

Q What are the major advantages of using steel vis-à-vis conventional materials?

A The biggest advantage with steel is its flexibility to render aesthetically complex geometries and forms, and at the same time, the time for execution gets reduced drastically. Other than this, a very important aspect with steel construction is that retrofitting is possible and can be done with ease, which provides for even more flexibility and functionality.

Many old buildings, which were rendered useless owing to limitations of expansion within the same structure owing to the difficulty of using conventional structures, steel has served as a logical and economical alternate there and has helped revamp those buildings to use again. We see this happening at an extensive scale in India now, when majority of the old airports are being redone and a lot of structural steel is being put to use there which is not only assisting with the strength, but, also is given them a modern and contemporary appeal.

With the use of steel even expansion of buildings is becoming easier. In a growing economy like India, where the demand of air travel is constantly rising after every 4-5 years, we have to look to expand our airports and steel has given immense flexibility there. Look at the old Mumbai Terminal T-2 and how it has

come up beautifully and making the headlines everywhere after T-3 New Delhi. With steel phasing and planning for the future has become much easier and that's why Internationally many public buildings are designed keeping in mind the demand for the coming 20 years so that integration of the structures to come is easily possible.

Q How structural steel can be innovatively used in construction to provide design aesthetics and at the same time offer economical solution?

A If we look at the large-scale and large span structures such as Airports, Stadiums, Exhibition Centers etc. wherein the sheer size of the building envelope is quite huge, therein, structural steel is already serving as the most aesthetical and economical design solution. The expression of form in such building typology has become easier with steel and it saves a lot of time in execution.

The bigger challenge in using structural steel for design aesthetics comes when it is to be used for small structures such as commercial spaces, offices, residences etc. as for these there aren't many aesthetical solutions available. It is great when we have to do a building in all glass, as steel supports the joinery, but what if we don't want to do a glass building. In a climate like India, wrapping all buildings in glass isn't logical given the extremities in temperature and then

we have to over spend either on air-conditioning or use double glaze units.

Now, we can't wrap in steel either as it looks industrial or too modern, the challenge comes at such places. If we could have maybe sort of hybrid products with steel, wherein we can replace walls and roofs without using glass it will be amazing. We have products now also, but, firstly the range is not enough and then we have to think a lot on how to do water proof jointing because with steel water proofing is a major challenge. If such solutions are available, definitely the demand will go up and the increase in demand will bring the cost and economics down.

Q What's your take on the variety of sections/grades provided by our steel producers for various demands of creativity?

A As I said before, for large scale structures it is not an issue, as there are many sections available, and if not available, they are customized, and even after being customized, the cost doesn't go up much because of relatively good quantities. To fulfill the creative demands in smaller projects, which are an equally bigger niche, there aren't many things available especially in India, and importing everything from abroad doesn't fetch cheap. For example, dormer windows and skylights. In residences, to do such windows and skylights aesthetically

SENSE OF AWARENESS IS NEEDED

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and neatly without problems of leakage, you really need to have deep pockets. But yes, times are changing and so is the industry making efforts to bring such things to market developing prototypes in India. The sooner it is out, the better it will be.

Q What trends are we going to witness in the next 5-7 years, as far as designing structures with steel is concerned?

A The future of structural steel looks pretty good as more and more designers are now exploring new materials and evolving new concepts on a very regular basis to express their designs. Interestingly, structural steel has found its way in the interiors as well, and 'Interiors' is fast becoming a bigger market than Architecture. While the principles of 'Design & Functionality' remain intact, designers are now exposing their structures and joineries for everyone to see.

An abandoned factory or a warehouse with some refurbishment and paint job over the rusted steel sections are now serving as office spaces to many budding and thriving start-ups. It's like serving an old wine in a new bottle.

These spaces not only look fresh, but, also are visually light that you can't help, but appreciate them. If we look at all 'Starbucks' outlets across India, you notice the rustic and industrial appeal they have been given. Interestingly, they are designed like that.

Another plus point in using steel is we are saving a lot of space as the width

of the sections is going down so we are looking at optimization to another level altogether. Similarly, with the use of mechanical car parks, which are again in steel, our parking efficiencies have more than doubled up. Steel has given us such flexibility, and I am sure that in times to come, we might be looking at some amazing applications of steel given the decreasing shortage of time and in some cases rendering portability.

Q What should be the strategy of industry in promoting structural steel construction in India?

A To promote structural steel construction extensively, more and more awareness of the range of products and sections already available need to be brought in. Conducting design competitions and organizing seminars and conferences in the design colleges can be a good way. In our curriculum, we have Building Construction as a subject, there instead of age-old knowledge, we can have interactive sessions with what's happening in the market because there is a huge difference in what we learn and how things are actually done. If there is knowledge of steel construction, designers can pick their path as to they want to practice in steel or not. Since the awareness abroad is more, you see more steel specific construction happening, and since here technical know-how is less, we see less of it happening in India. In my opinion, it really depends on the architect's mindset as to which material they want their designs in. It's a deliberate choice because everyone creates his or her own niche based on that.

Q Which are the iconic steel-specific projects executed by you?

A Well it's been only a few years since I am practicing, but yes, I have been lucky enough to have researched, designed and executed some steel-specific projects. Airports have always fascinated me, and for the same, I did my Design Thesis & Dissertation on the proposed 'Airport at Navi Mumbai'. It was quite a learning experience. While I was working on it, I stumbled across an interesting detail wherein the roof of airport was supported on shockers to withstand the earthquakes.

Other than this, we did interiors for a pent house overlooking Jaipur Airport, just when we had started. It shared amazing views on three sides, but, the layout of the house was very poor and the carpet area was also very less. Our brief was to increase the carpet area in the first case and it was on 7th floor. We doubled up the area using structural steel in no time. Only other alternate was RCC, but, there was no way we could have done that because the cost of scaffolding was more than the cost of the project. Since it was our first experiment, we did face issues with waterproofing, but, we have come a long way since then.

And then, since the very inception I have been part of Jaipur Exhibition & Convention Centre as the In-House Architect, and have hands on experience executing the largest indoor column-less exhibition halls in the country. ■