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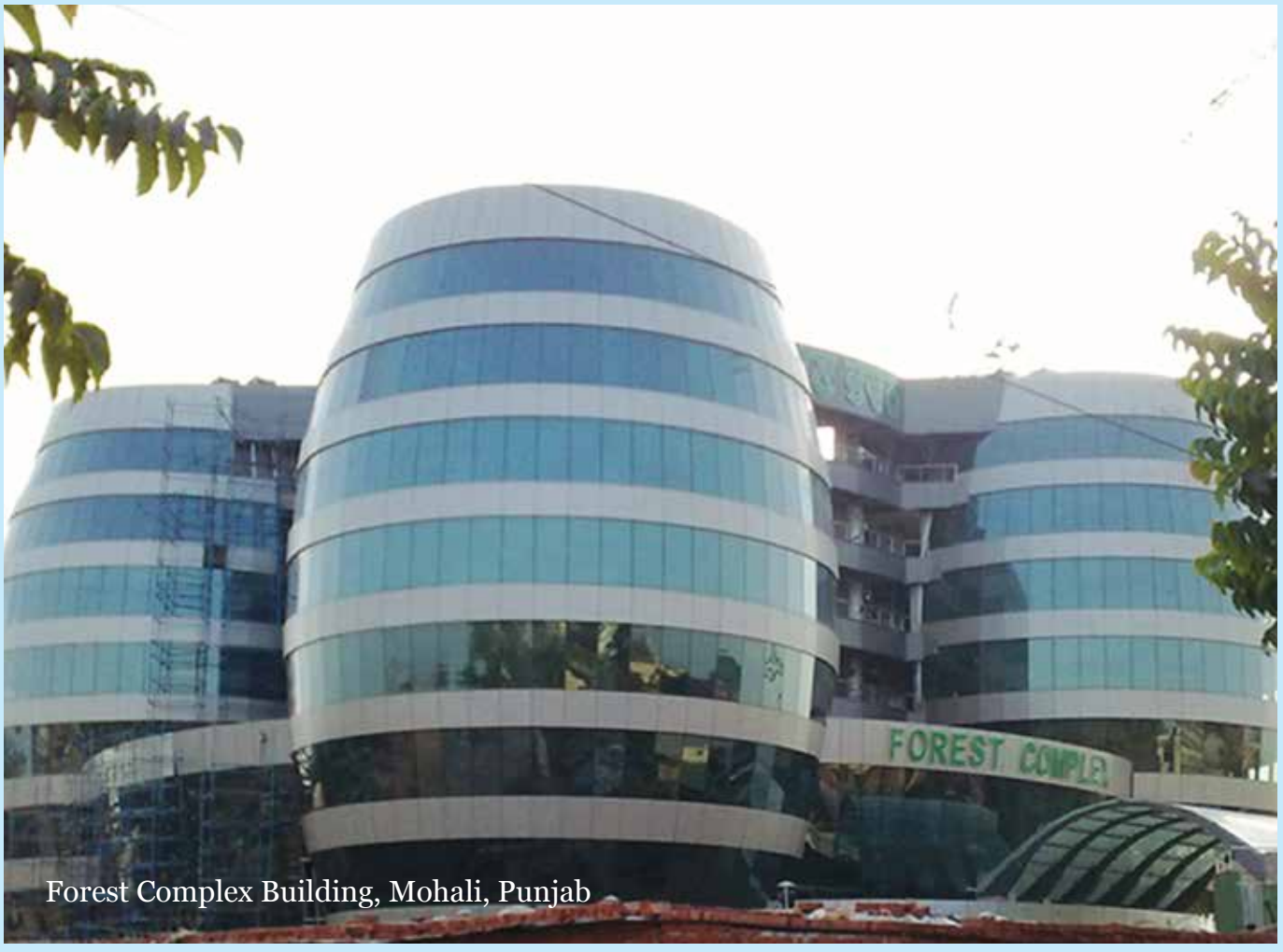

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INTERNATIONAL NEWS

From President's Desk

India is undergoing an unprecedented growth in Built Environment Sector. The factors of rapid urbanization, extensive infrastructure development, increasing technological intervention and various initiatives of Govt. of India like "Smart Cities Mission" and "Housing for All" have contributed to this unprecedented growth in Built Environment. Huge investment in development of Airports, Highways, Railway Stations and various Institutional Buildings in Education and Health Sectors has given further impetus to this development. The sum of interrelated components viz. products, interiors, structures, landscapes, cities, regions and earth define the built environment.

It is predicted by National Commission of Population that by 2036, 38% of Indians will live in Urban Areas and also double its building space over the next two decades. This trend of rapid urbanization has led to overcrowded cities, placing immense pressure on infrastructure and creating urgent housing shortages.

Rapid development of Built Environment presents host of opportunities for the Professionals and increasing demand of goods and services. It also poses series of challenges, such as Waste Management, Slow adoption of technology, Environmental Concerns, Water Scarcity, adverse effects of climate change, high energy consumption and balancing the competing demands in Urban Planning and inclusive development. Resilient Infrastructure designed to withstand natural disaster and climate change effects, management of floods in urban areas / cities and adaptive road network is essential for future urban resilience.

Retrofitting in construction, Architecture and renovation for improving the existing building including structural stability rather than rebuilding or building additionally is a challenge in itself. By changing the existing building / structure in relation to the materials, building quality, structural strength and energy usage, the efficiency of its operation can be improved leaving it more sustainable without the need to rebuild or demolish and reconstruct it as fresh one.

IBC presents a unique platform to the professionals associated with Built Environment, be it Engineers, Architects, Academicians, Builders, Building Materials Manufacturers, Planners, Administrators etc. , for deliberating on various challenges facing the sector and contribute in evolving of sustainable solutions to these challenges. IBC has taken rapid strides in dissemination of knowledge of Built Environment to the various stakeholders by publishing Technical Journals/Newsletters, organizing of various Technical Talks, Seminars and Training Programmes etc. with the involvement of experts from different sectors of the country and abroad as well and also by involving it's Chapters in all States of the Country.

Publication of this issue of Built Environment is an initiative in this direction. I take this opportunity to call on all the professionals associated with Built Environment to join hands and effectively use the platform provided by IBC for betterment and development of the Country.

Let us join hands to build a Better Tomorrow.

(Er.C. Debnath)
President,
Indian Buildings Congress (IBC)

From Editor-in-Chief Desk

We are living in the times of large scale construction of Built Environment, spanning from construction of Houses, Hospitals, Education Institutions, Airports, Railway Stations to various kinds of Institutional Buildings. The development process of the Built Environment has been further accelerated by technological interventions, development and adoption of new materials, innovative designs and inclusive planning.

The development of the Built Environment has a significant impact on various kinds of pollution such as Air pollution, Water pollution, Landfill waste, Noise Pollution.

Although, much is said and written about outdoor Air pollution, however damaging implication of indoor air pollution on the human health needs to be given special attention for evolving remedial measures.

The main source of indoor air pollution are building materials including paints, household cleaning items, gas stoves, cooking fuels, heaters, dust mites, pet dander, etc. Indoor air pollutants can cause range of short term and long term health issues, such as respiratory diseases, heart disease, cognitive cancer, deficits etc.

Households needs to make concerted efforts to control indoor air pollution by way of ensuring proper ventilation, use of green cleaners, use of low-emitting building materials and furnishings, keeping indoor spaces clean &dry and use of appropriate indoor plants in an effective way to reduce indoor air pollution. Adopting sustainable design system and incorporating green areas in the planning shall substantially control indoor pollution.

Onuslies on every household to take effective measures to control Indoor Air pollution.

Clean Indoor Air is Key to good health !.

(K.B. Rajoria)

Decarbonization Strategies in Urban Planning: A Pathway to Sustainable Cities

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Abstract

Unprecedented Urbanization and reliance on fossil fuels, infrastructure, and energy habits of urbanized populations in cities contribute to about 70 per cent of the global CO_2 emissions. Climate change is, as of now, an irreversible process causing deep concern for human lives; therefore, cities have started to implement complete decarbonization approaches. The study is part of a larger exploration which aims at more effective sustainable transformation in countries that are at an early stage of industrialization.

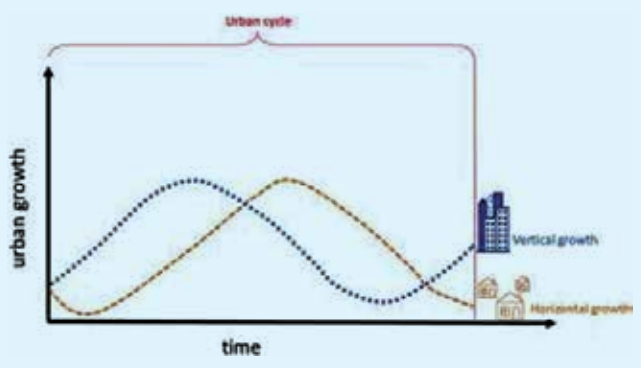
Among the elements of urban planning, this paper focuses on sustainable codes in building design and construction, on site renewable energy integration, energy efficiency measures, and low carbon transport modes with the last two supplemented by green infrastructure. This paper analyses the best city practices through international case studies and reviews how different city authorities employ the global policy index with an aim of drawing the experiences, limitations, and optimistic outcome for cities. These findings give a good basis on maneuvering through social and political barriers to enable cities shift towards low carbon and resilient futures.

Introduction

1. The Role of Cities During the Climate Crisis

Cities are placed in the strategic core of a global carbon cycle, since the UN - Habitat of 2020 reports that this sector of human settlement has been accountable for more than two-thirds of carbon dioxide emissions around the globe (Bai, et al.).

Along side the sharp rise in people moving into urban centers, cities are being simultaneously viewed as both a goal and a target when it comes to climate change. The growing populations should be met with expanding vertical and horizontal developments but also at the same time ought to reduce carbon emissions as an equally consider edaim (Zambon & Calantoni, 2019).



As the biggest contributors to population to economies and utilization of resources, it comes as no wonder that cities are in an especially strong position to lead the implementation of effective Decarbonization policies and practices.

During the last two decades, the idea of decarbonizing the economy and following the goals of such international agreements as the Paris Agreement, has become particularly popular. As of the most recent definitions, urban decarbonization is the "set of transitions towards zero carbon cities" which consists of policy oriented, governance and locational changes and has been a priority issue for most countries and urban designers and planners around the world (Seo, 2017).

1.1. The Decarbonization of Cities: Why is it Urgent?

With more than half of the population expected to be housed in urban areas by the year 2030, pressure on the climate crisis mounts with each step of urbanization, especially in developing nations. Industrialization that decay demands is even more concentrated in urban areas. Considering demographic trends, this population surge leads to a higher demand for energy, thus causing more intensification of carbon emissions, thus forcing cities to be the leading sources of greenhouse gas emissions that will support up to 68% of the world's population residing in urban areas by 2050.

The Paris Agreement, which was introduced in 2015, now aims for emissions that will keep the temperature below 2 degrees Celsius worldwide, with a target limit

of 1.5 degrees Celsius. Any of these outcomes will require cities, which depend mostly on coal and oil for energy generation and transportation, to slim coal or reduce more emissions dramatically.

As a result, various cities are now focusing on devising and implementing comprehensive Climate Action plans in a bid to attain carbon neutrality by mid-century. The focus areas in these plans are usually three:

- **Shift from Fossil Fuels** — The culture of using coal and oil is being phased out, and wind and solar are used not only because of carbon emissions but also to make energy usage a lot more efficient.
- **Replacement of Infrastructure** — Adequate meet some of the constructed environment policy that incorporates retrofitting and expanding public transport alternatives across the region, which also allows for low-carbon alternatives and supports the higher resilience in the cities in question.
- **Nature - Based Solutions** — Incorporation of natural habitats and greenery with in urban development policies would alleviate the negative influences of climate change, foster additional biodiversity, and enable carbon storage.

There are crucial systemic reforms with regard to the planning as well as governance frame work that will help step toward such ambitious goals. This again infers that there are numerous players and stakeholders that will have to be considered for all efforts in the decarbonisation of a society towards social justice. And while there are physical and socio-political issues to be solved, the latter is more prominent in the regions that suffer more direct consequences from climate change.

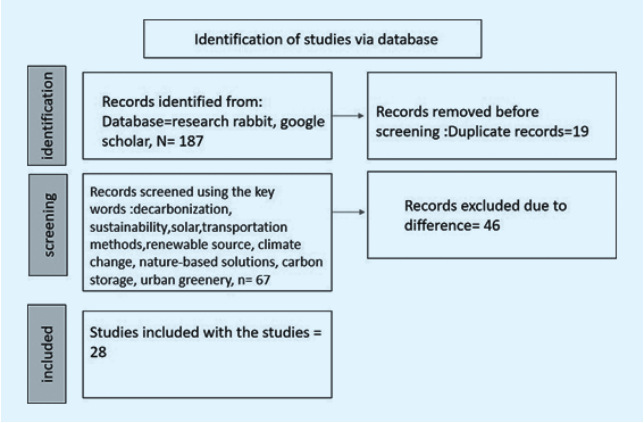
In a nut shell, there are two reasons why it is worth trying to reduce emissions in cities and the need is dire – the heavy dependency of cities on carbon emitting activities and the need to address the climate crisis. If cities can demand themselves to set aggressive goals of carbon neutrality and encapsulate them in new development of cities, they can help inspire hope for a sustainable world in the better future.

Methodology

A comprehensive literature review was carried out to identify key trends, challenges, and effective strategies in urban decarbonization. Key terms used include "Urban Decarbonization," "Sustainable Urban Planning," "Climate Change Mitigation," "Low-Carbon Cities," "Green Infrastructure," "Renewable Energy," and "Sustainable Transportation.". A systematic search was conducted across the academic data bases, such as Google Scholar, JSTOR, Web of Science, and Scopus, to find relevant research papers, articles, and reports. Based on the identified strategies from the literature review, three case studies were selected to analyze their implementation and effectiveness.

City	Basis
Stockholm, Sweden	A city that has successfully integrated renewable energy sources into its energy mix and implemented ambitious climate action plans.
Singapore	A city known for its innovative approach to green building standards and energy-efficient urban design (landscaping)
Ahmedabad, India	A city that has prioritized sustainable transportation, investing heavily in public transit and cycling infrastructure.

By comparing the strategies implemented in the three case studies, this research aims to identify the most effective approaches to urban decarbonization and provide valuable in sights for policy makers, urban planners, and other stakeholders.



2.0 Strategies for Decarbonization in the Management of Urban Areas

While decarbonization impacts an entire spectrum of urban life including transportation, buildings and energy systems, it also requires systems that provide the necessary thrust to such strategies.

The subsequent sections outline the principal strategies for carbon emission reduction in cities: starting with Managing carbon emissions, and the enabling processes in the last sections such as Growth of Effective Policy Mechanisms, Technological Advances in Design and Architecture, and Sustainable Urban Devices and Systems.

2.1 Integration of Alternative Sources of Energy

One of the most critical features of cities under the movement toward the decarbonization process is that switch away from fossil fuels to alternative sources of energy in its energy strategy. As urban areas have a high energy consumption level, it is crucial that development and integration of Clean Energy Technologies should take place in such a manner that the dependency on carbon sources is diminished.

2.1.1 Solar energy in urban environment

Solar energy supply potential, since mutual shading caused by buildings influences solar potentials on facades and roofs (Mohajeri, et al., 2016). Additionally, spatial differentiation of energy demand can be helpful in the estimation of energy poverty risks, which might play a crucial role in formulating socially accepted energy policies (Kelly, s. shahab, & Clinch, 2020). Therefore, adequate representations of the spatial dimension of energy systems are necessary for developing appropriate model representations (Horak, stoeglehner, Neugebauer, &henoun, 2022). The spatial dimension is evaluated along the smallest spatial unit, like individual buildings, considered within the relevant Union Etoile Sportive Montmorillonnaise (UESM).

2.1.2 Wind and Geo-thermal Energy Potential

One of the best renewable energies for cities is solar power because it is scalable and versatile. The carbon emissions can be cut significantly by installing solar panels on roof tops, in public buildings, and in ground-mounted array sat out-of-area farms within the city. For example, cities like Copenhagen and San Francisco blazed a trail for solar initiatives by implementing tens of thousands of rooftop photovoltaic panels located in civic as well as private buildings.

These incentives can take the shape of tax rebates or subsidies offered by the government and thus, to boost investment in solar installations by residential as well as commercial sectors also enables their financial viability. Urban infrastructural developments such as bus stations, streetlights and benches in public spaces can all be fitted with solar panels to utilize the optimal savings on energy efficiencies that by going green present themselves with.

Meanwhile, urban wind farms (the type most suitable for coastal cities with a predictable wind pattern) offer an additional source of renewable energy. Small wind turbines can be mounted on buildings or next to industries to supplement the demand. And geo-thermal heat power (once again, less often found in a city than other locations) provides one of few urban-friendly renewable options for those that just happen to sit atop the proper geological formation. As seen in Reykjavik, Ice land, it can power the district heating system and thus offer a successful option for decarbonizing uses of this energy source. (Seo, Comparison of geothermal with solar and wind power generation systems, 2017)

2.2 Building Energy Efficiency

The building sector is one of the largest sources of urban carbon emissions, globally contributing to between 24% and 40% of energy-related emissions in many cities currently (IEA 2021). Reducing energy use in new and emerging buildings is one basic measure in decarbonizing cities.

2.2.1 Green Building Standards and Certification Programs are as follows:

Use of the environment-friendly codes in new constructions of buildings, for instance, LEED and REEAM, can be enhanced by increasing green energy efficiency. These schemes encourage the use of environment friendly products, such as materials with less consumption of energy, energy consuming appliances, and smart technologies that do not squander energy.

2.2.2 Retrofitting Existing Buildings

Retrofitting existing buildings is a significant challenge for urban planning because it usually has very low energy efficiency, often resulting from outdated construction methods and materials. For example, cities like New York and London have created policies that mandate older buildings to retrofit to meet new energy efficiency standards. Such retrofitting may include energy-efficient windows, better insulation, as well as modern HVAC systems. Even financial incentives can stimulate property owners' interest in upgrading to make them more energy-friendly by offering, for example, low-interest loans or subsidies.

2.2.3 Smart Buildings and Energy Management Systems

The integration of smart building technologies, sensors, and automated energy management systems with real-time monitoring will enable the most optimal usage of energy in both residential and commercial buildings. These technologies facilitate precise control over heating, cooling, and lighting by reducing unnecessary energy usage and lowering carbon footprints. Barcelona has been a leader in the enforcement of smart city technologies, which implanted sensors in its urban infrastructure to enhance energy efficiency.

2.3 Sustainable Transportation Systems (guddmanson, Hall, Marsden, & Zietsman, 2016)

The decarbonization of the transport sector requires a set of strategic actions and top-down policy interventions. Freight transport, which is among the major green housegas-emitting activities, would be supported by this green logistics framework that identifies five key strategies:

Reduce Freight Transport Demand: Reduce freight movement that is unnecessary through local sourcing, improved logistics planning, and better inventory management

Switch to Low-Carbon Transport Modes: Promoting modal shift to railway and inland waterway systems over road transport. This can be achieved by fiscal measures (e.g., rail freight subsidies), regulatory measures (e.g., size and weight norms of trucks), and investments in infrastructure. Policy makers must anticipate economic counter-play and there sponses of road haulers for the shift to be viable.

Asset Utilization Improvement: Improving the productivity of existing transport systems by increasing vehicle load factors, optimizing routing, and reducing empty back hauls.

Improving Energy Efficiency: Introduction of advanced vehicle technologies and encouragement of best practices in operations to reduce energy consumption per ton-km.

Switching to Lower-Carbon Energy: Transitioning from fossil fuels too the resources of energy, such as electricity and hydrogen, to power freight vehicles.

2.3.1 Expanding Public Transport Networks

Public transportation systems-including electric buses, metro systems, and trams -need to be expanded and upgraded in any city to reduce the use of private vehicles. Curitiba, Brazil, has for years been known for its Bus Rapid Transit (BRT) system, emulated as a model of sustainable urban transit around the world.

Fully electrifying the public transport fleet will further cut emissions. Shenzhen, China has fully electrified the bus fleet, reduced emissions, and improved air quality.

2.3.2 Active and Micro-Transport Solutions (Merkert, bushell, & j. beck, 2019)

High levels of active transport, such as walking and cycling, can significantly reduce emissions, especially for short distances. Cities in Amsterdam and Copenhagen have invested huge amounts in bicycle infrastructure, and cycling as now become the biggest mode of transport in cities. In addition, micro-mobility solutions such as e-scooters and bike-sharing programs offer a lower-emission alternative to traditional forms of transport, often required only as an option for last-mile connectivity.

2.3.3 Charging Infrastructure for Electric Vehicles

Electric vehicles will increasingly be an integral part of the decarbonization strategies of urban areas.

Cities must offer comprehensive charging infrastructure for electric vehicles to enable the transformation from internal combustion engine vehicle types to electric alternatives. Incentives that encourage the use of electric cars and trucks along with banning or phasing out policies for internal combustion engines will help expedite the replacement of the conventional vehicles by electric cars and trucks

2.4 NBS (Nature-Based Solutions)

Nature-based solutions present an auxiliary method to technical decarbonization strategies by utilizing the capacity of eco systems to sequester carbon and manage urban climatic conditions.

2.4.1 Urban Green Areas and Woodlands

Green spaces, which may include parks, urban forests, and green roofs, can decrease the effects of the urban heat island, improve air quality, and offset carbon sequestration. For example, cities in Singapore have used extensive green space through plans such as the "City in a Garden" project, which has both bio-diversity benefits and contributes to reducing the effects of climate change.

2.4.2 Blue-Green Infrastructure

The restoration of wetlands, rivers, and lakes may additionally facilitate carbon sequestration and bolster resilience against climate-related impacts, including flooding. Blue-green infrastructure, which harmonizes water management systems with vegetative areas, offers urban environments sustainable strategies for both decarbonization and adaptation to climate change. A pertinent illustration of this is Rotterdam's "Water Squares," which capture and retain rainwater while simultaneously offering public green spaces, thereby strengthening the city's capacity to withstand climate challenges.

3. Policy and Governance for Urban Decarbonization

The urban environment has finally become

decarbonized with the use of "strong policy frameworks" and" efficiency in governance systems." Technology is also important, but programs like these chiefly rely on political, economic, and regulatory environments.

3.1 Carbon Valuation and Market Instruments

Other methods comprise taxation of emissions and cap-and-trade. These would be robust facilitators in terms of emission reductions of greenhouse gases. For instance, Vancouver imposed a carbon tax on the use of fossil fuels since 2008. The policy has been effective in inducing entities at both the micro and macro levels to employ more low-carbon technology and practices.

3.2 Land Use and Urban Policy Zoning

Urban planning strategies on high-density and mixed-use developments reduce the need to go that extra mile in commuting, thereby enhancing the public transportation usage. The TOD model has been successfully used in other cities such as Portland, Oregon. These approaches in the development of cities around the transit centers have highly reduced reliance on private automobiles and assisted in reducing emissions.

3.3 Public-Private Partnerships and Investment PPP

PPP formation is the critical process to achieve the heavy investments required for urban area decarbonization. Alliances spread risks and resources between the public sector and private enterprises, making the execution of vast sustainability initiatives possible. An excellent example is the city of Oslo, which has formed alliances with private organizations to work toward converting its public transport system completely into an electric one to show the efficiency of the partnerships in promoting efforts for urban sustainability. This section identifies the critical importance of policy and governance in decarbonizing cities. Pursuit of carbon pricing, sustainable urban planning, and cooperative partnerships position municipalities as better opportunities to pursue pathways to low- carbon futures with greater effectiveness.

4. Case Studies of Urban Decarbonization Strategies

This section presents a comparative analysis of three cities—Stockholm, Singapore, and Ahmedabad—each of which has adopted various strategies to promote decarbonization within their urban planning frameworks. Each city demonstrates unique initiatives that contribute to their sustainability objectives.

4.1 Stockholm, Sweden (Tozer,2019)

Overview: Stockholm has set an ambitious goal to eliminate fossil fuel usage by 2040, making significant strides towards reducing carbon emissions through a comprehensive approach to urban planning.

Key Initiatives:

- Renewable Energy-Powered Public Transport: The city's transportation system operates entirely on renewable energy sources, promoting sustainable mobility for its residents.

  Innovative District Heating System: This system utilizesbio-fuels and captures waste heat from local industries to efficiently provide heating to both residential and commercial buildings (Jodeiri, Goldsworthy, S.buffa, & Cozzini).

- Implementation of Green Building Standards: Strict energy efficiency requirements for new buildings help reduce energy consumption.

  Impact: Since 1990, Stockholm has successfully cut its carbon emissions by over 40%, positioning itself as a global leader in sustainable urban practices. The city exemplifies how integrating renewable energy in to urban infrastructure can drive significant environmental benefits (Walker & Devine-Wright, 2008) (Bright, bullman, evans, & gardner, 2008)

4.2 Singapore

Overview: Singapore is taking a comprehensive approach towards decarbonization through its Green Plan 2030, which emphasizes a combination of nature-based solutions and energy efficiency improvements (Lau, Ramakrishna, Zhang, & Hameed, A Decarbonization Roadmap for Singapore and Its Energy Policy Implications, 2021).

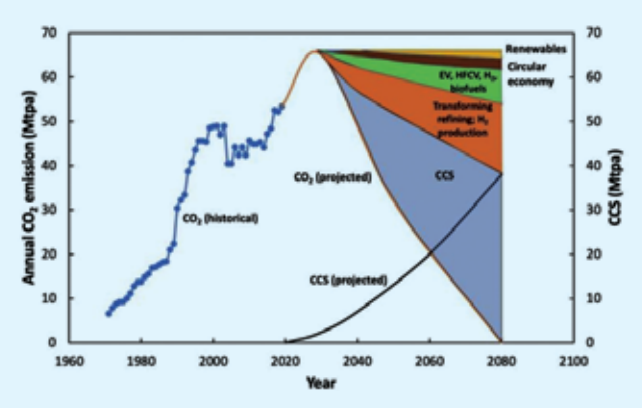


Fig. 1. Singapore's CO2 emissions and illustrative reductions needed to achieve net-zero emissions by 2080 (Lau, Ramakrishna, Zhang, & Hameed, A Decarbonization Roadmap for Singapore and Its Energy Policy Implications, 2021).

Key Initiatives:

- Extensive Green Space Network: The city features numerous parks and green corridors, which enhance biodiversity and provide residents with recreational opportunities, CO_2 emissions are highly concentrated on two small islands: Jurong and Bukom (Figure 3a). Jurong Island, 32 km2 in area, houses most of Singapore's refining, petrochemical, and power plants. Bukom Island, 1.45 km2 in area and located just 4 km east of Jurong Island, houses Shell's biggest refinery. Jurong Island accounts for over 50% of Singapore's CO_2 emissions, thus making it a prime target for carbon capture.

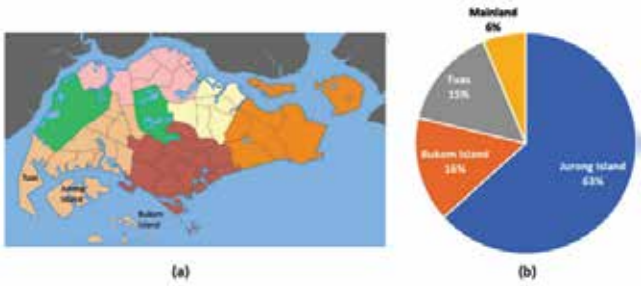


Fig. 2. (a) Map of Singapore, (b) CO_2 emissions from industry and power by location (Lau, Ramakrishna, Zhang, & Hameed, A Decarbonization Roadmap for Singapore and Its Energy Policy Implications, 2021).

- Energy-Efficient Building Practices: The city has adopted green building standards for new developments to enhance their energy performance.
- Enhancements to Public Transport Systems: Upgrades to mass transit have made public transport a more appealing alternative to private vehicles.

Impact: Singapore has achieved a significant reduction in per capita emissions while simultaneously improving urban livability. The Green Plan has positioned Singapore as a front runner in sustainable urban development, showcasing that dense urban areas can effectively incorporate green spaces

4.3 Ahmedabad, India

Overview: Ahmedabad's efforts toward decarbonization focuses on enhancing energy efficiency, improving public transport and adopting renewable energy solutions to address the challenges of rapid urban growth.

Key Initiatives:

- Bus Rapid Transit System (BRTS): This system provides an efficient and accessible mode of public transportation, decreasing dependency on personal vehicles (Kathuria, Parida, & Sharma, 2015).
- Investment in Solar Energy: The city has made significant investments in solar technologies to diversify its energy portfolio and lower carbon emissions.
- Energy Efficiency Initiatives: Various programs aimed at improving energy usage in buildings contribute to the city's sustainability efforts.

Impact: Ahmedabad's urban planning initiatives have led to better air-quality and reduced emissions, making it a valuable example for other Indian cities. The local strategies demonstrate how targeted actions can yield considerable environmental benefits.

Comparative Analysis

City	Target	Key Initiatives	Impact
Stockholm	Elimination of fossil fuels by 2040	Public transport powered by renewable energy, district Heating systems, and green Building standards	Over 40% reduction in emissions since1990; recognized leader in sustainability
Singapore	Implementation of Green Plan 2030	Green spaces, energy-efficient buildings, and public transport enhancements	Significant reduction in per capita emissions; improved Livability of urban areas
Ahmedabad	Broad decarbonization objectives	BRTS, solar energy initiatives, and energy efficiency programs	Improved air quality and lower emissions; serves as a model for other cities in India

5. Challenges and Opportunities in Urban Decarbonization

Urban decarbonization presents a complex landscape of challenges and opportunities that must be navigated to achieve sustainable outcomes. The following sub-sections highlight key barriers and potential avenues for progress.

5.1 Financial and Economic Barriers

Most challenges in decarbonization arise due to high up front costs associated with renewable energy

technologies, retrofitting initiatives, and development of smart infrastructure. Although all reports on long-term savings and other environmental benefits are documented for such investments, access to initial funding poses great challenge, particularly for cities of developing countries. Overcoming these obstacles through gaining access to financing mechanisms and incentives will further facilitate low- carbon solutions.

5.2 Political and Institutional Challenges

Political will as well as the institutional capacity of the local governments play a highly critical role in defining the decarbonization strategies. Political resistance, uncertainty over regulations, and short-term orientation may build unnecessary hurdles for necessary policy imposition. In such scenarios, cities with the least or in flexible governance structures pose an increasing challenge in achieving their sustainability goals due to fragmentation.

5.3 Social Equity and Inclusivity Social Equity

It is very important in the quest for decarbonization. Low-carbon transition may expose vulnerable communities to energy costs or displacement through such consequences of green gentrification. To get widespread public support and maintain social justice, decarbonization efforts must be designed to distribute the benefits equitably to limit the negative impacts on vulnerable populations. While this discussion recognizes significant barriers to urban decarbonization, an inclusive, equitable approach to these initiatives in making sure that benefits trickle down to all members will be stressed. Overcoming such bottlenecks is essential to a just transition into a low-carbon urban environment.

Conclusion

Decarbonizing cities is one of the essential steps toward mitigation of climate change; it forms a linchpin for developing a future where sustainable development is realized. Cities can reduce their carbon footprints most significantly and enhance their resilience to climate impacts through integration of renewable energy sources, improved energy efficiency, transformed transport systems, and mechanisms embracing nature-based solutions. Such efforts necessitate enabling policy frameworks, financial investments, and inclusive governance for prioritizing long-term sustainability as well as social equity.

Urban decarbonization is a challenge and an opportunity for cities worldwide. As more people than ever in history move to cities, the need for rapid, scalable, and equitable decarbonization will grow urgently. Cities can lead the transition to a low-carbon, resilient future through collaborative effort and sustained political commitment.

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Microplastics in Residential Spaces – Sources, Fate, and Human Exposure

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Abstract

Microplastics (MPs), synthetic plastic particles sized 1 µm to 5 mm, are emerging contaminants found ubiquitously, including residential spaces. These environments serve as both sources and sinks of MPs, derived from primary sources such as personal care products, synthetic textiles, and secondary sources like the degradation of plastic household items. This paper reviews the sources, fate, and potential human exposure to MPs in indoor environments. Atmospheric MPs (AMPs), encompassing both suspended (SAMPs) and deposited (DAMPs) particles, are particularly concerning due to their significant presence indoors, higher than outdoor levels. Studies highlight diverse exposure routes, including inhalation, ingestion via contaminated dust, and interaction with indoor air pollutants. Key polymers like PET, PE, and PP dominate indoor MPs. The findings underscore the need to understand MP dynamics within residential settings to assess human health risks and inform mitigation strategies.

1. Introduction

Microplastics (MPs) are a complex group of contaminants made up of synthetic polymers and its size ranges between 1 µm to 5 mm (Rochman et al., 2019). MPs are ubiquitous in the environment, ranging from oceans and rivers to remote locations and, increasingly, in indoor environments such as residential homes(Frias and Nash, 2022; Kershaw and Rochman, 2015; Machado et al., 2018). These small plastic particles, less than 5mm in size, originate from a plethora of sources, allowing them to classify as either primary MPs or secondary MPs. Primary MPs are those plastic particles that are intentionally produced in the size range of 1 µm to 5 mm to serve different applications, like microbeads in personal cleaning products, medical applications, feed material for plastic products, and industrial abrasive cleaners(Boucher and Friot, 2017; Conkle et al., 2018; Corcoran, 2022). In contrast, secondary MPs generates from breakdown of larger plastic items which may occurs due to multitude of agents (environmental weathering, mechanical forces like wear and tear, chemical processes, and biological degradation) that initiates and drive the breakdown (Corcoran, 2022; Crawford and Quinn, 2017, 2016).

Residential dwellings, as spaces where people live, work, and interact with various materials, serve as major sites for the accumulation and release of various pollutants including microplastics. The residents of these indoor environments, routinely use plastic-based materials, synthetic textiles, and plastic household products, which act as both sinks and sources of MPs. The MPs present in the outdoor and indoor atmosphere is colloquially referred to as atmospheric MPs (AMPs). AMPs research so far have mainly focused on both outdoor and indoor atmosphere and studies have used suspension MPs (SAMPs) and deposition MPs

(DAMPs) to classify AMPs. The SAMPs include those MPs that are collected when they remain in the air in suspended form, like particulate matter (PM). SAMPs have been studied in both outdoor and indoor air. The DAMPs include those MPs that get deposited from the suspended air to a surface. DAMPs, also known as atmospheric deposits (dry and wet), are collected from both indoor and outdoor atmospheres.

Within the residential habitat, humans are exposed to both SAMPs and DAMPs due to their dynamics & fate and the human exposure of AMPs is potentially responsible for inflammation, cytotoxicity, and lung disease(Ahmed et al., 2021; Anbumani and Kakkar, 2018; Bhuyan, 2022).With growing concerns about human exposure to MPs and their known eco-toxicological effects on biota, understanding their sources, fate, and potential health risks within residential homes is crucial for formulating mitigation strategies and limiting the exposure.

This paper aims to review the sources of microplastics in residential homes, their fate within the indoor environment, and the discuss the potential exposure routes for humans. We present the findings of the pertinent literatures related to presence of MPs in the indoor environment. Further, we have categorized the sources of MPs into primary and secondary categories similar to their classification based on origin, explored the ways these particles persist in indoor environments, and discuss their impact on human health and the challenges in mitigating exposure.

2. Review of relevant literatures

Majority of the human life is spent in the indoor space, be it for occupation, living, or recreation, thus the exposure of humans to indoor MPs is reported to be higher. Additionally, the MPs abundance in the indoor air and deposition samples are higher that the outdoor air and deposition samples (O'Brien et al., 2023). This is likely due to specific indoor emission sources, plastic products used in daily activities, and movement of air masses bringing outdoor MPs to the indoor habitat.

O'Brien et al., 2023 reviewed the AMPs studies published between 2015 to 2022 and observed that indoor air concentrations varied between <1 particles/m3 and 1583 ± 1181 particles/m3. Indoor DAMPs contained between 475 and 19,600 particles/m2/day and between 10 and 67,000 MPs/gram. The dominant polymers were PET, PE, PP in indoor DMPs.

In indoor and outdoor samples collected from 39 major cities of China, measured PET and PC-related DAMPs and PET fraction was higher in indoor dust (1550–120,000 mg/kg, average: 26,800 mg/kg) than outdoor dust (212–9020 mg/kg, average: 2780 mg/kg). Similar trends were also observed for PC (indoor:4.6 mg/kg, outdoor:2.0 mg/kg), indicating that the built indoor environment is more polluted than the natural environment, hence greater exposure risk for humans. Geo-mean daily intake of PET MPs in children was estimated as 17,300 ng/kg by weight (Liu et al., 2019).

In Mumbai, India, 24-hour composite food, water, and DAMPs samples were analysed for the presence of MPs and the daily exposure through the SAMPs (594 ± 269 per person) was higher than drinking water (382 ± 205 per person) exposure, but significantly lower than through contaminated food (1036 ± 493 per person). Overall, the average daily exposure of 2012 ± 598 MPs particles per person through these exposure routes is reported (Yadav et al., 2022). Taking together the findings of the studies discussed earlier, we can see the extraordinary impact of indoor dust deposition on human ingestion and inhalation, and their exposure potential is significantly higher than from the food contaminated with MPs. The presence, accumulation, and exposure of MPs in the residential habitats is concerning due to combined eco-toxic effects of MPs and coexisting air pollutants. Thus, its pertinent to understand the sources of AMPs within these spaces.

3. Sources of Microplastics in Residential Homes

Residential dwellings serve as environments where MPs accumulate from multiple sources. These sources can be broadly categorized into primary and secondary sources. In residential households, the major MPs sources are personal care products and cosmetics and laundry which utilizes wastewater as a pathway to escape to the outdoor environment. Primary sources refer to direct inputs of microplastics into the indoor environment, typically from products or materials specifically designed with plastic components. With respect to domestic households, the plastic product exposed to the environment and MPs generated from the use of these products are primary sources of airborne indoor MPs (Jessieleena et al., 2023). Secondary sources are those from which microplastics result from the degradation or wear of larger plastic items or materials within the household. In the indoor habitat, secondary MPs are generated by friction, heating, lighting or wear and tear of everything made from or with various types of plastics (Kacprzak and Tijing, 2022). This includes plastic furniture, other household items like carpet or

curtains or building materials including wall paints or floor finishes, plastic toys, buckets, mugs, dustbins, stationary items and office supplies, decorative items, FMCG products, SUPs, and kitchenware.

3.1 Primary Sources of Microplastics

Primary sources are those that introduce microplastics directly into the household environment. These sources include consumer goods, textiles, household items, and other products that contain plastic materials(Moore, 2008; Sun et al., 2020; van Wezel et al., 2016).

3.1.1 Household Products and Consumer Goods

Consumer goods and household products are significant contributors to the presence of MPs in residential spaces. For instance, personal care products like facial scrubs, body washes, and toothpaste often contain plastic microbeads. These microbeads are intended to serve as exfoliants but, once used, they are washed away, contributing to indoor plastic pollution. Additionally, cleaning products, such as detergents and floor polishes, often contain microplastic particles, either as part of their formulation or through the use of synthetic fibers in cleaning cloths and pads(Prata, 2018).

3.1.2 Textiles and Synthetic Fibers

Synthetic textiles, such as polyester, nylon, and acrylic, are common materials found in many household products, including clothing, bedding, carpets, and furniture. During everyday activities like washing, wearing, cleaning and drying or wear and tear, these textiles shed microfibers(Chen et al., 2020). Laundry activity and wipes are another important source of fibrous MPs in residential spaces (Galvão et al., 2020; Le et al., 2022). Washing clothes made from synthetic fabrics is a primary contributor to microplastic pollution, as washing machines release millions of microfibers into wastewater, some of which eventually enter the indoor environment.

3.1.3 Building Materials and Household Items

Plastic-based building materials and furnishings are another primary source of microplastics in residential homes. Decorative items and ornaments release microbeads, foams and fragments (Pandey et al., 2022; Raju et al., 2020; Satsangi, 2020; Wang et al., 2022; Yurtsever, 2019a, 2019b). Food wraps, plastic bags, food containers, milk pouches, and other FMCG scathes generates MPs during their application (Ajith et al., 2020; Kiruba et al., 2022; Rabnawaz et al., 2017; Schnurr et al., 2018; Spruit and Almenar, 2021).

Items such as plastic paint, PVC flooring, synthetic furniture, and plastic insulation materials can degrade over time and release microplastics into the indoor environment. Plastic-based finishes on furniture, like laminates and coatings, may also be worn down during use, releasing small plastic particles. In addition, household items like toys, kitchenware, and plastic containers degrade through regular use, contributing further to indoor plastic pollution.

3.2 Secondary Sources of Microplastics

Secondary sources are those that contribute microplastics to the indoor environment as a result of the degradation of larger plastic objects or materials. Over time, various plastic materials inside a residential home can break down into smaller particles due to factors such as abrasion, environmental exposure, or wear and tear.

3.2.1 Outdoor Pollution Infiltration

Indoor environments are not isolated from the outside world, and outdoor pollution is a significant secondary source of microplastics in homes. The abundance of MPs in the atmosphere arises from a range of different activities including agricultural processes, indiscriminate plastic waste disposal, domestic activities, wear and tear from tyres and industrial emissions in areas of high anthropogenic activities (Mbachu et al., 2020).

AMPs from nearby urban areas, industrial activity, and traffic emissions can infiltrate residential spaces through open windows, doors, and ventilation systems. These MPs may settle on floors, furniture, and other surfaces, contributing to the indoor load. Wind-blown debris, dust, and even rainwater may carry microplastics indoors, further increasing indoor concentrations(Alfonso et al., 2021; Beaurepaire et al., 2021; Enyoh et al., 2019).

3.2.2 Wear and Tear of Household Materials

Another secondary source of microplastics in residential homes is the natural degradation of larger plastic materials within the home. Items such as plastic furniture, plastic-coated materials, or synthetic flooring can break down over time due to exposure to friction, temperature changes, and humidity. For example, plastic containers and plastic bags that are repeatedly handled or exposed to sunlight can release microplastics as they degrade. Similarly, the abrasion of synthetic carpets or upholstery from regular use can lead to the release of microplastic particles into the indoor dust.

3.2.3 Human Activities

Human activities within the home also contribute to the secondary production of microplastics. During cleaning, dusting, or vacuuming, larger plastic particles may be broken down or redistributed into smaller fragments, contributing to the release of microplastics into the indoor environment. The movement of people and pets through the home can cause abrasion of materials, and regular maintenance activities such as renovations or the repair of plastic household goods can introduce new microplastics into the environment.

4. Fate of Microplastics in Residential Dwellings

Once introduced into the residential environment, microplastics do not remain static but continue to interact with the indoor environment in various ways. The final fate of indoor AMPs includes methods of transportation, spreading and deposition. Transport is a result of ambient, wind, speed, and direction.

The fate of microplastics is influenced also by their physical and chemical properties, as well as by environmental factors such as air circulation, temperature, and humidity. Spreading depends on local air movement caused by turbulence or disturbance and deposition depends on the size and shape of MPs particle (Enyoh et al., 2019). The indoor environment is fundamentally different than the outdoor environment, which transcends to the emission and accumulation of AMPs and this fundamental difference also makes the fate of indoor AMPs much different from the outdoor AMPs. The final fate of indoor AMPs depends upon characteristics of indoor space, lifestyle differences, and indoor dust cleaning activity.

5. Human Exposure to Microplastics in Residential Homes

The presence of microplastics in residential environments poses potential health risks to residents. Exposure occurs primarily through inhalation, ingestion, and dermal contact. Given the small size of microplastics, they can easily enter the body and accumulate over time, leading to potential adverse health effects.

5.1 Inhalation of Microplastics

Inhalation is one of the primary exposure pathways for microplastics in residential homes. Airborne microplastics, particularly those that remain suspended in the air, can be inhaled during everyday activities. Studies have shown that indoor air is often more contaminated with microplastics than outdoor air, which increases the potential for human exposure. Once inhaled, microplastics can accumulate in the respiratory system, potentially causing respiratory irritation, inflammation, or even chronic lung diseases.

The health implications of inhaling microplastics are still not fully understood, but preliminary studies suggest that these particles can cause inflammation in the respiratory tract. Additionally, there is concern that microplastics could contribute to the development of conditions such as asthma, bronchitis, or other pulmonary disorders.

5.2 Ingestion of Microplastics

Ingestion of microplastics occurs primarily through contaminated food, water, or airborne particles that settle on food surfaces. Household dust, which is often contaminated with microplastics, can also contribute to ingestion when people consume food in areas where dust accumulation is high. Additionally, microplastics in household water supplies, particularly if untreated, can also be a source of exposure.

Ingested microplastics are thought to primarily affect the gastrointestinal system. There is concern that microplastics may cause damage to the gut lining, leading to inflammation, gut dysbiosis, or other digestive issues. Some studies also suggest that ingested microplastics may accumulate in the liver or other organs, though more research is needed to understand the long-term health impacts.

5.3 Dermal Contact with Microplastics

Dermal exposure to microplastics occurs when particles come into contact with the skin. Microplastics can be found in household dust and on surfaces, which can transfer to the skin through direct contact. While dermal exposure to microplastics is less studied compared to inhalation and ingestion, it still poses a potential health risk, especially for children and individuals with sensitive skin.

Although the risks of dermal exposure are less well understood, microplastics could potentially cause irritation, allergic reactions, or other skin conditions. There is also concern about the long-term impact of plastic particles accumulating on the skin, potentially leading to systemic exposure through absorption.

6. Mitigation Strategies and Recommendations

Reducing human exposure to microplastics in residential homes is essential for mitigating potential health risks associated with these pollutants. Addressing microplastic pollution in residential homes requires a

multi-faceted approach, focusing on reducing sources, minimizing exposure, and enhancing awareness. These strategies include both household-level actions and broader policy measures to bring behavioural changes at individual and societal level. Below are several practical strategies that can be adopted to reduce microplastic exposure at home.

6.1 Reducing Sources of Microplastics

The most effective way to mitigate microplastic exposure is to reduce the sources of these particles within the home. Individuals can make a conscious effort to avoid products that are made from plastic or contain microplastic ingredients. This can be done by encouraging the use of natural fibers and materials, reducing the consumption of plastic-based consumer products, and opting for alternatives to plastic household items. Additionally, more sustainable practices in product design, such as reducing the use of microplastics in personal care products and household cleaners, are essential.

6.2 Proper Maintenance of Synthetic Textiles

Synthetic textiles shed microplastics during use and washing. To minimize this, individuals can adopt specific practices to reduce microfiber release from clothing and other synthetic textiles in the home. One of the most effective ways is to reduce the frequency of washing synthetic fabrics. Additionally, using washing bags designed to capture microfibers, such as the Guppy friend bag, can help prevent these particles from entering the water system and the home environment.

6.3 Improving Indoor Air Quality

Improving ventilation and air filtration in homes can help reduce the concentration of airborne microplastics. High-efficiency particulate air (HEPA) filters and air purifiers are effective in trapping microplastic particles, thereby reducing inhalation exposure.

6.4 Control Household Dust and Cleaning Practices

Dust is a major carrier of microplastics in residential environments. Regular cleaning can reduce the build up of microplastics in dust. However, cleaning practices should be chosen carefully to avoid redistributing microplastics into the air. For example, vacuuming with a vacuum cleaner equipped with a HEPA filter can help capture dust and microplastics. Dusting with microfiber cloths can also reduce the spread of microplastic particles compared to traditional cleaning methods.

6.5 Filter Water to Reduce Microplastics Contamination

Ingestion of microplastics through drinking water is another exposure pathway. While water treatment plants are increasingly equipped to remove larger debris, microplastics may still persist in tap water. Using home water filtration systems, such as activated carbon or reverse osmosis filters, can help reduce the presence of microplastics in drinking water.

6.6 Public Awareness and Education

Public awareness campaigns are critical for informing people about the sources of microplastics in the home and the potential health risks associated with exposure. Education efforts should focus on the importance of reducing plastic use, recycling, and using natural alternatives.

By adopting these practical measures, individuals can reduce their exposure to microplastics in residential homes. While household changes can mitigate exposure, a broader, more collective effort is needed to tackle the root causes of microplastic pollution at the global level.

Note: Citations & References are available with author and will be made available on request.

IBC NEWS

I. IBC HQ

Report of 106th meeting of the Governing Council of Indian Buildings Congress held on14th July, 2024 at New Delhi

The 106th meeting of the Governing Council of Indian Buildings Congress (IBC) was held on 14th July,2024 at Manekshaw Centre, New Delhi. At the outset, the outgoing President Maj. Gen. Ashok Kumar, DG (W),E-in-Cs branch, IHQ of MoD (Army) extended a warm welcome to all the Members of the New Governing Council. He thanked all Office Bearers, GC Members, Past Presidents and Permanent Invitees for their participation, support and valuable contribution towards upliftment of IBC. Then he read out the names of GC members; designated, nominated as per rules and those got elected during 26th Annual General Meeting on 13thJuly, 2024. Each and every member who was present was greeted with applause at the announcement of their name & also they introduced in the house.

Outgoing President than proposed the name of Er. Chinmay Debnath (C.Debnath), Fmr Superintending Engineer, PWD(Bldg),Tripura & also Past President, The Institution of Engineers (India) as new President of Indian Buildings Congress(IBC) for the session 2024-25 as per recommendations of the outgoing Executive committee. Governing council than unanimously approved the proposal for electing Er. Chinmay Debnath as President of IBC for 2024-25.

Maj. Gen. Ashok Kumar, the outgoing president invited the incoming President Er. C. Debnath, to assume the charge as President, IBC for the coming year 2024-25. Er. Debnath was felicitated by Maj. Gen. Ashok Kumar, Outgoing President; Er. O.P Goel, Founder President and others.

Than on recommendations of the outgoing Executive Committee, President Er.C.Debnath proposed the names of Er.Salil Rai Shrivastava, Engineer-in-Chief, Nava Raipur Atal Nagar, Er(Ms.) Veena Sinha, IRSEE, Chief Executive Officer, Railway Energy Management Company, New Delhi; Er. Mayank Tilak, ADG Border, CPWD; Er. Sudhansu Shekhar Rai, Engineer-in-Chief, Bihar Construction Department & Er. S.R. Baghel, Engineer-in-Chief, MP PWD for 5(five) Vice Presidents position of IBC for 2024-25.GC considered the above proposal and unanimously approved the names of above persons who were accordingly declared elected as Vice Presidents for the session 2024-25.

Er. C. Debnath, President, IBC proposed to continue the services of Sri Vijay Kumar Choudhary, Executive Director (Finance), NBCC(I) Limited, New Delhi to be appointed as Hony. Treasurer, IBC for the session 2024-25 & Governing Council unanimously approved the name of Sri Vijay Kumar Choudhary, Executive Director (Finance), NBCC(I) Ltd, New Delhi as Hony. Treasurer, IBC for the year 2024-25.

Er. C. Debnath, President, IBC proposed the name of Er. V.R. Bansal, Fmr. CE, MCD, New Delhi to be appointed as Hony. Secretary, IBC for the session 2024-25.Governing Council unanimously approved the name of Er. V.R. Bansal, Fmr. CE,MCD, New Delhi as Hony. Secretary, IBC for the year 2024-25.

Er.C. Debnath, President, IBC briefed the GC that under provisions of Rule 9.4.2 of Memorandum of Association of IBC, 18 members are to be co-opted to the new Governing Council including four ladies and two young professionals .During the meeting ,the following three names were proposed by the President for co-opting as GC member.

1. Er. S.R.Baghel, E-in-C,MP PWD
2. Sri Vijay Kumar Chaudhary, Executive Director (Finance),NBCC(I)Limited, New Delhi
3. Smt. Veena Sinha, Chief Executive Officer, Railway Energy Management Company, New Delhi

GC unanimously approved the proposal and co-opted the above persons as Governing Council members for the session 2024.-25.For remaining 15 GC seats against Co-option, GC authorized the EC to co-opt the remaining members. All GC Members were requested to send their suggestions regarding nominations, if any, positively within 15 days so that suggested names could be considered for co-option by the EC.

Than Er.C.Debnath, newly elected President, IBC for 2024-25 delivered his address. At the outset, he thanked all present for the opportunity given to him to serve the institution of the IBC, as President and accepted the same with due humbleness. He conveyed gratitude to the Founder President, Imm. Past President, Past Presidents & GC members & sought their guidance & suggestion to run the IBC properly. He also put in record in regards to the excellent work done by the outgoing committee & Council led by Maj.Gen. Ashok Kumar, Outgoing President of IBC. He also accorded warm welcome to GC members &

shared his vision for the ensuing year. He emphasized that regular GC/EC meetings to be held across the country & stressed upon the increasing Individual & Institutional Membership of IBC. He solicited cooperation of all in increasing the membership base of IBC and particularly emphasized for strengthening the role of Chapters and its various activities of IBC. He mentioned that Chapter should be more active in taking up technical activities so that the name of IBC is carried to the every nook and corner of the Country and Govt. may acknowledge the contribution of IBC in the development of the State & Nation.He further highlighted that the GC & EC members are very important for not only strengthening the activities of IBC, but also to increase the membership base. While thanking the outgoing President, IBC, Shri Debnath acknowledged that the important responsibility had been entrusted to him & renewed his commitment for meeting trust and confidence posed in him by the GC. He also urged upon to conduct the technical activities with new Vision for the cause of Society. He also viewed that being Past President of the Institution of Engineers(India)(IEI) & Past Chairman of Indian Engineers Federation(INDEF),he will try to organise activity jointly with these professional bodies in/c Indian Roads Congress(IRC) in regards to the programme of National & International importance

In regards to authorize the Executive Committee to fill up vacancies that have remained vacant under Rule no. 9.1.3.1 to 9.1.3.10 of the Rules & Regulations of IBC, the Council authorized the EC to fill up the vacancies.

The council meeting ended with thanks to all.

Report of 2nd Executive Committee Meeting for2024-25 held on 17th August, 2024 at New Delhi

The 2nd meeting of the Executive Committee for 2024-25 was held on 17th August, 2024 at the conference hall of IBC HQ at New Delhi.

At the outset, the President emphasized about the projection of IBC, role of IBC Chapters for coordinating with State Govts. for increasing memberships and taking up of Technical activities which will be beneficial in development of State. A target of enrolling 4000 new members have been set for the year 2024-25.

To settle the disputes raised by M/s RKMT Buildcon Pvt. Ltd, the DRC was constituted under the Chairmanship of – Shri Mayank Tilak, Vice President, IBC & other two members – Shri Salil Rai Shrivastava, Vice President, IBC & Shri V.K.Choudhary, Hony Treasurer, IBC.

The quarterly G.C. meetings were scheduled in the month of December, 2024 and March, June, September, 2025 and the E.C. meetings were scheduled in the month of October, December, 2024 and February, April, June, August, 2025.

The EC approved the following co-option of members to the GC for the year 2024-25 under 9.4.2 Co-option as GC Members

a) Under Ladies Category:-

(i) Prof. (Dr.) Madhura Yadav, Dean Faculty of Design School of Arch & Design, Manipal University

(ii) Ms. Anuja Sharma, Arch., M/s ICT Pvt. Ltd., New Delhi

(iii) Ms. Mitu Mathur, Dir., M/s GPM & Associate, New Delhi

b) Under Young professionals less than 35 years of age:-

(i) Shri Shubham Shah ,Gujarat

(ii) Ms. Smita, Dy. Manager, M/s ICT Pvt. Ltd., Bihar

c) Others:-

1. Col (Dr) M. Anand, Infrastructure Consultant, New Delhi
2. Dr. O.P. Tripathi, Fmr. E-in-C, Delhi PWD
3. Shri Atul Garg, Fmr. ADG,CPWD, New Delhi
4. Shri Rakesh Kumar, Fmr. E-in-C, BCD, Bihar
5. Shri Binod Jha, Fmr SE, BCD, Bihar
6. Shri S.D. Chandsure, Fmr EE, Maharashtra
7. Shri Biswajit Das, EE, PWD,Tripura
8. Shri Marut Gupta, Sr. Arch., M/s ICT Pvt. Ltd., New Delhi
9. Shri Praveen Kr. Pradhan, Fmr Pr. CE cum Secretary, PWD, Sikkim

Report of 3rd Executive Committee Meeting for 2024-25 held on 19th October, 2024 at Patna

The 3rd Executive Committee Meeting for 2024-25 was held on 19th October, 2024 at Adhiveshan Bhawan, Patna, Bihar hosted by Bihar Construction Deptt., Patna in association with IBC, Bihar State Chapter.

President initiated the discussion . It was discussed to give specific thrust on revenue generation by way of advertisement in Built Environment by which the financial base of IBC may be strengthened. The TA Rule of IBC applicable to Members/Staff was approved. It was

decided that the rule is applicable with retrospective effect from the date of the present set of office bearers assumed charges i.e. 14th July, 2024.

The vacancies in GC was filled up as follows:-

A. 9.4.2 Co-option as GC Members

(i) Dr. K.M. Soni, Fmr. ADG, CPWD filled up due to sad demise of Late Krishna Kant, Fmr. CE, CPWD.

(ii) Er. Y.L. Singh, GM, NPCC Ltd. Guwahati filled up due to resignation of Er. Praveen Kr. Pradhan, Fmr. PCE-cum-Secretary, Building & Housing Deptt. Sikkim.

B. 9.1.3.10 : Ordinary Members of IBC (State/UT wise)

(i) Er. T. Bisse Gowda, Fmr. CE, Karnataka

C. 9.1.1 Designated Members

9.1.1.10 Chairman of Chapter which has more than 100 members in roll

The following substitution in GC was accepted due to change of committee of IBC Chapters

(i) Dr. Debashis Sanyal, Chhattisgarh in place of Er. Salil Rai Shrivastava

(ii) Dr. P. Surya Prakash, Telangana, in place of Er. I. Ganapathi Reddy.

(iii) Er. Shyamlal Bhowmik, Tripura in place of Er. M.S.Roy.

EC ratified four Notifications regarding i) Delegation of Financial Power, ii) Constitution of various Committees, iii) Filling up of Vacancy in EC and iv) Cessation of Management Committee of the IBC Chapters. These were circulated to EC members for consideration and approval by circulation which was subsequently placed in the 3rd EC meeting & ratified. EC & noted Status of AGM of IBC Chapters. As per Guidelines, the IBC Chapters have to conduct AGM within June and with the permission of President within the extended period of 31st August, 2024. Accordingly, notification have been issued and as clearance received from EC, the communication was made for necessary action as per guidelines. It was also decided to arrange a special meeting in the later part of Nov,2024 to discuss on single agenda of E Mail of Shri S.C.Kakkar.

Report of Special Executive Committee Meeting for 2024-25 held on 22nd November, 2024 at New Delhi in hybrid mode

As per decision taken in the 3rd meeting held at Patna on 19th Oct,2024, the Special Meeting of the Executive Committee for 2024-25 was held on 22nd Nov., 2024 at IBC HQ, New Delhi to discuss on single agenda related to the E- mail of Shri S.C.Kakkar. Er. C. Debnath, President, IBC extended a warm welcome to the EC members, Founder President, Past Presidents, Permanent Invitees, Hony. Secy., Executive Director and Staff who were physically present and also others who joined in online .

The President, IBC briefed about the reference of calling of this Special EC Meeting & also briefed about the publication of IBC and also sought support from the members for collecting advertisement for Built Environment and also for membership drive.

Than Executive Director, IBC took up the single point Agenda and presented his Report along with details before the Executive Committee.

Dr. P. S. Rana, Past President; Dr.Mahesh Kumar, Past President; Er. K.K. Kapila, Past President; Er. Parimal Rai, Past President; Er.O.P.Goel, Founder President, Er. Dinesh Kumar, permanent invitee to EC took part in the discussion.

After detailed discussion in the matter, Special Executive Committee passed resolution that "Matter related to e-mails of Shri S.C. Kakkar stands closed and EC expresses its gratitude to the Building Construction Committee for their dedicated contribution and to the three persons Committee Chaired by Dr. P.S. Rana for their contribution for the cause of IBC."

Report of 4th Executive Committee Meeting for 2024-25 held on 15th December, 2024 at Chandigarh

The 4th Executive Committee Meeting for 2024-25 was held on 15th December, 2024 at Secretariat conference hall, Chandigarh UT hosted by Chandigarh Engg. Deptt., Chandigarh UT in association with IBC, Chandigarh Chapter.

At the outset, the President emphasized about the projection of IBC, role of IBC Chapters & also role of IBC in regards to the technological development in the country.

The following decisions taken in the meeting:-The persuasion is to be made with the Institutional members, who are in arrears, to clear up their dues. Also Request to be made to the Institutional Members to renew their

membership by paying arrear subscription who have been ceased. However, Such members can apply in fresh also. The topic & Sub topic of the Seminar of Mid term session have been finalized.The membership form of IBC has been revised withdrawing yearly membership. It has been discussed to activise the IBC Chapters as per guide line.

II. TRAINING PROGRAMMES

(i) Two days Training Program on Quality Management in Construction on 15-16 October, 2024 at IBC HQ, New Delhi

Two days Executive Development Training Program on "Quality Management in Construction" was conducted on October 15-16, 2024 at Seminar Hall of IBC HQ, R.K. Puram, New Delhi.

Shri Mukesh Asija, Plumbing Consultant delivering the lecture

44 participants from various organizations viz Staff Training College, Roads and Building Department, Gujarat; PWD Mizoram; PWD Madhya Pradesh; PWD Nagaland; PWD Chennai; PWD HP; PWDUP; Awas Vikas Parishad Lucknow; PWD GNCTD, Delhi and DDA attended the Training Program. The Training Program was inaugurated by Shri D. S. Sachdev, Fmr. DG., CPWD &Director Training, IBC. He referred to the key issues encountered to achieve Quality in Construction and spoke on the objective of this Program.

Certificate Distribution

Senior reputed Quality Management Experts dealing with Building Construction and MEP Services were invited to the Program as faculty members. The officers who attended the programme, took keen interest in the deliberations and appreciated the programme content and the presentations. At the end of the program, Participation certificates were distributed to the participants.

(ii) Two days Training Program on Planning, Execution, Operation and Maintenance Management of E&M Systems in Buildings for Engineers and Architects on 18-19 December, 2024 at IB HQ, New Delhi

Two days Executive Development Training Program on "Planning, Execution, Operation and Maintenance Management of E&M Systems in Building for Engineers and Architects" was held on Dec. 18-19, 2024 at Conference Hall of IBC HQ, R.K. Puram, New Delhi.

Shri Deependra Prasad Consultant (Ar.) delivering lecture

17(Seventeen) Participants from various organizations viz Uttar Pradesh Awas & Vikas Parishad, Bulandshehar Vikas Pradhikaran, GDA, Uttarakhand PWD, MP PWD, Tamil Nadu PWD and CPWD attended the Training Program.

Shri D. S. Sachdev, Fmr. DG, CPWD & Director Training, IBC explained the objectives of the Program and spoke on the basic components of E& M Systems in a Building and stressed on inter services coordination right from the Planning &Design stage to execution and finally provide seamless operation and maintenance.

Certificate Distribution

Senior reputed E & M Experts were invited to the Program as faculty members. The Participants, took keen interest in the deliberations and appreciated the program content and the presentations. At the end of the program, Participation certificates were distributed to the participants by Shri V.R. Bansal, Fmr. CE, MCD & Honorary Secretary, IBC.

III. PARTICIPATION OF IBC IN VARIOUS EVENTS

(i) 22nd Edition of IGBC's Green Building Congress on 14-16 Nov, 2024 at Bengaluru

Indian Buildings Congress (IBC) was associated with the 22nd Edition of IGBC's Green Building Congress held on 14-16 Nov., 2024 at Bengaluru under the theme of "Advancing Net Zero in Buildings and Built Environment". IBC was associated with this event as a supporting organization. The programme was on innovation and collaboration, driving transformative change in the construction industry. Shri Eshwar Khandre, Hon'ble Minister Forest, Ecology and Environment, Govt. of Karnataka addressed the Inaugural Session. More than 140 Exhibitors participated in 3 days Exhibition. More than 2,750 delegates and more than 6,850 visitors attended the 3 days Conference.

(ii) International LED EXPO & Light India on 21-23 Nov., 2024 at New Delhi

The International Light + LED Expo India was held on 21- 23 Nov., 2024 at India International Convention and Expo Centre Yashobhoomi, Dwarka, New Delhi. 240+ exhibitors from six countries presented Innovative solutions for homes, high rise buildings, architecture, infrastructure. Indian Buildings Congress was associated with this event as a supporting organization.

Er. C. Debnath, President IBC with dignitaries at the Event

Shri Piyush Goyal, Hon'ble Minister of Commerce and Industry, Government of India, delivered his thoughts. He said that "The Government of India has undertaken collaborative initiatives to establish a strong LED ecosystem in India. Initiatives like the Unnat Jyoti by Affordable LEDs for All (UJALA) and LED Street Lighting National Programme (SLNP) have significantly bolstered the adoption of energy-efficient lighting solutions across the nation, leading to widespread cost savings, reduced energy consumption and environmental benefits. He was hopeful that this expo and summit would serve as an ideal platform for stakeholders to come together, exchange ideas, showcase advancements and further contribute to the growth and sustainability of the LED industry in India."

Before inauguration of exhibition, Heads of various organization like IBC, Bureau of Energy Efficiency (BEE), Solar energy of India, Ministry of Electronics &Communication and Council of Architecture were part of inauguration programme.

Er. C. Debnath, President IBC as Guest of Honour at the Event

Er.C. Debnath, President IBC graced the programme of inauguration of Light & LED expo Delhi as Guest of Honour at Dwarka International exhibition centre. Discussions were held with representation of BEE+Solar Energy Corporation of India Ltd. (SECI), Ministry of Electronics &Communication. They were briefed about activities of IBC and also mutual co-operation were discussed. After that in the same venue a cordial discussion was held with Ar. Gajanand Jha, Vice President, Council of Architecture, India where Executive Director Er. I.S. Sidhu was also present.IBC opened a stall in the exhibition.

(iii) Bauma CONEXPO INDIA on 11-14 Dec,2024 at Noida, UP

7th edition of Bauma CONEXPO INDIA was held on 11-14 Dec., 2024 at India Expo Centre in Greater Noida, Uttar Pradesh. IBC was associated with this event as a supporting organization.

IBC Stall at Bauma Conexpo

The exhibition was inaugurated by Shri Nitin Gadkari, Hon'ble Union Minister for Road Transport and Highways, GoI. In his inaugural address, he mentioned that "India is rapidly transforming into a global infrastructure powerhouse with large-scale projects. To sustain this momentum, we must prioritize technological innovation, invest in research and development, and adopt sustainable fuels. The construction equipment industry, being the world's third largest, has immense potential to expand exports and strengthen India's manufacturing capabilities."

IBC stall attracted steady footfall and visitors evinced interest in the activities of IBC. They collected Membership Forms.

(iv) President, IBC met Secretary, PWD, West Bengal on 23rd Dec., 2024 at Kolkata

Er. C. Debnath, President, IBC visited Secretariat, West Bengal in Kolkata alongwith Er.Srikumar Bhattacharjee, Hony Secretary, IBC, West Bengal Chapter and Fmr. E-in-Chief, PWD, West Bengal & Er.S.P.Dutta, Member, IBC,WB Chapter on 23 Dec., 2024 for meeting with Secretary, PWD, WB..

President, IBC had detailed discussion with Er. Dilip Kr. Baidya, E-in-Chief, PWD, West Bengal giving thrust to the activities of IBC in State of West Bengal and for increasing membership base from West Bengal, PWD.

Er. C. Debnath, President, IBC also called on Smt. Antara Acharya, IAS, Secretary PWD, Govt. of West Bengal and had fruitful discussions. President, apprised Smt. Antara Acharya about the various activities of IBC and requested for support of PWD, West Bengal in initiatives of IBC. Secretary, PWD requested for conducting seminar on Constructing activity involving Engineers & Architects. She also requested for conducting training programmes at Kolkata.

Er. C. Debnath President, IBC Presenting Built Environment to Smt. Antara Acharya, Secretary, PWD, West Bengal

(v) Meeting with President, Indian Roads Congress (IRC) on 21st Nov., 2025

Er. C. Debnath, President, IBC met Prof. Manoranjan Parida, President and Er. Rahul Gupta, Secretary General, IRC on 21st Nov., 2024 in IRC office,Sector VI, R.K. Puram, New Delhi alongwith Er. I.S. Sidhu, Executive Director of IBC. Discussions were held in regard to joint programmes of IBC & IRC at New Delhi.

IV. NEWS OF ACTIVITIES AT IBC CHAPTERS

A. IBC, Tripura State Chapter

Management Committee Meeting:

As per provision, the Tripura State Chapter is conducting monthly Management committee meeting on every 2ndSaturday. Besides, other meetings are conducted as per necessity. During this quarter, the management committee meetings were held on 26th Oct, 9th Nov., 28th Dec & discussed on various issues.

Technical Activities:-

i) World Habitat Day

IBC, Tripura State Chapter observed the Statutory day of World Habitat Day -2024 on 8th Oct,2024 at PWD Conference Hall, Netaji Chowmuhani, Agartala . Er. Bimal Das, Chief Engineer, PWD (PMGSY) was Chief Guest; Er. C. Debnath, President, IBC, New Delhi and Past President, The Institution of Engineers (India),was Guest of Honour; Er. Kapil Baran Bhowmik, Fmr. DGM, HUDCO graced as Key Note Speaker; Er. Sajal Ghosh, Executive Engineer, Agartala Smart City Ltd. was Special Speaker; Er. Biswajit Das, Governing Council Member & Vice Chairman, IBC Tripura State Chapter; Er. Shyamlal Bhaumik, Chairman, IBC Tripura State Chapter were present on dais.

World Habitat Day Celebration

Welcome Address was delivered by Er. Sibasish Bhattacharyya, Hony. Secretary, IBC Tripura State Chapter.

Er. Sajal Ghosh, Executive Engineer, Agartala Smart City Limited in his presentation highlighted Sustainable Development Goals, (SDG) 3, 14 &17 in detail to solve the habitation problem. He also stressed upon that the Master Plan for a City is essential to address the habitation problem.

Er. C. Debnath, President, IBC while delivering his speech highlighted the importance of topic. He also discussed about Mission, Vision & Objectives of Indian Buildings Congress. He requested all for membership drive and to increase IBC, Tripura Chapter Membership.

Presidential Address was delivered by Er. Shyamlal Bhaumik, Chairman,IBC,Tripura State Chapter.

At the end, Vote of Thanks was offered by Er. Biswajit Das, GC Member & Vice Chairman, IBC Tripura State Chapter.

ii) World Standard Day

The World Standard Day was celebrated by IBC, Tripura State Chapter on 23rd Oct,2024 at PWD Conference hall, Netaji Chowmuhani, Agartala. The dignitaries on the dais were :Er. C. Debnath, President, IBC;Er. Ranjit Kumar Majumder, IAS (Retd.) EC Member, IBC; Dr. Bijoy Kumar Upadhay, Principal, Tripura Institute of Technology, Narsingarh, Tripura; Er.. Biswajit Das, Vice Chairman, Tripura State Chapter and Governing Council Member, IBC; Er. Shyamlal Bhaumik, Chairman, IBC ,Tripura State Chapter .

Er. Sibasish Bhattacharyya, Honorary Secretary, IBC Tripura Chapter delivered Welcome Address and discussed about the objectives of World Standard Day each year.

In his address Er. C. Debnath, President,IBC highlighted the Mission, Vision and Objectives of IBC and its importance in National level and State level. He also recalled innovative ideas taken up during his tenure and highlighted the tasks ahead.

World Standard Day Celebration

Er. Ranjit Kumar Majumder, EC Member delivered a Keynote Address. He emphasized the importance of standardization w.r.t. international perspective.

Dr. Bijoy Kumar Upadhay, Principal, Tripura Institute of Technology, presented a power-point presentation on "Shared Vision for a Better World incorporating SDG3".He mentioned about High Definition Multimedia Interface(HDMI)w.r.t. SDG 2030, "Transforming our world: the 2030 Agenda for Sustainable Development."SDG 2030 was adopted by United Nations in 2015. He also stressed upon major challenges for India in achieving SDG 2030 targets.

Er. Biswajit Das, Vice Chairman, IBC Tripura Chapter suggested to create awareness among engineers for U N Standards and other latest advancements like SDG 2030 and other relevant topics.

At the end, Er. Shyamlal Bhaumik, Chairman, IBC, Tripura State Chapter delivered Presidential Address.

iii) Regional Seminar on "Infrastructure in North East Region of India: Challenges & Way Ahead" on 7th Dec,2024 at Agartala

The Indian Buildings Congress (IBC),Tripura State Chapter jointly with PWD,RD,UD Deptt. (Being

Institutional member of IBC) & Agartala Municipal Corporation had organized a Regional Seminar titled "Infrastructure in Northeast Region of India: Challenges & Way Ahead" at Sukanta Academy Auditorium, Agartala on 7th December, 2024. Shri Sushanta Chowdhury, Hon'ble Minister for Tourism, Transport etc deptt, Tripura was the Chief Guest. Er. O P Goel, Founder President, IBC, New Delhi & Former, DG, CPWD & Er. C.Debnath, President, IBC were Guests of Honour; Brig. Simerjeet Singh, VSM, Chief Engineer, MES, Shillong: Er. Rajesh Mandloi, Chief Engineer, N F Railways, Guwahati; Er. M Kalita, SE, NEC,Shillong; Er. Mridul Buragohain, AEE, MoRTH, Guwahati and Er. Ajeet Kumar, DGM, NPCC Ltd.,Guwahati were present in the Seminar as expert Speakers on different topic & made presentation from their respective deptt..

Hon'ble Minister & other Dignitaries on Dais

Inauguration by lighting of lamp

While addressing the seminar, the Chief Guest Shri Sushanta Chowdhury, Hon'ble Minister for Tourism, Transport etc deptt, Tripura emphasized the government's focus on infrastructure as a catalyst for overall development of State. He said that engineers play a pivotal role in building robust infrastructure, which directly impacts the state's progress, "Engineers are effectively implementing various projects initiated by the State and Central Governments,". Highlighting the Government's achievements, the Minister pointed out that Tripura previously had only one national highway, NH-44. However, under the current administration, six new national highways have been announced, with funds already allocated for their construction. He expressed his confidence that these highways would significantly boost the state's connectivity and economic growth, transforming them into critical infrastructure for Tripura's development. The Seminar brought together experts and stakeholders to discuss the challenges and opportunities in improving infrastructure across Northeast India. Participants underscored the importance of sustained investment and innovative solutions to overcome regional barriers and unlock the region's growth potential. The Hon'ble Minister reiterated the Government's commitment to advancing infrastructure projects and fostering a conducive environment for holistic development in Tripura.

Good nos of engineers, faculty & Students participated the Seminar. The colourful cultural programme was organized with the performance of the Artist from Kolkata & Agartala in the evening.

iv) National Energy Conservation Day

The IBC, Tripura State Chapter had observed the National energy conservation day on 24th Dec,2024 by organizing a seminar at PWD conference hall, Netaji Chowmuhani ,Agartala. Er.. Subhas Chowdhuri, Fmr Director,Tripura Renewable Energy Dev Agency graced the occasion as Chief Guest . Er. Anup Kr. Das, CEO, Tripura Housing & Constn Board & Er. R.K.Majumdar,IAS(Retd), Executive Member, IBC &Fmr Director, UD Deptt, Tripura graced the programme as Special Guest. Dr.Subhadeep Bhattacharjee, Associate Professor,NIT,Agartala made presentation. Er. Shyamlal Bhowmik, Chairman, IBC, Tripura State Chapter presided over the programme. Er. S.Bhattacharyya, Hony Secretary delivered welcome address while vote of thanks was offered by Er. Biswajit Das, Vice Chairman.

B. IBC, Kota Local Chapter

Management Committee Meeting

The Management Committee Meeting of IBC Kota Local Chapter was held on 30th Nov., 2024 at Nayapura, Kota, Rajasthan which was presided over by Er. Suresh Kumar Bairwa,Chairman of the Chapter.

Management Committee Meeting in Progress

The following important points were discussed and decided:-

Members of Management Committee stressed to increase the membership of IBC Kota Local Chapter. Current Account for IBC Kota Local Chapter has been opened in Punjab National Bank, Dadabari, Kota. It is decided to submit quarterly audit report to head quarter. The audit report for the period March-2024 to Sept-2024 circulated amongst the Management Committee Members and decided to submit it to IBC head quarter so that the annual grant may be obtained from head quarter. All the members of Management Committee agreed to publicize the activities of IBC Kota Local Chapter.

Technical Activities:-

i) World Habitat Day

The Indian Buildings Congress (IBC), Kota local Chapter celebrated World Habitat Day in Meeting hall at Public Works Department (PWD) on 7th Oct., 2024. The event was graced by the Chief Guest Shri M.L. Kalwar, Addl. Chief Engineer (Retd.), PWD and presided over by Shri B.L. Malav, DGM (Retd.), RSRDC; Shri P.K. Jain, Chief Engineer (Retd.), PWD, Rajasthan & former Chairman, IBC Kota Chapter; Shri V.K. Jain, SE, (Retd.), PWD and Shri Suresh Kumar Bairwa, Chairman, IBC Kota Local Chapter & Addl. Chief Engineer (Retd.), PWD were also present on the dais.

World Habitat Day Celebrated

On this Occasion, Shri Suresh Kumar Bairwa mentioned that World Habitat Day is celebrated to reflect on the state of towns and cities and to promote the basic right to adequate shelter or housing to all. The day serves as a reminder to the current generation that they are responsible for the habitat of future generations. The United Nations announces a special theme each year. This year's theme is to engage the youth in building a better urban future. The number of people living in slums is increasing globally.

The Keynote Speaker, Shri Piyush Goyal, Director of Aakar Consultant made a presentation on the theme of engaging youth in building a better urban future, accelerating development in Rural Areas andto create Safe and Sustainable Urban Neighbourhoods.

Dr. B.P. Suneja, Former RTU Professor and Shri R.P. Sharma, Past Secretary & Executive Engineer (Retd.), PWD also shared their thoughts. The event concluded with Vote of Thanks by Shri Ashok Kumar Sanadhya, Treasurer, IBC ,Kota Local Chapter.

ii) World Standard Day

The Indian Building Congress (IBC), Kota Local Chapter celebrated the World Standards Dayat the Public Works Department (PWD) Meeting hall on 14th Oct., 2024. The event was graced by the Chief Guest, Sh.Nishu Gupta, Addl. Chief Engineer, PWD, Kota and presided over by, Sh. B.L. Malav, DGM (Retd.),RSRD , Sh. Suresh Kumar Bairwa, the Chairman of the IBC ,Kota Local Chapter & Addl. Chief Engineer (Retd.),PWD stated that the first World Standards Day was observed in 1970. This day is celebrated to recognize the efforts of the technical communities around the world that contribute to the creation of internationally accepted standards. These standards are developed and demonstrated through the scientific process of technical documentation. On this day, members pledge to make the world a better place to live in and to work towards building smart cities in alignment with international standards.

World Standard Day Celebration in Progress

The keynote speaker, Dr. BP Suneja, Professor and Dean (Retd.), RTU, Kota gave a detailed presentation on the history and objectives of celebrating World Standards Day. Dr. Suneja highlighted this year's theme of "Shared Vision for a Better World".

The Chief Guest, Shri Nishu Gupta urged IBC members to focus on sustainable development. The program was presided over by Sh. BL Malav, DGM (Retd.),RSRDC who shed light on the importance of standards in everyday life.

iii) National Energy Conservation Day

IBC, Kota Local Chapter organaised a programme in connection with National Energy Conservation Day on 14thDec., 2024 in PWD Office, Kota. Shri A.K Gupta, Fmr. Chief Engineer and Energy Advisor of Rajasthan Govt. was the Chief Guest and Keynote Speaker.

World Energy Conservation Day Celebrated

In his address he mentioned that after the formation of Energy Efficiency Bureau, National Energy Conservation Day is celebrated every year on 14th Dec., since 1993. He mentioned that the importance of energy conservation is to reduce unnecessary energy use with the help of efficient efforts and technology. Minimizing un-conserved energy is the need of the hour.

Sh. Suresh Kumar Bairwa, Fmr. Addl. CE, PWD and Chairman, IBC, Kota Local Chapter mentioned that National Energy Conservation Day reminds us the important role of energy in our lives and the need for its conservation.

C) IBC, Chhattisgarh State Chapter

Technical Activities:-

i) World Habitat Day

World Habitat Day was celebrated by IBC, Chhattishgarh State Chapter on the theme "Engaging Youth to Create a Better Urban Future" on 7th October, 2024 in Golden Tower, NIT Raipur Campus, Raipur. The guests were welcomed by the Chairman Dr. Debashis Sanyal, Professor, NIT, Raipur who emphasized the need to hold the programme on this important day.

World Habitat Day Celebrated

Er. S.K. Agrawal ,Past Chairman addressed the gathering on this occasion and informed that the day is observed on the first Monday of October every year, focusing on various themes set by UN-HABITAT to raise awareness about urbanization challenges and solutions for enhancing the quality of life in cities.

The first World Habitat Day was celebrated in 1986 in Nairobi, Kenya, with the theme "Shelter is my Right". This year, it will be celebrated globally, with the main event in Queretaro, Mexico, under the theme "Engaging Youth to Create a Better Urban Future." Guest Speaker, Ar. Sachin Kumar Sahu, Assistant Professor, NIT Raipur, World Habitat Day 2024 emphasised the critical role of youth in shaping sustainable urban futures. The creativity and energy of youth can drive cities toward equitable development, ensuring a brighter, sustainable future for all. At the end, Er. Anil Tiwari Hony. Secretary, delivered the vote of thank.

ii) World Standard Day

The IBC,Chhattisgarh State Chapter , Raipur celebrated World Standard Day on 15th Oct., 2024 at Golden Tower, NIT Campus, Raipur. The theme for this year's

World Standard Day Celebrated

celebration was "Shared Vision for a Better World" with a focus on incorporating Sustainable Development Goal 9 (SDG 9), which emphasizes the importance of building resilient infrastructure, promoting inclusive and sustainable industrialization and fostering innovation.

The Guest Speaker, Dr. Shirish V. Deo, Professor and Head of Civil Engineering Department, NIT, Raipur delivered a keynote address. The lecture centered on the role of standards in achieving the objectives outlined in SDG 9. He highlighted how resilient infrastructure and sustainable industrial practices can drive innovation, ensuring a better quality of life for future generations. Dr. Deo discussed various challenges and opportunities in the field of construction, emphasizing the need for adopting international standards to improve infrastructure development. He touched upon the significant role that civil engineers play in fostering innovations that align with global sustainability goals.

Chairman of the IBC, Chhattisgarh State Chapter, Dr. Debashis Sanyal addressed the audience stressing the importance of standards in every aspect of engineering and development particularly when working towards global sustainability targets. They thanked the sponsors, Ultra-Tech Cement for their continued support in advancing the cause of sustainable construction.

The programme concluded with a Vote of Thanks, followed by an informal networking session where professionals from different sectors exchanged ideas and discussed the future of sustainable infrastructure in Chhattisgarh and beyond.

D) IBC, Himachal Pradesh State Chapter

Management Committee Meeting

Management Committee Meeting of IBC, Himachal Pradesh State Chapter was held on 23rd Oct,, 2024 in the New Conference Hall of E-in-C, HP, PWD Nirman Bhawan, Nigam Vihar ,Shimla under the Chairmanship of Er. Ajay Soni, SE, HP PWD to review the activities of Indian Buildings Congress, Himachal Pradesh Chapter. Members present in the meeting were welcomed & briefed about the vision and objective of the organization. Presentations of new products related to Building Construction was given by various firms such as Ultratech, Birla OPUS ARC Ltd., NCL VEKA Pvt. Ltd., J.K. Cement Ltd., Delite Kom Ltd. & Anutorne Acoustices Ltd. Around 19 members attended the meeting.

E) IBC, West Bengal State Chapter

Annual General meeting

The Annual General Meeting cum Election of the New Management Committee of IBC, West Bengal State Chapter for the Year 2024-2026 was held on 13th December, 2024 in the office premises of IBC, West Bengal State Chapter at Baburam Ghosh Housing Estate, 21, Baburam Ghosh Road, Tollygunge, Kolkata.

25 members were present in the meeting. The names of elected Management Committee for the year 2024-26 are as follows:-

Chairman – Shri Nilmani Dhar; Vice Chairman- Shri Arun Kumar Chakraborty; Hony. Secy.- Shri Srikumar Bhattacharya; Treasurer- Shri Sanjay Kumar Mukherjee; Imm. Past Chairman- Shri B.K. Dam; Imm. Past Hony. Secy.- Shri Bipul Chakraborty; Members- Dr. Bhaskar Sengupta; Shri Shymal Kumar Biswas; Shri Soumen Misra; Shri Birendra Nath Dey. The AGM ended with Vote of Thanks.

F) IBC, Arunachal Pradesh State Chapter

Annual General Meeting

Annual General Meeting of IBC, Arunachal Pradesh State Chapter was held on the 27th August, 2024 at Itanagar.

After the threadbare discussion, Members elected new Management Committee for the year 2024-2026 for IBC Arunachal Pradesh State Chapter. Following members were elected :-

Chairman – Dr. Toli Basar, CE (Retd.), PWD, AP; Honorary Secretary- Er. Tok Tayum, SE, PHED; Treasurer-Er. Nabam Takar, EE, PWD; Vice Chairman -Er. Taniyok Taga, CE (CSQ), PWD; Members- Er. Robin Nani, CE, Highway Zone, Er. Rimmar Taso, CE (Vig.&Trg.); Council Members - Er. Sitem Borang, CE (SID&P).

In the AGM , it was also resolved to nominate one executive member as representative from departments- UD&H, Municipality, Town Planning, PHED, RWD, WRD, Power, Hydro Power, Police Housing.

The Annual General Meeting was ended with the Vote of Thanks by outgoing Chairman for smooth conduct of electing new Management Committee Membersandto those who were present in the AGM.

G) IBC, Puducherry Chapter

General Meeting

A general Meeting of IBC, Puducherry Chapter for

formation of Management Committee was held on 24th Nov., 2024 at Saint Louis Street, Puducherry.The new Management Committee were constituted as follows:-:-

Chairman - Dr. S. Thirougnaname, Secretary - Dr. T.V. Srinivas Murthy, Treasurer - Er. R. Balamourougane, Management Committee Members- Er. K. Subhas Chandra Bose, Er. G. Bakthavathsalam, Er. J Ramadass, Er. R. Devadassou, Er. T.S. Semmal.

Special discussion was held for increasing of membership

H) IBC, Punjab State Chapter

General Meeting

A General Meeting of IBC, Punjab State Chapter was held on 22nd Dec., 2024 at PWD Rest House, Bhupindra Road, Near Children Park, Patiala.

General Meeting in Progress

15 members were present in GM. They were welcomed by Col. Satnam Singh, Convener of meeting & Council Member of IBC. Er. Raj Kumar Aggarwal, EE, Dashmesh Institutions, member discussed the agenda of the meeting.

The following Office Bearers were elected for the year 2024-26.

Chairman - Er. Vipan Bansal, CE, PWD (B&R); Vice Chairman- Col. Satnam Singh; Hony. Secy. – Er. Mukul Aggarwal, SDG, WRD, Punjab; Treasurer- Shri Vinod Jindal, Contractor; Members–Er. Rakesh Garg, SE, PWD (B&R); Er. P.S. Virdi (Dimensions, Architects & Engineers); Er. Raj Kumar Aggarwal, EE, Dashmesh Institutions; Er.(Dr.) Ajay Kaushal, Chief Structural Consultant; Er. Ranjeev Goyal, ESS Kay Builders; Er. S.K. Malhotra, M/s Bhawan Nirman Associates and Er. H.S. Sahota, Former Estate Officer Regulatory, PUDDA.

The office of the Indian Buildings Congress, Punjab State Chapter shall be in Patiala as proposed by the House.

I) IBC, Chandigarh Chapter

General Meeting

A General Meeting of IBC, Chandigarh Chapter was held on 15th Dec., 2024 at Chandigarh UT Secretariat, Sector 9D, Chandigarh just after the Seminar & Inauguration in connection with 4th meeting of EC of IBC. Er. C.B. Ojha, Chief Engineer, UT Chandigarh & Council member, IBC welcomed all the members present in the meeting and initiated proceedings. After due deliberation, the following members were unanimously elected for new management Committee :-

Chairman – Er. C.B. Ojha, Chief Engineer; Vice Chairman - Dr. Rajesh Bansal, SE; Hony. Secretary – Er. Shiv Kumar Kukreja, Executive Engineer; Treasurer – Er. Jigna K. Sanghadia, SE; Members - Er. Dinesh Tandon, Executive Engineer; Er. Suresh Kumar, Executive Engineer; Er. Lalit Mohan Bansal, Executive Engineer; Er. Sumit Dixit, Sub Divisional Engineer; Er. Sudhir Batra, Sub Divisional Engineer.

At the end, Er. C.B. Ojha, Chief Engineer, UT Chandigarh thanked all the members for their active participation. He emphasized the importance of collaborative efforts for the growth of the IBC Chandigarh Chapter.

Technical Activity:-

i) Seminars on Sustainable Building Construction Practices and GFR Rebars on 15th Dec, 2024

Seminar on Sustainable Building Construction Practices

The Indian Buildings Congress, Chandigarh Chapter in association with the Engineering Department of Chandigarh Administration organized a Technical Seminar on "Sustainable Building Construction Practices" alongwith Inauguration programme of 4th meeting of EC of IBC on December 15, 2024 at Chandigarh UT Secretariat, Sector 9D, Chandigarh. The Seminar & Inauguration started with a welcome address by Er. C.B. Ojha, Chief Engineer, UT, Chandigarh. He welcomed Er. O.P. Goel, Founder President, Er. C. Debnath, President, Er. V.R. Bansal, Hony. Secretary,

IBC and all the IBC members & distinguished guest present in the meeting. Er. Anil Kumar Dahiya, E-in-C (Building), Haryana was the Chief Guest. The technical presentation was given by Prof. (Dr.) Sanjay Sharma, National Institute of Technical Teachers Training & Research on "Sustainable Building Construction Practices" and Shri Sanjeev Biswas, Tata Steel gave Presentation on "Glass Fibre Reinforced Rebars".

The seminar served as a platform for knowledge sharing, innovation exchange and networking among professionals and stakeholders from across the building and construction ecosystem. Er. C. Debnath, President, IBC emphasized the importance of collaborative approaches and technological innovations.

The report of Technical Seminar was published in various newspapers of Chandigarh

चंडीगढ़ में सस्टेनेबल बिल्डिंग कंस्ट्रक्शन प्रैक्टिसेज और ग्लास फाइबर रीइन्फोर्स्ड रीबार्स पर तकनीकी सेमिनार का आयोजन

Indian building congress holds seminar in city

After discussions and due deliberations, the meeting resolved the following:-

(i) Utmost effort shall be made by all existing members to register new members for Mizoram State Chapter. It is targeted to achieve at least 100 members for Mizoram State Chapter in the coming year 2025.

(ii) Management Committee for IBC, Mizoram State Chapter for 2024-26was elected as Chairman -Er. Hrangthanga Zote, Hony. Secretary - Ar. Zoramnghaka, Treasurer - Er. Evangeline Lalrinmawii and Management Committee Members - Ar. LalrinzualaRalte& Er. H. Lalnunpuia.

K) IBC, Odisha State Chapter

Annual General Meeting

Annual General Meeting of IBC, Odisha State Chapter was held on 7th Dec., 2024 at The Institution of Engineers (India), Odisha State Chapter, Bhubaneswar. Shri Manoranjan Mishra, Convener & Council Member, IBC welcomed all the members present in the meeting. He requested Er. Bijay Kr. Nayak, Honorary Secretary to take up the proceedings of AGM.

Various activities of the State Chapter were informed and discussed in the meeting.30 Members were present in the AGM. During the meeting ,following Office Bearers of IBC Odisha State Chapter for the Session 2024-26 were unanimously elected:

Chairman - Er. Bijoy Chandra Tripathy; Vice Chairman - Prof. Pravat Kumar Parhi; Secretary - Er. Trinath Behera; Treasurer - Er. Prabhudatta Pradhan and Management Committee Members - Er. Satya Ranjan Sethy, Er. Akshay Kumar Sahoo, Er. Binodini Behera, Er. Anuradha Meher, Er. Saideep Sahu, Er. Jyoti Prakash Nayak and Er. Tara Prasad Dhal.

The AGM was concluded with the Vote of Thanks to the Convener and others present.

J) IBC, Mizoram State Chapter

Annual General Meeting

The Annual General Meeting of IBC, Mizoram State Chapter was held on 12th Dec.,2024 in the office of Chief Engineer, PWD, Tuikhuahtlang, Aizawl. Er. H. Zoramliana, Chairman welcomed all the members present in the AGM. Er. Lalremruata, Honorary Secretary placed Annual Report 2024 before the members. The Financial report were discussed and approved by the AGM.

The Chairman placed the three agenda on the floor of the meeting and briefly explained each of the agenda.

L) IBC, Bihar State Chapter

Annual General Meeting

The Management Committee, Bihar State Chapter conducted the Annual General Meeting and Election for new Office Bearers on 21st Dec., 2024 at IB, BCD Rajbanshi Nagar, Patna, Bihar. Shri Rakesh Kumar, Convener of AGM & Council Member, IBC welcomed all the members present in the meeting. He requested Shri D.K. Baxi, Past Honorary Secretary, IBC Bihar State Chapter to start the proceeding. He briefed about the

activities by the state chapter and at the headquarter. In the meeting, the following Office Bearers of IBC Bihar State Chapter were elected for the Session 2024-26.

Chairman- Shri Santosh Kumar, E-in-C, BCD; Vice Chairman - Shri Sunil Choudhary, Fmr. Chief Engineer, BCD; Hony. Secretary - Shri Tarani Das, Chief Engineer, BCD; Treasurer - Shri Gunjan Kumar, Executive Engineer, BCD and Management Committee Members- Shri Suresh Prasad Prabhakar, CE, BCD; Shri Harendra Kumar Dubey, Fmr. SE, WRD; Shri Vinod Choudhary, SE, BCD; Shri Aditya Narayan Jha Anal, Fmr. SE, WRD; Shri Malay Kumar Sinha, EE, BCD; Shri Narendra Tiwary, Fmr. CE; Shri Anand Kishor Prasad, Fmr. CE, RCD.

All the members congratulated the new office bearers of IBC Bihar State Chapter and the meeting concluded with vote of thanks to the Convener and other present in AGM.

Technical Activities

The inaugural ceremony of 3rd meeting of EC of IBC alongwith Seminar on "Sustainable infrastructure development & management for built environment" was organized by Building Constn. Deptt in association with IBC, Bihar State Chapter at Adhibheshan Bhawan, Patna on 19th Oct,2024. The welcome address was given by Er. Sudhanshu SheKhar Rai, Engineer in Chief, BCD & also Chairman, IBC, Bihar State Chapter & Vice President, IBC. Than the President of session Er. C.Debnath, President, IBC delivered speech. Er.V.R.Bansal ,Hony Secretary & Er.O.P.Goel, Founder President, IBC alos delivered speech. Vote of thanks was offered by Er. Santosh Kumar, Chief Engineer, BCD & Council Member,IBC. After that presentation made on the topic of seminar by Er. Ram Babu, SE, BCD & others. A colourful cultural function was organized in the evening.

M) IBC, Madhya Pradesh State Chapter

General Meeting

The general meeting was held for formation of Management Committee of IBC, Madhya Pradesh State Chapter on 10th Dec., 2024 at Nisarg Hotel, Bhopal. Shri S.R. Baghel, E-in-C, MP, PWD& Vice President, IBC welcomed all the members. The proceedings of the chapter were discussed in the meeting. After detailed discussions, the following members of Management Committee were constituted:

Chairman – Er. S.R. Baghel; Honorary Secretary - Er. Praveen Nigam; Treasurer – Er. R.D. Choudhary; Management Committee Members- Er. K.S. Yadav, Er. K.S. Yadav, Er. Mayank Shukla, Er. G.S. Bhuriya , Er. Jatin Chundawat, Er. Neelesh Gupta, Er. Shivani Budhauliya, Er. Kapil Tyagi.

Technical Activities:-

i) Seminars on" Exchange Information Requirement (EIR) for BIM &CDE and Good Construction Practices"

A seminar on "Exchange Information Requirement (EIR) for Building information Modeling (BIM) & Common Data Environment (CDE)" was held on 15th Oct., 2024 at E-in-C (Building), MP, PWD, Nirman Bhawan, Plot No. 27/28, Arera Hills, Bhopal.

Lighting of Ceremonial Lamp

The Seminar began with Lighting of Ceremonial Lamp by Er. S.R.Baghel, E-in-C MP, PWD, Chairman IBC-MP-State Chapter & also Vice President, IBC where Er. V.S.Verma, Former E-in-C, MPPWD, Past President IBC and Past Chairman IBC-MP-State Chapter; Er. G.P.Mehra, Former E-in-C MP PWD, Past Chairman IBC MP State Chapter; Er. A. R. Singh, CE, MP, PWD, Deputy Secretary, MP, PWD and Er. R.K. Ahirwar Special Invitee IBC were present. Shri V.S. Verma was welcomed by presentation of bouquet by Shri S.R. Baghel.

Shri S.R. Baghel, E-in-C, MP, PWD (Building), Chairman delivered the opening speech reflecting on milestones achieved by the Chapter over the past year and emphasizing the importance of setting ambitious goal for the future. Shri V.S. Verma, was the speaker. He spoke on "Exchange Information Requirement (EIR) for Building information Modeling (BIM) & Common Data Environment (CDE), a part of employer requirement and particular Condition of Contract (PCC)". The lecture was very informative. Around 40

participants from various Engineering Departments of the State Govt. were present in the Seminar.

Welcome of Sh. V.S. Verma by Sh. S.R. Baghel, Chairman

Sh. S.R. Baghel delivering the speech

A Seminar on "Good Construction Practice" was held on 10th Dec., 2024 at Nisarg Hotel, Zone-I, MP-Nagar, Bhopal.

Four number topics were discussed in the Seminar in five sessions namely (i) Cost Analysis of Large Infra-Project (ii) Internal Campus Road Construction Methodology and its Quality Construction (iii) Retrofitting Methodology of R.C.C. Buildings (iv) Good Construction Practice for Building Works

In the Technical Session –I, Shri V.S. Verma, Past President, IBC was the Special Guest Speaker. He spoke on "Cost Analysis of Large Infra-Project". He mentioned the importance of acknowledging the chapter's efforts and sharing insights into IBC's national initiatives. He guided on aligning regional objectives with the broader goals of the Council.

In the Technical Session – II, the speaker was Shri S.D. Pandse, CE, MPRRDA. He spoke on "Internal Campus Road Construction Methodology and its Quality Construction". He mentioned the various aspects of Internal Campus Road and Quality Construction and its maintenance.

In the Technical Session – III, the speaker was Shri Garg, a Retrofitting Consultant who spoke on "Retrofitting Methodology of R.C.C. Buildings". He discussed in detail about the nature of deterioration of RCC structure and its methodology for retrofitting.

In the Technical Session – IV, the speaker was Shri Anil Srivastava, E-in-C, Building Development Corporation who spoke on "Good Construction Practice for Building Works". He discussed about the various construction practices adopted in construction and new technologies used.

In the Technical Session – V, the speaker was Shri J.P. Pastor, E-in-C, Police Housing who also spoke on "Good Construction Practice for Building Works". The speech was very informative.

The Honorary Secretary presented a summary of the Chapter's Activities. The Treasurer presented an overview of the financial health of the Chapter and presented Vote of Thanks to the Chairman and participants.

FOR KIND ATTENTION OF MEMBERS

It has been observed that the communications from the IBC Headquarters sent in hard copies to members by post, to their addresses registered with IBC do not reach at some of addresses and are returned back to us. The situation arises presumably due to the fact that the members concerned though have shifted from the address recorded with us but have not informed the IBC office.

It is our earnest request to members who make any change in their address (or Mobile No. /Email ID) should intimate IBC HQ, New Delhi by filling Updation Form.

INDIAN BUILDINGS CONGRESS

MEMBERSHIP DATABASE UPDATION FORM

(Membership No……..)

PLEASE FILL THE FORM IN BLOCK LETTERS

Full Name: Mr./ Ms .....

*Date of Birth:.....

Address:.....

.....

…….....……

City…….....Pin…….....State.....

Occupation:.....

*Phone/s: (Office)…….....…….....(Residence)…….....

Mobile: .....

*Email:.....

*PAN Card No :.....

***Mandatory fields**

Kindly fill the IBC Membership Database Updation Form and send the same at **membership.ibc2022@gmail.com** or to the **Indian Buildings Congress**, Kama Koti Marg, Sector-VI, RK Puram, Delhi-110022.

INDIAN BUILDINGS CONGRESS

Kama Koti Marg, Sector-VI, R.K. Puram, New Delhi-110022
Phone: 011-26169531, 26170197
Email: info@ibc.org.in indianbldgscongress@gmail.com
Website : www.ibc.org.in

Application for Life Membership

I desire to become a Life Member of the Indian Buildings Congress. If admitted, I agree to abide by the provisions of the Memorandum, Rules & Regulations & Byelaws in force now or as may be amended from time to time. My particulars are given below:-

1. Name (CAPITAL LETTER) :
……

2. DOB (**Enclose Proof- Aadhar Card etc.**): ……

3. Qualifications (enclose proof): ……

4. Nationality:……

5. Designation: …….

6. Organisation : ……

7. Contact Address: ……..

2 Photos
(Paste 1 photo here & enclose another for I-Card with clip only no stapling)

…….....…….....
PIN Code…….

Permanent Address: ……..……
……..... PIN Code…….....

Telephone No. (R): ….. ……..(O): ……..…..(M)…….....…Email: …….....

8. State attachment

9.Category: Consultant / Architect / Civil / Electrical / Mechanical / Town Planner / Public Health / Administrator / Developer / Structural Engineer / Energy / Eco scientist / Horticulturist / Builder / Manufacturer of Building Materials: **Tick (√) any one**

10. Annual Income Rs.…….....

11. Experience in Buildings & Built Environment (Start from the Present Post held and go backwards):

	Period	Post-Held	Nature of work assigned
(i)	.....	.....	.....
(ii)	.....	.....	.....
(iii)	.....	.....	.....

12. Amount payable (Refer rates given below)

For Life Membership

Entrance Fee	Age Group	Compounding Fee for Life	GST @ 18%	Amount Remitted
Rs.500/-	Less than 50 Years	Rs.6,000/-	Rs.1170	Rs.7670
Rs.500/-	Between 50-55 Years	Rs.5,000/-	Rs.990	Rs.6490
Rs.500/-	Between 55-60 Years	Rs.4,000/-	Rs.810	Rs.5310
Rs.500/-	Between 60-65 Years	Rs.3,000/-	Rs.630	Rs.4130
Rs.500/-	Above 65 Years	Rs.2,000/-	Rs.450	Rs.2950

Cheque/DD payable to "Indian Buildings Congress" at New Delhi

13. Cheque/DD No. ……dated….....…for Rs.....on……...…… Bank……..…… Branch

(Date) (Signature)

CHEQUE can be deposited in 'Indian Buildings Congress, C&I A/c No.10932790856 with STATE BANK OF INDIA, (01076), IFSC Code-SBIN0001076, MICR Code-110002106; Ramakrishnapuram, New Delhi Branch OR AXIS BANK LTD, Sector VI, R.K. Puram, New Delhi-22, Saving A/c No.919010023477937, IFSC UTIB0003532, MICR Code-110211226. Online payment can also be made.

Visit www.ibc.org.in for applying and making payment online.

Payment can also be made through UPI by scanning code as given below:

Applicants for Life Membership may submit two passport size photos for issuing Identity Card.

Please Enter UPI's Ref. No. OR Cheque / DD No., Bank Name, Branch, Dated, Amount :

For use in Indian Buildings Congress Office:

Receipt No…… Date ……..……for Rs. ……..…….. Membership No … ...……....

Ratified/Clearance given by the Executive Committee on ……

Approved by the Executive Committee on : ……..…….

Guidelines of qualification, experience and status for enrollment of Life Member:

1. **Administrators:** Members of organized Central or State Government Services, Public Sector Undertakings and Private Sector which are dealing in the construction of buildings holding responsible positions.

2. **Engineers:** (i) Persons holding a degree or equivalent qualification in Civil, Electrical, Mechanical, Public Health and allied sciences of Engineering irrespective of experience. (ii) Diploma holders having 10 years' experience in buildings

3. **Architects:** Persons registered with the Council of Architecture

4. **Planners:** Holding a degree qualification in the Science of Planning or the member of Council of Planners.

5. **Educators:** Holding a professional degree in any discipline of Engineering or a Post Graduate Degree in any other discipline and teaching in an Institution imparting education or training in the field connected with buildings.

6. **Trainers:** Same as for Educator

7. Financiers: Persons holding a degree qualification and dealing in finances for the building industry.

8. **Developers:** Persons heading firms of Developers engaged in development of Real Estate including construction of housing projects with annual turnover or not less than Rs.2 crores.

9. **Builders:** Builders & Building Contractors either having a Class I registration with Central or State Government or Central or State Undertakings, or with annual turnover of not less than Rs.2 crores in any one of the last three years.

Contract Form

Ref: IBC/Hq/01 Date:_____

To

M/s, Sri/ Smt_____

_____

Dear Sir/ Madam,

Indian Buildings Congress (IBC) was established in September 1992 as a professional organization with a vision of Built Environment conducive to good living, which is technology driven and environmentally sustainable having its Hq at New Delhi. The Departments Like CPWD, Railways, DDA, MES, State PWDs, Rural and Urban Development and other Organization are the Institution members of IBC. IBC has Chapter in every part of the country. IBC is pursuing a number of technical activities for dissemination of knowledge in the field of Built Environment by organizing workshops/seminars and publishing technical books/journals. Its main mission is to bring the concerned professionals on one platform to share their experiences, thereby enabling adoption of good practices.

It is to apprise that IBC brings out quarterly publication tilted "Built Environment" in October, January, April and July, containing short articles concerning Built Environment, activities conducted by the IBC HQ and its various Chapters, news of importance & interest, besides other informations related to IBC which are circulated throughout the country.

We, on behalf of the IBC, request you to book a suitable space for advertisement of your organization in the Built Environment to make our venture a grand success.

The Rate of advertisement is as follows:

1. Full Page	Rs. 50,000/-
2. Half Page	Rs. 30,000/-
3. Quarter Page	Rs. 15,000/-

Kindly fill up the contract form and send your advertisement material to us alongwith the advertisement charges in cheque or electronic mode.

Kind Regards & Best Wishes

Yours faithfully,

(I.S. Sidhu)
Executive Director
ed@ibc.org.in

N.B. : 1. Cheque/Draft may please be drawn favouring "Indian Buildings Congress", payable at New Delhi.

2. Advertisement to be accompanied with Advertisement charges by cheque/online payment to Bank Account No- 10932790856IFSC Code of Bank SBIN0001076 of IBC

CONTRACT FORM

To
The Executive Director
Indian Buildings Congress, Sector VI, R.K. Puram, New Delhi.-110 022
Ph 011-26169531 Mob.9625656865

Dear Sir,

I/We intend to insert an advertisement in your Built Environment for (……..) page as per rate mentioned in your letter. I/We am/are enclosing herewith the advertising materials and cheque for Rs. ……(Rupees ……) only. Bearing No ……dated ……for the purpose / by online

Yours sincerely,
Signature
Name:……..
Address……

Important Days for IBC Meetings During 2024-25

Tentative Schedule

A) Governing Council Meetings

Sl.	Schedule Month	Date	Venue	Co-ordinator
1	Dec, 2024	5 Jan, 2025 Sunday	Raipur	IBC, Chhattishgarh Chapter & Naya Raipur Dev. Authority
2	March, 2025 (Mid Term)	12-13 April, 2025 Saturday, Sunday	Hyderabad	PWD (Bldg), Telangana & IBC, Telangana Chapter
3	June, 2025	21-22 June, 2025 Saturday-Sunday	Agartala	PWD, RD.UD, Tripura & IBC, Tripura Chapter
4	Sept, 2025 (Annual)	19-21 Sept, 2025 (Friday to Sunday)	Nagpur	PWD (Bldg), Maharashtra & IBC, Maharashtra Chapter

B) Executive Committee Meetings

Sl.	Schedule Month	Date	Venue	Co-ordinator
Spl-1	July, 2024 (Just after last AGM)	27th July, 24 (Saturday)	IBC HQ	ED, IBC HQ
Spl-2	August, 2024 (Spl for filling up of vacancies in EC/ GC)	17th August, 24 (Saturday)	IBC HQ	ED, IBC HQ
1	Oct, 2024	19th Oct, 24 (Saturday)	Patna	BCD, Bihar & IBC, Bihar Chapter
2	Dec,2024	15th Dec, 2024 (Sunday)	Chandigarh	Engg. Deptt, Chandigarh Admn & IBC, Chandigarh Chapter
3	Feb, 2025	15 Feb, 2025 (Saturday)	Chennai	PWD (Bldg), Tamilnadu & IBC, Tamilnadu Chapter
4	April, 2025	3rd May, 2025 (Saturday)	Gandhinagar	PWD (R & B),Gujarat & IBC, Gujarat Chapter
5	June,2025	7th June, 2025 (Saturday)	Bhubaneswar	PWD, Odisha & IBC, Odisha Chapter
6	August, 2025	24th August, 2025 (Sunday)	Jaipur	PWD, Rajasthan & IBC, Rajasthan Chapter
Spl-3	Sept, 2024 (Just before AGM)	18th Sept, 2025 (Thursday)	Nagpur	PWD (Bldg), Maharashtra & IBC, Maharashtra Chapter
Spl-4	Sept, 2024 (Just after next AGM)	21st Sept, 2025 (Sunday)	Nagpur	PWD (Bldg), Maharashtra & IBC, Maharashtra Chapter

NOTE: Special E.C. may be held at IBC HQ in case of any special necessity

Statutory Days for Observation

A) At IBC Head Quarter, New Delhi

Sl.	Date	Subject/Day
1	1st September	Foundation Day of IBC
2	15th September	Engineers Day
3	31st May	V.R.Vaish Memorial Lecture

B) At IBC Chapters

Sl.	Date	Subject/Day
1	1st September	Foundation day of IBC
2	15th September	Engineers Day
3	October (1st Monday of Month)	World Habitat Day
4	14th October	World Standard Day
5	14th December	National Energy Conservation Day
6	25th January	National Tourism Day
7	22nd March	World Water Day
8	18th April	World Heritage Day
9	22nd April	World Earth Day
10	5th June	World Environment Day

Note: IBC Chapters have to conduct programme on Statutory days & send report to IBC HQ.

Benefits of IBC Membership

Indian Buildings Congress (IBC) a professional organization was, established in 1992 with CPWD, MES, Railways and other premium Organisations as its founder members. IBC, with its headquarter at New Delhi, has an pan-India presence with Chapters in 27 states/UTs. IBC is striving continuously to bring all professionals connected with the built environment on a single platform so as to form collective opinion related to built-environment for the benefit of various stakeholders and policy-makers.

Benefits:-

- Free Subscription to be IBC Periodicals
- Free Access to the past issues of the IBC periodicals
- Opportunity to participate in various training programmes and Technical Events i.e. Seminars, Convention, Workshops, Webinars etc. organized by IBC HQ and various State/Local Chapters at State/National/ International levels. The participation is complementary for Life Members and for other at a concessional rate.
- Opportunity for interaction and networking with eminent experts of Built Environment and Construction Industry.
- Platform for interaction and Peer-learning among all the stakeholders i.e., Engineers, Architects, Contractors, Builders Planners and Policy-makers etc.
- Opportunity to present their paper and receive acknowledgement by Award/Commendation Certificate.
- Opportunity for Executing Organisation and Planner for recognition for their outstanding work in Built Environment.

NATIONAL NEWS

a) A brand-new experience at Delhi airport's Terminal 1

To enhance the passenger experience, DIAL has introduced several new features at the new terminal, such as mobile check-in service, longer baggage reclaim carousels, an automated tray retrieval system, individual carrier system, common usage self service, aerobridges, check-in-counters and self-baggage drop kiosks. These features are designed to streamline airport processes for travelers.

Additional amenities include expanded baggage reclaim carousels, multiple entry gates, a prayer room, yoga area, quiet zone, group seating, laptop and mobile charging stations, a self-medication room, baby care rooms and smart washrooms. These features aim to improve the traveller experience on the airport.

b) Why critical thinking is key for engineers in this Age of AI

As AI reshapes the landscape of technology and industry, engineers find themselves at a crossroads. The question is no longer whether AI will impact their field, but how to adapt and thrive in this new era. In a webinar last week, industry leaders said that there are several critical skills engineers need to develop to stay ahead in this emerging AI-driven world.

To navigate this new terrain, continuous learning and curiosity are indispensable. Subject matter expertise, will still be more important or as important to what AI can do.

The ability to critically evaluate AI outputs is perhaps the most crucial skill for engineers to develop. It's critical thinking that is most important.

Another key skill set revolves around ethical considerations and compliance. Even on Google search, one can find unsettling answers and images to very simple questions.

Navigating this terrain, involves not just having a thorough understanding of the laws and regulations surrounding AI, but also its wider implications.

Integration skills are also becoming important. Once engineers understand the problems and the limitations of AI systems, then comes the complex task of integrating the AI solution at scale. This requires a strategic approach that considers factors such as the cost-effectiveness of any AI solution, the legal hurdles it may face, and project-specific needs.

c) Nagari ka Pul

Nagari ka Pul is also known as Jhaal Bridge was constructed on Ganga Canal and Kali River. It was constructed between 1885 to 1889. Its length is 346 m and its discharge capacity is 7095 cusec. It is the historical and brilliant example of Irrigation Department.

The Jhaal bridge located in Nadrai village at the mouth of Kasganj was built during the British rule. It has been more than 135 years since this bridge was built.

135 years old bridge, Hazara canal above and Kali river below

Hazara canal flows above this bridge and the continuous flow of Kali river below is a sight to behold. Not only this, the chambers built in the middle of the bridge are a unique example in themselves. The Jhaal bridge built near village Nadarai at a distance of about five kilometers from Kasganj is a testimony to the British history.

The British government spent lakhs of rupees in the construction of this bridge. The bridge was constructed at a height of several hundred feet above the uninterrupted flow of the Kali river in such a way that the Hazara canal was drained from above. Chambers were constructed here in the middle of the river and the canal.

At that time when there were no modern resources like today, the construction of this bridge was no less than a challenge. The bridge is still strong today. Tunnel chambers have also been constructed between this bridge and the canal which is built several feet above the river.

The problem of water scarcity of the local people also got resolved. Since then till today, this Jhaal bridge made of English art is giving testimony to the excellent construction art.

The canal department has currently tried to do some more development around this bridge. A dam has also been constructed here to stop the water from Hazara canal.

d) World's Largest Overhead Water Tank, Kolkata

Tala Tank in Kolkata is one of the city's major landmark, the world's largest overhead tank made of mild steel.

Tala Tank was built by colonial Brits, in 1911. It's served the city ever since, never malfunctioned, and the first major overhaul in more than 100 years finished recently.

An overhead water tank that's 100m by 100m (the depth of its water chambers is 18 feet). The tank has been in operation for 113 years, holds about 36,000 tonnes of water that caters to 50 lakh people, one third of the 1.5 crore population of a major city, its restoration cost was Rs 100 crore, the job took seven years and 3,600 tonnes of steel, and repainting just the outer sides needed 1.3 lakh litres of paint.

The Tala story is as fascinating as the tank's dimensions are aw-inspiring. The Steel used was the same that went into building the Titanic. The tank, weathered 113 years, standing-120 ft. high, base to top on a large

Tala Water Tank, Kolkata

patch of land donated in early 20thcentry by local philanthropist Babu Khelat Ghosh.

Materials for building a huge water tank came from around the British empire. Especially important were quality wood from Burma (now Myanmar) and special anti-corrosive steel plates from Middlesbrough, England. Fabrication works were carried out on-site. Clayton, Son and Co of Leeds, England, got the job. The construction work was completed by January 12, 1911.

North Kolkata and bits of South Kolkata are dependent on Tala water. Kolkata Municipal Corporation employs 300 people to run the tank that has four underground water chambers. Five heavy-duty pumps lift water to the overhead tank. In peak summer, four more pumps are deployed.

Repair works were first mooted, in 2016, by experts in IIT Kharagpur and Jadavpur University who flagged structural weakness that had built up in the century-old tank. Work started in 2017, but first Covid and then Cyclone Amphan delayed the massive project.

Much of the Rs 100 crore was spent on special-purpose materials: high-grade steel, anti-corrosive, UV-resistant paint for the exterior and food-grade paint for the interiors of the tank as well as the underground water chambers.

Fittingly, perhaps, repairs were carried out by Bridge & Roof Co-a 104-year-old public sector company set up in 1920, nine years after Tala Tank was built. KMC officials are confident the strengthened Tala Tank is now good to go for another 100 years.

e) Sand Substitute Developed by Indian Scientists for Eco-Friendly Construction

Scientists at the Indian Institute of Science (IISc) in Bengaluru have created a promising new material that can replace natural sand in construction. This development comes as a response to the growing scarcity of sand, a crucial component in building materials.

The team at IISc's Centre for Sustainable Technologies (CST) is exploring methods to utilise carbon dioxide (CO2) captured from industrial waste gases. They treat excavated soil and construction waste with this CO_2, transforming it into a viable sand alternative.

"These materials can then be used to partially replace natural sand. This would not only reduce the environmental impact of construction materials but also impart properties that can enhance their use for construction," stated IISc in a Led by Assistant Professor Souradeep Gupta, the research demonstrates that using CO2-treated construction waste in mortar, followed by curing in a CO2-rich environment, significantly accelerates the development of the material's strength.

"CO2 utilisation and sequestration can be a scalable and feasible technology for manufacturing low-carbon prefabricated building products while being aligned with the nation's decarbonisation targets," explains Dr. Souradeep Gupta, whose lab is carrying out these studies.

This innovative process boasts a 20-22% increase in the material's compressive strength. Additionally, injecting CO2 into clay soil, commonly found at construction sites, improves its interaction with cement and lime. This not only stabilises the clay but also enhances its overall engineering performance.

Dr. Gupta's team's research extends further. They've explored incorporating captured CO2 into excavated soil to create cement-lime-soil composites, potentially replacing up to half of the fine aggregates typically used in mortar. This technique promotes the formation of calcium carbonate crystals, leading to improved strength and reduced pore space. Exposing these materials to CO_2 further accelerates curing and increases early-age strength by 30%.

Sand Substitute Developed By Indian Scientists for Eco-Friendly Construction

The researchers have also developed 3D-printable materials using stabilised excavated soil combined with binders like cement, slag, and fly ash. These materials offer superior printability, potentially reducing the need for cement and sand by up to 50% each.

Future research will focus on the impact of industrial flue gas on these materials' properties, paving the way for industrial applications and potentially revising standards for cement-based construction materials.

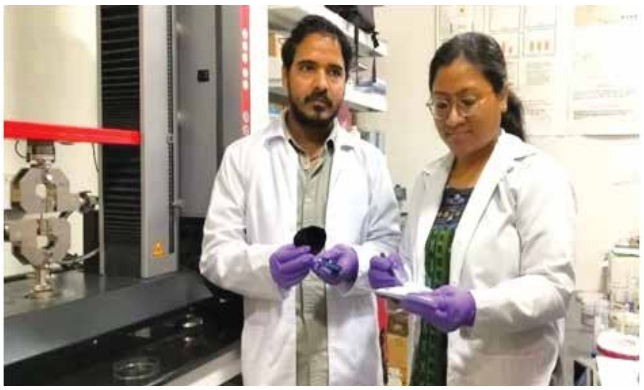
f) विज्ञानियों ने खोजा पालीथिन का सस्ता बायोडिग्रेडेबल विकल्प

पर्यावरण के लिए खतरा बनी पालीथिन पर नियंत्रण के लिए दुनियाभर में अभियान चलाया जा रहा है। इसके लिए नए–नए विकल्पों की तलाश वर्षों से चल रही है, लेकिन अब तक ऐसे किसी विकल्प पर नहीं पहुंचा जा सका है जो सभी मानकों पर खरा उतर सके। पालीथिन के बेहद सस्ते होने के चलते इसके विकल्प व्यावहारिक रूप से बड़े स्तर पर उपयोग में नहीं आ पा रहे हैं।

मगर अब भोपाल के भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान (आइसर) के विज्ञानियों के शोध से एक उम्मीद जगी है। आइसर के विज्ञानियों ने एक प्राकृतिक वायोडिग्रेडेबल नैनोकंपोजिट फिल्म तैयार करने में सफलता हासिल कर ली है। विज्ञानियों ने केकड़े और झींगा श्रेणी के जीवों से प्रेरणा लेकर इसे तैयार किया है। न केवल इसकी लागत वेहद कम है, बल्कि यह चंद दिनों में अपने आप नष्ट भी हो जाती है। प्राकृतिक रेशों से बनी यह फिल्म बेहद मजबूत भी है। इसके चलते सामानों की पैकिंग में मददगार होने से लेकर अन्य उपयोग में इसे पालीथिन के बेहतर विकल्प और पर्यावरण संरक्षण के रूप में भी देखा जा रहा है।

आइसर के रासायनिक अभियांत्रिकी विभाग की सहायक प्राध्यापक डॉ. परमिता दास का कहना है कि पेट्रोलियम आधारित पैकेजिंग सामग्रियां गैर–बायोडिग्रेडिबिलिटी और गैर नवीकरणीयता के कारण पर्यावरण के लिए खतरा हैं। जबकि बायोपालीमर आधारित यह फिल्म पर्यावरण मित्र है। इसे जमीन पर कहीं भी फेंक देने से भी यह पर्यावरण को नुकसान नहीं पहुंचाती और धीरे–धीरे मिट्टी में धुल जाती है।

प्राकृतिक चीजों से बनाने के साथ ही मजबूती के लिए इसमें सेल्यूलोज नैनोक्रिस्टल्स का उपयोग किया गया है। यह



भारतीय विज्ञान शिक्षा एवं अनुसंधान संस्थान की विज्ञानी डॉ. परमिता दास और शोधार्थी रूप सिंह लोधी के प्रयोगशाला में शोध करते हुए

नैनोकंपोजिट फिल्म, उच्च ताकत युक्त और हानिकारक परावैंगनी किरणों से संरक्षण वाले गुणधर्मों से युक्त हैं। इस शोध का प्रकाशन प्रतिष्ठित अमेरिकी जर्नल एसीएस एप्लाइट नैनोमैटेरियल्स में किया जा चुका है।

INTERNATIONAL NEWS

a) Thinnest Skyscraper in the world

The newly constructed, 1,428-foot-tall 111 West 57th Street, also known as Steinway Tower, is the world's thinnest skyscraper.

A member of the latest generation of New York skyscrapers, 111 West 57th Street, often known as Steinway Tower, is the world's thinnest skyscraper.

The 91-story skyscraper contains 46 full-floor and duplex residences. Photos by the designers show opulent lobbies decked out in limestone, marble, blackened steel, and velvet, floors paved in smoke-gray solid oak, and original artworks by Picasso and Matisse.

According to Studio Sofield, Steinway Tower's interiors were designed to evoke the grandeur of New York's Gilded Age, a period in the late 19th century when the city's boulevards were lined with the stately mansions of robber barons like Andrew Carnegie and Cornelius Vanderbilt. It sits on a Midtown street, filled with gleaming towers, that has become known as "Billionaire's Row." The interiors of Steinway Tower were designed by William Sofield, the creator of Studio Sofield.

b) Housing Construction Technology – Villa can be built in 3 hours

A Chinese company has assembled a 3-D printed two-story villa in less than three hours, complete with interior decoration, plumbing, wiring and other facilities. The modules were made in the factory using 3-D printing technology.

Traditional construction requires half a year to build up a villa, whereas using 3D print modules, the process can be shortened to around a dozen of days.

The cost per square meter is around $400-480, People's Daily Online reported. Because of the reduction in cost of transportation, labour, material, machinery and assembly costs, the low cost of producing the final homes are passed on to the home owners.

This makes the homes much more affordable than those built from scratch using traditional construction methods, according to 3ders.org.

The company claims its new materials are sourced from industrial and agricultural wastes and are capable of withstanding earthquakes with a magnitude of 9.0 and are also fireproof and waterproof.

NOTICES

1. Members/Authors/Professionals are requested to contribute technical articles related to Built Environment to be published in IBC magazine. Articles may be sent @ email indianbldgscongress@gmail.com
2. It is informed that Mid Term Session and Seminar on "Innovations in Built Environment" is tentatively scheduled on 12-13 April, 2025 at Hyderabad.

   All members authors/professionals are requested to send full paper on selected topic on or before 1st March, 2025.
3. 5th Executive Committee Meeting shall be held on 15th February, 2025 at Chennai.

Executive Director

IBC

Appeal

We request all professionals connected with built environment like administrators, financiers, planners, managers, developers, architects, structural engineers, civil engineers, public health engineers, electrical engineers, energy engineers, mechanical engineers, eco-scientists, horticulturists, builders, manufacturers of building materials, researchers, teachers etc. to join with our organization (IBC) to enroll as IBC Life Member to enable development of a sustainable built environment in the Country.

Online Membership form and other information are available on our website: www.ibc.org.in

IBC Welcomes the following New Individual & Student Members enrolled during 18/08/2024 to 15/12/2024

Individual Members:

S. No.	M. No.	Name	Qualification	Designation	Department	City	State
1	ML-9954	Shri Sanjeev Gupta	B.E. (Hons.) Civil	Superintending Engineer	Rajasthan PWD	KOTA	Rajasthan
2	ML-9955	Shri Chandra Prakash Nagar	B.Tech. Civil Engg.	Junior Engineer	Rajasthan PWD		Rajasthan
3	ML-9956	Shri Nandkishor Maal	B.Tech. Civil Engg.	Junior Engineer	Rajasthan PWD		Rajasthan
4	ML-9957	Shri Sanjeev Kumar Saini	Diploma in Civil Engg.	Junior Engineer	Rajasthan PWD		Rajasthan
5	ML-9958	Dr. Amarsinh Babanrao Landage	Ph.D	Assistant Prof.	Govt. College of Engineering Karad	KARAD	Maharashtra
6	ML-9959	Shri Harish Chandra	M.Tech. (Geotech)	Chief Engineer	MES	GANDHINAGAR	Gujarat
7	ML-9960	Shri Anil Chadha	B.E. (Civil)	Independent Consultant	Freelance Consultant	DELHI	Delhi
8	ML-9961	Shri Mangibhai Narandas Patel	B.E.(Civil), M.E., Ph.D, FIE	Sr. VC-GU/GTU/PU, Advisor	Silver Oak University	AHMEDABAD	Gujarat
9	ML-9962	Shri Tony Yumnam	B.E. (Civil)	Assistant Engineer	Manipur University	IMPHAL WEST	Manipur
10	ML-9963	Shri Braj Bahadur Shrivastav	B.Sc (Engg.), M.E. (Hons.)	Former Chief Engineer	UP PWD	LUCKNOW	Uttar Pradesh
11	ML-9964	Shri Basant Kumar Sahu	Diploma in Civil Engg., A.M.I.E (I)	Former Asst. Gen. Manager	SAIL Bhilai Steel Plant	DURG	Chhattisgarh
12	ML-9965	Dr. Ani lJoseph	Ph.D	Managing Director	Geostructurals (P) Ltd.	COCHIN	Kerala
13	ML-9966	Shri Faiq Rasheed	B.Sc. Engg. (Civil), A.M.U.Aligarh	Former Project Manager	Q.B.E.C, Doha Qatar	ALIGARH	Uttar Pradesh
14	ML-9967	Ms. Gargi Biswas	M.E.	Assistant Engineer	Tripura PWD	AGARTALA	Tripura
15	ML-9968	Shri Rajesh Kumar Joshi	B.E. (Civil), MBA	Sr. Vice President	The Wave Group	GREATER NOIDA	Uttar Pradesh
16	ML-9969	Shri Bhavinbhai Ganeshbhai Lakhani	B.E. (Civil), Master of Science in Env.Tech& Sustainability	Project Controls Specialist Lead	DACK Consulting Solutions	SURAT	Gujarat
17	ML-9970	Shri Amit Jain	Post Graduate, M.Tech. Geo-Tech (Civil)	CEO	Parshvanath Construction & Infrastructure	KOTA	Rajasthan
18	ML-9971	Ms. Preeti Nair	Ph.D	Associate Professor	Delhi Technical Campus	GREATER NOIDA	Uttar Pradesh
19	ML-9972	Shri R.Chandrakanth	M.E. Environmental Management	Asst. Executive Engineer	Tamil Nadu PWD		Tamil Nadu
20	ML-9973	Shri Ravi Bansal	B.E. (Civil) Engg.	Executive Engineer	Rajasthan PWD	JAIPUR	Rajasthan
21	ML-9974	Shri Amitesh Vijay Mourya	B.Arch., M. Urban Planning	Associate Professor	Delhi Technical Campus	GREATER NOIDA	Uttar Pradesh
22	ML-9975	Shri Ravi Kant Goel	B.Sc. Cost (Inter)	Associate	M/s M.P. Khaitan	NEW DELHI	Delhi
23	ML-9976	Shri Islahuz Jaman Ahmed	B.E. (Civil)	Consultant (Civil)	Factor Consultancy	GUWAHATI	Assam
24	ML-9977	Shri Chandrashekar G. Prabhudessai	B.E. (Civil)	Consulting Civil Engineer	Chandrashekar Prabhudessai (Proprietor)	MARGAO	Goa
25	ML-9978	Md. Ali Rashidi	B.Tech. (Civil)	Project Manager	AI Kulaib International Trading Co.	NEW DELHI	Delhi
26	ML-9979	Shri Sitem Borang	B.Tech. (Civil)	Chief Engineer (SID&P)	Arunachal Pradesh PWD	ITANAGAR	Arunachal Pradesh
27	OM-9980	Ms. Sailee Yash Awade	M.Arch. (Landscape), B.Arch.	Landscape Architect, Founder	Earthist Landscapes	PUNE	Maharashtra
28	ML-9981	Shri Vijaya Vishwa Kumar Alwal	B.Tech. (Civil)	Executive Engineer	R&B Deptt. Govt. of Telangana	HYDERABAD	Telangana
29	ML-9982	Shri Goutham Kumar Varala	M.Tech., MBA	Dy. Executive Engineer	R&B Deptt. Govt. of Telangana	HYDERABAD	Telangana
30	ML-9983	Shri Nookala Ravinder Reddy	B.Tech. (Civil)	Former Executive Engineer	R&B Deptt. Govt. of Telangana	HYDERABAD	Telangana

31	ML-9984	Shri Rajeshwar Reddy Gangi Reddy	A.M.I.E.	Chief Engineer	Roads & Buildings		Telangana
32	ML-9985	Shri Ramesh Marri	B.Tech. (Civil), M.Sc. (E.V)	Consultant (Civil)	TSTDC Ltd.	HYDERABAD	Telangana
33	ML-9986	Shri Raveendar Mittapally	M.Tech. (Strct.)	Dy. Executive Engineer	Roads & Buildings		Telangana
34	ML-9987	Shri Liladhar Doraya	M.Tech.	CEO	Vratul Test Laboratory Sawer Distt. Indore	UJJAIN	Madhya Pradesh
35	ML-9988	Ms. Sarita Evane	B.E. (Civil)	Assistant Engineer	Madhya Pradesh PWD	BETUL	Madhya Pradesh
36	ML-9989	Shri P. G. Redekar	Diploma in Civil Engg.	Director	M/s G.M. Arch. Pvt. Ltd.	MUMBAI	Maharashtra
37	ML-9990	Shri R. Devadassou	B.E. (Civil &Strct.)	Assistant Engineer	Puducherry PWD		Puducherry
38	ML-9991	Shri T. S. Semmal	M.Tech. (Strct. Engg.)	Ph.D Research Scholar	Puducherry Technological University		Puducherry
39	ML-9992	Shri Jitender Vaidya	B.E. (Civil), M.E. (Civil)	Executive Engineer	Himachal Pradesh PWD	MANDI	Himachal Pradesh
40	ML-9993	Shri Sandeep Vithalrao Nandanwar	B.E. (Elect.), M.Tech. Env. Sc &Engg.	Former CGM	Steel Authority of India Limited	BHILAI	Chhattisgarh
41	ML-9994	Shri Ayush Jain	M.Tech. (Strct&Constn.)	Structural Engineer		DURG	Chhattisgarh
42	ML-9995	Dr. Bal Krishan Sahay	B.ScEngg. (Civil), LL.B, MBA, Ph.D	Advisor (Technical)	Bihar State Disaster Management Authority	PATNA	Bihar
43	ML-9996	Shri Manish Kumar	B.Tech. (Electronics)	Special Secretary	Bihar BCD	PATNA	Bihar
44	ML-9997	Shri Sunil Kumar Sinha	B.Sc. Engg. (Civil)	Engineer-in-Chief	Road Construction Department	PATNA	Bihar
45	ML-9998	Dr. Safayat Ali Shaikh	Ph.D in Civil Engg.	Asstt. Chief Engineer	Housing Department, Govt. of West Bengal	KOLKATA	West Bengal
46	ML-9999	Shri Ajeet Kumar	B.Tech. (Elect. & Electronics)	Dy. General Manager	NPCC Limited	GUWAHATI	Assam

Student Members:

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2	SM-80350	Ms. V.S. Anagha	Pursuing B.Arch.	Student	NIT Raipur	RAIPUR	Chhattisgarh
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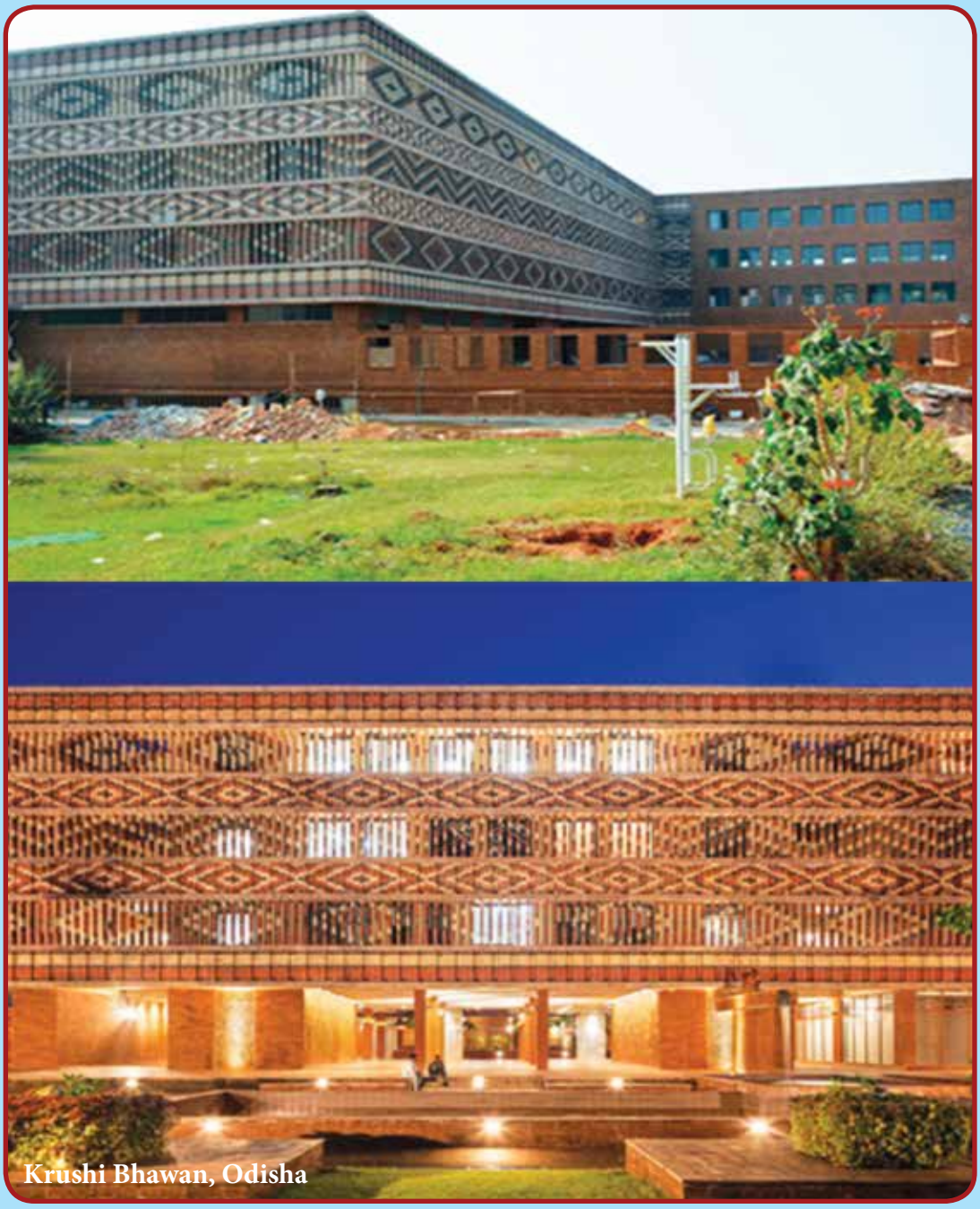

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