Our composite steel structures help to overcome the deficiencies of conventional construction methods.

SARATH PARUPALLI
Managing Director, Maiwir Engineering

How is Maiwir Engineering taking a lead role in the steel structure innovations?

As we all say necessity is the mother of invention and that's how Maiwir Engineering was born in 2015 in Hyderabad to solve this problem of complex engineering projects. By investing many years in R&D and on boarding a global design team of experts equipped with the latest advancements in engineering, we developed a patented composite-steel structure system that would significantly reduce construction time without compromising the quality.

Maiwir became the first company in India to provide this technology to the Indian construction industry. This technology is aiming to challenge the age-old conventional methods of construction which are highly dependent on various factors such as uncertainty like local manpower, and resources and consume a lot of time. We specialise in building complex engineering projects. Our main ideology is to provide innovative solutions to deliver the best results without causing much inconvenience to the public at large. Design & Technology is our core strength, approved and attested by premier institutions like IIT Roorkee and IIT Madras.

Before we introduced hybrid construction technology in the Indian market, it was clouded by conventional methods. Our composite steel structures are a mix of conventional, pre-engineered methodology, using a combination of structural steel and reinforced concrete. This helps to overcome the deficiencies of conventional construction methods. I can explain the benefits better with the two recent projects undertaken by Maiwir.

- In our recent ongoing development, we constructed a section of the Gachibowli bridge for GHMC and installed the longest span of 64 m, and 18 m from above the ground level in one of the busiest junctions of Hyderabad without causing any traffic congestion.
- In India, the average time to construct a 1,000 sq ft house takes about 8 to 12 months, but with our technology, we were able to construct a 1,30,000 sq ft complex engineering structure in a record time of 45 days.

I strongly believe that this technology could change the dynamics of the Indian infrastructure development and be a huge force in nation-building.

Sarath Parupalli in front of DRDO facility in Bangalore that was constructed in 45 days.

Can you elaborate on the innovative solutions introduced by the company in PEB and steel structures?

In recent developments, the concept of composite construction is extended to the industrial and private sector (residential and commercial high-rise buildings), but with our hybrid technology, we offer innovative design solutions to the infrastructure sector in hospitals & educational institutions, bridges, mass transit systems, data centres, recreational centres,

seaports and airports.

Maiwir Engineering's system (hybrid technology) is a patented, highly flexible building system. It is composed of horizontal structures (MAIWIR® beams) and vertical ones (MAIWIR® piers), which can be used either separately or as part of a system depending upon the required standards. It is a global, effective and advanced solution for industrial, commercial, and residential buildings, as well as for large works, infrastructures, facilities, renovation, and conservative restoration.

What are the key advantages of your innovative technologies and solutions? How will these benefit the Indian construction sector in the future?

This hybrid technology will help increase productivity, optimise resource utilisation, resistant to wind load and seismic loads, improve structural integrity, and reduce losses due to wastage, and a massive reduction in construction time.

The Indian construction industry still uses conventional methods of construction wherein new effective and efficient methods addresses the challenges faced in conventional methodologies. Our proven technology has the following benefits:

- More than 60% reduction in construction time of the building
- Cost and budget efficient
- Less susceptive against seismic forces, wind and fire
- Superior quality and longer lasting buildings

Also, I'm confident that hybrid composite technology will catalyse the governments' ambitious infrastructure projects like PMAY-HFA, Jal Jeevan Mission, industrial corridors, National Infrastructure Pipeline, and others. The Indian construction sector is expected to clock 10.7 per cent growth in FY22 owing to the government's upcoming ambitious infrastructural projects and increased demand for commercial and residential spaces. It is also expected to be the third-largest construction market globally by 2022.

What are your future expansion plans and how are you planning to take your solutions to the next level?

Speaking on the technology front, today concrete is the undisputed leader (63%) for structures, while composite constructions using concrete and steel is on the rise from 26% to 32%. While in general these steel structures are built at a much-elevated cost, as those are all hot-rolled steel sections, we can do these in our in-house composite system at a much lower budget and at a fraction of the cost of their construction methodology. A typical hot-rolled or steel built-up section in a high-rise building is always more expensive than our composite system.

Maiwir Engineering successfully executed a complex steel bridge in Gachibowli, Hyderabad which is one of the busiest junction without any traffic snarls.

Our main area of focus in near future is high rise buildings and urbanisation. Just like our Mission to Mars, the mission to build can happen at a fraction of the cost with local material and skill-developed team and we shall target and improve the country's GDP growth with infrastructure development and spending. Over the past three decades in India, there has been a shift in construction technology, especially in steel structures related to design concepts, erection methodology, manufacturing, section profiles, code provisions, etc. Evolution of composite structures is one such revolution, which has gained significance and has mostly replaced conventional construction techniques.

Maiwir Engineering was awarded the fastest structure in India, the 'Flight Control System Integration Facility', at DRDO's Aeronautical Development Establishment, Bengaluru. The seven-storey building was designed using Maiwir Engineering's Composite-Steel Construction Technology.

For instance, the per capita consumption of steel in China is 590 kg per annum, where in India it is only 32 kg per annum. With key Indian Government initiatives like the 'National Steel Policy' which aims to improve the domestic steel production and consumption specially to cater to the rapidly growing infrastructure needs like affordable housing, hospitals, and urban transit systems, we see a huge potential to offer sustainable solutions with our technology within a short time frame. CT