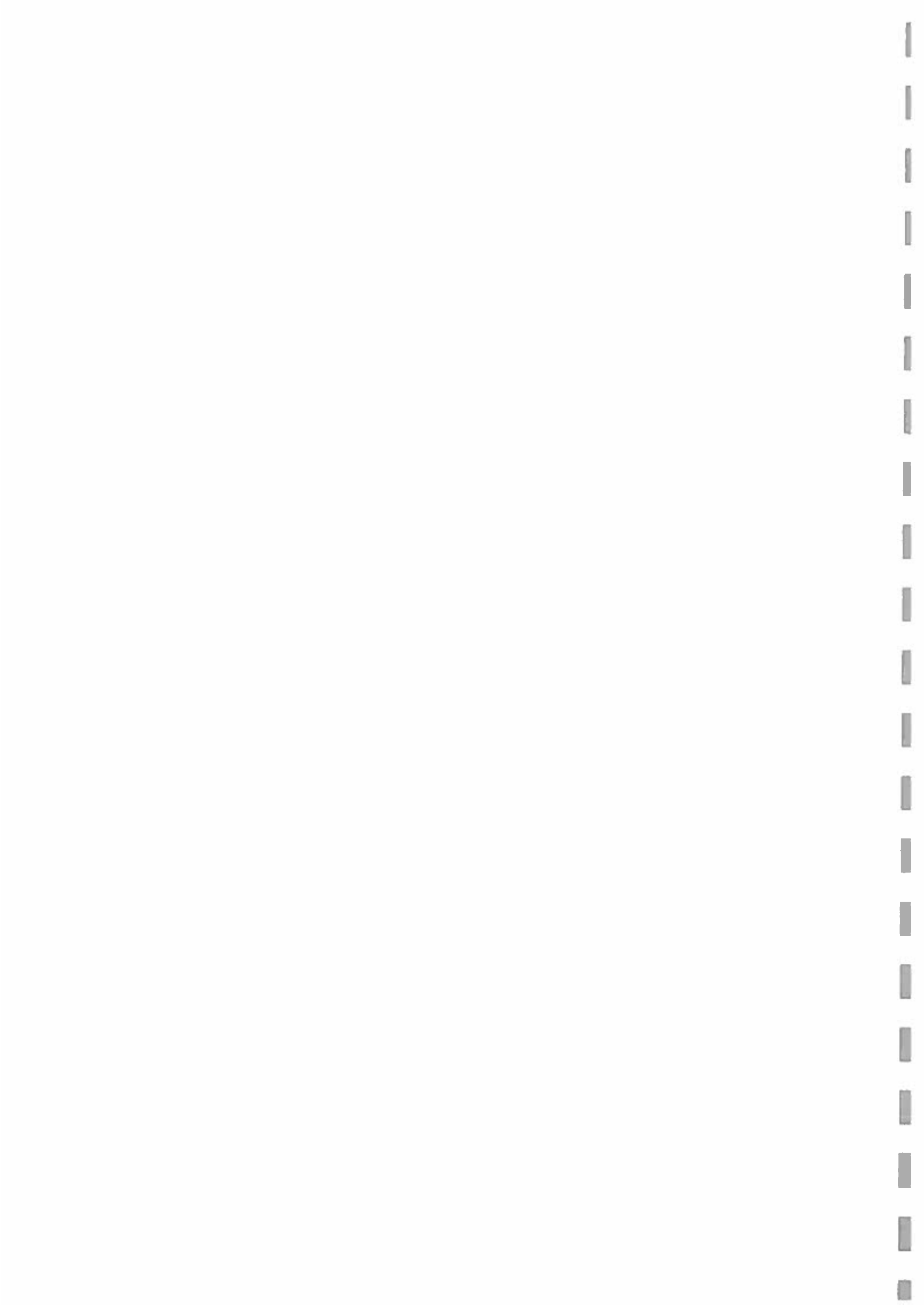
- 8th National Convention on Construction-"Development of Physical Infrastructure-Synergy Approach"- October 20-22, 2006 at New Delhi...*I.J.S.Sidhu*
- Technical Workshop on Model Amendments in Town and Country Planning Act, Zoning Regulation, Development & Control Regulation and Building Regulation for safety against natural hazards was organized by BMTPC at Mizoram - October 24, 2006....*J.K.Prasad*
- One day workshop on BSUP for In-house capacity building of BMTPC officers organized on October 27, 2006 at IHC Office of the Council. ...*I.J.S.Sidhu*
- "Preparation & Appraisal of DPRs for BSUP under JNNURM" to Municipal Functionaries at Bhubaneswar on October 28, 2006...*I.J.S.Sidhu*
- National Conference on High Rise Buildings: Materials and Practices from October 30-31, 2006 *J.K. Prasad*
- Training Programme on "Promoting Cost Effective and Environmental friendly Building Materials & Technologies-Efforts & Experiences of BMTPC" conducted by HSML, New Delhi on 'Urban Development Management : Perspective and Possibilities' on 31 October 2006 at HSML...*R.K.Celly, I.J.S.Sidhu*
- Training Course on Legal Side of Contract Management, Arbitration and Dispute Settlement Mechanism, 2-3 November, 2006, New Delhi - *I. J. S. Sidhu.*
- Three months online certificate course on "Intellectual Property Rights and Information Technology in the Internet Age", November 2006 – January 2007.... *R. K. Celly, S. K. Gupta, Dr. Amit Rai.*
- International Conference on Structural Analysis of Historical Construction, 6-8 November, 2006, New Delhi *R. K. Celly, S.K Gupta.*
- World Conference on IT in Design and Construction 15-17 November, 2006, IHC, New Delhi.....*Arvind Kumar.*
- National Housing Ministers conference at Hyderabad organised by M/o Housing & Urban Poverty Alleviation on 17-18 November 2007... *R.K.Celly, I.J.S. Sidhu*



Regional Workshop on Project Development under Jawaharlal Nehru National Urban Renewal Mission (JNNURM) at Shillong, Meghalaya



Kumari Selja, Hon'ble Minister of State (IC) for Housing & Urban Poverty Alleviation at the BMTPC Display during the Asia Pacific Ministerial Conference on Housing & Human Settlements, 13-16, December, 2006



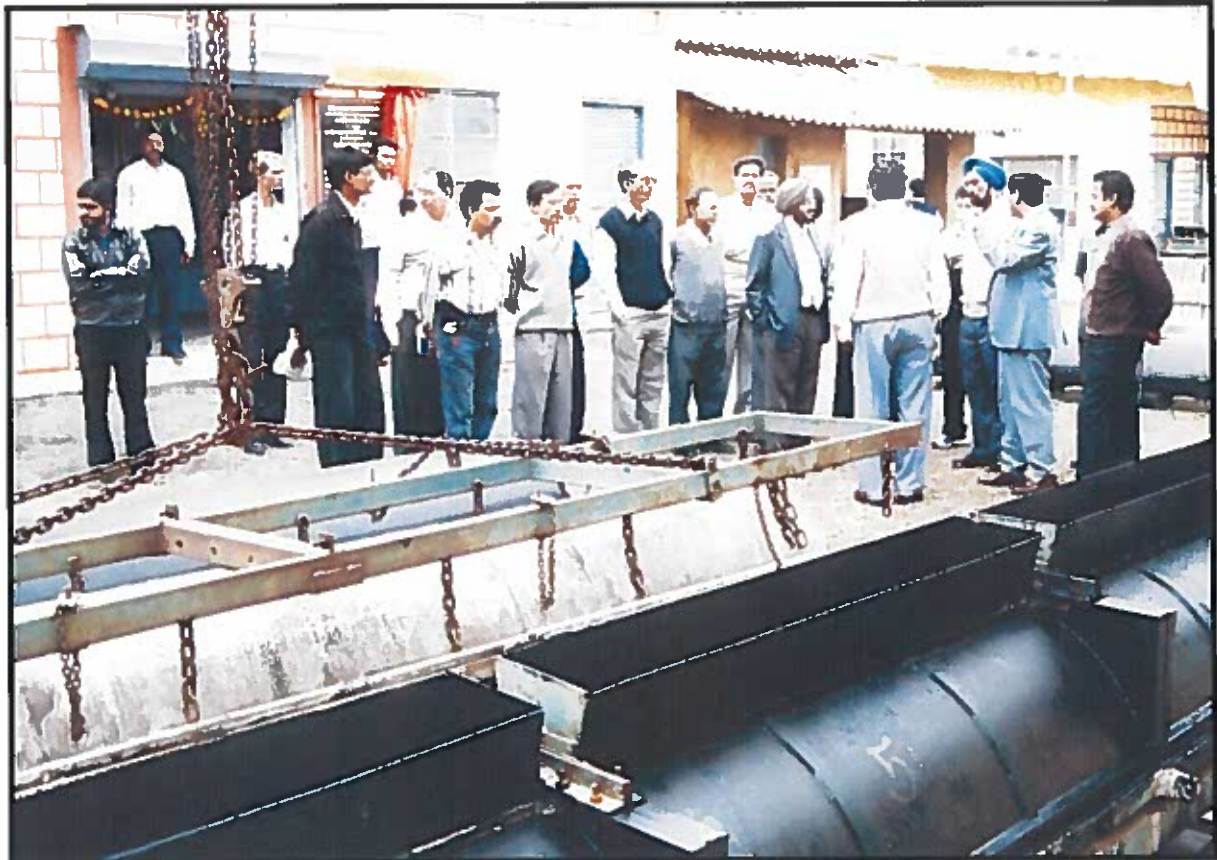
- Technical Workshop on Model Amendments in Town and Country Planning Act, Zoning Regulation, Development & Control Regulation and Building Regulation for safety against natural hazards was organized by BMTPC at Kohima, Nagaland on November 23, 2006 *R.K. Celly, J.K. Prasad.*
- 5-day training programme on field application of innovative technologies in co-operation with Samrat Ashok Technological institute (SATI), Vidisha, Madhya Pradesh under its programme of "National Network of Building Technology" was organized in November 2006....*I.J.S.Sidhu*
- Asia Pacific Ministerial Conference on Housing and Human Settlements organized by M/o HUPA, Gol at Vigyan Bhawan, New Delhi , December 13-16, 2006...*R.K.Celly, J.K.Prasad, I.J.S.Sidhu, S.Balasrinivasan, A.K.Tiwari, S.K.Gupta*
- Summit cum Exposition "Constru India-2006" from 7-9 December, 2006, Mumbai, organized by India Tech Foundation. ...*I.J.S.Sidhu*
- Mid Term Session & Seminar on "Green Buildings", December 15-16, 2006, Raipur *Pankaj Gupta.*
- 13th Symposium on Earthquake Engineering 13 SEE-06 December 18-20, 2006, Roorkee *J. K. Prasad, C. N. Jha.*
- Training Course on Gender Issues 18-22 December, 2006, ISTM, New Delhi - *Richpal Singh*
- One day Sensitization Workshop on information Literacy, 23 December, 2006 *Arvind Kumar, Alok Bhatnagar.*
- National Workshop on Earthquake Engineering Education in India: Looking Ahead, 5 January, 2007 New Delhi ... *R. K. Celly, J. K. Prasad.*
- Capacity Building Programme for municipal functionaries, 5-6 January, 2007 at Bangalore...*I.J.S.Sidhu*
- International Roundtable Meeting on Lessons from Natural Disasters- Policy Issues and Mitigation Strategies, 8- 12 January, 2007, Vellore*R. K. Celly.*
- 5 days short term Certificate Training Programme was

conducted by the Council jointly with IIT- Roorkee on "Performance Based Design and Retrofitting of Buildings and Structures", 8 to 12 January, 2007 - New Delhi....*J.K.Prasad, D.P.Singh*

- Capacity Building Programme for municipal functionaries, 11-12 January, 2007 at Patna...*I.J.S.Sidhu*
- Capacity Building Programmes for municipal functionaries, 15-16 January, 2007 at Kolkata...*I.J.S.Sidhu*
- Two days workshop on Building Bye-Laws for Safety against Natural Hazards & Project Development under JNNURM was held at Port Blair in Andaman & Nicobar Islands on 17-18 January, 2007. ...*R.K.Celly, J.K.Prasad, I.J.S.Sidhu, S.K.Gupta*
- One day Conference on Latest Trend in Use of Energy Efficient Equipments, 19 January, 2007 New Delhi *Akash K. Mathur.*
- Two days training programme on "Water Proofing and Damp Proofing Materials and Techniques for Buildings and Structures" on 22 and 23 January, 2007 was conducted at Kolkata in association of Program partner - Dr. Fixit Institute of Structural Protection and Rehabilitation *J.K. Prasad, Arvind Kumar.*
- Capacity Building Programmes for municipal functionaries, 23 January, 2007 at Chandigarh. ...*I.J.S.Sidhu*
- Sensitization Seminar on "Safe Structural Practices" at Dr. B R Ambedkar National Institute of Technology Jalandhar, Punjab in January 2007.... *D.P. Singh*
- NIDM Workshop on "Issues & Policies for Retrofitting of Lifeline Buildings" held on 1 February 2007 at Delhi Secretariat, New Delhi... *J.K. Prasad, Pankaj Gupta*
- Training Course on Organisation & Methods 5-9 February, 2007, ISTM, New Delhi *A. K. Tiwari, S. M. Malhotra.*
- "Indo-Pakistan Business Cooperation", February 10, 2007, New Delhi *I. J. S. Sidhu.*
- One day workshop on Building Bye-Laws for Safety against Natural Hazards & Project Development under JNNURM was held at Gangtok, Sikkim on 16 February 2007 *R.K. Celly, J.K. Prasad.*



Training Programme on Cost Effective Building Materials and Construction Technologies for Working Women, Vidisha



Permanent Technology Display Centre at Samrat Ashok Technology Institute, Vidisha, Madhya Pradesh.

- Management Development Programme for the Senior Personnel of Housing Cooperatives, 19-22 February, 2007 Jaipur *S. K. Gupta.*
- JNNURM Workshop in Bhubaneswar on Project Development for BSUP and IHSDP under JNNURM, organized by Bhubaneswar Municipal Corporation and M/o HUPA in February 2007...*I.J.S.Sidhu*
- Technical Workshop on Model Amendments in Town and Country Planning Act, Zoning Regulations, Development Control Regulations and Building Bye-Laws was organized at Ranchi, (Jharkhand) on 12 March 2007 *J.K. Prasad*
- National Consultation on "JNNURM: Developing Inclusive Cities" held on 16-17 March 2007 at New Delhi. ...*R.K.Celly, J.K.Prasad, I.J.S.Sidhu, S.K.Gupta,*
- The Council jointly with Nirman Vikas Anushandhan Sansthan, Raipur organized a One Month Training Programme for Capacity Building of 30 masons from rural areas near Raipur on 23 March 2007
- National Seminar on "Capacity Building for Urban Renewal through Trenchless Technology" 28-29 March 2007....*I.J.S.Sidhu*
- Two days Management development programme on "Costing and Pricing for Exports", 27-28 March, 2007, New Delhi *D. P. Singh*

III BIS COMMITTEES

- 12th Meeting of Civil Engineering Division Council (CEDC) - 6 July, 2006 at BIS *J.K. Prasad*
- BIS meeting of Earthquake Engineering Technical Committee, CED 39, 11 August 2007 ... *J.K. Prasad*
- BIS's meeting of Committee on "Construction Project Management", on November 23, 2006, New Delhi. BMTPC has been included as a member of the working group on construction project management ...*I.J.S.Sidhu*
- BIS meeting of Construction Management including Safety Management Committee, held on 2 February 2007 at Bureau of Indian Standards, New Delhi....*I.J.S.Sidhu*

IV TECHNICAL COMMITTEE/ WORKING GROUPS ETC.

- Meeting with H.E. Ntopile Kganyargo, Dy. Minister of National Department of Public Works, South Africa, 3 April 2006...*R.K. Celly*
- Meeting for Low Cost Housing Competition (Urban) 2005-06 in HUDCO, 8 April 2006...*R.K. Celly*.
- Meeting of National Disaster Management Authority (NDMA) in connection with the preparation of Strategy Paper on Disaster Management in the country by NDMA and provided list of multi hazard districts and districts lying in different zones of earthquakes to NDMA for inclusion in its report *R.K. Celly*
- Meeting with Mr. C.V. Shankar at Delhi to discuss Quality Assurance in Tsunami affected areas, 10 April 2006 ...*R.K. Celly*.
- Meeting of the Board of Agreement (PAC) of BMTPC on 18 April 2006...*R.K. Celly, J.K.Prasad, A.K.Tiwari*.
- Meeting on Microzonation of Sikkim organized by Deptt. of Science & Technology, 24 April 2006...*R.K.Celly, J.K.Prasad*
- Meeting on the occasion of signing of MoU between India & South Africa on 27 April 2006 ...*R.K.Celly*.
- Meeting of the National Disaster Management Authority, 3 May 2006....*R.K. Celly*.
- Meeting of the IT Task Force constituted by Construction Industry Development Council on 5 May 2006 *I.J.S.Sidhu*.
- Meeting of the Jury for 'Award for Excellence in the field of Housing and Human Settlement' by HUDCO on 6 May 2006 *I.J.S. Sidhu*
- Meeting of the Steering Committee of projects sponsored by BMTPC at Bangalore, 6 May 2006....*R.K.Celly*.
- Meeting of the IT Task Group for Construction Industry at CIDC on 20 May 2006....*R.K. Celly*.
- Meeting with Vice Foreign Minister of Venezuela with MoS-HUPA, 28 May 2006....*R.K. Celly*.



Visit of Indian Technical Delegation of Building Materials Manufacturers to Italy organized by BMTPC in collaboration with UNIDO – International Centre for Advancement of Manufacturing Technology (ICAMT), 13-17 November, 2006



- Meeting with Mr. Carlos Agostinho, Ambassador of Mozambique to India, at Nirman Bhawan, 6 June 2006*R.K.Celly*.
- Meeting with Mr. Alvarec from Mexico on new technologies, 6 June 2006....*R.K.Celly*.
- Meeting with Mr. Sheikn Diallo, Counsellor (Economic), Embassy of Senegal, 7 June 2006....*R.K.Celly*.
- 1st Sectoral meeting on "Housing Road & Construction for Formulation of 11 Five Year Plan for CSIR at SERC, Chennai, 19 June 2006....*R.K.Celly*.
- Meeting of Technical Assessment Committee on PACS of BMTPC, 28 June 2006....*R.K.Celly, J.K.Prasad, A.K.Tiwari*
- 3rd Meeting of the Project Steering Committee of "Greening of Brick Industry" organized by Development Alternatives, New Delhi on 14 July 2007 ... *I.J.S.Sidhu*.
- Meeting of the Consultative Committee in M/o Urban Development, 17 July 2007 ...*R.K. Celly, I.S. Sidhu*.
- Meeting of Environment Clearance Committee of Ministry of Environment & Forest for new construction projects and Industrial estates*I.J.S. Sidhu*.
- Series of Review Meetings on projects received under BSUP & IHSDP of JNNURM.... *I.J.S. Sidhu*.
- Meeting of the Steering Committee on World Conference of "IT in Design and Construction" by CIDC on 3 August 2006...*I.J.S. Sidhu*.
- Meeting of Core Group on Landslide Guidelines at NDMA, Delhi, 22 August 2006....*R.K.Celly*.
- Meeting with South African delegation on 13 September 2006....*R.K.Celly*.
- Third Sub-Committee of the Committee of Parliament on Official Language inspected and reviewed the use of Hindi language in official works in BMTPC on September 15, 2006. The Committee Members were satisfied with the progress made *R.K. Celly*.
- Meeting with COMESA Delegation, 10 October 2006*R.K.Celly*.
- Discussion on formulation of National Policy on Disaster

Management, organized by National Disaster Management Authority (NDMA) on October 27, 2006, at MCR HRD Institute of Andhra Pradesh, Hyderabad
R.K. Celly.

- Monitoring Committee meeting held at CBRI, Roorkee of the project "Mathematical Modeling for Optimizing Clay Flyash Mix in different regions of the country for manufacturing Clay Flyash Bricks" sponsored by Flyash utilization programme, TIFAC on October 31, 2006....*J.K.Prasad*
- Meeting of the Parliament Standing Committee on Urban Development, 31 October 2007...*R.K. Celly, I.J.S. Sidhu.*
- Meeting with Russian Delegation on Innovative Technologies, 4 November 2006....*R.K.Celly.*
- Monitoring committee meeting on the Project of "Development of New Building Construction & Technologies" held on November 15, 2006 at CBRI, Roorkee....*R.K.Celly*
- Meeting of the "Working Group on Rural Housing and draft Rural Housing Policy", chaired by Secretary, M/o Rural Development, November 2006.... *I.J.S.Sidhu, S.K.Gupta*
- Meeting of the Indo-French working Group on Urban Development, Constituted by MoUD, held on 2nd February, 2007, under the Chairmanship of Secretary, Urban Development. BRGM projects for capacity building in Disaster Preparedness and Mitigation came up for discussion.... *I.J.S.Sidhu*
- Meeting on 'Affordable Housing' Chaired by JS(H) on 12 February, 2007....*R.K.Celly, I.J.S.Sidhu*
- Meeting of the "Working Group on Rural Housing and draft Rural Housing Policy", chaired by Secretary, M/o Rural Development, 12th February 2007... *I.J.S. Sidhu.*
- 1st Steering Committee meeting of National Bamboo Mission, 27 February 2007....*R.K.Celly.*
- Meeting with Chief Secretary, Govt. of Delhi, Secretary-HUPA, Secretary-UD and other high officers of MoHUPA to discuss the BSUP projects of Govt. of Delhi under JNNURM on 7 March, 2007....*R.K. Celly, I.J.S. Sidhu.*

- Meeting of the Steering Committee of Indian Building Congress on the National Seminar to be held in May 2007 on 13th March 2007... *I.J.S. Sidhu*.
- Meeting with Belgium Delegation at IHC, 28th March 2007....*R.K.Celly*.
- Series of meetings for finalization of 11th Five Year Plan of the Ministry of Housing & Urban Poverty Alleviation...*R.K.Celly, I.J.S.Sidhu*
- Series of meetings of Central Sanctioning and Monitoring Committee of JNNURM
- Series of meetings for excise and custom duty concessions with M/o HUPA.
- Series of meetings of Project Screening Committee of BMTPC
- Series of meeting of BMTPC Project Monitoring Committee of VAMBAY.

V OTHER ACTIVITIES

- On-the-spot study visit of the Parliamentary Standing Committee on Urban Development (2006-07) to Hyderabad, Mumbai and Goa from February 2-6, 2007.
- 7th Meeting of the Board of Management of BMTPC was held on 21 December, 2006
- 25th Meeting of the Executive Committee of BMTPC was held on 21 December, 2006
- BMTPC participated in the meeting of National Disaster Management Authority (NDMA) in connection with the preparation of Strategy Paper on Disaster Management in the country by NDMA and provided list of multi hazard districts and districts lying in different zones of earthquakes to NDMA for inclusion in its report.
- BMTPC celebrated its sixteenth Foundation Day on 29th of June, 2006. Secretary (HUPA) presided over as Chief Guest of the function. Dr. C.S. Venkataraman, Director, International Management Institute, New Delhi delivered a guest lecture on "Empowering People for organizational effectiveness". The function was attended by the officials of the Ministry and the departments/ organizations under the Ministry.

- BMTPC organized a one day awareness programme for the contractors of DSIDC in the field of Innovative building materials and construction technologies in August 2006.
- ED-BMTPC was invited as Chief Guest for CSIR Foundation Day celebration at SERC, Chennai on 26 September 2006. He delivered a lecture on "Affordable Houses" on the occasion.
- Action for implementing Quality System as per ISO 9000 has been initiated in the Council.
- The Pimpri Chinchwad Municipal Corporation (PCMC) in partnership with International Institute for Energy Conservation (IIEC) and Science and Technology Park (STP) is establishing the Sustainable Building Technology Centre (SBTC) to act as a hub to demonstrate, display, educate and test alternative construction techniques, eco-friendly products and technologies. As an invited Member, BMTPC participated in discussion to identify the functional requirements, working and operation of the Centre held on 22nd February 2007 at Standing Committee Hall, Pimpri Chinchwad Municipal Corporation.
- Prepared a draft Chapter on Promoting Cost-Effective Construction Techniques and Disaster Mitigation for 11th Plan Document of Ministry of Housing & Urban Poverty Alleviation.
- Prepared a draft Chapter on Technology for 11th Plan of the Ministry of Rural Development.
- A Directory of Machinery and Equipment Manufactured in India was brought out by BMTPC for the first time in India in 1997. The 2nd edition of the Directory was brought out in 2001. 3rd edition of the Directory is under compilation.
- Estimate prepared by M/s Adlakha & Associates for 1848 number of EWS dwelling units to be constructed by Greater Noida Industrial Development Authority (GNIDA) was vetted by the Council as a third party as per the requirement of GNIDA in January 2007.

SPONSORED STUDIES/PROJECTS COMPLETED DURING THE YEAR

A. SPONSORED STUDIES COMPLETED

1. Market Survey of Flyash Bricks/Blocks in Delhi and Hyderabad
2. Preparation of Vulnerability Atlas of India
3. Preparation of Housing Design for 19 Zones Vulnerable to Natural Disasters.
4. Development of Bamboo Mat Ridge Cap for roofing application
5. Preparation of Posters and Booklet for Safe Construction in J&K

B. PROJECTS COMPLETED

1. Setting up of Technology Demonstration cum Production Centre at Belgaum, Karnataka
2. Strengthening the production base of building components at Hindustan Prefab Ltd., New Delhi
3. Retrofitting of Sub-District Hospital at Kupwara, J&K
4. Retrofitting of MCD School Building at Vasant Vihar, New Delhi
5. Construction of demonstration structures using bamboo based technologies in New Delhi
6. Setting up of Permanent Exhibition at Vidisha, Madhya Pradesh.
7. Setting up of Permanent Exhibition at School of Planning & Architecture, New Delhi.

SPONSORED PROJECTS, STUDIES AND VIDEO FILMS INITIATED DURING THE YEAR

A. SPONSORED STUDIES INITIATED DURING THE YEAR

1. Preparation of Templates for affordable houses for the poor taking into account the geo-climatic and geographical requirements.
2. Industrial Up-scaling in the production of Bamboo Mat Ridge Cap for Roofing with Bamboo Mat Corrugated Sheets.
3. Setting up of demonstration, training and incubation centre for mechanized production of bamboo mats.
4. Development of flattened Bamboo Composites and Laminated Bamboo Lumber products.
5. Study on Environmental Impacts of Disposal of Marble Slurry/Marble Dust and Investigations on its use in Concrete.
6. Development of building components from granite industry waste.
7. Setting up of pilot scale plant for development of value added building materials from flux bonded flyash.
8. Upgradation of machines for manufacture of prefab components.
9. Training Programme for masons, carpenters in Uttarakhand on cost effective and disaster resistant technologies.
10. Documentation of Industrial Workers Housing Project at Bawana.

B. PROJECTS INITIATED WITH THE FINANCIAL ASSISTANCE FROM COUNCIL DURING THE YEAR

1. Setting up of Mat Weaving Centre for tribal at Wayandu, Kerala.
2. Construction of demonstration houses using bamboo based technologies in Chhattisgarh.

3. Retrofitting of 4 MCD School Buildings for Seismic Strengthening.
4. Construction of demonstration structures using bamboo based technologies in Nagaland.
5. Construction of demonstration structures using bamboo based technologies in Meghalaya.
6. Setting up of Permanent Exhibition at School of Planning & Architecture, New Delhi.
7. Strengthening the production of Building Centre at Uttarakhand, Chhatisgarh and Kohima.

C. VIDEO FILMS

1. Film on Demonstration Housing Projects under VAMBAY.

PAPERS PRESENTED/PUBLISHED

- i. Technical paper titled "Green Building Technologies for Sustainable Development" during Asia Pacific Ministerial Conference, December 13-16, 2006, Vigyan Bhawan, New Delhi organized by M/o HUPA,*R.K.Celly, J.K.Prasad, S.K.Gupta*
- ii. Article titled "Innovation in Building Materials and Technologies - An India Perspective", Times Journal of Construction and Design... *R.K.Celly, J.K. Prasad.*
- iii. Paper on "Bamboo: A suitable material for Building and Housing", National Seminar on "Green Buildings", December 15-16, 2006 organized by IBC at Raipur, Chattishgarh.... *J.K.Prasad, Pankaj Gupta*
- iv. Article on Durability of Concrete, Times Journal of Construction and Design, January 2007.....*J.K. Prasad*
- v. Article on Green Building Technologies for Sustainable Habitat, Times Journal of Construction and Design, March 2007*R.K.Celly, J.K. Prasad, S.K. Gupta*
- vi. Paper on "Vulnerability Atlas of India and Risk Reduction Measure", Training cum Workshop Programme, 12 – 17 February 2007 at Aayojan School of Architecture, Jaipur....*D.P.Singh*
- vii. Paper on Vulnerability Aspects of Building, Sensitization Seminar on "Safe Structural Practices" at Dr.B.R.Ambedkar National Institute of Technology, Jalandhar....*D.P.Singh*
- viii. Article on Team Work in Construction Projects, Building Materials News, World Habitat Day 2006*J.K.Prasad, A.K.Tiwari*
- ix. Article on Safety and Security in Tall Buildings in Cities, Building Materials News, World Habitat Day 2006*I.J.S.Sidhu, Akash Mathur.*
- x. Risk Assessment of Housing Stock – Vulnerability Atlas of India, Housing Ministers Conference, Hyderabad, 16-17 November, 2006...*I.J.S.Sidhu*



Meeting during the visit of Nepalese Delegation to the BMTPC's Display Centre at Nirman Bhawan, New Delhi, July, 2006





PUBLICATIONS BROUGHT OUT DURING THE YEAR

1. Vulnerability Atlas of India (First Revision : 2006).
2. Directory of Indian Building Materials and Products with Information on Nepal and Bhutan – Seventh Edition : 2006.
3. Special Issue of Building Materials News on the theme “Cities – Magnets of Hope” on World Habitat Day 2006.
4. Brochure on Introduction to Vulnerability Atlas of India.
5. Brochure on Multi-faceted Initiatives of BMTPC.
6. Brochure on Bamboo in Housing & Building Construction – Initiatives of BMTPC.
7. Brochure on Retrofitting of Hospital in Kupwara, J&K for Safety Against Earthquakes.
8. Booklet and Posters on Simple Ways to Earthquake Safety for J&K in English and Urdu.

IMPORTANT VISITORS FROM OTHER COUNTRIES

1. Mr. Carlos Agostinho Do Rosario, High Commissioner of Republic of Mozambique in India
2. H.E. Ntopile Kganyargo, Dy. Minister of National Department of Public Works, South Africa
3. Mr. Sheikn Diallo, Counsellor (Economic), Embassy of Senegal
4. Mr. Raj Kent, K.Pac (Kenya) Ltd., Nairobi, Kenya
5. Mr. Gene McGlynn, Asstt. Secretary, Australian Green House Office, Australian Government, Canberra, Australia
6. Mr. Paul Schwejgels, Sr. Programme Manager, US Environmental Protection Agency, USA
7. Delegation from UNIDO, Russia
8. Delegation from Nepal
9. Delegation from South Africa
10. Delegation from Belgium
11. Delegation from ICF Consulting, USA



Hon'ble Minister of State (Independent Charge) for Housing & Urban Poverty Alleviation, Kumari Selja, chairing the 7th meeting of the Board of Management held on December 21, 2006 at BMTPC Office, New Delhi.





ACTION PLAN FOR THE YEAR 2007-08

BMTPC in its endeavor 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. Over the years, the Council has focused on the development, promotion and dissemination of innovative, cost-effective, environment-friendly and energy-efficient building materials and technologies based on agro-industrial wastes. However, off late with the active support of Ministry of Housing & Urban Poverty Alleviation, Council has also embarked upon the field level application of innovative building materials and technologies by way of implementation of the housing projects under the VAMBAY Scheme (now merged with the Integrated Housing & Slum Development Programme [IHSDP] under Jawaharlal Nehru National Urban Renewal Mission [JNNURM]).

The Council, in its efforts to promote use of local resources in the North Eastern Region, is striving to develop and promote bamboo based technologies by way of development of bamboo based building material technologies, construction of demonstration structures and establishing Bamboo Mat Production Centres. The Action Plan for the year 2007-08 of the Council is structured in such a manner that it not only focuses on the various operational areas of the Council but also leads to the tangible results with societal benefits.

The various activities which the Council envisages to undertake during 2007-08 are classified under the operational areas of Disaster Resistant Technologies; Technology Development/Promotion; and Technology Demonstration, Construction & Dissemination.

A. TECHNOLOGY DEVELOPMENT/PROMOTION

1 Development of Comprehensive Guidelines for Green Habitat

First meeting of Task Force for formulation of Guidelines for Green Habitat (GGH) set up by the Ministry of Housing & Urban Poverty Alleviation, was held in February 2007 to discuss the methodologies for the formulation of guidelines for Green Habitat (GGH). During the year, collection of data/information of existing work done, Analysis of data collected, Identification of useful data/information, Identify gaps in data and Preparation of draft Interim Report will be undertaken.

2 Development of Techno-Economic Feasibility Reports on innovative building material technologies

The Council has already transferred several technologies either for pilot plant scale or for production at commercial levels. But there are a large number of queries received

in response to BMTPC's Website asking for specific Project/Feasibility reports. Such queries are being received both from Indian entrepreneurs and those from other countries. It is therefore, proposed to develop Techno-Economic Feasibility Reports on 12 innovative and cost effective technologies for different levels of investment and production.

3 Setting up of Pilot Plant for manufacture of Flux bonded Flyash building components

The proposal is based on application as coating of nano titanium oxide to value add to high volume flux bonded fly ash building components already developed at the laboratory and scaled up for technological feasibility under another programme. Such products will result in value added components since the coatings impart the fly ash bodies anti algal, anti soiling and anti bacterial properties. The process for the preparation of photo catalytic titanium oxide in the size range 20-30 nm has been successfully developed by the research group and characterized for its activity towards anti algal and anti soiling properties. The process needs to be scaled up to larger volumes in order to apply on products of commercial value.

The project has the following objectives:

1. To scale up the already available process of flux bonded high volume fly ash products with the help of the participating industry. Bricks, floorings, wallings and special application products for external use will be made.
2. Scale up of the process for nano titania from aqueous route having excellent photo catalytic property and further developing a coating precursor. The coating precursors will have to be formulated based on the laboratory trials on coating on the fly ash surfaces. The coatings will be characterised under laboratory experiments and morphological examination will be made.
3. Develop and demonstrate the coatings of photo active titania on flux bonded fly ash products in M/s Terra tile consortium in Kerala, who have agreed to participate in the project.
4. Evaluating the techno-economic feasibility and technology transfer.

4 Development of Machines for recycling of construction and demolition waste

A lot of construction and demolition waste is generated while reconstructing and aftermath of natural and man-made disasters which causes serious problem of disposal of these wastes. The technology for recycling of construction and demolition waste are available in European countries. In order to indigenize the technologies, the Council proposes to develop suitable machines for recycling of these wastes.

5 Setting up of Pilot Plant for manufacture of Tiles from Granite Industry Waste

The Council is developing a technology for manufacture of tiles from granite industry waste in collaboration with Andhra Pradesh Technology Development Corporation. The technology has shown encouraging results at the laboratory scale. In order to commercialize the technology, it is proposed to set up a Pilot Plant for manufacture of tiles from granite industry waste. After the development of commercial parameters, the technology will be transferred to interested entrepreneurs.

6 Development of Housing Designs package for General House Builders

The Council has been frequently visited by the general house builders for seeking guidance and obtain information regarding sample drawings, plans and estimates. During the year the Council proposes to prepare plans of houses of different sizes, their estimates with different options for cost effective technologies in different geo-climatic hazard zones.

7 Commercialization of technology for recycling of plastic waste

The Council in recent past has developed a technology for recycling of plastic waste for manufacturing of panels and boards. In order to commercialize the technology, it is necessary to develop commercial parameters for manufacture of panels and boards on a large scale. It is therefore proposed to undertake a project for commercialization of technology for recycling of plastic wastes.

8 Development of medium level manufacturing facilities for production of cement bonded particle boards using agro-waste

In India, technologies are available for manufacture of cement bonded particle boards using agro-waste for high level of production. In order to encourage small and medium size entrepreneurs, it is required to develop suitable plant and machinery for manufacture of particle boards from agro-waste bonded with cement. This will help in mass scale utilization of agro-waste which is available abundantly.

9 Technology Forum for identification and adoption of new technologies

It is proposed to establish a Technology Forum for identification, selection and adoption of new innovative technologies developed worldwide. A data base will be

generated which will help in providing information to the professionals, entrepreneurs and technologists.

10 Development of a process for manufacture of pollutant absorbing coating for exterior applications

The main objective of the project is to develop an indigenous process for manufacture of pollutant absorbing coating for exterior applications to reduce the air/noise pollution.

11 Development of low cost curing chambers

The Council proposes to undertake a project for development of cost effective and energy efficient curing chambers for effective curing of the prefab components. This technology will be suitable for construction in urban and rural areas.

B. TECHNOLOGY DEMONSTRATION, CONSTRUCTION & DISSEMINATION

1 Training Programmes for Construction Workforce such as Master Masons, Carpenters, Supervisors in the States of Kerala, Haryana, Assam and Jharkhand (5 in each states)

To achieve a comprehensive approach for adopting new and innovative technologies alongwith disaster resistant technologies there is a need to train the master masons, carpenters, supervisors and local artisans for adoption of these technologies in the field atleast at block/taluka level. The masons in the field may not be able to use new technologies in construction due to lack of knowledge. It is therefore proposed to organize training programmes on cost-effective & disaster resistant construction in the States of Kerala, Haryana, Assam and Jharkhand. 5 numbers of training programmes will be organized at each State.

2 Dissemination of Information through Seminars/Workshops/ Exhibitions

For large scale dissemination of cost effective, environment friendly building materials & technologies, it is proposed to organize and participate in the seminars/workshops and exhibitions in different parts of the country.

3 Organization of Series of Training Programmes on various subjects relating to promotion of environment friendly, using efficient building materials, green technologies and disaster resistant technologies

It is proposed to organise a series of training programmes at different places on various topics during the year for

development authorities, architects, engineers, planners, developers, etc.. The themes of the training programmes will be selected to cover the wide spectrum of environment-friendly, energy efficient building materials, green technologies, and disaster resistant technologies.

4 Establishing demand driven Technology Demonstration cum Production Centres (2 nos.)

The Council will be establishing Technology Demonstration-cum-Production Centres on cost and profit sharing basis with construction agencies in public and private sector to reach large construction organisations on demand basis for promoting innovative and cost effective building materials and technologies.

5 Implementation of Performance Appraisal Certification Scheme

BMTPC is operating Performance Appraisal Certification Scheme as a continuous activity to evaluate the performance of the new, innovative building materials and systems on which Indian Standards are not available. In order to create wider awareness about the scheme it is also proposed to organise a workshop on the subject.

6 Organisation of International Workshop on Emerging Building Technologies at Bangalore

It is proposed to organize a International Workshop on Emerging Building Technologies at Bangalore for identification, selection and information collation of new emerging technologies amongst various countries.

7 Organization of Entrepreneurship Development Programme at 6 locations

Entrepreneurship Development Programmes will be organized at 6 selected locations to promote cost effective and innovative building materials and construction technologies. Unemployed youth interested in setting up of small building materials manufacturing units will be provided all technical help and guidance.

8 Establishment of Permanent Display Centres in three Engineering Colleges

In order to promote the awareness of the innovative building materials and construction technologies among engineering/architecture students fraternity, Council proposes to set up three permanent Display Centre in three engineering colleges, so that the engineering college/architecture college students not only get exposure to these materials and technologies but it also commands their confidence to adopt these technologies in the field projects.

9 Updating of Display Panels and Publications of the Council

In order to increase awareness on latest cost effective building materials and technologies, it is proposed to develop various information in print and electronic forms.

10 Preparation of Corporate Film on BMTPC

In order to propagate the activities of the Council and widening its reach to the masses, it is proposed to prepare a Corporate Film on BMTPC.

11 Construction of Demonstration Houses using innovative, green and disaster resistant technologies

It is proposed to construct few Demonstration Houses using innovative, green and disaster resistant technologies at four places in different regions with the twin objectives of creating awareness and large scale dissemination of innovative, cost effective, green and disaster resistant construction technologies. During the construction of buildings, the training will also be provided to local artisans, engineers etc. The State Govts. will be requested to provide land and other infrastructure.

12 Preparation of following publications of council:

- Standards and Specifications on cost effective building materials and technologies including analysis of rates
- Directory of construction equipments and machinery manufactured in India
- Compendium of manufacturers of innovative building material in India and abroad
- Directory of Indian building materials and products

C. DISASTER RESISTANT TECHNOLOGIES

1 Preparation of State/UT-wise Vulnerability Atlases of India upto Taluka level (17 States/UTs)

The Executive Committee in last meeting decided that State/UT-wise Vulnerability Atlases may be brought out after completion of the Vulnerability Atlas of India. National Disaster Management Authority, during BMTPC's presentation on Vulnerability Atlas also desired that State Atlases be prepared. The State wise Vulnerability Atlases will include specific chapter on State-Specific Recommended Action Plans and considering that Disaster Management Plans are being prepared at District level, information upto Taluka level will be given.

2 Preparation of Geo-technical Guidelines for disaster resistant structures

Geo-technical details is important for proper selection of

foundation for any structure especially in the disaster prone areas. A comprehensive guidelines on geo-technical will be useful for both new construction and retrofitting of existing buildings. It is therefore proposed to prepare Geo-technical Guidelines for disaster resistant structures.

ACTIVITIES IN THE NORTH EASTERN REGION

1 Construction of demonstration houses using bamboo based composite technologies in Assam and Arunachal Pradesh (5 structures in each location)

In order to demonstrate the use of bamboo based technologies in more bamboo growing states, it is proposed to take up construction of demonstration structures like house, picnic hut, OPD building and a school building in Assam and Arunachal Pradesh. In each state 5 demonstration structures will be taken up. The main objective of the project is to create and enhance social and professional acceptance and to upgrade skills of local artisans in improvised house construction using bamboo & bamboo based products.

2 Establishment of Bamboo Mat Production Centre in Arunachal Pradesh

Bamboo Mat Production and Training Centre is proposed to be established in Arunachal Pradesh. The setting up of Bamboo Mat Production and Training Centre will facilitate availability of bamboo mats for production of Bamboo Mat Board, Bamboo Mat Corrugated Roofing Sheets and other structural and non-structural applications in the house construction and provide training to local men and women in Bamboo Mat weaving operations.

PROJECTS FROM OTHER SOURCES

1 Preparation of Vulnerability Atlases for 63 identified cities/urban agglomerations under JNNURM including development of guidelines for disaster resistant buildings (likely funding from JNNURM)

As decided in the last of the meeting of Executive Committee, the Vulnerability Atlas and Guidelines for disaster buildings by BMTPC for 63 cities identified under JNNURM will be prepared during the year.

2 Establishment of Technology Demonstration - cum - Production Centre for promotion of cost effective and innovative building materials in Bhutan (Funding from Govt. of Bhutan)

After the signing of the Memorandum of Understanding between Govt. of India and Govt. of Bhutan, the Council is

providing technical assistance for setting up of Technology Demonstration cum Production Centre for promotion of cost effective and innovative building materials in Bhutan.

3 Retrofitting of 7 MCD School buildings for seismic strengthening (likely funding from MCD)

Considering the importance of school buildings, it is necessary to retrofit these buildings in Delhi which lies in Zone – IV (highly seismic active area), to ensure safety of structures in case of occurrence of earthquakes in future. It is proposed to take the demonstration of retrofitting in 7 schools of MCD.

4 Appraisal and Monitoring of projects under JNNURM (Revenue generation activity)

The Council has been designated as one of the Appraisal Agencies for appraisal of Detailed Project Reports received under BSUP and IHSDP from identified Mission Cities under the recently launched Jawaharlal Nehru National Urban Renewal Mission (JNNURM). BMTPC is also helping the Municipal Bodies and State Nodal Agencies in preparation and modifications of DPRs through various workshops, meets, etc. and 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.

The Council is also being designated as a Monitoring Agency for monitoring of the projects in the States where the projects have been appraised by the Council. A detailed monitoring mechanism in consultation with the Ministry of HUPA is being evolved for effective monitoring of these projects.