

ECO-WATCH

The Smart City Concept

Since the Smart Cities have become the buzz of the town. It is clear that technology will play a major role in the formation of a smart development. **Pradeep Misra, CMD, Rudrabhishek Enterprises Pvt. Ltd. (REPL)** gives the example of Bhopal turning into a smart city.



Since decades cities have been growing, some organically on their own and some through various planning interventions. But to make a city smart, it requires

smart planning framework involving technological processes with an aim to make the urban centre sustainable, more livable, socially inclusive and efficient in all respect. Planning for Bhopal Smart City was done

with a vision of "Transforming Bhopal, a city of lakes, tradition & heritage into a leading destination for smart, connected and eco-friendly community focused on education, research, entrepreneurship and tourism.





The Design Approach

Bhopal Smart City has been envisioned as 24X7 activity based integrated live-work-play-learn-shop concept. The planning approach was based on Transit Oriented Development (TOD) with social inclusiveness. The Proposed Site for Redevelopment spread over approx. 350 acres has been planned to ensure that there is least commutation involved for all the residents, in terms of going to work or accessing the amenities. This

has been ensured through land use coordination of carefully balanced areas of residences, office, education, medical and entertainment areas. The modern Commercial Zone would provide better economic & employment opportunities.

The redevelopment project was designed to unlock the value of underutilized government land in the heart of the city thereby radically transforming the area into an eco-friendly and financially sustainable model.

The city was strategically located between two primary transport axis (BRTS & proposed Metro) and embodied ToD principles to provide a compact, walk able and sustainable spatial morphology. This approach will lead to a domino effect in catalysing the future economic and social development of Bhopal.

The Infrastructure Planning

Plan incorporated smart components like mixed use development with activity based hubs, efficient road network, round the clock water supply & electricity provisions, solid waste management, treated waste water recycling, usage of renewable energy, green buildings etc.

Water is a precious natural resource. Therefore, water demand of the city was planned to be catered by fresh as well as recycled water. About one third of domestic water demand (for flushing), total water requirement for horticulture, cooling water demand for HVAC in commercial & institutional area has been planned by treated wastewater recycling.

Technologies for Mapping & Planning

ICT played major role in this project. Through central command system and sensor system, the concept of making the city safe, effective, and efficient was achieved. In due course, whole development will have fibre-optic for each household and office. This will ensure super high-speed connectivity (up to 200Mbps For ex. Singapore Open NET) to every inhabitant as well as have provision for Public Wi-Fi system in all public plaza / areas. As IT connectivity by combining high



It is the proper urban planning which gives platform to other smart features to sync, in order to make the city intelligent. The sustainable physical & social infrastructure, carefully planned facilities, technological edge and enhancement of livelihood opportunities for all socio-economic strata are the part and parcel of a smart development.

bandwidth and network solutions can process massive amount of data generated by a city, this will aid authorities in offering quality public services and release public data sets.

Retrofitting & Upgrading Initiatives

Retrofitting in an old city has always been a challenge. For instance, there is a limited scope of development in the existing settlement, no space for improvement as per norms and a very limited scope for new projects/facilities to develop, etc. Same applied in the case

of Bhopal old city, having very limited space available even for a fire station. Solution lay in the approach of strict imposition of fire fighting norms at building level and converting one of the government buildings with fully equipped fire fighting facilities for surrounding areas.

The New Smart Design & Utilities

Central control and command system has been proposed to facilitate integrated facility management. The development would have smart metering system which would provide real-time energy consumption data as well as provide Snag free distribution system in which faults can be pin-pointed for faster maintenance.

The development would have Intelligent Traffic Management systems like Dynamic Traffic Light Sequence. Such system would help reduce congestion on peripheral roads as well as improve efficiency of roads.

All household will have twin dustbins. One for organic and other for inorganic waste. All multi-storeyed residential and commercial buildings will be equipped with chute system for collection of waste and it will then be transported to iBins (with sensors) placed at various locations. Organic waste will then be transported to composting plant within smart city, and inorganic waste outside at municipal dumping ground.

Provision of earthquake resistant structures, proper drainage systems to prevent flooding, efficient fire fighting system with alarms, sensors & alarm system for any type of emergency will make the city disaster resistant. ■

