



ATUL SHAH

INSPIRINGLY INNOVATIVE

Atul Shah, owner & founder at Access Architects, along with his son Jay Shah and nephew Anuj Shah, make up the core of Access Architects. Even though they all come from different schools of thoughts due to their age differences, the one thing they all believe in, is 'Looking Beyond' - when it comes to anything related to design and architecture. Every effort is made for continuous improvement to ensure that clients receive cutting edge innovation, design and implementation.

Excerpts from an exclusive interview, wherein they share their respective viewpoints on questions thrown by SSMB on various aspects of designing with steel...

Q When do you work at your optimum best to design anything?

Jay I believe in the 'four a.m. miracle'. I think it is an unexplainable and unusual event that happens around 4 a.m. where sleep deprivation erodes your internal censors and allows you to come out of yourself and create something amazing. When you spend enough time designing something, the mind tends to merge the left brain – right brain thinking. And then you're able to use the left and right brain at the same time, which sometimes leads to Eureka moments in design.

Atul I have the exact contrasting answer to this. My brain cells work at their best early in the morning. My family calls me a workaholic. I like to work before everyone comes to work and meetings and workshops begin, because they don't allow me to concentrate on what my actual passion is – Design.

Anuj For me, I am more balanced between the three of us. I need a good night's sleep to be fresh and energetic to get to work next morning. Also I believe

its important not to exhaust the brain to the extent that you may suffer a burnout. And for me, my inspiration comes from everything around me. All that I have learnt, seen, experienced, in some way or the other has a big impact on my design sensibilities.

Q What challenges do you face in a city like Mumbai while designing buildings?

Atul The reason I enjoy designing buildings in a city like Mumbai, is because no matter how many one builds, the next one is always a new challenge.

Jay Commercial buildings, for example, don't allow a lot of freedom to express creativity when it comes to designing. There are a huge number of municipal guidelines, developer requirements, and general structural stipulations that need to be adhered to when an architect designs this kind of a structure. But what is more important is that even with all these parameters and challenges, if one is still able to create a building that has an eclectic and admiral value, then the goal has been achieved.

Anuj I have returned to Mumbai just last year. I was in Los Angeles, studying Architecture and then working for a few years before coming back to my base. And the difference in the style of work, design sensibilities, even the client expectations, are so different. And in some way, this makes me want to prove myself even more. I had worked at AA, before I went to LA, but now that I am back here for good, I love this challenge of designing buildings where every plot we are given is smaller than the last but the brief given is larger than most. So its definitely a challenge and I must say that as a pretty low-profile firm, we are doing some of the most prestigious projects in the country.

Q Currently, you'll are probably a studio working with most number of steel buildings in India. How did it all start for you? Can you tell us your story?

Atul Access Architects was started in 1982 by me. My son Jay Shah has joined since 2009 and my nephew, Anuj is now also a part of our firm since 2015. The firm has evolved into a design studio that believes

in innovation and modernization while keeping the traditional principles of design intact. There is a wide experience across multiple programs with projects like The Ruby for Ruby Mills and Rohan Lifescapes, Sofitel for Accor India, Saarthi for Naman Group, Washington House for Lodha Developers and Rivali Park for CCI Projects. From our office based in Mumbai, we have worked in North, Central and South India as well as internationally. Access Architects was one of the first architecture firms to begin using Revit in 2004. Revit is a design software specifically built for Building Information Modelling. Typically, by designing in Revit we assure the client of all drawings required till completion, delivered before foundation for the building is complete. The Revit file allows for infinite sections, elevations and 3D's to be pulled out for the building. When there are other consultants also working on the project, it allows us to foresee clashes and problems before they reach site. The value of this increases exponentially where the complexity and size of project increases.

Jay I grew up travelling to various places in India and abroad with a varying and rich cultural history. I recognized a part of me that was sensitively aware of the effect that great buildings had on the people within them. The internal optimist in me believes that great architecture helps enrich the soul. My interests lay in architecture since my early years. So I studied Advanced Architectural Design from Columbia University in New York City under the tutelage of architects such as Steven Holl, Bernard Tschumi and Kenneth Frampton. One of the reasons why I chose to attend Graduate School, was to be exposed to the cutting edge Design and Technology. I recall that during the orientation, the Dean said, "This is not design studio, this is a design laboratory." The goal is to 'realize' the future of design. The Software being used in movie studios and architectural offices today was partly developed in his college, Columbia University, in the 1990s.

Anuj I have officially been a part of the organisation only for a year, but this has always been my calling. After completing my Masters in Architecture from the University of California, Los Angeles, I came back to India because I knew this was the place I wanted to see my designs come to life. I studied architecture because this was what I always wanted to do. My love for design

is my biggest inspiration. It's too early for me to be reminiscing the "start" of my career, but I must say that I have a long way to go and I could not have asked for a better start than this.

Q What were the learnings from working in such huge number of steel projects?

Atul Steel, even though it's been extensively used all over the world until recently, has not been used as often in India. With the fall in steel prices serving as a big incentive among other factors for this project, steel construction was the most appropriate for this development. The buildings are designed from scratch considering steel composite construction. Some of the important factors for choosing this kind of construction are the amount of time it saves, overall cost comparison with RCC, more flexibility in future design changes if any, increase in usable floor area, reduction in constructed area when compared to RCC, similar to international construction methodology for commercial spaces and a reduction in concrete use.

Q Today, steel is also been used in residential buildings, and to your credit, you have quite a few projects in your hand. How did you manage to convince the developers/clients to opt for steel?

Jay Not all projects are fit to be built or designed in steel. So once we are working on a project, we evaluate it before trying to convince a client on steel construction. Getting clients to agree on steel construction has definitely been a challenge by itself. But eventually when the above mentioned benefits are discussed with them at length, they usually agree to this method of construction.

Q What are the real time benefits of opting for steel in residential buildings?

Anuj Steel offers architects more design freedom in colour, texture and shape. Its combination of strength, durability, beauty, precision and malleability gives architects broader parameters to explore ideas and develop fresh solutions. Steel's long spanning ability gives rise to large open spaces, free of intermediate columns or load bearing walls. Its capacity to bend to a certain radius, creating segmented curves or free-form

combinations for facades, arches or domes sets it apart. Factory-finished to the most exacting specifications under highly controlled conditions, steel's final outcome is more predictable and repeatable, eliminating the risk of on-site variability.

Jay Steel can be assembled quickly and efficiently in all seasons. Components are pre-manufactured off site with minimal on-site labour. A whole frame can be erected in a matter of days rather than weeks, with a corresponding 20 to 40 per cent reduction in construction time relative to on-site construction, depending on a project's scale. These days, a building's function can change dramatically and rapidly. A tenant may want to make changes that increase floor loads significantly. Walls may need to be repositioned to create new interior layouts based on different needs and space usage. Steel-built structures can cater for such changes. Steel sections provide an elegant, cost-effective



JAY SHAH

method of spanning long distances. Extended steel spans can create large, open plan, column free internal spaces, with many clients now demanding column grid spacing over 15 metres.

Atul Extensive testing of structural steelwork and complete steel structures has provided the industry with a thorough understanding of how steel buildings respond to fire. Advanced design and analysis techniques allow precise specification of fire protection requirements of steel-framed buildings, often resulting in significant reductions in the amount of fire protection required. Earthquakes are unpredictable in terms of magnitude, frequency, duration, and location. Steel is the material of choice for design because it is inherently ductile and flexible. Steel structures can be significantly lighter than concrete equivalents and require less extensive foundations, reducing the environmental impact of the build. Less and lighter materials means they are easier to move around, reducing transportation and fuel use.

Q What are the disadvantages of using steel?

Atul While steel is the way to go for the future of buildings, especially in a city like Mumbai where quick construction is a big part of every client's brief, there are

also a lot of disadvantages to this kind of construction. Most steels must be painted at regular intervals because if they are freely exposed to air they get corrode. This requires extra cost and special care. If we use weathering steel, then this will eliminate this cost. Although steel members are incombustible in nature, their strength is tremendously reduced at temperatures prevailing in fires. At about 400°C, creep becomes much more pronounced. Creep is defined as the plastic deformation under a constant load for a long period of time. This produces large deflections in steel structures.

Steel sections usually consist of a combination of thin plates. The steel members' dimensions are also smaller than reinforced concrete members. If these slender members are subjected to compression, there are greater chances of buckling. For certain types of buildings, the steel structures are architecturally preferred. However, for majority of residential buildings and office buildings, steel structures are considered to have poor aesthetic appearance. At these places, they required false ceiling and cladding to improve their appearance.

This is a reason why a lot of clients till today try and stay away from steel construction. We have had numerous instances where everything is decided and drawing are made as per steel construction and just before work begins the client develops cold feet and decides to go with the tried and tested RCC construction. In such cases we try our best to convince them but eventually it's the client's call to take.

Q How do you see the future of residential buildings being designed with steel? Where do we go from here?

Atul In urban areas, residential buildings are often complex in form in that they are often designed to fit in tight infill sites or to replace existing buildings. The nature of urban projects is also that the urban street scape has to be part of the architectural concept. Also, many sites are next to busy roads and railway lines and so questions of isolation to external noise and vibration are important design issues. In cases like this, steel construction will be the preferred way forward.

Q What do you feel is the greatest challenge when it comes to designing for sustainability?

Atul Addressing global mega-trends in population growth, emerging economies, resource scarcity, food and water storage, energy demand and climate change requires new solutions. Engineering materials and smart design can be combined to resolve these challenges.

Jay If architecture is to become truly green, then a revolution of form and content - including radical changes in the entire look of architecture - will have to occur. The building arts need an infusion of new ideas that can be translated into a more contextually integrative, socially responsive, functionally ethical, and visually germane architectural language.

Despite the advances in the research and development in the built environment there are still major challenges encountered. One key challenge is in the integration of such practices in the design process. Most designers still see such tasks as the responsibilities of the environmental consultants rather than part and parcel of their design tasks. Thus, it is essential that more research should be conducted to seamlessly integrate such modeling approaches with the design process.

With the advancement of Building Information Modeling (BIM) this serves as an excellent platform for such integration to occur. It also allows a better integration of the different simulation models so that a better understanding of the relationship between these simulation models could be obtained. For this, Access Architects has slowly and gradually converted all its project designing to Revit, a BIM software.

Anuj Currently, there is also lack of understanding of the inter-relationship between urban and building systems. Such understanding is crucial as studies have shown that the microclimates, which are very much governed by the urban systems could have major impact on the energy, thermal, and lighting performance of buildings. Currently, there are tremendous research works done at the urban level using Geographical Information System (GIS). The study of such inter-relationship between urban and building systems could be facilitated by a better integration between GIS and BIM.



ANUJ SHAH