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STEEL STRUCTURES & METAL BUILDINGS

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nerve of steel construction...

STEEL CONSTRUCTION 2022

10-12 NOVEMBER 2022
Novotel Hyderabad
Convention Center,
Hyderabad, India

STEEL DAY

27-29
APRIL
2023

MUMBAI

12TH

ANNIVERSARY SPECIAL

ME & STEEL

Connected with Steel

GURPREET SHAH
PRINCIPAL ARCHITECT
CREATIVE GROUP LLP

The proposed terminal building covers the ground floor, first floor and roof consisting of RCC and steel columns and beams. The form off the building is made with the structural support of steel columns covered by glass cladding. The structure proposed for terminal building is composite columns up to the roof, steel built-up section beams at first floor level and structural steel truss at roof level. The composite columns consist of steel hollow section with RCC filling. The roof truss consists of hollow tubular sections with purlins of tubular rectangular section. The structural design of the proposed project is based on Indian Standard Codes. It has been analysed for dead, live, wind and seismic load conditions taking into relevant load combinations recommended by the codes. The vertical loads of the structure including the dead and super imposed loads and the lateral loads due to wind and seismic forces are transferred to the soil through proposed structural steel frame, core walls and footings. Footings/foundations are sized with consideration to the safe bearing capacity of soil at the level of transfer of load recommended by specialist soil investigation consultants as the case may be. Concrete has been considered for the foundation.

Client: Airport Authority of India
Architect & Structural Consultant:
Creative Group LLP

RAJ MATA VIJAYA RAJE SCINDIA TERMINUS, GWALIOR AIRPORT, GWALIOR CITY, MP

The brief broached Gwalior Fort as an inspiration to be taken for the design. The detailing of Man Singh Palace solely lies on its elements from Hindu architecture with sequences being followed, commanding each and every minute elements to form the flawless grand structure. With a built-up area of 20,000 sq. m., we are designing the Gwalior Airport as a National facility to develop the regional connectivity as well as creating an aesthetically pleasant structure including commercial and financial feasibility. Our intent was on building a facility which reflects the soul of past glory in the contemporary era with modern facilities and creating a free-flowing movement and using Intelligent Building Management Systems.

NIKUL SHAH
DIRECTOR ARCHITECTURE & INTERIOR DESIGN
& JAYESH HARIYANI, CMD, SENIOR PRINCIPAL

The linear building blocks are designed with the use of steel as the main structural element enveloped by high efficiency glazed systems, invoking an inherent transparency in the work culture of the Miraclus enterprise. This transparency balances the appearance of the structural framework which contributes to a sleek, modernist, industrial aesthetic and minimal presence of built-form blends unobtrusively with the meticulously landscaped site. Along with strength and safety, the use of structural steel provides an elegant look to facade due to its sleek sizes, neat junctions and flexibility in working methodology. It also made possible to execute long span structure, cantilevers without compromising aesthetical value of project. Selection of glass and steel as a construction material helped to achieve the construction timeline and are easy to maintain.

MIRACLUS ORTHOTECH PVT. LTD., KHEDA, GUJRAT

Client: Pranav Thakar
Architect:
INI Design Studio
Structural Consultant:
Orbit Consultants
Fabricator:
Prem Engineering & Infra Projects

The state-of-the-art campus design for Miraclus Orthotech Pvt Ltd. at Kheda District, near Ahmedabad, Gujarat, houses facilities for continuous research, development and innovation of newer lines of products for orthopedic implants and instruments along with the manufacturing unit. The design beholds two independent buildings, designing arm and manufacturing arm, as a part of functional requirements while being synthesized by shared facility such as cafeteria and green courtyards. A slender arm of designing wing is placed across a green stretch from the angularly oriented manufacturing arm. A third arm houses the administration and management workspaces as well as board and conference rooms which bridges across the first two at the upper floor level, projecting outward to form a canopied drop-off porch in front of the main entrance.

Client: TATA Steel
Architect:
The Architecture Place
Structural Consultant:
Cathy Consultants, UAE
Steel Fabricator:
TATA Steel

J.K. JAYAKANTH, LEAD ARCHITECT, THE ARCHITECTURE PLACE

The materials used to create the Seedling are circular hollow sections of three different diameters. We have used an infinite loop to cater to structural feasibility. This project seeks to enhance press-fit fabrication techniques through the use of hybrid material construction technology and bending-stabilized forms. It overcomes certain press-fit limitations and undertakes a systematic improvement to connection design, which in combination with material and form enhancements allows for an increase in robustness of press-fit structures, an increase in the reliability and precision of assembled geometry and retention of the critical press-fit benefits of lightweight, high-speed and uncomplicated construction. The fabrication technique is greatly inspired from the automotive fabrication methods. We are learning the possibilities of new materials every day. The possibilities of steel push designers to think big and step out the comfort of simple volumes.

SEEDLING, KOCHI, KERALA

'Seedling' is a 11 meters tall installation made using steel hollow sections. The sculpture was created for TATA steel addressing the 'Notions of India'. Designed by bio mimicry of a sapling, the exaggerated form emphasizes the significance of sustainability and agriculture for a thriving modern civilization. We chose a germinating seed as a design inspiration because the stage of the sapling marks a critical moment of its life. Likewise growth takes consistency and metamorphosis. From conception to completion, it is carefully constructed. It is a knowledge that is continuously passed on, planted and resurrected to life. However small a seed may seem, at the right circumstance grows to a marvelous tree. The steel sculpture aims to acknowledge the philosophy through its design intervention.

Client: Indian Potash Limited
Architect: Ini Design Studio
Structural Consultant: CBM
Fabricator: Vedang Enterprise
Steel Tonnage: 225T

BHRUGU GANGADIA, ASSOCIATE DIRECTOR ARCHITECTURE & INTERIOR DESIGN & JAYESH HARIYANI, CMD, SENIOR PRINCIPAL, INI DESIGN STUDIO

A diagrid exoskeleton was created which allows the lateral transfer of loads in the multi-storied building through its triangulated geometry facilitates, a column free interior space allowing flexibility and adaptability as per the users' needs. An efficiently planned service and circulation core has been lined up along the south-western façade, fronted and accessed by a lavish double height lobby at the ground floor. While the ground and first floors have exclusive retail spaces, the remaining floors house offices of various configurations. The efficient planning of the south-western core and compact floor plate allows the entire interior space on every floor to be lit up by glare-free northern sunlight, while remaining part, shaded from the harsh south-western sun. High performance glazing system within the diagrid reduces the load on air-conditioning. Many passives as well as active sustainability strategies have been employed, thus, qualifying the building for an IGBC Gold rated Green Building certification.

INDIAN POTASH LIMITED CORPORATE HOUSE, AHMEDABAD, GUJARAT

This corporate office of Indian Potash Limited needed a new building to be built on an identified site in Ahmedabad. The compact site was accessed by a main road on the front and two subsidiary roads on other two sides, with the rear edge abutting another plot. The INI team's design housed the fertilizer manufacturer's corporate office in a ground plus seven stories building having a compact footprint that occupied the center of the site with a larger front court available for arrivals. A double basement accessed by ramps in the side and rear marginal spaces facilitates ample parking space for 4 and 2 wheelers, leaving the ground area clutter free was also needed. Thus, the design of an open landscaped forecourt sets off the elegant, triangulated geometry of the diagrid façade of seven-plus floors strikingly to create an impressive address.