

Director's Epistle



Arvind Nanda
 Founder Director & CEO

Gautam Suri
 Founder Director & CTO

It brings us pleasure to announce that our newsletter has completed 3 years and reached a readership of more than 35,000 across India, with this issue- we are launching Volume 4 of the newsletter.

We would like to thank our readers and all our partners for contributing to the newsletter in form of informative articles and interviews for successful completion of three years of this journey

We hope the newsletter has been a regular source of information to you and we will try to keep you updated with all latest trends and new technologies in this sector.

We would also like to share the launch of Interarch Infra Facebook page and its website www.interarchinfra.com, & a new section "Ask an Expert" Please join us at Facebook to know more about Interarch Infrastructure.

Thanks & Regards,
 Arvind Nanda & Gautam Suri
 Founder Directors - Interarch Building Products

Healthcare sector in India

Indian government expenditure on health care is the highest amongst all the developing countries. The expenses of the healthcare industry comprise 5.25% of the GDP. There are even chances that the health care market could experience a hike and attain a figure ranging \$53 to \$73 billion. The Indian Health Care Industry earns revenue accounting for 5.2% of gross domestic product.

Indian healthcare industry comprises of hospitals and allied sectors which is projected to grow 23% per annum to touch US\$ 77 billion by 2012 and according to the current estimated size of US\$ 35 billion. The industry has registered a growth of 9.3 % between 2000-2009, as compared to the sector growth rate of emerging economies such as China, Brazil and Mexico. There would be increase in number of public and private healthcare facilities which are expected to propel demand for the industry, accounting for another US\$ 6.7 billion.

Majority of the Indian Health Care Industry and Fortis Hospitals plans to invest US\$ 53.7 million and plans to expand the facilities for the pan-India Columbia Asia Group, which already has six hospitals in the country. Asia's leading hospital chain, plans to ramp-up its operations in India by opening eight more multi-specialty community hospitals with a total capacity of 800 beds by the year of mid-2012. Total investment of US\$ 177.1 million for 14 hospitals is projected.

In Hyderabad, the NarayanaHrudayalaya has inaugurated the phase-I of the 5,000-bed health city which is the Hub for the multinational corporations. The company plans to expand its presence to seven more cities to take the total number of hospitals to 14 in the next 2-3 years.

Cochlear Ltd plans an Australian medical devices company to set up its wholly-owned subsidiary in India, to provide better patient and product support. In next five years the Company also plans to invest about US\$ 15 million.



How MEP interfaces in Hospitals can be done using Interarch structural steel

Mechanical, Electrical & Plumbing interfaces tend to be the most critical part of any building's requirement, and especially in a hospital environment, these services are critical to saving lives. Interarch structural steel interfaces easily with Hospital requirements taking into consideration

- HVAC requirements for hospital ventilation and air-conditioning
- Special air quality, circulation and pressure for operating theaters (HEPA filters)
- Positive and negative pressure rooms for patient isolation
- Pressure cascade for surgical department
- Laminar flow for special theaters and clean workrooms
- Patient controls & interface (at bedside)
- Special drainage of radioactive waste
- Task lighting vs. comfort lighting
- Operation & maintenance

Besides MEP and HVAC services, Hospitals focuses on other aspects like maintaining the water supply and drainage systems for normal and radioactive waste, fire alarm system etc.

Interarch engineering takes into account MEP loads are given by the consultants and design the building considering the requirements, and our structural members are manufactured to accommodate these connections at site. Provisions for these loads are given either vertically for ducts and shafts or horizontally in form of castellated beams and floor cutouts. Chiller rooms where MEP requirement is heavy can also be delivered in Structural Steel.



Connection Details in Structural Steel

By Mr. Vishal Khandelwal, DGM Design Interarch Infrastructure & Mr. Neeraj Lohani, A.M. Design

The common connection used in steel structures can be broadly classified into the following categories:

Shear Connections

A connection which is only capable of transferring shear from one connected part to another, but no moment is transferred. It is known as Shear connection or Pin connection. Since, the shear is practically borne completely by the web of a beam and the tension/compression couple created by moment is mainly borne by the top & bottom flanges of the beam, in shear connection only webs are connected and the flanges remain unconnected. A shear connection is only provided at the zero bending moment locations of a beam, which is typically the end support location of a simply supported beam (e.g. floor joists).

Common shear connections in use are

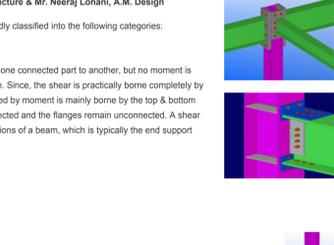
- Double clip connection
- Fin plate connection
- End plate connection

Moment Connections

A connection which is in addition to the shear connection above is capable of transferring the flange tension and compression forces (due to tension, compression generated by bending moment at the connection location) is referred as a moment connection.

The common forms of moment connections in use are

- Extended end plate moment connection
- Flush end plate moment connection
- Spliced moment connection
- Sealed moment connection



Fire Proofing in Structural Steel

The structural elements of a building need to be designed to withstand the effects of building compartment fires, so as to minimize the likelihood of structural collapse. The use of steel framed construction and in particular the use of fireproofing materials is known to provide fire resistance levels for the steel elements of buildings. Fireproofing is achieved by applying fireproofing covering materials to thermally protect the underlying steel from the heat of the fire. The type and amount of fire proofing material is dependent on a number of variables, some of which include

- Size of steel members in question
- Fire severity
- Fire rating or duration of exposure to a given fire
- Time of application of the fireproofing covering
- Budget
- Aesthetics
- Location of project

Conventional spray applied materials

These are the oldest and at present the most widely used form of fireproofing material. These are relatively low density materials, (at least when compared to concrete) which typically are supplied in bags, and which are mixed with water and sprayed as a type of slurry onto or around the contour of the steel profiles.

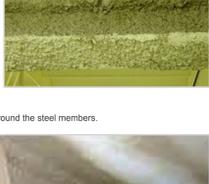
The thicker the applied material, the higher the fire rating, within maximum thicknesses which prove the material's adhesiveness to the steel during fire testing

Board Materials

Board materials, like conventional spray applied materials, have been used for a long time. Manufactured board materials are cut to size and fixed around steel sections, in essence "boxing" them in to provide the necessary fireproofing. Fireproofing boards must be able to limit the amount of cracking or spalling so as to limit the spread of hot gases to the underlying steel structure

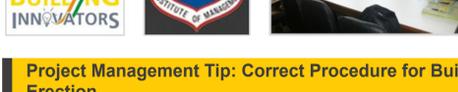
Intumescent Materials

Intumescent materials are those which expand to many times their original volume when heat is applied to them. They are widely used in the Passive Fire Protection or Fire Stopping market. Examples of such materials include intumescent fire collars for protection of slopping pipes or Intumescent sealant for around steel pipes. Intumescent paints can be applied at relatively low thicknesses when compared to conventional spray applied materials, and when they are subjected to the heat of a fire, expand or swell to form a thick insulating char around the steel members.



Customer Testimonial- Young Builder Program at K.R Mangalam Institute, Delhi

Thanks and congratulations to your team for an interactive session on pre-Engineered steel buildings. Hope this will help our students to think in a different direction of construction. We shall be in touch and also try to arrange a plant visit to Pantnagar to take the maximum benefit of it.



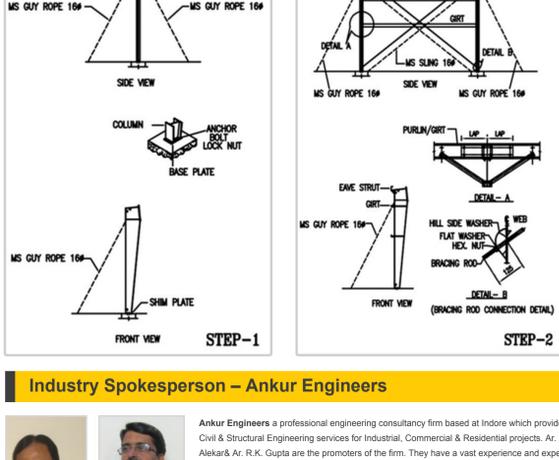
Project Management Tip: Correct Procedure for Building Erection

Column Erection

- Column is arranged with all fixtures & painting duly completed
- Lifting sling is fixed to the column at exact position of lift
- Guy ropes are fixed to the column before lifting
- Lifting equipment lifts the structural column vertically and is positioned in the Pedestal
- Anchor bolts/nuts are fixed and tightened
- Guy ropes are tied as shown in the figure
- Column plumb is checked and sling is released using boom lift or scissor lift

Braced Column Erection

- Same Procedure is followed for lifting the second column
- The portal beam is the primary lying member between the two columns. It is lifted using Crane and boom lift used for bolting the portal beam
- The eave strut is immediately erected after the erection of second Column
- Bracing rods should be lifted and fixed to the adjacent columns. Hill side washers are used to tighten the brace rods
- The same procedure is followed for erection of the columns on the other side of the grid



Industry Spokesperson – Ankur Engineers



Ankur Engineers a professional engineering consultancy firm based at Indore which provides Civil & Structural Engineering services for Industrial, Commercial & Residential projects. Ar. C.S. Akanksh & R.K. Gupta are the promoters of the firm. They have a vast experience and expertise in Manufacturing Industry, Food Processing Industry, Engineering Industry, Warehouse Industry, Textile Industry, Commercial Building, IT Industry & Residential buildings.

According to them, Multi Storey Buildings for industrial and commercial purposes both are upcoming in India, and solvent industry is the upcoming industry in MP region.

Recently new design implemented by them was to club the RCC Building with Pre-Engineered Building with 2 beam support to avoid hurdle with the conveyor. Their most favored project is Metalmat Auto Pvt. Ltd, Aurangabad which involves 2 parallel gantries to match the utility of the manufacturing process.

With their experience with various Pre-Engineered Building companies they shared that Interarch, with its high quality in building material and project execution makes them one of the leaders in this segment in the Madhya Pradesh region.

Building Maintenance Tip: Maintenance of Doors

- Lubricate hinges and lockset
- Remove dirt & grit from the threshold
- Ensure that the door should not swing back and strike the wall panels, as this will sprain the hinges and will damage the panel



New Project Wins

- Indospace Logistics Pvt. Ltd, Tamil Nadu
- Central India Logistics, Maharashtra
- Western Refrigeration, Gujarat
- SMS India Pvt. Ltd, Orissa
- Dee Development Engineers Pvt. Ltd, Haryana



Projects Completed

- Skoda Auto India Pvt. Ltd, Maharashtra
- Hindustan Aqua Limited, Orissa
- Danik Bhaskar Corporation Ltd, Rajasthan
- Insecticides India Ltd, Gujarat
- Osav Agro Industries Ltd, Punjab



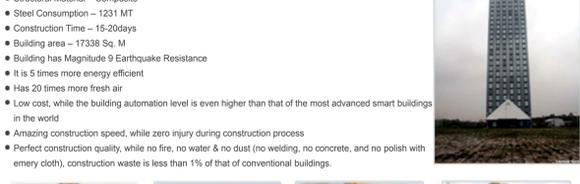
Press Coverage

- Ace Update
- CE & CR
- Construction Week
- Construction World
- MGS Architecture
- NBM & CW
- Steel Structures & Metal Buildings
- The Masterbuilder
- B2B Purchase



Building Made Possible in Steel: T30 Hotel, China

- Building Usage – Hotel
- Building Location – China
- Structural Material – Composite
- Steel Consumption – 1231 MT
- Construction Time – 15-20days
- Building area – 1738 Sq. M
- Building has Magnitude 9 Earthquake Resistance
- It is 5 times more energy efficient
- Has 20 times more fresh air
- Low cost, while the building automation level is even higher than that of the most advanced smart buildings in the world
- Amazing construction speed, while zero injury during construction process
- Perfect construction quality, while no fire, no water & no dust (no welding, no concrete, and no polish with emery cloth), construction waste is less than 1% of that of conventional buildings.



CSR at Interarch: Fire Safety Week Celebration at Plant

Fire Safety Training for all Interarch's Pantnagar plant employees was arranged with collaboration of Fire Department Rudrapur.

This initiative was to coincide with The Fire Safety Week Celebrations by Fire Department, U.S.N.



Trivia Question of the month

Q. Which building delivered by Interarch has received the Platinum rating by IGBC

- DIAL Terminal 3, New Delhi
- Bayer Life sciences, Greater Noida
- c) Tata Motors, Dharwad
- d)Asian Paints, Pune

Please post your answers on Facebook.

Ask an Expert

We want to offer all our readers a platform to ask us questions or technical query regarding pre-engineered buildings engineering, Production or Site Management during erection

We will be happy to provide you with answers, case study and real time knowledge through site and plant visits to educate you properly.

Please visit us on Facebook and post your queries there.



