

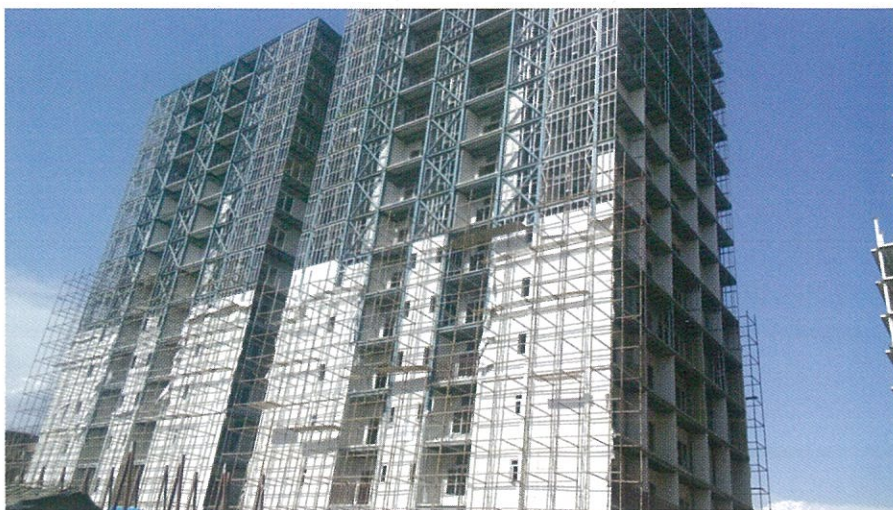
Skeleton Consultant Pvt. Ltd

Paradise Avenue at Jammu is India's biggest high rise residential project in ALL-STEEL construction where no Brick work or structural concrete has been used above ground. This project comprises of three towers, with a total of built up area of about 7.00lac sqft spread over 15 floors, and in THREE towers, A1, A2 & B1/B2. Tower B1/B2 has been completed and is covered in this feature. Towers A1&A2 are still under construction.

Opting For Steel

In Jammu, it is a challenge to take up construction activities across the year citing the climatic conditions. Also, during few months of the year, the working hours are even less than 6 hours in a day. Temperature during a particular period is much below and concrete quality with respect to workability and its maturity may not be achieved upto the required standards for such a high rise construction. With all these limitations, off-site construction of components was the best solution. Precast RCC components need a highly sophisticated plant, and also the weight of components is huge from the transportation point of view. Hence, prefabricated steel components which are stronger and lighter in a plant situated anywhere in the country was the best solution. All other materials were evaluated against structural steel, and steel was the best material of choice. There are many benefits of using steel in construction, and in this project, steel was selected considering the below factors:

- Speed of construction
- Definite project costs
- Reliable and predictable
- Better quality structural system
- High strength



- Design flexibility
- Aesthetic appeal
- Less carbon footprints

Building Features

Concrete has been used in foundations and till stilt parking. The building has stilt + ground floor + 12/13 storeys with approx. 12,000 sqft floor area having about 100 apartments and it also adheres to green building requirements. The project has a health club with gym, swimming pool, garden and shopping complex. All flats have large size rooms for dining, drawing, bedrooms, and spacious kitchen, bathrooms and balconies.

Structural Aspects

The building is pre-engineered and designed in strict accordance with stringent Indian standard (IS Codes) and detailed intricately to take residential occupancy into account. The joineries, connection and junctions are seamless. Another aspect pioneered in the project was to use dry wall concept to reduce dead load of the building, thereby, keeping light foundations giving more usable space to consumer as steel walls are thinner than block walls/ brick walls, yet stronger to resist high wind gust. Being in Zone-V of earthquake, the light weight

construction added benefits.

Paradise Avenue high rise has primary framing, i.e., columns and beams using plate fabricated built-up sections of steel grade 345MPa. Floor supporting joists are cold formed galvanized sections resting over the beams. The floor comprises of metal deck sheet with 100mm foam concrete and 40mm thick floor finish. For effective lateral load resistance, cross bracings have been used in addition to OMRF.

Structural Uniqueness

Paradise Avenue is designed as Ordinary Moment (OMRF) with cross bracings ensuring earthquakes. Having located in seismic zone V, it is imperative to have a structure flexible and low weight, as heavier structures attract larger forces when an earthquake occurs. Forces in the structure are reduced and its foundations are therefore lighter. This reduction of design forces significantly reduces the cost of both, the superstructure and foundations of a building. Steel structures are generally light in comparison to those constructed using concrete.

As earthquake forces are associated with inertia, they are related to the mass of the structure, and so reducing the

massive vitably leads to lower seismic design forces. Some steel structures are initially light such that seismic design is not critical. A regular prismatic structure, axi-symmetrical right from ground floor to top about both the axes, very much seismic resistant. Aspect ratio of building is about 2 in one and about 1 in the other. Plan aspect ratio is 2.5. No large cantilevers and hence, stable configuration. This was a challenging project in the sense that the location was tough and soil conditions along with topography were not much favourable. Moreover, this is the first project in the country in residential sector with large occupancy and



in seismic zone-VMGI-Kirby combination did well to execute the concept and design produced by architects and consultant.

FACT FILE:

Developer: Simula Infra Development, Jammu

Architects: Stonehenge (A&I), New

Delhi

Structural Consultant: Skeleton Consultant Pvt. Ltd, Noida

Turnkey contractors: MGI Infra Pvt. Ltd., New Delhi

PEB steel vendor: Kirby Building Systems India (UA) Pvt. Limited, New Delhi

Total Tonnage: 1140MT,

Working Team: Er. Vandana Verma,

Er. Mohd. Mueez, Devendra &

Dr. Abhay Gupta.

Contact:

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Website: www.skeleton.in

Ultimate Construction Solutions

We "Ultimate Construction Solutions" incorporated in the year 2007, our firm established as a proprietorship firm and engaged in providing Waterproofing & Epoxy Services to the clients. Located in Chennai, our company is persistently striving hard in serving the best and optimum solutions to the clients. We are Supplier of the materials and Service Provider. The range of services offered by us comprises Waterproofing & Epoxy Services and many others. All the services offered by us are rendered through cutting-edge technology tools and premium grade chemicals.

With the help of our hi-tech facilities and sophisticated machinery, we are able to provide innovative and excellent services to the clients that meet their changing and diverse requirements appropriately. Our skilled workforce also helps us in providing the services in all possible manner.

Epoxy Floor Coating Service:

Our organization is amongst the highly trusted supplier and service provider of

excellent array of Epoxy Floor Coating Service. These epoxy coatings we are offering are renowned for its supreme strength, excellent functionality and long lasting efficiency for achieving excellent ambience and easy to maintain environment ideal for shop floors, workshops, offices, various commercial establishments and many others. These epoxy coatings are made from premium grade quality range of raw materials fabricated in compliance with industry standards.

Features:

- Premium strength
- Long lasting
- Excellent chemical composition
- Supreme functionality

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We provide an array of epoxy coating solutions that are mainly applied on floors and walls. Our solutions enhance the aesthetic value to the plant where it is applied and in addition, adds to the décor of the plant to attract the potential customers. Epoxy Wall Coating

Services offers greater abrasion resistance to surface, where it is applied. This helps to give a cleaner, healthier and more pleasant ambience of the location for working. It assists in controlling the concrete dusting and safeguards the surface from chemical as well as physical degeneration. The distinct feature of epoxy coating is that renders cleaning and maintaining very easy, which further assists in cost cutting. Also, this coating mitigates the amount of lighting required in the plant. There are diverse industries where epoxy coating solutions are adopted.

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