Fire Safety Over Cost: India's Path to Sustainable Growth

Strict adherence to building codes and use of fire-retardant material must to safeguard lives

By Mayur Karmarkar

Quality will determine the nature of our country's growth in *Amrit Kaal*. Union Minister for Commerce and Industry, Consumer Affairs, Food and Public Distribution and Textiles, Piyush Goyal recently said that we must recognize and accept the importance of quality to make India a developed nation.

India has made rapid progress in urbanisation in the last two decades and it is expected to gain further momentum. It is anticipated that the Indian real estate sector would touch US$ 1 trillion in market size by 2030, from US$ 200 billion in 2021.[1] Industry reports further suggest that India's urban population size will almost double between 2018 and 2050, from 461 million to 877 million. The National Commission on Population (NCP) in India predicts that close to 38.6 percent of Indians (600 million) will live in urban areas by 2036.[2]

As the world's second-largest populated country, it is not surprising to see such industry forecasts, but the question is — are we prepared to handle such an influx while ensuring strict adherence to quality growth and safety standards?

While our country continues to keep pace with the growing real estate demand with vertical expansion, with such a massive shift expected to take place in our cities, it is important that critical aspect like fire safety is accorded utmost priority while designing such spaces.

Fire safety is a critical feature of any structure, especially high-risk buildings which include high-rise constructions, hospitals, educational institutions, public buildings such as metro stations, airports, and malls among others in densely populated urban areas as accidental fires in buildings pose a big threat and continue to haunt occupants. According to the National Crime Records Bureau (NCRB), India witnessed close to 63,557 fire-related accidents resulting in 62,832 tragic deaths between 2016-2020, which on an average translates to 35 people getting killed by fire every day during the five years period.

Electrical issues or short circuits have been identified as the main reason for the majority of the fires as per authorities. For example, fire caused due to electrical accidents accounted for 20% of cases in 2020, as per NCRB data.

Similarly, the Central Electricity Authority (CEA) reported 10,022 electrical accidents in India during 2019-2020, and close to 55% of these were contributed by faulty electrical installations.[3]

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[1] https://www.ibef.org/industry/real-estate-india

[2] https://www.orfonline.org/expert-speak/managing-india-urban-transition-2021/#:~:text=The%20National%20Commission%20on%20Population,from%20461%20to%20877%20million.

[3] https://cea.nic.in/cei-electrical-accident-statistics/?lang=en

Our tendency to save costs often results in critical aspects like safety being compromised under L1 cost pressure in building construction and split incentive is a major cause here. The cost of installing electrical and fire safety equipment is part of capital expenses carried out by the builders, while its benefits, minimized fire risk in the buildings, are with the occupants. Split incentive here arises from the misplacement of incentives between the builder selecting the equipment or technologies for fire & electrical safety and the occupants who stay in a safe building.

Using inferior quality metal conductor, wrong selection & under-sizing of wires and cables at the time of construction is a major issue that leads to fire due to electrical hazards resulting in loss of life & property and also affects the sustenance of buildings and their long-term performance. Despite this having an impact on safety of the building, little attention has been drawn on how to resolve it and current policy interventions have made relatively little progress towards providing effective solutions that align incentives between concerned actors.

It is important to understand that trying to economize on wire & cable costs is not a viable option while constructing buildings and should not be a stated objective. Wire and cable represent a smaller percentage of the total construction cost of a building i.e., on average 1.1% for commercial buildings and 1.6% for most residential buildings. Though using 100% copper cables in the building will add a marginal additional average cost of 0.5% for commercial buildings and 0.6% for residential buildings, it gives a significant perceived benefit of safety and reliability to consumers in the long run over other materials.

A building is safer because of copper wiring which is not only easy to install, but also serves as a better conduit and lasts longer than any other material. Copper conductors increase system safety and quality, improving the performance of the construction and adding, in turn, value to the property. Copper conductors reduce energy losses leading to lower CO2 emissions and lower utility bills. Copper also offers excellent performance and has value, making it economically attractive to recycle at its end of life. While there are other electrical conductors in the market, all have lower conductivities with reduced system safety and durability and increased end-user electricity costs.

Additionally, strict adherence to the National Building Code of India (NBC 2016) and National Electrical Code of India (NEC 2023) published by the Bureau of Indian Standards (BIS) are critical to ensure quality electrical infrastructure in buildings and overall safety. Efforts should be made to curb the usage of substandard wires and cables.

On one hand, India is one of the fastest growing nations in the world, but on the other hand, non-adherence to electrical standards, codes & regulations exposes the threat our urban population is facing in the form of electrical accidents and negligence toward the issue. As India continues to see more urban spaces, a collective effort is required to focus on providing safe buildings to our citizens.

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