

**Interarch**  
LIFE Systems  
for  
**High-Rise**  
**Buildings**

## INTERARCH BUILDING PRODUCTS NEWSLETTER

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### Possibilities of Interarch Life for High-Rise Buildings

Interarch LIFE, a lifestyle concept for developing modern & elegant infrastructure in steel. Interarch LIFE is focused on enhancing the lifestyle, and creating state-of-the-art facilities & amenities in steel construction. Interarch Life uses the latest technology for turnkey construction of steel buildings in rural and urban development in India.

Interarch LIFE, provides a customized structural steel system for Multi-Storey Steel Buildings, offers engineering & designed Pre-engineered Steel Building Solution from concept to completion. We take innovation in engineering, and strive to go beyond the realm of conventional construction with our team of leading engineers, quality manufacturing and efficient project handling capabilities.

#### Application Possible for High-rise Steel Structure:

- Tall buildings for Offices and other Commercial uses
- Multi-Storey Buildings for Healthcare (Hospitals)
- Multilevel Car parking's
- Institutional Buildings for School and Colleges
- Malls & Shopping Centres
- Residential Buildings
- Hotel Buildings



### Future Demand for High Rise Buildings:

Most of the cities in the world are now growing vertically, as the population in cities is rising and the space to accommodate the growing number remains limited. Fast growing urbanization and soaring land and construction costs are compelling India to also go vertical. The Developers routinely seek to push the envelope on height in order to gain more rentable space, and make the structure economically viable. Tall buildings provide a variety of options for housing and offices, allowing a city to grow without expanding its boundaries or claiming green space or farmland.

Moreover when you go vertical there are many benefits also like more natural light, less noise of traffic, less air pollution and better ventilation. In India, the demand for High-Rise buildings is growing very fast and there are many buildings under construction which will be delivered in the next few years.

### Advantages of Steel Structure for High-Rise Buildings - The practical benefits (cost, optimization, energy efficiency) in going vertical with Steel Buildings

The biggest benefit is time benefit. Steel frames are faster to erect as compared with reinforced concrete frames, hence providing an overall time saving of around 40%. Steel building floors with the metal deck system is handed over faster for fit-outs as no shuttering or water curing is required; thereby resulting in considerable time savings and early revenue generation or occupancy of the building.

Steel frames are significantly lighter. This results in reduced loads on the foundations and a lot of cost savings as lighter foundations are required for Steel Buildings. Moreover, steel is a stronger material than RCC and for the same loading (thickness of columns is less in case of steel) so the occupants get more floor to floor area.



Pre-Engineered buildings are earthquake resistance and offers more stability and safety during an earth quake as steel is a ductile material and can take 18 times more deformation than concrete. This ductile property of steel enables it to absorb the forces and it can take in deformation to a greater extent beyond their flexibility behaviour

### Project Spotlight: G+2 Reliance Office Building

Interarch engineered, manufactured & delivered the first Pre-Engineered Steel Multi storey office complex in India for Reliance Industries Ltd.

Reliance office space is a G+2 multi-level building built for headquarter of the Reliance Mukesh Ambani Group. It covers 50,000 sq. meters of office space and accommodates 5 star office facilities inside a completely steel structure clad with structural glazing and aluminum composite panels.

**Project Name**  
Reliance Industries Ltd, Corporate Park, Navi Mumbai

**Building Usage**  
Multi-Storey G + 2 Office Building

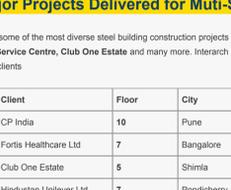
**Tonnage of Buildings**  
5,000 MT

**Covered Area**  
50,000 Sq. M

**Erection Time: 7 months**

#### Special Features

- First Pre-Engineered Steel Building office complex
- Deck slab flooring with ceramic tiles
- High-end interiors to meet international office standards
- External glazing and ACP Façade
- In-Built utility structure within building



### Major Projects Delivered for Multi-Storey Steel Buildings

Interarch caters to some of the most diverse steel building construction projects in India ranging from clients like Fortis Healthcare, GMR, Reliance Industries Ltd, Delhi Cargo Service Centre, Club One Estate and many more. Interarch has emerged into a large EPC player providing critical Project Management Consultancy to its clients

Client	Floor	City	Usage
CP India	10	Pune	Industrial Structure
Fortis Healthcare Ltd	7	Bangalore	Hospital Building
Club One Estate	5	Shimla	Residential
Hindustan Unilever Ltd	7	Pondichery	Industrial Structure
Kasa Development Pvt Ltd	3	Howrah	Industrial Structure
GMR Infrastructure Ltd	2	Chamba	Office Space
Oberoi Flight Kitchen	2	Mumbai	Flight Kitchen
Thapar university	2	Patiala	Hostel Building
Reliance Industries Ltd	2	Navi Mumbai	Office Space
Chemo India Formulation	2	Hyderabad	Drug Unit
Hindustan Aeronautical Ltd	2	Nashik	Work Shop
Central University	2	Bhubaneswar	Work Shop
Delhi Cargo Service Centre	2	New Delhi	Cargo Terminal
SMS Seimag India Pvt Ltd	1	Khurda	Office Space



### Industry Spokesperson - Dr Jain, Vintech Consultants

Vintech Consultants are a structural design and civil engineering consultancy founded by Dr Jain in 1988, the core area of expertise of the firm is in structural design as well as retrofitting and rehabilitation of reinforced concrete and steel structures, including residential, commercial, institutional, industrial, medical, hospitality, recreational, high-rises, etc. up to 50 storeys. Dr. Jain was involved in the development of many high-rise buildings in North India, and his recent achievement is Alphathum Project, a 33 storey building spread over 24 Lacs Sq. Ft. made of composite steel structure connecting 3 buildings at the top with a bridge.



Mr. Jain feels that the future of High-Rise building is increasing day by day in India. As per him a plethora of High Rise Buildings has come up in India from last 2 decades and the number has exponentially increased in the last decade. This trend has continued ever since and now tall building more than 50 stories would be very common in the coming decade.

He always focuses on best design practice and believes that a structural engineer should understand the feasibility of the structural system along with its effectiveness to restrain lateral loads. Other factors like asking for adequate sizes of columns and beams from architects, minimizing any irregularities and always doing back of envelope hand calculations to review the results from models. According to Dr. Jain, an ideal grid size which is globally followed would be 8.4 x 8.4 to 10.5 x 10.5 as it is governed by the parking spaces require and building functionality.

As per him the advantage of using steel structures have faster construction with cleaner site. Moreover, the quality control is great and large spans can be economically achieved. He feels with the exponential benefit in speed and success of steel buildings, the steel structures are becoming accepted by the clients. They have realized that this is the need of the hour. Almost all of our new queries from clients do include a presentation of the steel option too. This really means that this system is being accepted by all and people want to start with it.

He feels the normal timeline to construct a G+14 storey residential or commercial building in steel can be done in total 7 months i.e. 2 months design + 5 months for the construction

Vintech Consultants provided the structural design consultancy for ALPHATHUM. The scope included complete project design along with furnishing complete design and fabrication drawings. Alphathum is one of the tallest buildings in India, which have been designed with the composite construction concept and have been executed at the site as well. The project consists of 3 buildings which are connected at the top with the bridge and the swimming pool extending to all the three buildings.

The major challenge faced by us was to reduce the structural steel consumption, so that the project cost is compared to the RCC option. At the same time, maintain the pace of construction for fast execution. After various iterations and discussions, composite structure was chosen.

#### Primary / Secondary Frame of the building

The frame is a dual system of Special concentrically braced frame and shear wall systems. The columns are composite column with steel fabricated I sections of grade 550 encased in concrete. The beams are steel beams of grade 450, fabricated and rolled parallel flange I sections designed compositely with the slab. The composite action with the slab facilitates a lower depth of the beams. Lower material consumption and lower deflections. The shear transfer between beams and slabs is facilitated by channels of 75 mm depth ensuring slabs behaves compositely with beams.



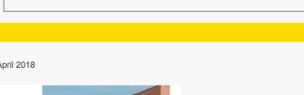
### Project Won

- TATA Motors Ltd in Uttarakhand
- Goodyear South Asia Tyres Pvt Limited in Maharashtra
- Intas Pharmaceuticals Ltd in Gujarat
- BDG Polysteel Ltd in West Bengal
- Covestro India Pvt Ltd in Uttar Pradesh



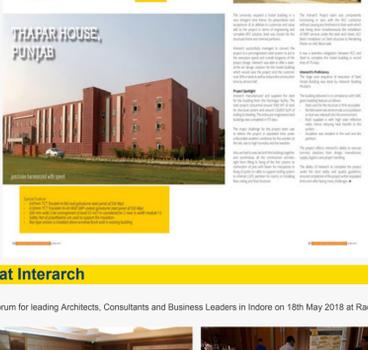
### Project Completed

- Heinz India Pvt Ltd in Uttarakhand
- CEAT Specialty Tyres Ltd in Maharashtra
- Rohit Surfactants Private Limited in Uttar Pradesh
- Thamara Studios LLP in Tamil Nadu
- Endurance Technologies Pvt Ltd in Uttarakhand



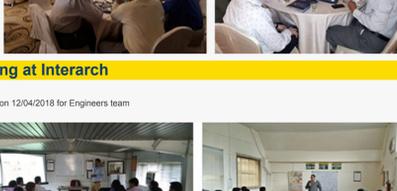
### Press Coverage

Interarch received Press Coverage in Steel Structure Metal Building magazine in April 2018



### Events at Interarch

Interarch organized Interarch Forum for leading Architects, Consultants and Business Leaders in Indore on 18th May 2018 at Radisson Blu Hotel.

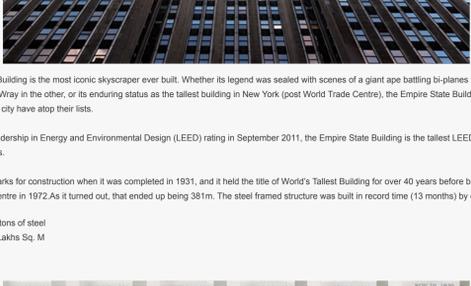


### Training at Interarch

Interarch organized training on 12/04/2018 for Engineers team



### Building made possible in Steel: The Empire State Building, New York



The Empire State Building is the most iconic skyscraper ever built. Whether its legend was sealed with scenes of a giant ape battling bi-planes with one hand while cradling Fay Wray in the other, or its enduring status as the tallest building in New York (post World Trade Centre), the Empire State Building is the one sight most visitors to the city have atop their lists.

Receiving gold Leadership in Energy and Environmental Design (LEED) rating in September 2011, the Empire State Building is the tallest LEED certified building in the United States.

It set new benchmarks for construction when it was completed in 1931, and it held the title of World's Tallest Building for over 40 years before being eclipsed by the World Trade Centre in 1972. As it turned out, that ended up being 381m. The steel framed structure was built in record time (13 months) by contractors.

- Tonnage: 57,000 tons of steel
- Floor Area: 2.08 Lakhs Sq. M
- Floors: 103
- Height: 381 M



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