



# Futuristic Construction

A tectonic shift needed in the way Indian construction thinks and acts.

With the launch of Digital Roof 4.0 (DR4.0), a new day has dawned in the Indian construction sector. Digital Roof 4.0 is a multi-faceted engineering and management company set up with the avowed intention of bringing about a radical change in the way the Indian construction thinks and acts. The company is the brainchild of **V. Ramnath, an industry veteran who recently retired as Chairman, APRERA.**



The name Digital Roof 4.0 is intended to signify a commitment towards the global standards of Industry 4.0 - a tectonic shift in the Indian context. While Roof points to built-up spaces, Digital signals a technological approach towards achieving 4.0 goals in the construction sector.

Says Ramnath, "With rising pressure to provide humane living spaces that are affordable, the Indian construction industry has to take a quantum jump in terms of technology, products, processes, and standards. We have severe limitations of natural resources, including land. We are far from being a medium economy country. The only thing in India's favor is the ability to leverage technology and innovate ceaselessly. We aim to do our part by launching several novel initiatives, at par with what is normal in advanced economies, through the frugal, innovative and engineering skills of Indian professionals.

According to him, the \$250 billion sector (equal to the GDP of Bangladesh), is fragmented and unorganized, ignoring the imperative to seek technological parity and create products rivaling those offered by smaller nations. The heaviest blow falls on the MSME sector, leaving them with little re-investible surplus, and a sense of caution that dampens the entrepreneurial spirit. If you look at Germany, South Korea and several smaller but developed countries, this very same SME sector is the backbone of their respective economies.

The result is a cost matrix influenced by erratic and non-standardized data driven by lack of proper information, leaving even mid-sized players ill-equipped to cope with too many variables.

In his opinion, the government should introduce a TLI (technology linked incentive) scheme in the lines of PLI (production linked incentive) for the industry to come out of the shackles of age-old practices and conventional methods, which are inefficient, leading to wastage of large amounts of precious natural reserves.

Factory built elements are the way to go to transform the sector to reach global standards. Pre-cast and steel framed structures are the hallmark of advanced construction methodologies. In addition, India lacks designated service standards for the services offered by the construction sector leading to poor workmanship and lifecycle of the building finishes. Even the sizes and specifications of doors and windows are not standardized. The government will be doing a great service to the industry by making the standards of sizes mandatory, which will make the products available at competitive prices due to economy of scale.

## The solution?

The radically new approach, built on deploying materials that have been proven in advanced markets, blended with a series of technology-driven initiatives, while never walking away from first principles. Says Ramnath, "Take steel. It's ecologically better for the environment in the long term. If you were to redo the Empire State building, you could recover 85-plus percent of the metal. Similarly, if we pivot towards precast, we would use significantly less cement or concrete in the elements, increase productivity and upskill the workforce by an order of magnitude. Imagine completing a structure six months earlier! The mindset has to change to mass manufacturing of the elements or components in a factory. If housing is to become affordable, or dormitories come within reach of the younger generation, who power certain segments of the economy, thinking scale and doing scale is the only way."

## The proof of the pudding

Presently, there is no designated destination for the entire infrastructure, construction and real estate sectors to experience the modern trends in construction technology,

equipment, advanced building materials, software etc. Punjab is the first state in India to have recognized the need to educate, train and offer skill development for the industry at a single location. The state has plans to build a sector specific industrial park at Rajpura to promote the construction sector and elevate the knowledge and practices for the sector to reach the Industry 4.0 standards.

He signs off by saying, "Our dream is to serve a customer all along the value-chain: from a factory which sources materials, from our marketplace and provides manufactured/fabricated elements based on BIM-driven blueprints, to a builder who assembles a well-architected structure at the construction site, saving the end-customer valuable time and money."

Ramnath Velamati, a veteran of the infrastructure, construction and real estate sectors has more than 40 years of experience in several engineering, manufacturing and service sectors. He has been actively involved in the private sector as a technocrat entrepreneur navigating through cement, steel, engineering, chemicals and graphic arts industries. He was invited as a lateral entrant into the government of Andhra Pradesh. He has

the credentials of being the first Executive Advisor of APEDB, the first head of Urban housing programme under the Pradhan Mantri Awas Yojana, founder of Andhra Pradesh Economic Cities (Promotion & Development) Corporation, and had the privilege of being the first Chairman of Andhra Pradesh Real Estate Regulatory Authority (APRERA). He is also the Managing Trustee of Empower MSME Trust, a social enterprise. Empower has been authorized by the Government of Punjab to conduct a "National Demand Assessment Survey" to gauge the demand from the construction sector to set up an advanced industrial park to meet the comprehensive needs of the sector to reach global construction standards by moving towards Industry 4.0.

Ramnath founded Digital Roof 4.0 to introduce digitally driven technologies to enhance the capability and offering of the construction industry and meet the global standards of manufacturing and services 4.0. Through DR 4.0, Ramnath envisages that modern technologies, materials, products, equipment, systems, procedures, processes and standards can be brought to the industry, especially the MSME sector, at affordable and competitive costs. ●