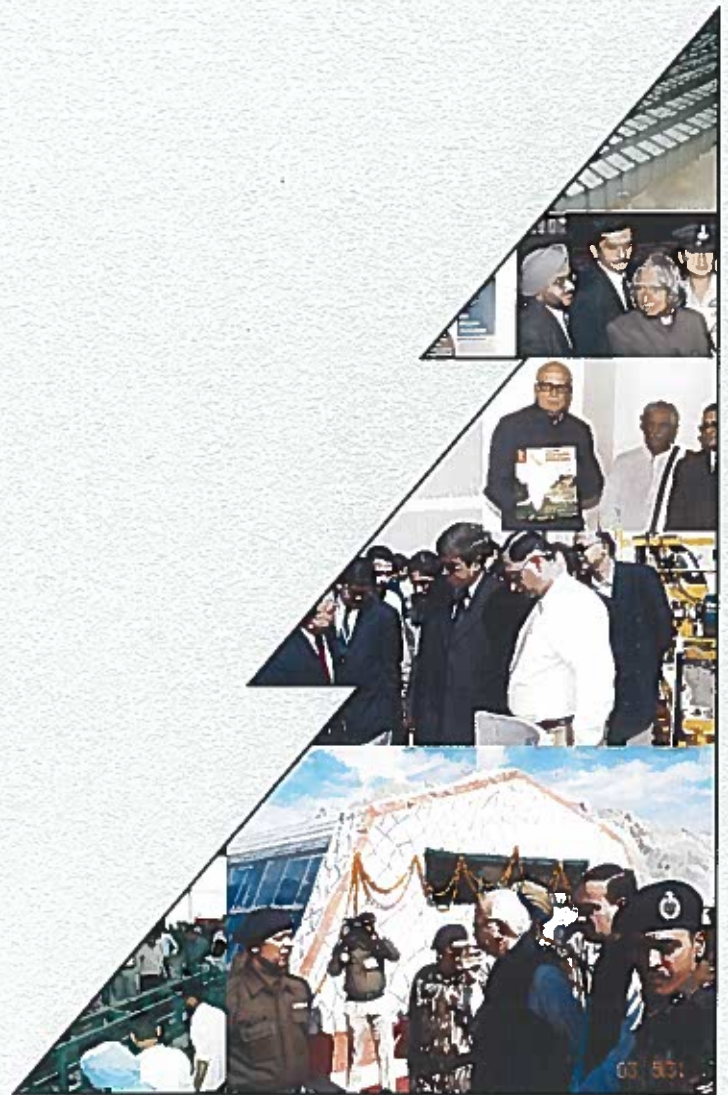


# वार्षिक रिपोर्ट Annual Report 2003-2004



**btapc**

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

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

# **Annual Report 2003-2004**



**Building Materials and Technology Promotion Council**  
(Ministry of Urban Development & Poverty Alleviation, Government of India)  
Core-5A, First Floor, India Habitat Centre,  
Lodhi Road, New Delhi

## FOREWORD

I have great pleasure in presenting the fourteenth Annual Report of the Building Materials & Technology Promotion Council for the year 2003-2004.

With deep concern on environment and ecology, the Nation's focus is on sustainable development – to meet the needs of contemporary society and at the same time conserve resources for posterity. Building materials and construction practices and technologies have a major role to play in this developmental process. BMTPC is committed to address itself to this National Agenda at a macro level.

Disaster mitigation has been a thrust area in the year. In this context, publication of Landslides Hazard Zonation Atlas of India is a very significant document. Developed as an extension to the Vulnerability Atlas of India with respect to earthquakes, floods and cyclones released in 1997, this Atlas will serve as a tool to help in taking pro-active actions for the safety of buildings and infrastructure development in landslide prone areas.

BMTPC partnered with the Gujarat State Disaster Management Authority to construct 484 model houses and retrofit 484 traditional houses in selected villages in the earthquake affected areas in the State. In the process as many as 5500 masons and 50 field engineers were trained in construction of disaster resistant dwellings and retrofitting techniques.

BMTPC, in association with the Indian Institute of Technology (Kanpur) developed 16 Earthquake Tips, which was released in the form of a booklet for mass awareness among householders and to guide professionals on construction in earthquake prone zones.

It is a matter of great satisfaction that issues such as energy efficiency, human settlement and habitat, demonstration of construction technologies and development and dissemination of information about new technology and building materials have been addressed to by the Council in the year.

For any effective upgrade of construction technologies, it is essential to impart appropriate skills to the workforce in the industry. BMTPC has been continually working towards upgrading of building skills and training of construction workers at all levels.

With depleting energy resources, energy efficiency in structures/buildings has become a national priority area. BMTPC addressed itself to this and constructed two Green Houses at Leh for the Indo-Tibetan Border Police (ITBP) at the instance of the Ministry of Urban Development & Poverty Alleviation. The design of these Green Houses was based on maximum thermal efficiency for extreme climatic conditions. Appreciating the energy efficiency of the design, the ITBP, Ministry of Home Affairs has desired that similar huts to be constructed at their 70 posts spread over in Jammu & Kashmir, Himachal Pradesh and Uttranchal.

To secure acceptance for new technologies, it is important to showcase them to the consumers. Continuing its focus on construction of demonstration buildings, BMTPC, in consultation with the Karnataka Slum Clearance Board began the Valmiki Ambedkar Awas Yojna (VAMBAY) Demonstration Housing Project. This project is being executed using cost effective building materials and technologies.

A number of initiatives has been taken for development of new alternate products/technologies with special focus on waste utilization and conservation of forest reserves. Some of the important technologies developed during the year are bricks using

copper mine tailings, coir cement prefab components, development of activated pozzolana using rice husk and panel products using banana sheath bonded with polymer resin.

Special efforts have been made to promote appropriate technologies based on local resources in the North East region resulting in employment generation with due consideration to disaster resistant technologies. As a part of this, guidelines have been developed for Slope Reinforcing Technologies for safety of settlements. Projects are underway to demonstrate construction of houses using bamboo-based materials and technologies in Mizoram and Tripura.

Towards international networking to promote low-cost and innovative housing, BMTPC hosted a high-level delegation from Venezuela, led by Vice Minister for Science & Technology. The team expressed its willingness to set up a Centre for Technology Demonstration and Diffusion in Venezuela. The delegation also proposed to convert this into a Regional Centre for the entire Latin American Region. High level delegations from Sri Lanka, Zambia, Peru and Rwanda who visited the Display Centre of BMTPC evinced interest in various technologies based on agro-industrial wastes and simple machines for production of prefab components.

With a view to enlarge the scope of the activities of the Council to attain self-sufficiency, an ambitious Action Plan for the period 2004-07 is prepared for undertaking mega projects with the objective of augmenting internal generation. It is the earnest desire of the Council to reach greater heights in the years to come.

I would like to place on record the valuable guidance and encouragement received from the President, Members of the Board of Management, the Chairman and Members of the Executive Committee for the various programmes undertaken and executed by the Council. Special thanks are due to HUDCO, BIS, NHB, CSIR, CPWD, DST, NSIC and CIDC for their continued support and interest in strengthening the efforts of the Council over successive years.

I would like to place on record the untiring efforts of Mr. T.N. Gupta, the founding Executive Director of the Council since its inception in taking the Council to higher levels. His relentless pursuit of partnerships with like-minded institutions has helped BMTPC gain wide acceptance as a nodal coordinating agency for construction materials and technology.

I would also like to place on record my appreciation of the cooperation of my colleagues in carrying on the Council's activities. The Council acknowledges the support and cooperation received from officers and staff of the Ministry of Urban Development & Poverty Alleviation, which helped the Council to meet its mandate and further its objectives.

(D. B. N. Rao)  
Director General



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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) was set up in 1990 by the then Ministry of Urban Development (now Ministry of Urban Development & Poverty Alleviation), Government of India as an apex level inter Ministerial institution for promotion, development and large scale dissemination of appropriate, cost-effective, eco-friendly and energy-efficient building materials and technologies. The successive National Housing and Habitat Policies have laid emphasis on adoption of an integrated and holistic approach to delivery of low-cost housing projects and schemes through innovation, R&D and technology promotion of waste-based and local building materials.

With burgeoning population, housing shortages and rising-costs, there has become an imperative need to adopt, standardize and popularize cost-effective building materials and environment-friendly technologies. The mandate given to BMTPC to disseminate information on a national level to bring the alternative and non-conventional materials and technologies to the door-steps of the common-man is being fulfilled using different dissemination tools including website and networking with a host of institutions and agencies dealing with different aspects of technology development, investment promotion and practice in the housing and building sectors. The provision of a house is a basic need which has a significant social and economic value for the occupants.

The goal "Shelter for All" by 2010 declared by Hon'ble Prime Minister has continued to impact the Council's programmes and activities. In this direction, the Council is adopting a multi-pronged strategy for technological interventions in national level housing projects and schemes such as VAMBAY, strengthening of the Building Centres, Rural Housing Schemes and also advisory role to the private sector. Over the last decade and more, the Council has undertaken a range of activities aimed at development and diffusion of alternative technologies and cost-effective materials in the housing construction sector and outreach activities in the realm of disaster mitigation and management.

Two main factors that prevent people to have access to domestic dwellings are the cost of building materials and the cost of labour. An alternative solution to the situation is by:

- Large scale adoption of low-cost innovative recycled materials
- Application of self-construction methods through training of local people

The Council is striving to remedy the housing shortage in the country by promoting both the above spelt-out strategies.

The Council has been acting as a catalyst for speedier transfer of R&D available with national laboratories, think-tanks and technical institutions. It has also facilitated the transfer of know-how from foreign countries which have relevance to India through a range of fiscal incentives. The Council has significantly contributed to the low-skilled based employment generation by developing and commercializing several machinery for production of building materials at local level.

Since its inception, the Council has been a strong proponent of information dissemination to the sections of the society including the grass-root workers. The outreach and awareness of the Council's multi-dimensional activities has been done through a range of printed and audio-visual techniques including the usage of internet and CD-ROMs. BMTPC has published and disseminated technical literature through Self-Help Manuals, Brochures, Exhibitions, live demonstration of machines for production of materials, directories, newsletters, video cassettes, technology profiles, arid advertisements in popular magazines and professional journals targeting architects and civil engineers. BMTPC has been networking and partnering with Industry associations like CIDC, FICCI, WASME, professional bodies like Indian Building Congress, Council of Architecture, NGO's and Think-Thanks like Development Alternatives, NICMAR, IIT's Roorkee and Kanpur, National Academy of Construction, State Level housing bodies like RGRHC, OHRC, GSDMA and educational and technical institutions and several state governments to reach different target groups and users.

Technology development, evaluation and promotional activities of the Council during the year were pursued with greater emphasis on (a) establishment of Demonstration cum Production Centres in different states; (b) awareness generation on disaster related themes targeting the common man by publishing Earthquake Tips; (c) putting up of demonstration structures (d) transfer of technologies to private entrepreneurs for commercialization and (d) preparation of Landslide Hazard Zonation Atlas of India; (e) Launching of National Network on Building Technology; (f) Capacity Building of Potential Entrepreneurs.

In the last few years the Government of India has been emphasizing on accelerated developmental activities in the North-eastern states of the country especially infrastructure related such as roads, houses, school buildings, hospitals etc. During the current year the Council submitted a number of project proposals to undertake design and construction of cost-effective buildings using locally available materials such as bamboo which are also disaster resistant. The State Governments of various North-eastern states have also sought the expertise and experience of BMTPC in revising/formulating appropriate building codes and land-use regulation in view of the several states being prone to multi-hazards like earthquakes, landslides and floods. The Council in close collaboration with leading technical institutions like IIT Roorkee, CBRI, IIT Kanpur, IIRTI has done awareness training programs on a wide-range of subjects like vulnerability reductions and use of disaster-resistant cost-effective construction technologies and techniques.

BMTPC in consonance with the changing milieu in the Indian economy has restructured its thrust areas and scope of activities based on past experience, increased understanding of the needs of the sector and the emerging "Brown Revolution" in the country with massive construction activities planned both by the public and private sector agencies. Adequate awareness of the Council's activities has been created among the potential entrepreneurs about newly developed waste-

based and cost-effective materials. An alternative building material industry is emerging with a number of micro-enterprises producing eco-friendly materials and products promoted by BMTPC. Several institutions are engaged in the skill-upgradation and capacity building of construction workers, masons and labourers for adoption of the new materials, systems and processes. BMTPC's endeavour has been to create an enabling environment for the new technologies and help in the overall growth of the economy.

The Council this year has revised and reoriented its approach in pursuing technology development, promotion and commercialization of projects and services. The thrust provided by the Government of India and also several State Governments on the housing sector has opened new vistas and opportunities to the Council for promoting its technologies. In light of this, the Council has redefined and reinvigorated its objectives and goals as follows:

## **Objectives**

1. To promote development, production, standardization and large-scale application of cost-effective innovative building materials and construction technologies in housing and building sectors.
2. 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.
3. 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.
4. 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 2003–2004

### I. DEMONSTRATION BUILDINGS USING COST-EFFECTIVE TECHNOLOGIES

#### 1. Construction of Demonstration Houses under VAMBAY Scheme

BMTPC has undertaken design and execution of 125 dwelling units under 'VAMBAY', a centrally sponsored scheme at Bangalore, using cost-effective materials and technologies. An intensive library study and field visits to various slum redevelopment projects was undertaken. This helped in understanding the requirements of slum dwellers in a better way. 'VAMBAY' guidelines stipulate a ceiling of Rs. 60,000 per dwelling unit. Following are the highlights of the design proposed by BMTPC:

- Economy in unit space planning adhering to the minimum codal provisions.
- Maximum sharing of common walls between different units.
- Minimum wall lengths per unit area, with a view to reduce the costs.
- One common staircase for eight units.
- The interaction of balconies at upper floor and cluster court at ground floor forms the first level of outdoor space for the cluster.
- Design of streets and maidens forms the next level of outdoor community space.
- Provision of vehicular access to each cluster.
- The placement of units on the site is governed by the following criteria:
  - Reduction in construction cost
  - Improvement in safety of habitat
  - Allowing for natural water drainage

Another 125 units at the same site are being constructed for KSCB (Karnataka Slum Clearance Board).

The proposed specifications for these houses include the following:

- Random rubble stone masonry in foundation and plinth (locally available stone).
- Load bearing masonry in solid concrete blocks.



- Filler slab for roofing.
- Precast RCC door and window frames.
- Door shutters using composite materials.

## 2. Construction of Green House Huts at Leh for the Indo-Tibetan Border Police (ITBP)

BMTPC had undertaken the development and construction of proto-type Green House Huts (for growing vegetables) at Leh for the high altitude ITBP border posts at the instance of the Ministry of Urban Development & Poverty Alleviation. The design of the Green Houses is based on maximum thermal efficiency for the extreme climatic conditions and which is capable to withstanding harsh storm weather conditions and will provide desired level of temperatures for growing of vegetables. Green House Huts constructed by BMTPC at ITBP posts were inaugurated by Hon'ble Dy.Prime Minister of India at Leh on 1<sup>st</sup> June, 2003.

The Huts are being maintained by ITBP officers who are also studying performance with respect to desired objectives. Since its erection 8 months have elapsed and Huts have proved to be very useful for growing vegetables, flowers and other plants.

Following inside temperatures were obtained during summer and winter months. These have established the suitability of Green House huts for replication at other locations of ITBP.

	<u>Outside</u>	<u>Inside</u>
Summer	10/3°C	30/12°C
Winter	-20/-28°C	16/10°C

Appreciating the design efficiency and usefulness of huts put up at Leh, Ministry of Home Affairs has desired similar huts to be put up on 70 ITBP posts located in Jammu & Kashmir, Himachal Pradesh and Uttranchal. The estimates and design of these huts have been prepared and submitted to the Ministry of Home Affairs for funding.

### **3. Demonstration structures in Mizoram and Tripura**

The entire North Eastern region is rich in Bamboo, which has been used extensively in the traditional construction. However, there has been a gradual decline in the use of bamboo in construction due to (i) lack of dissemination of information about its treatment and (ii) lack of available know how on the applications of bamboo to engineers and field workers. With the help of IPIRTI, BMTPC has undertaken design and execution of demonstration structures for the States of Mizoram and Tripura. These structures are of the following types:

- Residences
- Picnic Hut
- Reading Room
- O.P.D. Building.

### **4. Industrial Workers Housing Scheme by Delhi State Industrial Development Corporation (DSIDC) – Technical Back-up Support**

On the request of Delhi State Industrial Development Corporation (DSIDC) the Council is providing Technical assistance for construction of 3160 houses for Industrial workers in Bawana Industrial Township, New Delhi. BMTPC was asked to put up 4 model houses (to demonstrate new techniques) on the site before laying the foundation stone. Hon'ble Chief Minister of Delhi visited the 4 prototypes and appreciated the design and cost reduction achieved. The foundation Stone of the Housing Scheme was laid by her on 20<sup>th</sup> February, 2003. The cost of a house worked out to Rs. 350 per sq.ft. The materials used in the construction of the houses were flyash bricks in rat trap bond, RCC planks and joists, ferrocement shelves, sunshades and steps. The construction of houses has already been commenced.

### **5. Affordable Innovative Housing Scheme by Greater Noida Industrial Development Authority**

After successful construction of the office building of Greater Noida Industrial Development Authority with innovative materials and construction techniques, the Greater Noida Authority has announced construction of 800 houses under their

Affordable Innovative Housing Scheme, wherein BMTPC is providing technical back up and guidance for production of cost-effective components. It is for the first time that a Public Housing Agency is using innovative technologies in a project of this size where houses will be sold to public.

The Council has set up a Technology Demonstration cum Production Centre jointly with a private entrepreneur for supply of components for this housing project. This Centre is also marketing components for several other building projects coming in the area. The scheme would in the long run serve as a good model for demonstration of the innovative, cost-effective technologies. The construction of houses have since been started.

## **II. STRENGTHENING THE INFORMATION AND DATABASE IN THE CONSTRUCTION SECTOR**

### **1. Release of Landslide Hazard Zonation Atlas of India**

As a natural extension of the Vulnerability Atlas of India with respect to earthquakes, cyclones and floods, published earlier for pro-active disaster preparedness and mitigation, a Landslide Hazard Zonation Atlas of India has now been brought out by the BMTPC. This was released by Hon'ble Deputy Prime Minister of India, Shri L. K. Advani on January 30, 2004, in the presence of the Minister of State (IC) for Urban Development & Poverty Alleviation, Mr. Bandaru Dattatraya.

### **2. Earthquake Tips: An Innovative Education Project for Earthquake Risk Reduction**

A Booklet "Earthquake Tips" containing 16 EQ Tips covering causes of earthquakes to different aspects of disaster resistant masonry structures was brought by BMTPC during the year. The above 16 Tips are part of project of bringing total 24 Tips jointly with IIT Kanpur. This was released by Shri K.C.Pant, Hon'ble Deputy Chairman, Planning Commission on the occasion of 6<sup>th</sup> National Conference on Construction – Global Challenges in Project Design and Construction

Management organised by CIDC on 11<sup>th</sup> November, 2003 at New Delhi.

**3. Publication of the Special Issue of Building Materials News on the occasion of World Habitat Day, 2003**

The Council brought out its special issue of Building Materials News on the occasion of World Habitat Day on the theme "Water and Sanitation for Cities". The publication was released by Hon'ble Minister of State (IC) for Urban Development & Poverty Alleviation on 6<sup>th</sup> October, 2003. The publication contains articles on different aspects of water and sanitation by experts in the field. The Newsletter has been very widely disseminated to all those interested in the subject.

**4. Analysis of the BMTPC website**

The Council's website is hosted under URL [www.bmtpc.org](http://www.bmtpc.org) and is being updated at regular interval. The continuous process of updating of the website is generating lot of interest among the visitors and receiving excellent search rating by various search engines used to browse quality information in the areas such as environment friendly, energy efficient, cost effective, waste based building materials, construction techniques and disaster mitigation. In the recent past the Council has increased its activities in north east region and valuable information is now also available on materials and construction techniques related to bamboo based products on the website. New activities of the Council are reported regularly in the NEWS section of the website.

The website is generating very encouraging response in terms of number of queries for its publications, machines, building materials and others and as per estimation, during the year 2003-2004 the Council has received 577 queries. The broad categorization and distribution of queries received are as follows.

National Queries	54%
International Queries	46%
Europe	18%
USA	15%
African	14%

Asia	12%
Latin America	9%
Australia, Russia, Ex USSR	8%
Gulf	4%
Country not specified	19%
1 Machinery Related	30%
2 Seeking Trade/Technical Information	32%
3 Publication Sale	8%
4 Project Consultancy	9%
5 General Information	13%
6 Seeking Business Associations	5%
7 Others & Miscellaneous	2%

## **5. Performance Appraisal Certification Scheme (PACS)**

As a continuing activity under Performance Appraisal Certification Scheme (PACS), various applications from a wide range of manufacturers/suppliers of products and systems received for certification are at various stages of processing.

The Council, during the year, has issued certificates for following products/systems:

1. HDF empanelled door shutter
2. HDF moulded raised panel door shutter
3. Pan Mixer
4. Block Making Machine
5. Rapid Wall Panels

The Council has received 7 applications from various companies for issue of PAC for the different product/systems which are in various stages of processing.

## **III. PROMOTION, OUTREACH AND CAPACITY BUILDING ACTIVITIES AT NATIONAL AND INTERNATIONAL LEVEL**

### **1. Exhibition on the occasion of the World Habitat Day, 6<sup>th</sup> October, 2003**

The Council had put up an exhibition of eco-friendly and alternative building materials on the occasion of the World Habitat Day organised by the Ministry of Urban Development & Poverty Alleviation on 6<sup>th</sup> Oct, 2003 at New Delhi. The exhibition was inaugurated by the Hon'ble Minister of State for Urban Development & Poverty

Alleviation, (I/C), Shri Bandaru Dattatraya. A number of people visited the exhibition and appreciated the role of the Council in the propagation of new and cost-effective building materials and technologies.

**2. Rural Entrepreneurship and Skill Development Programme at Village Bhometa, Distt. Ghaziabad, 25 April to 24 May, 2003**

BMTPC in collaboration with WASME organized a "Rural Entrepreneurship and Skill Development Programme" at Village Bhometa, Distt. Ghaziabad from 25 April to 24 May, 2003.

This 4 weeks programme comprised of 3 weeks of classroom lectures and 1 week of practical training. During the 3 weeks, faculty from WASME and the Guest Faculty from other institutions like Financial Institutions/Banks, District Industries Centres, UP Govt. delivered lectures on motivation, project formulation, project financing and the various governmental initiatives and support in setting up small and medium enterprise.

The fourth week of this programme covered the practical training which was organised by BMTPC at their Technology Demonstration-cum-Production Centre, Greater Noida. During this week, about 20 candidates of this programme were given practical training in production of various low cost building components like MCR tile, RCC joists and planks, Solid blocks, Flyash bricks, concrete door and window frames. During training, the candidates were made familiar with the basics of the machine operation and concrete mix. The candidates were made to operate the machines independently and produce the various precast components.

Various machines which were covered during this programme were:

- Precast concrete door/window frames making machine
- Bi- Directional Vibro Press
- C-brick machine
- Concrete Block machine (Sakar)
- RCC Plank casting machine
- RCC Joist casting machine
- MCR tile machine



On the last day of the training, Executive Director, BMTPC and Secretary General, WASME interacted with the candidates. In his address to the candidates, Executive Director, BMTPC highlighted the importance of setting up such a production unit in light of the massive construction activity in Greater Noida, Noida and Ghaziabad. He also highlighted the environment friendliness of these products and outlined the various Govt. stipulations in regard to the use of flyash. His address evoked keen interest in the candidates for setting up production units.

The interaction of the Executive Director, BMTPC and Secretary General, WASME with the candidates, enhanced motivational levels in the candidates for venturing into the field of Building Materials.

**3. Training Programme on Manufacture of Fly Ash Bricks and Blocks, New Delhi, 29<sup>th</sup> April to 1<sup>st</sup> May, 2003**

The Council in association with Institute for Solid Waste Research and Ecological Balance (INSWAREB) organised a Training Programme on Manufacture of Fly Ash Bricks and 29<sup>th</sup> April to 1<sup>st</sup> May, 2003 at New Delhi

The objective of the programme was to develop new Entrepreneurs, re-train those who were already in this business and to train Govt. Officers/Engineers particularly from Construction Departments on Fly Ash brick manufacturing Technologies. The programme was attended by 30 participants from govt. departments, entrepreneurs, NGOs, Building Centres from different parts of Delhi. The three days programme covered various aspects of Fly Ash Bricks and Blocks manufacturing by National Experts, Mr. N. Kalidas, Dr.(Mrs.) Bhanumathi Das of INSWAREB and BMTPC. Mr. O.P.Maken, Additional General Manager, NTPC, Dadri graced the occasion as Chief Guest. The programme covered counseling on process and plant operations and also on-site training about the production techniques through live demonstration of machines.

Experts from INSWAREB gave details with regard to various applications of Fly Ash in Building Materials Industry, and particularly emphasized the importance of Fly Ash based bricks from the point of view technical advantage, environmental benefits and employment generation. Mix composition for Fly Ash bricks manufactured through Lime Route and Cement Route was suggested. While emphasizing the environmental aspects it was also mentioned that for 1 Million tonne production of Fly Ash bricks, 270 tonnes of CO<sub>2</sub> could be reduced from getting discharged into the atmosphere. BMTPC representative spoke on various codes related to characteristics of Fly Ash bricks/ Fly Ash and world-wide Scenario of Fly Ash brick production.

For practical training, the participants were taken to BMTPC Technology-cum-Production Centre at Greater Noida. They were exposed to total manufacturing process of Fly ash bricks right from feeding various Raw materials to pan mixer and finally putting the bricks to curing yard. During the visit various intricacies with regard to the production of Fly Ash bricks were explained to the participants.

The participants were also taken to NTPC Dadri Production Centre, Dadri where machines for manufacture of flyash bricks and blocks were demonstrated. The participants were also given Certificate by BMTPC at the end of the programme.

#### **4. Training Programme on Disaster Management for Voluntary Workers, 11-16 October, 2003**

A Training Programme on Disaster Management was organized by the All India Congress Seva Dal from 11-16 October, 2003 at Bharat Scout & Guide Camping Ground, Nizamuddin, New Delhi. About 500 volunteers participated in the programme. The Council had put up an exhibition depicting the wide range of work done in the areas of disaster management and disaster resistant housing technologies. The video cassettes on the subject were shown during the training programme. Several important dignitaries visited the exhibition and conveyed their appreciation for the Vulnerability Atlas of India and guidelines

developed for safe housing in disaster prone areas.

**5. Awareness-cum-Training Programme on Cost Effective Construction Technology at Nagercoil, Tamil Nadu, 5-6 September 2003**

BMTPC took part in a two day Awareness-cum-Training Programme on Cost Effective Construction Technology at Nagercoil, Tamil Nadu on 5-6 September 2003. An exhibition highlighting the work of BMTPC was also organised on the occasion.

**6. Proposal for establishing Centre for Technology Demonstration and Diffusion in Venezuela to promote Indian Housing Technologies – Visit of High Delegation from Government of Venezuela, September 8-12, 2003**

A high level delegation led by Dr. Rudolf Romer, Vice Minister of Science and Technology, Government of Venezuela visited New Delhi and Bangalore during 8<sup>th</sup> to 12<sup>th</sup> September, 2003. After the visits to various Institutions and Centres, the delegation concluded their visit with a meeting with Shri L.M. Mehta, Secretary, Department of Urban Employment and Poverty Alleviation, Ministry of Urban Development & Poverty Alleviation and CMD, HUDCO. The delegation while appreciating the technologies that are available in India in the area of innovative building materials and cost-effective construction techniques, conveyed their willingness to establish a Centre for Technology Demonstration and Diffusion in Venezuela. They further conveyed to the Secretary that in view of the usefulness of Indian technologies for developing countries in Latin America region, the proposed Centre is expected to become a Regional Centre for the entire Latin America region. Shri Mehta, on behalf of the Ministry, assured the visiting delegation that the Building Materials & Technology Promotion Council (BMTPC) and Housing & Urban Development Corporation Ltd. (HUDCO) will join hands in strengthening the capacity of the proposed Centre in Venezuela.

**7. Participation in Exhibition – HUDCO-BUILDTECH 2003 and TECHMART 2003 at India International Trade Fair, 2003 Pragati Maidan, New Delhi, 14-27 November 2003**

As part of its Outreach activity, the Council took part in the India International Trade Fair – 2003 (IITF) held in Pragati Maidan from 14-27 November 2003. The Council had put live demonstration of different machines manufacturing waste-based building materials at HUDCO Build Tech 2003 which attracted the attention of thousands of visitors who thronged this Pavilion. On 14<sup>th</sup> November, 2003, the HUDCO Build Tech was inaugurated by the Hon'ble Deputy Chairperson of Rajya Sabha Dr.(Smt) Najma Heptullah. The Chief Guest spent more than two hours going through the production processes of waste-based materials and appreciated the role of BMTPC in disseminating the know-how on low-cost housing technologies. The Council was also fortunate to have a very brief visit of His Excellency. The President of India Dr. A. P.J. Abdul Kalam to BMTPC display in TECHMART.

Among other distinguished VIP's who visited the BMTPC exhibition were: Shri Bandaru Dattatraya, Hon'ble Minister of State (I/C) Urban Development & Poverty Alleviation, Shri Arun Jaitley, Hon'ble Minister for Commerce & Industry, Dr. C. P. Thakur Hon'ble Minister of SSI & North Eastern States, Shri Sangha Priya Gautam, Hon'ble Minister of State for ARI, Shi Tapan Sikdar Hon'ble MoS for SSI. Several business and trade delegations also visited the Council's exhibition that included from Sri Lanka, Congo, Namibia, Sudan and other developing countries. The Council received a commendation certificate for its participation in TECHMART- 2003.

**8. Visit of High Level Delegation from Central Provinces of Sri Lanka, 20<sup>th</sup> November, 2003**

A high level delegation from the Central Provinces of Sri Lanka led by the Hon'ble Wasanth Aluwihare, Chief Minister and Hon'ble Velusamy Radhakrishnan, Minister of Industries visited the Council on 20<sup>th</sup> November 2003 to discuss the possible areas of cooperation in the low cost housing technologies. The delegation also called on the Hon'ble MoS (I/C) Urban Development &

Poverty Alleviation. Detailed meetings were held on the proposed India Sri Lanka Exhibition "BUILDTECH" on innovative, cost-effective and eco-friendly building materials & technologies to be held in Sri Lanka in 2004.

**9. Participation in Exhibition on "Good Governance India" and "Good Urban Governance - Making Cities Work" at Hyderabad, 27-29 November, 2003**

BMTPC put up an exhibition at the 2<sup>nd</sup> International Exhibition on Good Governance India and Good Urban Governance - Making Cities Work at Hyderabad on 27-29 November, 2003. The Twin event was inaugurated by Hon'ble MoS (I/C) Urban Development & Poverty Alleviation, Govt. of India and presided over by Shri B. V. Mohan Reddy, Minister for Municipal Administration and Urban Development Govt. of Andhra Pradesh. Chief Secretary, AP Govt. Sh. Mohan Kanda also visited the exhibition. Several students from local engineering colleges and Architecture Schools evinced interest in the projects of the Council after seeing the technological progress made in low-cost housing.

**10. Workshop on 'Alternative & Innovative Building Materials & Technology', 19-20 December 2003 at Hubli**

BMTPC and BVB College of Engineering & Technology, Hubli jointly organised a workshop for teachers of civil engineering and architectural schools on 'Alternative & Innovative Building materials & Technology' on 19-20 December 2003 at Hubli. The workshop helped in formulating a course content on innovative technologies that can be included in civil engineering and architectural education at under-graduate level. The recommended course content has been forwarded to Visheswaria Technological University, Bangalore for their comments and suggestion.

The Workshop was designed to present State-of-the-Art latest technological innovations in the materials design sector and discuss the main aspects concerning the construction and the implementation needs. The two-days workshop helped in disseminating up-to-date information, knowledge and experience on design, production, testing and application of innovative building

construction technologies in the country. Expert lectures were supplemented by field visits. The topics of workshop were:

- New Trends in Alternative and Building Material and Technology
- Cost-effective approach to design of earthquake resistant buildings
- Masonry vaults and domes
- Stabilised blocks and masonry structures
- Newer technologies in pre-fabricated and precast roofing systems
- Composite beams and panel roofing
- Advanced ferrocement technologies and ferro concrete roofing systems
- Precast and concord products
- Composite materials for buildings
- Alternate cements

Faculty consisted of: Dr. K. S. Jagadish, Professor in Civil Engineering, Dr. K. S. Nanjunda Rao, Senior Scientific Officer from Department of Civil Engineering, Indian Institute of Science, Bangalore, Dr. R. Gopal, CEO from RV-TIFAC, Bangalore, Dr. Mohan Rai, Former Deputy Director, CBRI, Roorkee and Shri N. Siva Sailam, IAS, MD, Rajiv Gandhi Rural Housing Corporation and CEO, Karnataka Rajya Nirman Kendra, Bangalore. About 60 participants took part in the 2-day workshop.

**11. Bhoomi Pooja for Valmiki Ambedkar Awas Yojna (VAMBAY) Demonstration Project and inauguration of Business Promotion Cell and Regional Office of BMTPC at Bangalore, 21<sup>st</sup> January, 2004**

Bhoomi Pooja for Valmiki Ambedkar Awas Yojna (VAMBAY) Demonstration Housing Project which is being designed and executed by Building Materials and Technology Promotion Council (BMTPC) was performed by Shri L. M. Mehta, Secretary, Ministry of Urban Development & Poverty Alleviation, Government of India, in the proposed site at Laggere, Bangalore on 21<sup>st</sup> January, 2004. Shri Sageer Ahmed, Minister for Housing Government of Karnataka, Principal Secretary, Housing, Government of Karnataka, Chairman, Karnataka Slum Clearance Board were the guests of honour on the occasion.



The Demonstration Housing Project is a unique and first of its kind project in the country. Each dwelling unit having a covered area of 272 sq. ft. has been designed so as to give most efficient space utilisation. A group of eight dwelling units share a common interactive open space, which opens out into the next level of a larger community space. Each unit is to be built at a cost of Rs. 60,000 (Rs. 220 per sq. ft.). This project is being executed using cost effective building materials and technologies.

Shri L. M. Mehta also inaugurated Business Promotion Cell and Regional Office of BMTPC on 21.01.2004 at Karnataka Slum Clearance Board premises, Seshadripuram, Bangalore.

The Business Promotion Cell and Regional Office is helping in the expansion of activities of the Council in the Southern States through networking with different stakeholders. Various projects are being executed and monitored through the Cell.

**12. 1<sup>st</sup> International Exhibition & Conference on Building Materials and Construction Technologies, 12-15 February, 2004**

The Council participated in the 1<sup>st</sup> International Exhibition & Conference on Building Materials and Construction Technologies during February 12-15, 2004, Pragati Maidan, New Delhi organized by Deptt.of Industrial Policy and Promotion, Ministry Commerce & Industry. A range of cost-effective technologies based on agro and industrial waste were displayed. There was a special focus on the on-going India-UNIDO project on machines for manufacture of checkered tiles, concrete bricks, blocks, pavers, compressed earth blocks, concrete door and window frames. Shri A. N. Tiwari, Secretary, Urban Employment and Poverty Alleviation and Sh. Laxmi Chand, Secretary, Industries visited the exhibition.

**13. Seminar on "Recent Trends in Building Materials" at RRL, Bhopal, 26-27 February, 2004**

The BMTPC sponsored a seminar on "Recent Trends in Building Materials" held on 26-27 February, 2004 at RRL, Bhopal. It was jointly organized by the RRL, Bhopal and Materials Research Society of India, Bhopal Chapter. There

were three papers presented by the Council highlighting its achievements in different areas of construction materials. One of the sessions was chaired by the Council's representative. Delegates from the council also took part in panel discussions and helped in finalizing the recommendations. During the seminar, key speakers commended the publication of Vulnerability Atlas of India and showed keen interest in Performance Appraisal Certification Scheme.

**14. VII<sup>th</sup> World Bamboo Congress at Delhi, February 28 – March 4, 2004**

BMTPC participated in the VII<sup>th</sup> World Bamboo Congress between February 28 - March 4, 2004. World Bamboo Congress was inaugurated by Hon'ble Prime Minister of India. The Council put up an exhibition on a 27 sq mt area at the Congress and also advertised in the souvenir. The theme of the Congress, organised by the Export Promotion Council for Handicrafts, was "Bamboo for Integrated Development". The event consisted of workshop, and an exhibition on bamboo products and displayed the potential for bamboo to fuel economic and industrial development and create rural employment opportunities. Eminent visitors to the BMTPC exhibition included the Governor of Mizoram, Mr. Amolak Rattan Kohli, Member Planning Commission Dr. D. N. Tiwari and a host of professionals and government officials from Nagaland, Pune, Delhi, Andamans and Uttranchal. The exhibition generated a large number of queries for BMCS Technology.

**15. State Housing Ministers - Conference convened by the Ministry of Urban Development & Poverty Alleviation: Exhibition on Innovative Materials organized by BMTPC**

A Conference of State Housing Ministers was convened by the Deptt. of UE&PA, Ministry of Urban Development & Poverty Alleviation. On this occasion, an exhibition on cost-effective building technologies was organised which was inaugurated by the Hon'ble Deputy Prime Minister of India Shri L. K. Advani. ED, BMTPC briefed the Hon'ble Deputy Prime Minister on the multi-faceted activities of the organisation especially the disaster management related work of the Council. Hon'ble DPM appreciated the work of the Council. Hon'ble MoS, UD & PA (Independent Charge) Sh. Bandaru Dattaraya presided over the Conference. ED,

BMTPC made a presentation on the Disaster management related work including the Vulnerability Atlas of India to the gathering. The Council's Film – "Towards a Safer Tomorrow" – was screened to the delegates. Several State Govt. Ministers and Secretaries in their speeches/ presentation lauded the work of BMTPC and solicited the support and technical co-operation of the Council in revising their building bye-laws, control regulations and also in the application of cost-effective building materials and construction technologies for their mass housing programmes.

#### **IV. TECHNOLOGY DEVELOPMENT, DIFFUSION AND TRANSFER**

##### **1. Launching of National Network on Building Technology and Partnership Promotion Meet, Hubli, Distt. Dharwad, Karnataka**

Recognising the demand from various stakeholders in the construction sector, the Building Materials and Technology Promotion Council (BMTPC) has launched a National Network on Building Technology to ensure wide spread diffusion and availability of affordable building materials and construction technologies for the benefit of all concerned. Under the umbrella of the National Network, the BMTPC aims at establishing Strategic Partnerships with academic and other knowledge based institutions; private & public sector construction agencies; building material manufacturers; national/regional & international organisations engaged in investment & technology promotion; professional associations & chambers of commerce & industry; NGOs and CBOs engaged in housing construction; R&D & standardisation organisations; and training/HRD institutions.

The National Network on Building Technology was launched by Shri Ananth Kumar, Hon'ble Minister of Urban Development & Poverty Alleviation on 2<sup>nd</sup> June, 2003. On this occasion a Partnership Promotion Meet was also organised. The first Strategic Partnership has been established with BVB College of Engineering and Technology, Hubli, District Dharwad, Karnataka. An Memorandum of Understanding was signed between the BVB College of Engineering & Technology and BMTPC.

Under the cooperation programme between BMTPC and BVBCET, a Nodal Centre is being established and a permanent Exhibition cum Information Centre on cost-effective building materials and technologies has been established in the campus of BVB College of Engineering and Technology. The Nodal Centre will undertake the following activities:

- to develop curriculum content for diploma, undergraduate and post graduate levels on innovative, environment friendly and energy efficient construction materials and methods.
- conduct seminars/workshops/short term courses for academic community and students at state level.
- conduct entrepreneurial development and training programmes in collaboration with other resource institutions.
- undertake research and development for developing new materials and products for building application.
- undertake advisory/consultancy services for practising professionals (engineers, architects, contractors, builders, project managers, valuers, building materials manufacturers).
- undertake studies for assessing building material requirements, needs of trained skilled and semi-skilled workers for construction related jobs in the State of Karnataka.
- provide intellectual inputs towards technical and policy issues.
- to develop and maintain Regional Data Base - for dissemination of knowledge and information in building materials and construction related areas, with particular emphasis on best practices new materials and process technologies sources for procuring detailed information and technical know-how, policy decisions/notifications, training modules and feasibility studies etc.

## **2. South-South Cooperation and Technology in the Area of Materials for Low Cost Housing - Government of India and UNIDO Initiative**

Shri L.M.Mehta, Secretary, Department of Urban Employment and Poverty Alleviation, Ministry of Urban Development & Poverty Alleviation, Government of India and Dr. Carlos Magarinos,

Director General, United Nations Industrial Development Organization (UNIDO) signed a Memorandum of Understanding at Vienna on January 12, 2004 for technical cooperation between India and UNIDO in the area of low cost housing.

The delegation led by the Secretary (UEPA), comprised Shri T.P.Sreenivasan, Ambassador of India & Permanent Representative at UNIDO, Vienna, Austria; Dr. P.S. Rana, Chairman-cum-Managing Director, Housing & Urban Development Corporation (HUDCO) and Shri T. N. Gupta, Executive Director, Building Materials and Technology Promotion Council (BMTPC).

The signing of Memorandum of Understanding between the Government of India and UNIDO will help in strengthening domestic materials and construction industry, creating policy supports, strong inter-regional mechanisms for promoting investment and technology in developing countries from different regions. The programme is aimed at facilitating capacity building at institutional and enterprise levels for transfer, absorption and diffusion of new and proven technologies based on local resources like natural fibres, plant materials, agricultural, forestry and industrial wastes and by-products for manufacturing of environment-friendly and energy-efficient materials for low cost housing. The India-UNIDO programme of cooperation will further help in building up partnerships for sustainable development and promoting South-South cooperation amongst African, Asian and Latin American countries.

Recognizing the outcome of the joint efforts of the UNIDO and the Government of India under the Pilot Phase Programme initiated in July 2000, the Director General, UNIDO appreciated this project as an excellent example of South-South Cooperation and desired the demonstration of Indian Technologies to be arranged during UNIDO's General Conference held on 1-5 December, 2003 in Vienna. The exhibition drew attention of large number of delegations from member countries.

### **3. Technology Development and Dissemination**

- Development of and construction of prototype dwelling unit using Coir Cement Prefab components (under progress).
- Development of Activated Pozzolana from rice husk. (Pilot plant is being set up)
- Development of bricks using mine tailings from Khetri Copper Mines has been completed. Tests have shown that good quality bricks can be produced with waste from copper mines. The feasibility study for setting up a pilot plant is being prepared and entrepreneur for setting up of the commercial plant has been identified.
- The National Technology Business Incubator, which was established in collaboration with Deptt. of Science & Technology (GOI), State Government of Karnataka, RV-TIFAC Composite Design Centre and BMTPC, was inaugurated on 16<sup>th</sup> of December, 2003.
- The proposed establishment of pilot scale plant for fabrication of composite wood substitute using plant fibres, as a sponsored project with RRL Thiruvananthapuram, is in advanced stage and all the machinery required for the pilot plant has been fabricated.
- The furnace based on the design developed earlier for production of silica fume from rice husk has now been fabricated and the pilot plant is expected to be set up soon near Thiruvananthapuram.

### **4. Development of Machines for production of cost-effective building**

A new machine for making components required for drains and small water-carrying channels for rural areas has been developed and tested.



## **V. RURAL HOUSING TECHNOLOGIES**

### **Rural Housing Programme of Ministry of Rural Development**

The Ministry of Rural Development, Govt. of India has been operating a Scheme – Innovative Stream for Rural Housing and Habitat Development since 1 April, 1999. The objective of the scheme is to encourage the adoption of innovative, cost-effective and environment friendly solutions in building / housing sectors in rural areas. The Council has been closely involved in the scrutiny and technical evaluation of proposals submitted under this scheme. BMTPC has been offering constructive suggestions and comments on the projects that would lead to increased use of appropriate technologies. The Council gets the additional advantage of getting to know the NGO's and other agencies with whom the Council can network for promotional activities.

## **VI. DISASTER MITIGATION – REPAIR, RECONSTRUCTION AND RETROFITTING**

### **1. Earthquake Tips – A unique partnership project with IIT Kanpur**

Continuing with the project of releasing Earthquake Tips jointly with IIT-Kanpur launched last year for preparation and dissemination of 24 Earthquake Tips. following 12 Tips have been released in addition to the 8 Tips released earlier. These Tips are targeted for awareness creation and guidance to professionals and common man.

- EQ Tip 9: How to Make Buildings Ductile for Good Seismic Performance?
- EQ Tip 10: How Flexibility of Buildings Affects their Earthquake Response?
- EQ Tip 11: What are the Indian Seismic Codes?
- EQ Tip 12: How do Brick Masonry behave during Earthquake?
- EQ Tip 13: Why should Masonry Buildings have simple Structural Configuration?
- EQ Tip 14: Why are horizontal bands necessary in masonry buildings?
- EQ Tip 15: Why is vertical reinforcement required in masonry buildings?
- EQ Tip 16: How to make Stone Masonry Buildings Earthquake Resistant?

- EQ Tip 17: How do Earthquake Affect Reinforced Concrete Buildings?
- EQ Tip 18: How do Beams in RC Buildings Resist Earthquakes?
- EQ Tip 19: How do Columns in RC Buildings Resist Earthquakes?
- EQ Tip 20: How do Beam-Column Joints in RC Buildings Resist Earthquakes?

Besides releasing on a monthly basis on the websites of BMTPC and IIT-Kanpur, the tips are also published and printed in related journals, magazines and leading Newspapers which have a combined reach of several thousands of users. The Council has received appreciation both from professionals and common people about the usefulness of the tips.

## **2. Capacity Building Programme in partnership with Gujarat State Disaster Management Authority (GSDMA)**

GSDMA in partnership with BMTPC undertook a project for demonstration of disaster resistant construction methods and retrofitting of large number of buildings in different talukas lying in the earthquake prone areas and the region specifically affected by the January 2001 earthquake.

Under the project, it was proposed to retrofit 484 damaged houses and build 484 new model houses/buildings in worst affected villages of Gujarat spanning over 5 districts of Kachchh, Rajkot, Jamnagar, Surendernagar and Patan besides providing training to masons and engineers.

478 model houses were constructed and 442 public buildings like schools, health centres, community centres were retrofitting. Training were provided to 5500 masons and 50 field engineers in construction of building using disaster resistant technologies and retrofitting of damaged buildings.

The technical audit of 478 model houses ('Afat Sajjata Kendras' - Disaster Preparedness Centres) has been undertaken and defects wherever found have been rectified .

### **3. Updation and Digitisation of Vulnerability Atlas of India**

The Department of Urban Employment & Poverty Alleviation, Ministry of Urban Development & Poverty Alleviation, being the national nodal agency for development programmes of housing and human settlements, has decided that the Vulnerability Atlas is updated by incorporating the information on three new States created during the period, over 100 districts added and the new Census of 2001 made available and the changes in the housing typologies that have taken place. Besides these changes, the Seismic Zoning Map of India has also undergone change as revised by Bureau of Indian Standards (BIS).

To examine and study the impact of changes and update the Vulnerability Atlas of India with respect to these in GIS platform, the Government has constituted Peer Group comprising the experts in the field from leading academic and technical organizations and departments. The Atlas would include hazard maps for States/UTs right upto Taluka level indicating vulnerable areas: district-wise risk levels of existing housing types. The Group would also make recommendations on nature of Techno-legal regimes to be established and necessary technical guidelines for disaster resistant construction methods, for construction, reconstruction and retrofitting of housing and buildings so that pro-active programmes of strengthening the existing stock can be formulated and implemented.

### **4. Committee on the Development of Model Building Bye-laws for Seismic Zone III, IV and V and the Review of City, Town and Country Planning Act and Zoning Regulations**

A Committee on the Development of Model Building Bye-laws for Seismic Zone III, IV and V and the Review of City, Town and Country Planning Act and Zoning Regulations has been constituted by the Ministry of Home Affairs, Govt. of India. The Council is represented on the Committee and is also coordinating the activities.

**5. Guidelines for Disaster Resistant Houses under Indira Awas Yojna (IAY) of Ministry of Rural Development**

Guidelines for Improving Disaster Resistance of rural dwelling units in different climatic zones of the country were prepared for a variety of designs, to be covered under Indira Awas Yojna. There is a great variety in architectural designs in different parts of the country, with different materials of walling and roofing. An attempt was made to cater to typical designs of a particular region, keeping in mind the available materials and technologies.

**6. Retrofitting of Office Building for Road and Building Department, Patadi, Gujarat**

The Council has completed the retrofitting of the Office Building of Road and Building Department, Government of Gujarat at Patadi which was damaged during earthquake. The building has been handed over to the Department for their use.

**VII. ACTIVITIES IN NORTH-EASTERN REGION**

**1. Important Activities in North-Eastern Region to Promote Disaster Resistant Construction Practices**

The Building Materials and Technology Promotion Council (BMTPC) is actively involved in developing bamboo based technologies and is currently working under the umbrella of the National Mission on Bamboo Applications, to promote these in the North-Eastern Region by encouraging commercial production of bamboo based products. The Council is undertaking following activities in the North-Eastern Region:

- The BMTPC and the IPIRTI, have jointly developed a technology for manufacturing of Bamboo Mat Corrugated Sheets (BMCS). The Council has transferred this technology to a private entrepreneur M/s Timpack Pvt. Ltd. for commercial production and marketing. The product has been accepted by the consumers and is becoming increasingly popular as a roofing option in the north east part of the country.
- The Ministry of Urban Development & Poverty

Alleviation has sanctioned two projects for putting up Demonstration buildings using Bamboo technology in Tripura and Mizoram. BMTPC is putting up demonstration buildings using cost effective building technologies in Mizoram in order to propagate disaster resistant cost effective construction technologies to deal with the problems of high seismicity in the State. The sites have been selected for construction of 10 demonstration buildings in both the States. It is expected that construction work will be started in February 2004. Under this project, 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 land.

- Recognising the shortage of suitable bamboo mats for manufacturing of corrugated sheets, the Deptt. of Development of North Eastern Region has asked BMTPC to establish 8 bamboo mat making Centres in States of Tripura, Mizoram, Meghalaya and Assam. The Project proposal was submitted to DONER and they have sanctioned an amount of Rs. 3.6 crores to be released by Ministry of Urban Development & Poverty Alleviation out of their 10% component for North East. The project is under consideration of Housing Division of the Ministry.

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

### **1. Preparation of Guidelines on Site Selection and Development Planning of Human Settlements and Infrastructure in Landslide Prone Areas**

The Council sponsored a project to the Centre for Disaster Mitigation and Management, Anna University, Chennai, for preparing Guidelines on Site Selection and Development Planning of Human Settlements and Infrastructure in landslide Prone Areas. The entire Himalayan belt is bristling with the landslide problems of a bewildering variety and yet there is no guidelines for development planning of housing and infrastructure for sustainable development. Likewise, many other states suffer from landslides every now and then

and yet the constructions in those areas are not regulated by sound scientific principles thereby leading to severe damage to existing housing stock and infrastructure due to frequent occurrences which turn into disasters.

The scope of the project covers the following situations of human habitat:

- i. A township or a human habitat located on dormant landslides, fossil landslides or on unstable sloping landmass.
- ii. A township or a human habitat located at the foot of a problematic slope or unstable landmass.
- iii. A township or a human habitat located on the head of the unstable slope/landmass.
- iv. A township located on a safe landmass but threatened by landslides or avalanches because of their run-out effects.
- v. A township located at the foot of a cliff as a source of rockfall.
- vi. A township or human habitat on seemingly stable slope on one side of the valley but may be affected by breach of landslides dams upstream.
- vii. A sloping and mass threatened by meandering rivers.
- viii. A site comprising metastable sand masses on a sloping land susceptible to liquefaction.
- ix. A site on creeping slopes with imperceptible rates of movements.
- x. Human habitats threatened by pre-existing landslides in seismic areas.

Each situation includes all the practical aspects such as site investigation considerations, elements of engineering concern, planning & design considerations, and engineering interventions necessary in a given situation.

## **2. International Directory of Institutions/Organisations/Agencies engaged in Natural Disaster Mitigation and Management**

In order to strengthen the database in the field of natural disaster mitigation and management, the

Council in close collaboration with Centre for Disaster Mitigation and Management, Anna University, Chennai has completed a project for preparation of International Directory of Institutions/Organisations/Agencies engaged in the field. The Directory has following sections:

- i. Database of Organisations & Institutions working in the areas of natural disaster mitigation and management
- ii. Database of Members of Commonwealth Science Council
- iii. Database of Non-Governmental Organisations
- iv. Database of Experts in the field of Disaster Management
- v. Database of Publications, Newsletters and journals published by different organisations
- vi. Database of Search and Rescue Equipments
- vii. Directory of Websites
- viii. Directory of published Books in the areas of natural disaster mitigation and management.

### **3. Setting up of Training-cum-Production Centre for Production of Bamboo Mats near Magdi, Karnataka**

During the year, the Council has undertaken a project for setting up a Training-cum-Production Centre for production of bamboo mats jointly with Sri Kateshwara Multi Purpose & Credit Cooperative Society Ltd. (a State level tribal cooperative society) at Magdi, Karnataka.

The project undertaken jointly with IPIRTI includes providing training to the members of tribal community in selection of right type of bamboo, improving the same for splitting and making slivers of desired size. In addition, machines for production of bamboo slivers will be installed at the Centre. After the Centre becomes operational, the finished goods like bamboo mats in different sizes and other components produced at the Centre will be supplied to the production units where these will be used as the inputs for final products.

As reported last year, the Council provided training to 25 tribal members in bamboo based manufacturing technologies for production of slivers and mat-making. During the year, training for another 50 tribal members has been provided. The training was provided at IPIRTI in such a way that trainees can acquire knowledge about the operation of the machinery used for bamboo processing and its application.



**IX. FINANCIAL AND TECHNICAL SUPPORT TO SELECTED BUILDING CENTRES AND ENTREPRENEURS FOR TECHNOLOGICAL UPGRADATION**

1. Production Unit at Building Centre, Shahjahanpur (UP).
2. Production Unit at Building Centre, Balewadi, Pune.
3. Production Unit at Building Centre, Khurda, Orissa.
4. Production Unit at Building Centre, Raichur, Karnataka.
5. Production Unit at Building Centre, Bagalkot, Karnataka.
6. Production Unit at Building Centre, Bellary, Karnataka.
7. Production Unit at Building Centre, Chitradurga, Karnataka.
8. Production Unit at Building Centre, Bangalore Urban, Karnataka.
9. Demonstration-cum-Production Unit at Yelamchilli, AP.
10. Demonstration-cum-Production Unit at Jahajgarh, Haryana.
11. Demonstration-cum-Production Unit at Ramchandrapuram, AP.
12. Setting up of BMTPC Technology Demonstration-cum-Production Centre at Greater Noida (UP).
13. Setting up of Demonstration-cum-Production Unit at Pendurathi Mandal, Vishakhapatnam, AP.
14. Setting up of Demonstration-cum-Production Unit at Ramanayapeta, Kakinada, Rural Mandal, AP.

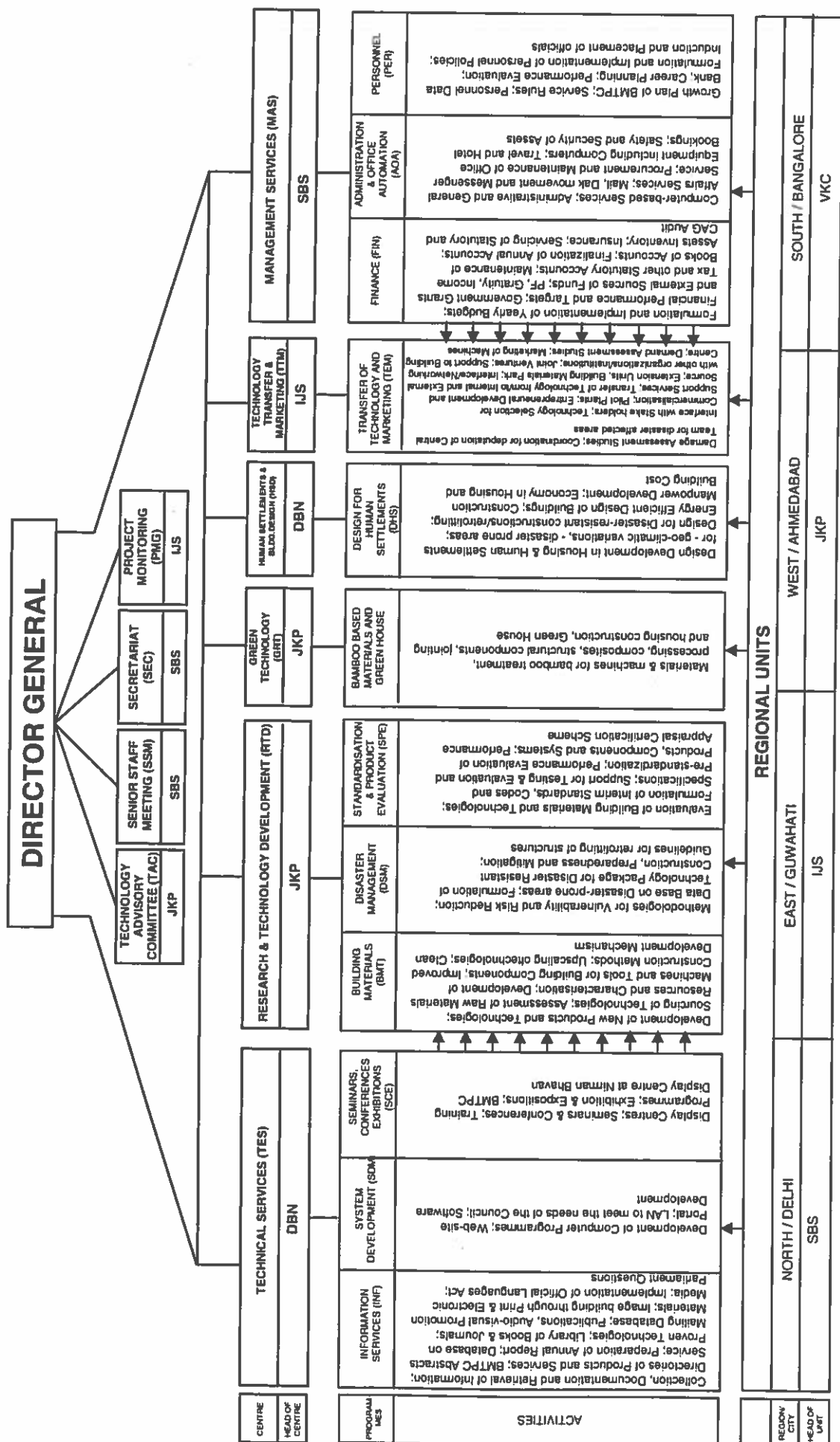
## ORGANISATION

The Chart on the next page shows the organisation of different functional units in the establishment of the Council. As on 31<sup>st</sup> March, 2004 BMTPC had a staff strength 51 comprising 28 officers and 23 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, interalia, include domestic and foreign investment, stimulating information flows and developing support functions and improving infrastructure to meet the changing needs of housing and building construction sector. In the last couple of years, need was felt for some reorganization of different operational units within establishment. In close consultation with the Housing Division of the Ministry, the organizational restructuring has been undertaken. The restructuring aims not only to bring clarity in its various functional wings but also on improving the overall efficiency to match the increasing demand on its services from various government departments and different sections of housing and building construction sector.

# BUILDING MATERIALS & TECHNOLOGY PROMOTION COUNCIL

## ORGANIZATIONAL STRUCTURE



## STAFF STRENGTH

<u>S.No.</u>	<u>Name &amp; Designation</u>	<u>Date of Joining</u>
1.	D.B.N. Rao <i>Director General</i>	05.03.04
2.	S. Balasrinivasan <i>Chief-Finance &amp; Administration</i>	08.04.92
3.	Dr. Vishnukant S. Chatpalli <i>Chief-Technology Marketing</i>	01.07.03
4.	J.K. Prasad <i>Chief-Building Materials</i>	01.09.03
5.	I. J.S. Sidhu <i>Chief-Project Monitoring &amp; Training</i>	16.09.99
6.	B. Anil Kumar <i>Deputy Chief - Information &amp; Documentation</i>	15.04.99
7.	Rajesh Malik <i>Deputy Chief-Human Settlement &amp; Building Design</i>	20.04.99
8.	M. Ramesh Kumar <i>Deputy Chief-Management Information Systems</i>	01.04.93
9.	Arun Kumar Tiwari <i>Deputy Chief-Standardisation &amp; Production Evaluation</i>	22.07.03
10.	S. K. Gupta <i>Deputy Chief-Technology, Demonstration Extension&amp; International Cooperation</i>	26.10.93
11.	Arvind Kumar <i>Systems Manager</i>	15.04.99
12.	V. K. Sethi <i>Deputy Chief -Cost Analysis &amp; Estimation</i>	05.04.94
13.	Dr. Amit Rai <i>Development Officer- Building Materials-Product Development</i>	05.10.98
14.	Chandi Nath Jha <i>Development Officer- Building Materials -Product Evaluation</i>	09.09.99
15.	Pankaj Gupta <i>Development Officer- Engineering Design &amp; Performance Evaluation</i>	14.10.99
16.	Vijo Cherian <i>Sr. Field Officer- Architecture</i>	03.09.01
17.	D. P. Singh <i>Development Officer - Demonstration, Construction &amp; Exhibition</i>	05.10.98

18.	Richpal Singh <i>Personnel Officer</i>	23.02.94
19.	Dalip Kumar <i>Systems Analyst</i>	04.03.91
20.	Alok Bhatnagar <i>Library Officer</i>	05.10.98
21.	Akash Kumar Mathur <i>Field Officer -Product Evaluation</i>	01.01.02
22.	S. M. Malhotra <i>Principal Private Secretary</i>	09.04.99
23.	Anita Kumar <i>Sr. Programmer</i>	03.10.96
24.	M. Ramakrishna Reddy <i>Liaison Officer -Information &amp; Public Relations</i>	24.10.03
25.	Pankaj Gupta <i>Asstt. Accounts Officer</i>	01.03.94
26.	Praveen Suri <i>Private Secretary</i>	01.09.94
27.	Sukhpal Pundir <i>Asstt. Field Officer</i>	03.10.96
28.	D.Prabakar <i>Project Officer</i>	29.01.04

**Resignations/Retirements (on superannuation)**

1.	R.S. Godbole <i>OSD to President BMTPC (upto 31.07.2003)</i>	01.11.02
2.	N.Gopalakrishnan <i>OSD to Vice President BMTPC (upto 09.09.2003)</i>	16.07.03
3.	M.A. Rashid <i>Deputy Chief-Entrepreneurial Financing (upto 10.02.2004)</i>	06.10.03
4.	T.N. Gupta <i>Executive Director (upto 04.03.2004)</i>	01.01.94

## ACCOUNTS

The Council received grants of Rs. 400.00 lakhs from the Ministry of Urban Development & Poverty Alleviation. In addition, the Ministry of Urban Development & Poverty Alleviation also provided a grant of Rs.75 lakhs Valmiki Ambedkar Awas Yojana (VAMBAY). The Council had also brought forward Grants sanctioned by Ministry of Urban Development and Poverty Alleviation & Ministry of Rural Development to the tune of Rs.130.18 lakhs from the previous year. The total expenditure incurred during the period from April 2003 to March 2004 was Rs.6,57,86,588 as detailed below:

Major Heads	Amount (Rs.)
• Expenditure on Sponsored Studies	82,31,554
• Expenditure on Financial Assistance for Technology Development/application	1,49,64,745
• Expenditure on Financial Assistance to Building Centres	5,37,156
• Expenditure on Rural Housing & Habitat Development	30,45,925
• Expenditure on construction of demonstration units with disaster resistant technology in earthquake prone areas	63,77,749
• Exhibition & publicity and dissemination of information	38,85,036
• Printing & publications	32,25,042
• Seminars/Workshops expenses	13,70,527
• Technology transfer programmes	3,46,760
• Expenditure on UNIDO, Asian Disaster Preparedness Centre fund	1,07,165
• Purchase of machines	4,51,101
• Membership fees	90,064
• Security Deposit	4,20,000
• Loan and advances disbursed	1,35,680
• Expenditure on Books & Periodicals	3,15,444
• Purchase of Fixed Assets	44,66,981
• Personnel Expenses	54,29,130
• Administration and other Expenses	37,80,362
• Expenditure on construction of demonstration houses in Mizoram	26,84,448
• Expenditure of Training Centre at Bangalore	53,650
• Expenditure on drafting model building byelaws for seismic zones III, IV and V	40,715
• Expenditure for construction of demonstration with cost effective technologies demonstration cum production centre in Tripura	21,95,660
• Expenditure on Valmiki Ambedkar Awas Yojana	36,31,694
<b>TOTAL</b>	<b>6,57,86,588</b>

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 2003-2004 is placed later in the report.

## **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 2004 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 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 purpose 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. Attention is invited to Note No. 3 of Notes to the Accounts (Schedule-I) regarding non-provision of depreciation on fixed assets.

4. Subject to our observation reported to in the above paragraph and its consequential effect on the accounts, in our opinion and to the best of our information and according to 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 31st March, 2004; and
- (ii) In the case of Income and Expenditure Account of the excess of Income over Expenditure for the year ended on that date.

FOR M.S. SEKHON & CO.  
CHARTERED ACCOUNTANTS



*(Signature)*  
(RAJIV TANDON)  
PARTNER

DELHI  
DATED: 26 APR 2004

## BALANCE SHEET as on MARCH 31, 2004

SOURCES OF FUNDS	Schedule	Amount (Rs.)
<b>CAPITAL FUND</b>		
<b>RESERVES AND SURPLUS</b>		1 000 000
Capital Reserve		
Opening Balance		
Add : Transfer during the year	68 636 244	
	4 460 675	73 096 919
<b>Excess of Income over Expenditure</b>		
Opening Balance		
Add : Excess of Income over Expenditure transferred from Income and Expenditure Account	34,166 988	
	957,865	
	35 124 853	
Less : Transfer to Capital Reserve	4 460 675	30 664 178
<b>EARMARKED FUNDS</b>		
<b>Construction of demonstration units with disaster resistant technology in earthquake prone areas</b>		
Opening Balance		
Add : Received during the year	3 346 668	
	3 630 000	
Less : Utilised during the year	6 976 668	
	6,377 749	598 919
<b>Construction of Demonstration Buildings with cost effective technologies and Technology Demonstration-cum-Production Centre in Tripura</b>		
Opening Balance		
Less : Utilised during the year	6,519,640	
	2,195,660	4,323,980
<b>Grants Received for National Network of Building Centres</b>		
Opening Balance		
Add : Contribution to the project	471,202	
Less : Utilised during the year	65,954	
	537,156	
<b>Central Assistance for Rural Housing and Habitat Development</b>		
Opening Balance		
Amount Recoverable from Ministry of Rural Development	770,531	
	2,275,394	
Less : Utilised during the year	3,045,925	
	3,045,925	
<b>Construction of Demonstration Houses in Mizoram</b>		
Opening Balance		
Amount Recoverable from Ministry of Urban Development & Poverty Alleviation	1,910,578	
Less : Utilised during the year	773,870	
	2,684,448	
<b>Construction of Demonstration Houses in Bangalore Under Valmiki Ambedkar Awas Yojana (VAMBAY)</b>		
Less : Utilised during the year	7,500,000	
	3,631,694	3 868,306
<b>TOTAL</b>		<b>113,562,302</b>

### APPLICATION OF FUNDS

<b>FIXED ASSETS</b>		
<b>CURRENT ASSETS, LOANS AND ADVANCES</b>	D	73 096 919
Cash and Bank Balances	E	
Loans and Advances		35 352,357
Other Current Assets		7,006,672
		29 627
<b>Less: CURRENT LIABILITIES AND PROVISIONS</b>		42 388 656
<b>TOTAL</b>	F	1 933 273
		40 455 383
<b>Notes to the Accounts</b>		<b>113,562,302</b>

Note: Schedules A to H form an integral part of the Balance Sheet

S. B. Balasubramanian

(S. Balasubramanian)  
Chief - Finance and Administration



As per our separate Report attached  
for M.S. Sekhon & Co.,  
Chartered Accountants  
(Rajiv Tandon)  
Partner

D. B. N. Rao  
(D. B. N. Rao)  
Director General

Date: 26 APR 2004  
Date:





## INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDING MARCH 31, 2004

	Schedule	Amount (Rs.)
--	----------	--------------

### INCOME

Grants received from Ministry of Urban Development and Poverty Alleviation	40,000,000
Receipt from UNIDO Asian Disaster Preparedness Centre Fund	92,564
Receipt from Technology transfer and Sale of Machines	297,704
Receipt from Sale of publication	291,766
Receipt for Training Course at Bangalore	40,317
Interest	2,251,414
<b>TOTAL (A)</b>	<b>42,973,765</b>

### EXPENDITURE

Personnel Expenses (net)	5,737,158
Administration and Other Expenses (net)	3,812,754
Expenditure on Financial Assistance for Technology Development/Application	G 14,964,745
Expenditure on Sponsored Studies	H 8,231,554
Exhibition & Publicity and dissemination of information	3,855,898
Expenditure on National Network of Building Centres	65,954
Printing & Publications	3,225,042
Membership Fees	90,064
Seminar/Workshop Expenses	1,370,527
Technology Transfer Programmes	346,760
Expenditure on Books and Periodicals	315,444
<b>TOTAL (B)</b>	<b>42,015,900</b>

### EXCESS OF INCOME OVER EXPENDITURE (A-B) CARRIED TO BALANCE SHEET

**957,865**

Notes to the Accounts

*S.B. Srinivasan*

(S. Balasubramanian)

Chief - Finance and Administration

*D.B.N. Rao*  
(D.B.N. Rao)  
Director General

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



*Rajiv Tandon*  
(Rajiv Tandon)  
Partner

Delhi  
Date

26 APR 2004

# **RECEIPTS AND PAYMENT ACCOUNT FOR THE YEAR ENDING 31ST MARCH 2004**

## **RECEIPTS**

Opening Balance	Amount (Rs.)
- Cash in Hand	
- Balance in Savings Account with Canara Bank (Hauzhas)	224 049
- Balance in Savings Account with Canara Bank (Parliament Street)	9,027,814
- Balance in Current Account with Canara Bank (Parliament Street)	9,834,270
- Balance in Fixed Deposit Account With Canara Bank	5,784,737
Grants received from Ministry of Urban Development and Poverty Alleviation	20,060,000
Receipt from UNIDO Asian Disaster Preparedness Centre Fund	40,000,000
Sale of SARKAR Block Machine / Bi-directional VIBRO Press/ Tile Making Machine	200,000
Receipts from Technology Transfer and sale of machines	523,280
Receipts from publications	225,525
Receipts from Training Course at Bangalore	291,766
Receipts from Ministry of Home Affairs for drafting model building byelaws for Seismic Zones III, IV and V	93,967
Receipt from Gujarat State Disaster Management Authority (GSDMA)	100,000
Recovery of Staff advance (net)	3,630,000
Vaishali Ambedkar Awas Yojana (VAMBAY)	844,729
Interest	7,500,000
<b>TOTAL</b>	<b>2,798,808</b>

## **PAYMENTS**

Purchase of Fixed Assets	4,466,981
Personnel Expenses (net)	5,429,130
Administration and Other Expenses (net)	3,780,362
Expenditure on Sponsored Studies	8,231,554
Exhibition & Publicity and dissemination of information	3,885,036
Printing & Publications	3,225,042
Seminar/Workshop Expenses	1,370,527
Technology Transfer Programmes	346,760
Expenditure on Books & Periodicals	315,444
Expenditure on Financial Assistance for technology development/application	14,964,745
Membership fees	90,064
Expenditure on Rural housing and habitat development	3,045,925
Expenditure on UNIDO Asian Disaster Preparedness Centre Fund	107,165
Expenditure on Construction of demonstration houses in Mizoram	2,684,448
Expenditure on Construction of demonstration unit with disaster resistant technology in earthquake prone areas	6,377,749
Expenditure on Financial Assistance to Building Centres	537,156
Expenditure of Training Centre and Bangalore	53,650
Expenditure on drafting model building byelaws for Seismic Zones III, IV and V	40,715
Expenditure for Construction of Demonstration with cost effective technologies Demonstration-cum-Production Centre in Tripura	2,195,660
Security Deposit	420,000
Other advances during the year (net)	135,680
Purchase of SARKAR Block Machine / Bi-directional VIBRO Press/ Tile Making Machine	451,101
Expenditure on Vaishali Ambedkar Awas Yojana (VAMBAY)	3,631,694
<b>Sub Total</b>	<b>85,786,508</b>
Closing Balance	
- Cash in Hand	151,671
- Cheques in Hand	187,373
- Balance in Savings Account with Canara Bank (Parliament Street)	13,611,891
- Balance in Savings Account with Canara Bank (Hauzhas)	2,504,284
- Balance in Savings Account with Canara Bank, Bangalore	2,500
- Balance in Current Account with Canara Bank (Parliament Street)	577,056
- Balance with Canara Bank Parliament Street (VAMBAY Project)	5,757,582
- Balance with Canara Bank in Fixed Deposit Account	12,560,000
<b>Sub Total</b>	<b>35,352,357</b>
<b>TOTAL</b>	<b>101,138,845</b>

S. B. Mishra

(S. Balasubramanian)  
Chief Finance and Administration



As per our separate Report on the Balance Sheet  
for M.S. Sekhon & Co.,  
Chartered Accountants  
(Rajiv Tandon)  
Partner

*D. P. Singh*  
Director General

Only  
Date

26 APR 2004

**SCHEDULE 'A' - CONSTRUCTION OF DEMONSTRATION UNITS WITH DISASTER RESISTANT TECHNOLOGY IN EARTHQUAKE PRONE AREAS**

	Amount (Rs.)
Preparation of film on Gujarat post Earthquake reconstruction role of BMTPC	350,000
Development of mobile grinding machine for rubble	30,000
Quality Assurance Programme for Model Disaster Resistant unit in 5 Distt. of the State of Gujarat	5,032,480
Strengthening the production of building components in the earthquake affected area of distt. Kutchh, Gujarat	34,650
Salary and Administration Expenses	930,619
<b>TOTAL</b>	<b>6,377,749</b>

**SCHEDULE 'B' - FINANCIAL ASSISTANCE TO/UTILISATION FOR BUILDING CENTRE PROGRAMMES**

	Amount (Rs.)
Demonstration cum Production Unit at Vidya Nagar Hubli, Kamataka	355,230
Salary and Administration Expenses	181,926
<b>TOTAL</b>	<b>537,156</b>

**SCHEDULE 'C' - RURAL HOUSING AND HABITAT DEVELOPMENT**

	Amount (Rs.)
Construction of Mandal office at Venkatachalam, Nellore	545,224
Setting up of Demonstration - Cum-Production Unit at Rural B.C. Kalinga Vihar Sipasrubuli Distt. Puri, Orissa	254,250
Setting up of production unit at village Nur Pura, Tehsil, Amloh	126,500
Setting up of production unit at Dehradun	61,589
Setting up a Production Unit cum Demonstration Centre at Bela Rudraprayag (U.A.)	36,751
Setting up of a production cum demonstration unit at Daotli, Solan (UP)	354,915
scheme for material and construction tech-programme in rural area village naiyla jaipur	395,090
Construction of demonstration housing using disaster resistant technology in Orissa	240,000
Salary and Administration Expenses	1,031,606
<b>TOTAL</b>	<b>3,045,925</b>

**SCHEDULE - 'D' - FIXED ASSETS**

	Cost as at 31.03.03 (Rs.)	Additions during the year (Rs.)	Cost as at 31.03.04 (Rs.)
Office Building	34,319,817	-	34,319,817
Furniture and Fixtures	1,818,933	895,023	2,713,956
Office Equipment	14,275,111	1,046,495	15,321,606
Air Conditioners	204,275	193,000	397,275
Fans and Coolers	32,916	-	32,916
Exhibits, Panels, Display Models	8,928,308	777,027	9,705,335
Computers	8,998,594	1,442,930	10,441,524
T.V. and VCR	58,290	106,200	164,490
<b>Total</b>	<b>68,636,244</b>	<b>4,460,675</b>	<b>73,096,919</b>



**SCHEDULE 'E' - CURRENT ASSETS, LOANS AND ADVANCES**

		Amount (Rs.)
<b>CASH AND BANK BALANCES</b>		
Cash in Hand	151,671	
Cheques in Hand	187,373	
Balance in Savings Account with Canara Bank (Parliament Street)	13,611,931	
Balance in Savings Account with Canara Bank (Hauz Khas)	2,504,284	
Balance in Current Account with Canara Bank (Parliament Street)	577,056	
Balance in Savings Account with Canara Bank, Bangalore	2,560	
Balance with Canara Bank Parliament Street (VAMBAY Project)	5,757,582	
Balance with Canara Bank in Fixed Deposit Account	12,560,300	35,352,367
<b>LOANS AND ADVANCES</b>		
Advance to Staff towards House Building, Vehicle, Tour & Festival	2,636,150	
Amount Recoverable	3,783,258	
Security Deposit	420,000	
Other Advances	157,264	7,006,672
<b>OTHER CURRENT ASSETS</b>		
Interest Receivable	14,927	
Tax deducted at source refundable	14,700	29,627
<b>TOTAL</b>		<b>42,388,656</b>

**SCHEDULE 'F' - CURRENT LIABILITIES AND PROVISIONS**

	Amount (Rs.)	
Outstanding Liabilities	141,111	
Balance of funds received for developing building bye-laws	59,285	
Provision of Gratuity	1,732,877	
<b>TOTAL</b>		<b>1,933,273</b>

**SCHEDULE 'G' - FINANCIAL ASSISTANCE FOR TECHNOLOGY DEVELOPMENT/APPLICATION**

	Amount (Rs.)	
Construction of Cybergram Building Project in Venkatachalam, Nellore Distt.	667,554	
Setting up of Production Unit at Ramchandrapuram EG Distt.	366,000	
BMTPC Demonstration Centre at Greater NOIDA	1,187,028	
Fabrication of two Green Houses at Leh	114,977	
BMTPC-BVBCET Nodal Centre at Hubli	631,517	
Strengthening of Building Centre at Bangalore Nirmithi Kendra	100,000	
Strengthening of Building Centre at Hassan Nirmithi Kendra	100,000	
Strengthening of Building Centre at Raichur Nirmithi Kendra	100,000	
Strengthening of Building Centre at Bellary Nirmithi Kendra	100,000	
Strengthening of Building Centre at Bagalkot Nirmithi Kendra	100,000	
Strengthening of Building Centre at Chitradurga Nirmithi Kendra	100,000	
Strengthening of Building Centre at Dakshina Kannada Nirmithi Kendra	100,000	
Strengthening of Building Centre at Kolar Distt. Nirmithi Kendra	100,000	
Strengthening of Building Centre at Shimoga Nirmithi Kendra	100,000	
Strengthening of Building Centre at Mandya Nirmithi Kendra	100,000	
Setting up of production unit at Balawadi, Pune	244,976	
Setting up of production unit at Budan Nirmithi Kendra	42,196	
Demonstration on Innovative Building Technologies at Prime Location in New Delhi	37,382	
Setting up of Demonstration-Cum-Production unit at B.C. Badaragunathpur Distt. Khurda	254,250	
Salary and Administration Expenses	5,969,322	
Strengthening the production base of a unit at Hyderabad, AP	158,892	
Technology demonstration cum production centre at Shanti Bastawad village Belgaur	1,043,832	
Setting up of production unit at Shahjapur, UP	179,313	
Strengthening the production of cost effective building components at Velamachalk, AP	232,500	
Setting up of Demonstration cum Production unit at village Sitapura, Jajpur	314,322	
Retrofitting of a damaged house in Uttaranchal	24,875	
Setting up of Demonstration cum Production unit at Pendurathi Mandal, AP	682,200	
Strengthening the production of machines for production light-weight concrete using flyash Ramchandrapuram, EG Distt. AP	787,000	
Setting up of a training cum demonstration centre at village Jahajgarh Distt. Jhajjar (Haryana)	237,732	
Strengthening the production base of building components using flyash at Pendurthy Mandal Viskhiapatnam (Andhra Pradesh)	1,003,750	
Setting up of Demonstration-cum-Production unit at Village Ramajyapata Kakinada	682,000	
<b>TOTAL</b>		<b>14,964,745.00</b>



**SCHEDULE 'H' - SPONSORED STUDIES**

	Amount (Rs.)
Preparation of landslide Vulnerability Atlas of India	466,201
Performance Appraisal and Certification Scheme	31,826
Development and construction of dwelling units using cement cum prefab components	275,000
Study on upgradation of Palta Mechanised Brck Plant, Kolkata, West Bengal	30,000
Preparation of earthquake tips	675,000
Salary and Administration Expenses	2,787,897
Compendium of landslide Atlas of India	240,000
A film titled "Technologies for Poverty Alleviation"	637,200
Preparation of guidelines for selection of sites for dev & planning of housing and infrastructure in the land slide prone areas	150,000
Assessment of the demand of construction materials in India - 2003-2013	340,000
Preparation of manual on guidelines for quality in building construction	200,000
Preparation of multimedia interactive cd-rom on BMTPC activities	100,000
Building Materials Development cum Demonstration Centres as part of National technology business incubator for composite materials at Bangalore	1,505,990
Preparation of DVD of the film Technology for Poverty Alleviation	100,440
Development of ferrocement drains and small water carrying channels making machine	30,000
Formulation of guidelines for assessment of strength and performance of existing buildings	8,000
Guidelines of noise abatement in high rise buildings	100,000
Preparation of film BMTPC - A process for building a nation	264,000
Marketing of Technologies Developed By BMTPC	50,000
A Film on the working of Machines Developed by BMTPC	240,000
<b>TOTAL</b>	<b>8,231,554</b>

**SCHEDULE 'I' - NOTES TO THE ACCOUNTS****1. Significant accounting policies**

(a) All income/receipts and expenses are accounted for on cash basis. However, interest on fixed deposits with banks is accounted for on accrual basis.

(b) Fixed assets are stated at cost and depreciation on fixed assets is not provided in the accounts.

(c) Liability in respect of gratuity is provided on accrual basis.

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

2. Salaries and Allowances includes an amount of Rs.2,98,516 on account of provision for gratuity payable to the employees on retirement/superannuation.

3. As suggested by the office of the Principal Director of Audit, Economic and Service Ministries in their Audit Report, fixed assets are stated at cost. As such, depreciation for the year amounting to Rs.33,48,357 as per provision of Income Tax Act 1961, and the arrears of depreciation amounting to Rs.2,56,20,664 has not been provided in the accounts

4. The Council, in the earlier years purchased certain machines for manufacture of Solid/Hollow Concrete Blocks, Clay bricks, Concrete Door/Window frames, RCC Planks and Joists, MCR Tiles etc. under its technology demonstration and dissemination activities primarily undertaken through Building Centres. Out of the machines purchased, certain machines are being presently used for demonstration during various exhibitions/seminars and will be transferred to be Building Centres later.

5. An amount of Rs. 2,24,33,094 has been incurred during the year on Salary and Administration. Out of this a sum of Rs.1,28,83,182 has been apportioned to various projects of the Council.

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

7. Deposits with Banks include a fixed deposit of Rs.60,000 pledged with Canara Bank in connection with Bank Guarantee issued by it in favour of Sales Tax Department.

S.B. Srinivasan

(S. Balasubramanian)

Chief - Finance and Administration

DB Rao  
(D.B.N. Rao)  
Director General

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



Rajiv Tandon

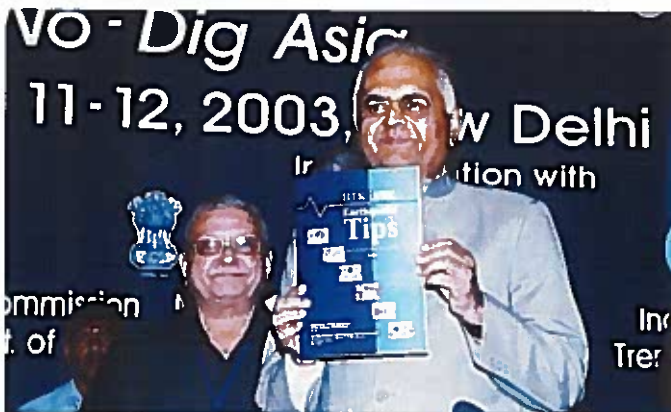
(Rajiv Tandon)  
Partner

Delhi  
Date: 26 APR 2004

## Release of Publications and Award won by BMTPC



Release of Landslide Hazard Zonation Atlas of India by Shri L.K. Advani, Hon'ble Deputy Prime Minister of India on 30<sup>th</sup> January, 2004 brought out by BMTPC to guide proactive actions required for safe location of buildings and other development works in landslides prone regions.



Release of Booklet "Earthquake Tips" by Shri K.C. Pant, Hon'ble Deputy Chairman, Planning Commission on the occasion of 6<sup>th</sup> National Conference on Construction – Global Challenges in Project Design and Construction Management organised by CIDC on 11<sup>th</sup> November, 2003 at New Delhi.



Release of BMTPC Newsletter "Water and Sanitation for Cities" by Shri Bandaru Dattatraya, Hon'ble Minister of State (IC) for Urban Development & Poverty Alleviation on the occasion of World Habitat Day 2003 held on 6<sup>th</sup> October, 2003 at New Delhi.

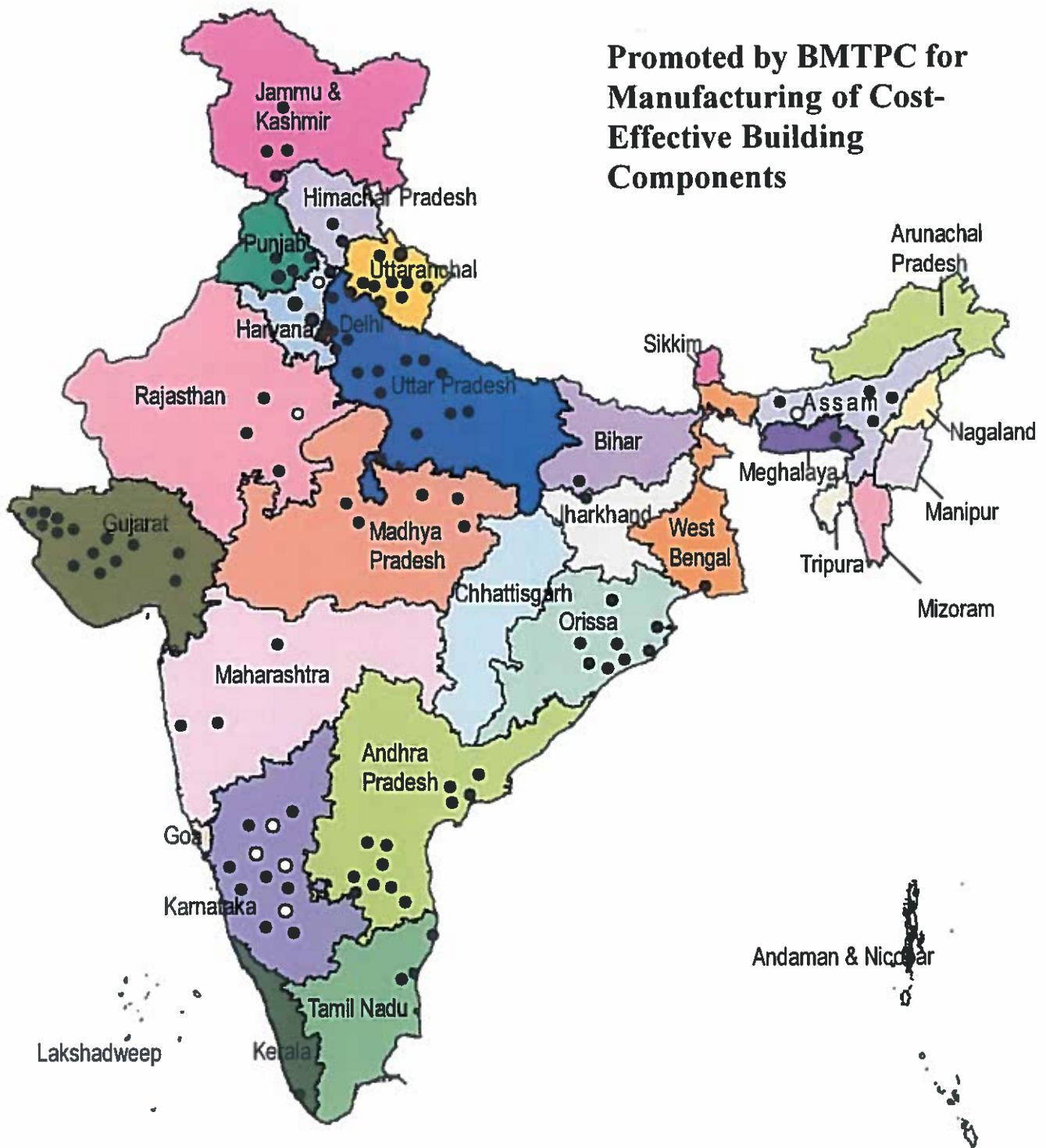


Release of Brochure "National Network on Building Technology" by Shri Ananth Kumar, Hon'ble Minister of Urban Development & Poverty Alleviation on the occasion of Launch of National Network on Building Technology and Partnership Meet held on June 2, 2003 at Hubli, Karnataka.



# Demonstration-cum-Production Units

Promoted by BMTPC for  
Manufacturing of Cost-  
Effective Building  
Components



# Launching of National Network on Building Technology and Partnership Promotion Meet, Hubli, Karnataka - June 2, 2003





## Training Programme on Manufacture of Fly Ash Bricks and Blocks, April 29 - May 1, 2003, New Delhi





## **BMTPC's Display at India-International Trade Fair – 2003 & 1st International Exhibition and Conference on Building Materials and Construction Technologies**





# Foreign Delegates at BMTPC's Display





# BMTPC's Presence at Important Events





# Signing of MoU with UNIDO





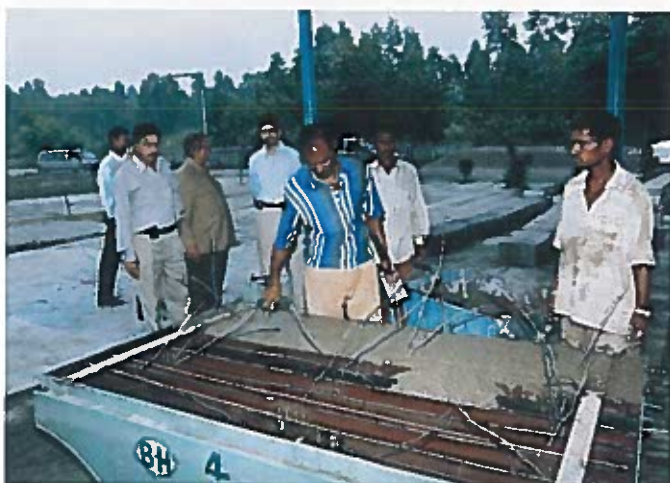
# Demonstration-cum-Production Units



Technology Demonstration-cum-Production Centre, Greater Noida, UP



# Demonstration-cum-Production Units



**NTPC Dadri Production Centre, Dadri, UP**



**Temporary Production Unit at Village Sikri, Faridabad, Haryana**



# Visit of Secretary (UEPA) to BMTPC





# Social Get-to-gether and New DG taking over



**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.

**National**

- Exhibition on cost effective building materials and technologies, 6<sup>th</sup> April, 2003, Bangalore.
- Exhibition on the occasion of launch of National Network on Building Technology, 2<sup>nd</sup> June 2003, Hubli, Karnataka.
- Exhibition cum awareness programme for masons on cost-effective technologies at 6-7 September, 2003 Nagercoil, Kanyakumari.
- Exhibition on the occasion of World Habitat Day, 6<sup>th</sup> October, 2003, New Delhi.
- Exhibition on the occasion of "Disaster Management Training Camp", 11-16 October, 2003, New Delhi.
- TECHMART 2003 during IITF 2003 organised by NSIC, 14-27 November, 2003, Pragati Maidan, New Delhi.
- BUILDTECH 2003 during IITF 2003 organised by HUDCO, 14-27 November, 2003, Pragati Maidan, New Delhi.
- Exhibition on Good Governance India, 27-29 November, 2003, Hyderabad.
- Exhibition "Build 4 India" organised by International Trade Exposition Ltd., December 6-9, 2003, Hyderabad.
- BMCT 2003 organised by NCB, 12-15 February, 2004, Pragati Maidan, New Delhi.
- Exhibition on the occasion of 'World Congress on Natural Disaster Mitigation, 19-21 February,

2004, New Delhi.

- World Bamboo Expo 2004, 28 February – 2 March 2004, Pragati Maidan, New Delhi.

## **II SEMINARS/CONFERENCES/WORKSHOPS**

- Entrepreneurship Development Programme on Manufacture of flyash bricks/blocks, 29<sup>th</sup> April to 1<sup>st</sup> May 2003, New Delhi... I.J.S. Sidhu, Rajesh Malik, S.K. Gupta, D.P. Singh.
- International Seminar on ICT in Popularisation of Appropriate Architecture – Indian & European Initiatives, Chennai...B. Anilkumar.
- Rural Entrepreneurship and Skill Development Programme was organised by BMTPC in collaboration with WASME, 25<sup>th</sup> April to 24<sup>th</sup> May 2003, Greater NOIDA.
- Seminar on National Capital Region: Challenge & Opportunities, 30<sup>th</sup> May 2003, New Delhi....T.N. Gupta
- Seminar organised by Indian Buildings Congress on "Emerging Trends in Building Technology", 6-7 June, 2003, New Delhi... B. Anilkumar, S.K. Gupta.
- Workshop on "ADB-India TA Cluster Component Project: Financing Cleaner Production" organised by Ministry of Environment and Forests, Asian Development Bank and Tetrattech, New Delhi... T.N. Gupta.
- Annual Conference of State Relief Commissioners, 2<sup>nd</sup> July 2003, New Delhi....T.N. Gupta.
- Seminar on "Jute Geotextile & Innovative Jute Products" organised by Ministry of Textiles and Jute Manufactures Development Council, 25-26 August, 2003...C.N.Jha.
- Training Programme on ArcGIS conducted by ESRI, 28<sup>th</sup> August to 2<sup>nd</sup> September 2003, New Delhi.... M. Ramesh Kumar, Akash Mathur.
- Two day Awareness-cum-Training programme on cost effective Construction Technology on 5-6 September 2003, Nagercore, Tamil Nadu... Dr. Vishnukant S. Chatpalli, S.P. Pundir.

- Seminar on Water and Sanitation for Cities on the occasion of World Habitat Day, 6<sup>th</sup> October 2003, New Delhi... T.N. Gupta, I.J.S. Sidhu, B. Anil Kumar, S.K. Gupta.
- State Housing Minister's Conference, organised by Ministry of Urban Development & Poverty Alleviation, 8<sup>th</sup> October 2003, New Delhi...T.N. Gupta, I.J.S.Sidhu, S.K. Gupta, D.P. Singh.
- Seminar held on the occasion of World Standards Day organized by BIS, 14<sup>th</sup> October 2003, New Delhi...J.K. Prasad, B. Anilkumar.
- National Conference on Construction Management organized by CIDC, 11-12 November 2003, New Delhi...T.N. Gupta, I.J.S.Sidhu, S.K. Gupta, D.P.Singh.
- Conference on Mechanisation of Construction Industry, 7-9 December 2003, New Delhi ....T.N. Gupta.
- National Conference on Urban Infrastructure: Projects, Reforms & Governance, 17<sup>th</sup> December 2003, Chandigarh...T.N.Gupta.
- Workshop for teachers of civil engineering and architectural schools on 'Alternative & Innovative Building Materials & Technology' organised by BMTPC and BVB College of Engineering, 19-20 Dec. 2003.
- 1<sup>st</sup> International Exhibition and Conference on Building Materials & Construction Technologies, February 12-15, 2004, New Delhi...T.N. Gupta, J.K. Prasad, A.K. Tiwari, S.K. Gupta, C.N. Jha, Dr. Amit Rai and D.P. Singh.
- Seminar on Recent Trends in Building Materials organised by RRL Bhopal, 26-27<sup>th</sup> February 2004, Bhopal...A.K.Tiwari, Dr. Amit Rai.
- World Congress on Natural Disaster Mitigation, 19-21<sup>st</sup> February 2004., New Delhi...T.N.Gupta, I.J.S.Sidhu, Rajesh Malik, S.K. Gupta, Pankaj Gupta, D.P.Singh.

- World Bamboo Congress, 20<sup>th</sup> February-4<sup>th</sup> March 2004, New Delhi..T.N. Gupta, J.K. Prasad, I.J.S.Sidhu, S.K. Gupta, D.P.Singh.
- Seminar organized by ASSOCHAM on Africa India Opportunities, 17 March, 2004, New Delhi.

### III BIS COMMITTEES

- BIS meeting of CED 46 on Loads Forces and Effects, 12 September, 2003. ...I.J.S.Sidhu
- Ninth Meeting of Wood Products Sectional Committee – CED 20 of the Bureau of Indian Standards (BIS) in Bangalore....J.K.Prasad
- Meeting of the Civil Engineering Divisional Council (CEDC), 25-26<sup>th</sup> March 2004, New Delhi (D.B.N.Rao was elected as Chairman of Cement and Concrete Sectional Committee CED:2).
- A series of meetings to review and revise the National Building Code ...T.N.Gupta, J.K.Prasad

### IV TECHNICAL COMMITTEE/WORKING GROUPS ETC.

- Inauguration of 1<sup>st</sup> Meeting of Indo-French Working Group on Urban Development, 24<sup>TH</sup> April 2003, New Delhi ..T.N.Gupta.
- Meeting with NCPDP for Capacity Building Programme, 28<sup>th</sup> April 2003, Ahmedabad...T.N.Gupta.
- Monitoring Committee meeting of Capacity Building Programme, 28 April, 2003, Gandhinagar ...I.J.S.Sidhu.
- Meeting on "Implications of GATS/WTO for the Indian Construction Industry", convened under the Chairmanship of Director General, CPWD, 2 May, 2003, New Delhi. ...I.J.S.Sidhu.
- Review meeting of "Rural Building Centres" convened by Ministry of Rural Development, Krishi Bhawan under the Chairmanship of

Secretary, Rural Development, 8 May, 2003, New Delhi. ...I.J.S.Sidhu.

- Central Product Evaluation Committee meeting of CPWD, 12 May, 2003, New Delhi....I.J.S.Sidhu.
- Monitoring Committee meeting on Capacity Building Programme being implemented by NCPDP, 16 May, 2003, New Delhi ...I.J.S.Sidhu.
- Wrap Up meeting with NCPDP for Capacity Building Programme, 16<sup>th</sup> May 2003, Ahmedabad,..T.N.Gupta.
- Meeting on VAMBAY – Modification of Guidelines convened by the Secretary (UEPA), 23<sup>rd</sup> May 2003, New Delhi....T.N.Gupta.
- First Partnership of National Network on Building Technology at BVB College of Engg. 2<sup>nd</sup> June 2003, Hubli ...T.N.Gupta.
- 31<sup>st</sup> Meeting of Governing Council of IBC, 5<sup>th</sup> June 2003, New Delhi...T.N.Gupta.
- Governing Council meeting of Indian Buildings Congress, 7 June, 2003, New Delhi. I.J.S.Sidhu.
- Meeting of Indo French Working Group, 16<sup>th</sup> July 2003, New Delhi...T.N.Gupta.
- 11<sup>th</sup> meeting of the Steering Committee on "Rural Building Centres" under the Chairmanship of Joint Secretary (Rural Housing), Ministry of Rural Development, Krishi Bhawan, New Delhi..I.J.S.Sidhu.
- 9<sup>th</sup> meeting of the Sub-Committee on "Innovative Stream for Rural Housing and Habitat Development" chaired by Joint Secretary, Rural Housing, Ministry of Rural Development, Krishi Bhawan, New Delhi, 10 July, 2003. .I.J.S.Sidhu.
- Meeting of the Steering Committee for Techmart 2003, New Delhi, 25 July, 2003....I.J.S.Sidhu.

- Meeting with Secretary (UEPA) and Dr. Mohanty, DG UNIDO, 8<sup>th</sup> August 2003, New Delhi.....T.N.Gupta.
- Meeting with Secretary (UEPA) regarding the proposed visit of Iranian Minister of Housing and Urbanisation to India, New Delhi, 1<sup>st</sup> August 2003... I.J.S.Sidhu.
- 1<sup>st</sup> meeting of the Project Screening Committee on "Innovative Stream for Rural Housing and Habitat Development" chaired by Director General, CAPART, 5 August, 2003, New Delhi. ... I.J.S.Sidhu.
- 1<sup>st</sup> meeting of the Committee constituted by Indian Buildings Congress for "Preparation of Manual on Retrofitting of Buildings" on 11 August, 2003, New Delhi. ... I.J.S.Sidhu.
- Central Product Evaluation Committee, CPWD meeting under the Chairmanship of Chief Engineer (TAD Cell), CPWD, 21 August, 2003, New Delhi. ... I.J.S.Sidhu.
- Review meeting of the Monitoring Committee constituted for the Capacity Building Programme implemented by NCPDP. Ahmedabad, 26<sup>th</sup> August 2003. ... I.J.S.Sidhu.
- Assessment Committee meeting in Central Road Research Institute, Delhi for Promotion Assessment, 27 Aug, 2003, New Delhi.... I.J.S.Sidhu.
- Meeting on National Bamboo Mission at Planning Commission, 9<sup>th</sup> September 2003, New Delhi....T.N.Gupta.
- Meeting on Development of Cane & Bamboo Industry in North-Eastern Region under the chairmanship of Hon'ble Minister (DONER&SSI), 29<sup>th</sup> September 2003, New Delhi ...T.N.Gupta.
- 2<sup>nd</sup> meeting of the Committee constituted by Indian Buildings Congress for preparation of a manual on "Retrofitting of Buildings" 26 September, 2003, New Delhi. ...I.J.S.Sidhu



- Meeting of the Inter-Ministerial Group to discuss the Central Reports for the Chattisgarh and Orissa floods, 29<sup>th</sup> September 2003, New Delhi,...I.J.S.Sidhu.
- 1st meeting of National Core Group for Earthquake Mitigation in Ministry of Home Affairs,. 3<sup>rd</sup> October, 2003, New Delhi....T.N.Gupta.
- Inter-Ministerial Group to consider Central Team Report on floods for the States of Arunachal Pradesh and Madhya Pradesh, 6 Nov, 2003, New Delhi. ..I.J.S.Sidhu
- Meeting of the Sub-Committee on 'Innovative Stream for Rural Housing and Habitat Development' under the Chairmanship of Joint Secretary (RH), Ministry of Rural Development (MoRD) 12 November, 2003, New Delhi... I.J.S.Sidhu
- Meeting of the Screening Committee on "Rural Building Centre Scheme, held under the Chairmanship of Jt. Secy (RH), 13 Nov, 2003, New Delhi.... I.J.S.Sidhu
- Meeting of the Inter-Ministerial Group (IMG) to consider the reports of the Central Team's on floods affected States of Uttar Pradesh and Karnataka on 28 Nov, 2003, New Delhi ...I.J.S.Sidhu
- The presentation-cum-meeting of the National Organising Committee 17 December 2003, New Delhi....I.J.S.Sidhu.
- 17<sup>th</sup> meeting of the Central Product Evaluation Committee under the Chairmanship of Chief Engineer (CDO), CPWD, 23<sup>rd</sup> December 2003, New Delhi. ....I.J.S.Sidhu.
- Meeting convened under the Chairmanship of Dr. D. N. Tiwari Member, Planning Commission, regarding the preparation for "Bamboo Expo and World Congress' 04", New Delhi, 24 Dec, 2003. ....I.J.S.Sidhu.
- Launching of BMTPC office & Business Promotion Cell and Bhoomi Pooja for VAMBAY

Demonstration Project, 21<sup>st</sup> January 2004  
Bangalore...T.N.Gupta.

- Meeting with Chief Administrator and other official of Housing Board, Haryana to jointly organize Regional Seminar on Utilisation of Fly Ash in Housing and Construction in May/June 2004... D.B.N. Rao.
- Meeting with Director RV-TIFAC – Composite Design Centre on the proposed activities in the National Business Incubator, Bangalore, 22<sup>nd</sup> March 2003.....D.B.N. Rao.
- Meeting with Managing Director Rajiv Gandhi Rural Housing Corpn. Ltd. Bangalore regarding exploring possibility of setting up a Building Technology Park, Bangalore, March 2004....D.B.N. Rao.
- 13<sup>th</sup> meeting of the Screening Committee on Rural Building Centres and Sub Committee meeting on Innovative Stream for Rural Housing and Habitat in the Ministry of Rural Development, March 2004, New Delhi...V.K. Sethi, C.N. Jha.
- Meeting with Director General, National Academy of Construction (NAC), Hyderabad on the possibilities of setting up a Building Technology Park at NAC Campus, Hyderabad, March 2004, ...D.B.N. Rao.
- Meeting with Dr. D.N. Tewari, Member, Planning Commission to discuss project funding under National Mission on Bamboo Applications, March 2004, New Delhi...D.B.N. Rao..
- A series of meeting of the Committee of MoUD&PA on Custom Duty and Excise Duty Exemption .. S.K. Gupta.

## **V OTHER ACTIVITIES**

- The technical services are being provided to M/s Trident Group for construction of following buildings in Barnala, Distt. Sangrur, Punjab:
  - o 198 rooms for Workers' Colony

- 100 rooms for Female workers' colony of 300 girls
  - Girls hostel
  - Staff housing for 10 families
  - Front commercial area which includes shops, mini hospital and guest house
  - 95 rooms for Male workers' colony.
- BMTPC's Official visited the State of Uttar Pradesh as the member of the Central Team deputed by the Ministry of Home Affairs to assess the damage caused due to the floods and heavy rains in the State from 21-25.10.2003.
- BMTPC's official visited the State of Andhra Pradesh as the member of the Central Team deputed by the Ministry of Home Affairs to assess the damage caused by cyclone in the State from 18.1.2004 to 21.01.2004.
- Attended the evaluation and monitory committee meeting on Clean Technologies convened by Director, Clean Technologies under the Chairmanship of Additional Secretary, Ministry of Environment and Forests, New Delhi.
- First meeting of the Committee constituted by Ministry of Urban Development & Poverty Alleviation for Development of Model Building Bye-Laws and the Review of City, Town and Country Planning Act and Zoning Regulations under the Chairmanship of Prof. A. S. Arya was held on 23 February 2004.
- BMTPC's official visited Rampur, U.P. to make a presentation during the Workshop organized by Indian Industries Association, Rampur and WASME on "Promoting Building Materials Technologies and Impact of WTO for small scale industries on 26 February 2004. A detailed presentation on the various technologies which can be adopted by the small scale entrepreneurs were discussed in detailed.
- Visit of ED & DC(I&D) to Bangalore to explore a suitable slum location with Karnataka Slum Clearance Board to take up the project of

Demonstration of cost-effective technologies for housing for urban poor under VAMBAY.

- The BMTPC has been requested by the State Government of Tripura to undertake retrofitting of a historic building i.e. Ujjayanta Palace (currently housing the State Government Secretariat). Council's representatives have already visited the site and major drawings of the building are being prepared, as the building being 100 years old the original drawings are not available. After the drawings are ready the design of retrofitting the various parts of the building will be undertaken.

**A. SPONSORED STUDIES COMPLETED DURING THE YEAR**

1. Preparation of guidelines for selection of sites for development, planning of housing and infrastructures in the land slides prone areas.  
*Associated Institution: Centre for Disaster Mitigation and Management, Chennai.*
2. Establishment of Building Materials Development-cum-Demonstration Centre as part of National Technology Business Incubator for Composite materials at Bangalore  
*Associated Institution - RV-TIFAC, Bangalore*
3. Training in Bamboo processing  
*Associated Institution - IPIRTI, Bangalore*
4. Preparation of Directory of Institution engaged in Mitigation of Natural Disaster  
*Associated Institution - Centre for Disaster Mitigation & Management, Chennai*
5. Preparation of Earthquake Tips  
*Associated Institution - IIT Kanpur, Kanpur*
6. Preparation of Manual and Guidelines for Quality Control and Construction Management  
*Associated Institution - CBRI, Roorkee.*
7. Quality Assurance Programme for Model Disaster Resistant Units in 5 Districts of the State of Gujarat  
*Associated Institution - National Council for Cement and Building Materials, Ballabgarh*
8. Extended Quality Assurance Programme for Model Disaster Resistant Units in district of State of Gujarat  
*Associated Institution - National Council for Cement and Building Materials, Ballabgarh*

**B. PROJECTS COMPLETED WITH FINANCIAL ASSISTANCE PROVIDED BY COUNCIL DURING THE YEAR**

1. Setting up of a Demonstration-cum-Production Unit at Ramchandrapuram, AP.

2. Setting up of BMTPC Technology Demonstration-cum-Production Centre at Greater Noida (UP).
3. Retrofitting of office Building for Roads and Building department, Patadi, Gujarat.
4. Setting up of BMTPC-BVBCET Nodal Centre at Hubli, Karnataka.
5. Setting up of Demonstration-cum-Production Unit at Pendurathi Mandal, Vishakhapatnam, AP.
6. Setting up of Demonstration-cum-Production Unit at Ramanayapeta, Kakinada Rural Mandal, AP.
7. Training Programme on manufacturing of Fly ash bricks and blocks, New Delhi.
8. Rural Entrepreneurship and Skill Development Programme at village Bhometa, Greater Noida.

**C. FINANCIAL AND TECHNICAL ASSISTANCE PROVIDED TO BUILDING CENTRES DURING THE YEAR**

1. Setting up of Production Unit at Building Centre, Shahjahanpur (UP).
2. Setting up of Production Unit at Building Centre, Balewadi, Pune.
3. Setting up of Production Unit at Building Centre, Khurda, Orissa.
4. Setting up of Production Unit at Building Centre, Raichur, Karnataka.
5. Setting up of Production Unit at Building Centre, Bagalkot, Karnataka.
6. Setting up of Production Unit at Building Centre, Bellary, Karnataka.
7. Setting up of Production Unit at Building Centre, Chitradurga, Karnataka.

8. Setting up of Production Unit at Building Centre, Bangalore Urban, Karnataka.

**D. PROJECTS COMPLETED UNDER INNOVATIVE STREAM FOR RURAL HOUSING AND HABITAT DEVELOPMENT**

1. Setting up a Demonstration-cum-Production Unit at Building Centre, Sipasirubuli, Distt. Puri, Orissa.
2. Setting up a Demonstration-cum-Production Unit at village Nurpura, Tehsil Amloh, Punjab.
3. Setting up a Demonstration-cum-Production Unit at village Daoti, Solan (HP).
4. Setting up a Demonstration-cum-Production Unit at village Sitapura, Jaipur, Rajasthan.

**E. VIDEO FILMS COMPLETED DURING THE YEAR**

1. Rekindling Hope
2. BMTPC-Protecting Homes and Lives.
3. Technologies for Poverty Alleviation.

**SPONSORED PROJECTS AND STUDIES INITIATED DURING THE YEAR**

**A. SPONSORED STUDIES INITIATED DURING THE YEAR**

1. Development and Construction of Dwelling Units using Coir-Cement Prefeb Components  
*Associated Institutions – CBRI, Roorkee.*
2. Assessment of Demand of Construction Materials in India for the period 2003-2013  
*Associated Institutions - Construction Industry Development Council, New Delhi*
3. Preparation of Multimedia Interactive CD-Rom on BMTPC  
*Associated Institutions - Mod Vision Productions, New Delhi*
4. Quality Assurance Programme for Model Disaster Resistant Units in 5 Districts of the State of Gujarat  
*Associated Institutions - National Council for Cement and Building Materials, Ballabgarh*
5. Extended Quality Assurance Programme for Model Disaster Resistant Units in 5 district of State of Gujarat.  
*Associated Institutions - National Council for Cement and Building Materials, Ballabgarh*
6. Machine for making Ferrocement drains and small water-carrying channels for rural areas.

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

1. Setting up of BMTPC-BVBCET Nodal Centre at Hubli, Karnataka.
2. Setting up of Demonstration-cum-Production Unit at Pendurathi Mandal, Vishakhapatnam, AP.
3. Setting up of Demonstration-cum-Production Unit at Ramanayapeta, Kakinada, Rural Mandal, AP.



4. Training Programme on manufacturing of Fly ash bricks and blocks, New Delhi.
5. Rural Entrepreneurship and Skill Development Programme village Bhometa, Greater Noida.
6. Setting up of Demonstration-cum-Production Unit at Shanti Bastawad Distt. Belgaum.
7. Construction of Demonstration building at Hubli, Karnataka.
8. Construction of 10 Demonstration Structures using Bamboo based technologies in Mizoram.
9. Construction of 10 Demonstration Structures using Bamboo based Technology in Tripura.
10. Establishment of Technology Demonstration-cum-Production Centre Agartala, Tripura.
11. Construction of 125 Demonstration Housing at Bangalore under VAMBAY Scheme.
12. Setting up of Demonstration cum Production Unit at Yelamchilli, A.P.
13. Setting up of Demonstration cum Production Unit at Jahajgarh, Haryana.

**C. PROJECTS INITIATED UNDER INNOVATIVE STREAM FOR RURAL HOUSING AND HABITAT DEVELOPMENT**

1. Setting up a Demonstration-cum-Production Unit at village Daoti, Solan (HP).
2. Setting up a Demonstration-cum-Production Unit at village Sitapura, Jaipur, Rajasthan.
3. Construction of Demonstration houses using Disaster Resistant Technologies in Orissa.

**D. VIDEO FILMS INITIATED DURING THE YEAR**

1. Technologies for Poverty Alleviation.
2. A film on working of machines developed and promoted by BMTPC

**PAPERS PRESENTED/PUBLISHED**

- i. Article on "Rain Water Harvesting – Need of the Hour" published in the BMTPC's newsletter released by the Hon'ble Minister of Urban Development & Poverty Alleviation on the occasion of the World Habitat Day 2003.. I.J.S.Sidhu.
- ii. Paper titled 'Bamboo – Wonder Material for the Housing Construction' was presented in VII World Bamboo Congress and Expo. ... T.N. Gupta and I.J.S.Sidhu
- iii. Alternative and Innovative Building Materials and Construction Technologies – "Initiatives of BMTPC" ... T.N. Gupta and I.J.S.Sidhu.
- iv. Article titled Water Conservation in Domestic Use published in BMTPC's Newsletter brought out on the occasion of World Habitat Day, October 6, 2003 .. J.K. Prasad, C.N. Jha.
- v. Article Late Sunrise & Early Sunset: Can We see a Sunset on this Sanitation Problem published in BMTPC's Newsletter brought out on the occasion of World Habitat Day, October 6, 2003..Dr. Vishnukant S. Chatpalli.
- vi. Pradushan Rahit Paryavas, published in BMTPC's Newsletter on the occasion of World Habitat Day, 6<sup>th</sup> October 2003... V.K. Sethi.

**PUBLICATIONS BROUGHT OUT DURING THE YEAR**

1. Landslide Hazard Zonation Atlas of India.
2. Newsletter "Water and Sanitation for Cities on World Habitat Day 2003.
3. A brochure on National Network on Building Technologies.
4. A brochure on Green Houses for Indo Tibetan Border Police at Leh.
5. A booklet on IIT-BMTPC Earthquake Tips.
6. A brochure on Technologies for Poverty Alleviation.
7. A leaflet on environment friendly, energy efficient, cost effective composite materials/ products for low cost housing.
8. A booklet on Bamboo – A Material for Cost-Effective and Disaster Resistant Housing.

Following publications were revised and updated:

1. Areas of Activity.
2. Brochure on Environment-friendly Building Materials & Construction Technologies.
3. Brochure on Local Vegetable Fibre + Industrial and Minerals Waste for Composite Materials.
4. Brochure on Introduction to Vulnerability Atlas of India.

**IMPORTANT VISITORS FROM OTHER COUNTRIES**

1. Mr. J.M. Kaome, Chief Executive Officer, National Housing Authority, Zambia.
2. H.E. Mr. Benjamin Ruiz, Ambassador of Peru
3. Mr. E.D. Maokola Majogo, Hon'ble Minister of State, Vice President Office, Tanzania.
4. Mr. Rudolf Romer, President, Foundation Institute of Engineering, Caracas, Venezuela.
5. Hon'ble Minister for Housing, Govt. of Singapore.
6. Dr. Camilo Arcaya, Advisor, Ministry of Science & Technology, Govt. of Venezuela.
7. Ms. Yasmin Turuphial, Embassy of Venezuela, New Delhi.
8. A high level delegation led by Hon'ble Chief Minister and Hon'ble Minister of Industries, Central Province, Sri Lanka.
9. Mrs. Modupe Adelaja, Director General, Small and Medium Enterprises Development Agency of Nigeria.
10. Mr. Kasereka Bwanakawa, Managing Director of Tourism, National Office of Dr. Congo.
11. Delegation from Afghanistan.
12. Delegation from Sudan.
13. Delegation from Rwanda.
14. Mr. Sujana Nanayakkara, Executive Director, Industrial Development Authority, Sri Lanka.
15. Mr. Frederic Mukanya Muleba, President, India Congo Chamber of Commerce and Industry, Congo.

16. Mr. Mustafa H. Bashir, Executive Manager, Araak Group, Sudan.
17. Mr. Soodurshan Bhunjum, Chairman, Association of Mauritius Enterprises, Mauritius.
18. Ms. Mataa Mukelabai, Zabs, Lusaka, Zambia.
19. Mr. B. Sanyaolu, Special Advisor, Agriculture and Forestry, Govt. of Nigeria, Nigeria.
20. Mr. Munoz, Embassy of Peru, New Delhi.

**Annexure VII**

**OBSERVATIONS OF IMPORTANT VISITORS TO BMTPC NATIONAL DISPLAY CENTRE ON BUILDING MATERIAL TECHNOLOGIES, PRODUCTS AND COMPONENTS/EXHIBITION HELD DURING THE YEAR**

<b>Date</b>	<b>Name</b>	<b>Remarks</b>
11.09.2003	Mr.Rudolf Romer President, Foundation Institute of Engineering, Venezuela	Excellent exhibition, a great contribution for Poverty Alleviation.
04.07.2003	Mr. E.D.Maokola Majogo Hon'ble Minister of State, Vice President Office, Tanzania.	Centre offer a lot to learn from .
10.06.2003	Mr. Benjamin Ruiz Ambassador of Peru	Congratulations to BMTPC for its extraordinary working.
25.04.2003	Mr.J.M.Kaome CEO, National Housing Authority, Zambia	Well done in all its adoptive research.
14.11.2003	Mr. Mustafa H. Bashir Executive Manager, Araak Group, Sudan	Very impressive products, which can prove successful in Sudan to replace the zinc roofing. We hope to import it in the short era.
14.11.2003	Mr. Sujan Nanayakkara Executive Director, Industrial Development Authority – Central Province, Sri Lanka	Highly impressed. Wants to cooperate in future.
15.11.2003	Mr. Frederic Mukanya Muleba President India-Congo Chamber of Commerce and Industry Congo	To promote your product in DRC. The promotion found of industrial development in Congo is very interested in partnerships with BMTPC to share experiences.
15.11.2003	Mrs. Modupe Adelaja Director General Small and Medium Enterprises Development Agency of Nigeria, Abuja	We are very impressed with the advancement of your technology in the area of utilization of local raw materials particularly conversion of waste to wealth. We hope that we can forge a relationship to

	Nigeria	transfer this unique technology to Nigeria. We need it urgently to provide employment opportunity to our youth. Well done.
17.11.2003	Mr. Soodurshan Bhunjun Chairman Association of Mauritian Enterprises Mauritius	Very interesting.
18.11.2003	Mr. Sangh Priya Gautam Union Minister of State (I/C) API, Udyog Bhawan, New Delhi	The pavilion is well managed, things are well arranged. Reflecting not only various national products in SSI sector but demonstrating the ancient Indian art and culture the new invention in the technology regarding manufacturing of boards, sheets etc. for building purposes is adding new dimensions in environment protection and eco-friendly atmosphere. I appreciate the efforts of the Ministry staff and offices.
18.11.2003	Ms. Mataa Mukelabai Zabs, Box 50259, Lusaka, Zambia	Very good array of building components. Technology looks adoptable.
18.11.2003	Chief Biodun Sanyaolu Special Advisor Agriculture & Forestry Office of the Governor, Oke-Mosan Abeokuta, Nigeria	I have visited and found all the machines very useful as a lead to wealth and from waste to wealth.



**ACTION PLAN FOR THE YEAR 2004-05**

As per its mandate, the Council's role for development and propagation of cost-effective and environment friendly building materials and technologies is a continuous activity for improving technology climate in the housing and building sector. Since the Govt. of India makes huge investments every year in supporting research and development, a number of emerging research results require upscaling and supplementing developmental work to transfer these bench level results for wider field application and/or for commercial production of new materials components and products. This requires a close networking with R&D laboratories, Bureau of Indian Standards on one hand and construction industry on the other.

The continuing interaction in past with the various stakeholders in the building materials and housing construction sector has given the opportunity to assess the technology needs of the industry which serves as the basis for further work of the Council and in identifying the specific studies which can be sponsored under the financial support from the Council. The output from such studies is either directly utilised by the industry or helps the Council in bringing out publications for different user groups. The operational linkages with various institutions developed and the output by networking with R&D organisations, industrial promotion agencies, centres of excellence, housing and construction agencies at Central and State levels.

The Council has been laying increasingly greater emphasis during recent years on revenue generating activities in order to gradually reduce the requirement of budgetary allocations.

While the emphasis on technology development, information, dissemination, validation and promotion of cost-effective technologies will continue, efforts are now being made to encourage setting up of production units of cost-effective building materials at cottage and small scale to suit

the investment capacities and local markets in rural, small and medium urban centres.

Following major activities are planned in 2004-05:

- Updating and revision of Vulnerability Atlas of India on GIS platform
- Preparation of technical publications and audio visuals
- Demand Assessment cum Market Survey and export potential for BMTPC technologies and machinery
- Computerisation for streamlining inter-departmental communication
- Modernisation and expansion of Display Centre at Nirman Bhawan
- National Workshop on cost-effective Housing, New Delhi
- National Workshop on use of Bamboo in housing and building construction, New Delhi
- A Demonstration Workshop "Building with Bamboo" in Kohima, Nagaland
- International Seminar-cum-Exhibition at New Delhi
- International Symposium on Concrete Technology for Sustainable Development, Hyderabad
- Demand driven Technology Demonstration-cum-Production Centres
- BMTPC regional units at Bangalore, Ahmedabad and Guwahati
- Establishment of Permanent Exhibitions at Colleges of Engineering & Architecture in Chandigarh, Maharashtra and Gujarat
- Setting up of Pilot Plant for production of 10,000 bricks per day using Copper Industry Waste from Hindustan Copper Ltd. at Khetri, Rajasthan
- Demountable pilot plant of 6 cum capacity for making non-autoclaved aerated Fal-G blocks at Vizag
- Alternative roofing proposal for low cost housing in Karnataka and Andhra Pradesh
- Development of Bamboo Mat Ridge Cap for roofing with Bamboo Mat Corrugated Sheet - Joint project with IPIRTI
- Development of technology for construction of two storey bamboo housing system - Joint project with IPIRTI

- Performance Appraisal Certification Scheme
- Construction of demonstration houses in 11 States under VAMBAY scheme - Ministry of Urban Development & Poverty Alleviation
- Construction of 10 demonstration houses in Mizoram - Ministry of Urban Development & Poverty Alleviation
- Construction of 10 demonstration houses and establishment of Demonstration cum Production Centre in Tripura - Ministry of Urban Development & Poverty Alleviation
- Fabrication of components and design and construction of 70 green houses for ITBP, Ministry of Home Affairs
- Establishment of Bamboo Mat Production Centre (8 nos.) in Mizoram, Meghalaya, Assam & Tripura - DONER & MoUD&PA.