VERSATILE
DESIGN
CONSULTANTS

UNIVERSAL STEEL
&
CONCRETE TECHNOLOGY

Two Companies, One Goal: Exceeding Your Expectations

UNIVERSAL STEEL & CONCRETE TECHNOLOGY

....From concept to creation

Message from CEO

Assalamu Alaikum,

Dear valued clients take my warmest welcome to my company **"UNIVERSAL STEEL & CONCRETE TECHNOLOGY"** and **"VERSATILE DESIGN CONSULTANTS".** Our honest and dedicated vision of offering high-tech along with high-quality metal buildings at an affordable price in all sector of constructions. As a civil engineer, I believe that a proper synchronization of project planning, design, materials fabrication, constructions supervision must lead to a classy and fabulous creation after all. My whole team & specially I directly participate in all program related to my project before starting it. Our superior design policy, experienced & skilled engineers, well trained & skilled erection and technical teams are the basic rhythm & strength of our company. We practice and follow all of the latest design code and computer aided structure analysis & design software's.

Thank You

Engr. Md. Sultan Mahmud

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Structural Design Engineer & CEO
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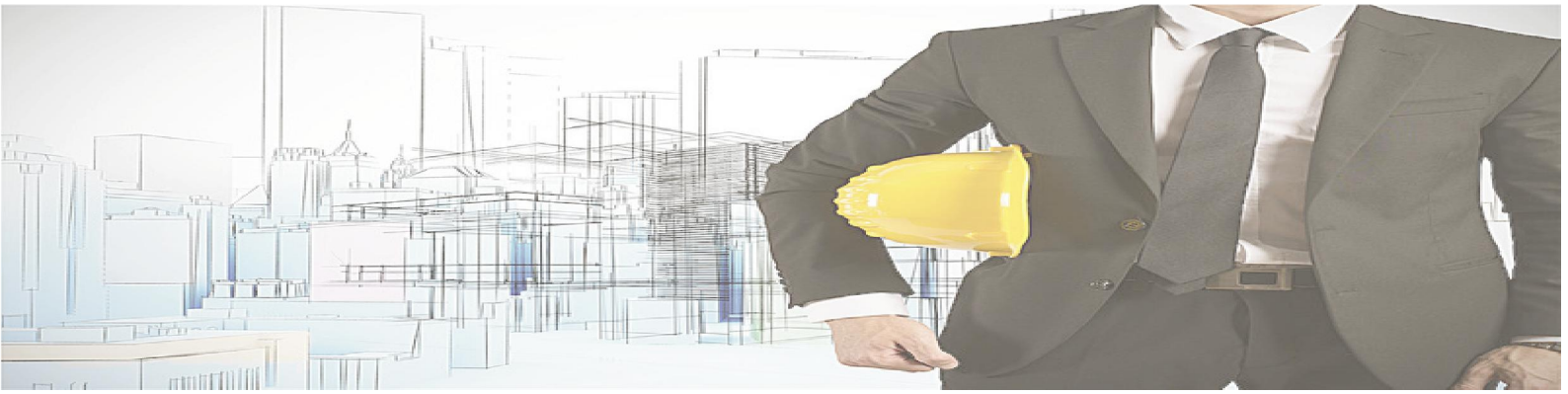


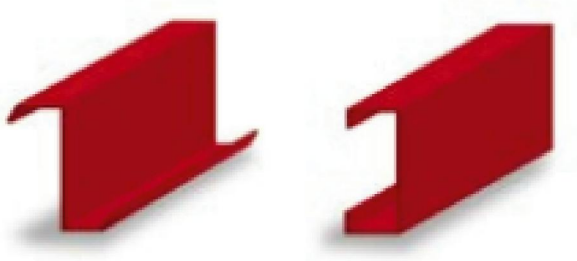
Pre-Engineered Building Concept:

Pre-engineered buildings (PEBs) use a pre-determined inventory of raw materials that has proven over time to satisfy a wide range of structural and aesthetic design requirements. This flexibility allows PEBs to fulfill an almost unlimited range of building configurations, custom designs, requirements and applications.

A pre-engineered steel building is a building shell utilizing three distinct product categories:

- *Built-up "I" shaped primary structural framing members* (columns and rafters)
- *Cold-formed "Z" and "C" shaped secondary structural members* (roof purlin, eave struts and wall girts)
- *Roll formed profiled sheeting* (roof and wall panels)

Optional structural subsystems are widely incorporated into pre-engineered buildings and provide *functional* as well as *aesthetic* features.



Functional subsystems include *mezzanine floors* (including joists and decking), *crane runway beams* (to support crane systems), *roof platforms, catwalks*, etc.

Aesthetic features include *fascias, parapets, canopies* and *roof extensions*.

Until 1990, the use of pre-engineered buildings was confined mostly to North America and the Middle East. Since then, the use of pre-engineered buildings has spread throughout Asia and Africa where the PEB construction concept has now been widely accepted and praised.

A growing number of prominent international contractors and designers, who previously specified conventional structural steel buildings exclusively, have recently converted to the pre-engineered building approach. They now enjoy significant cost savings and benefits from the faster construction cycle resulting from this concept.

Applications of Pre-Engineered Buildings:

In the USA, where the PEB concept was originally conceived during the early years of this century, nearly 70% of all single storey non-residential construction now utilizes pre-engineered buildings. Applications range from small car parking sheds to 90 m (+), wide clear span aircraft hangars to low-rise multi-storey buildings. Almost every conceivable building use has been achieved using the pre-engineered building approach.

The most common applications of pre-engineered buildings are:

Industrial

- Factories
- Workshops
- Warehouses
- Cold stores
- Car parking sheds
- Slaughter houses
- Bulk product storage

Commercial

- Showrooms
- Distribution centers
- Supermarkets
- Fast food restaurants
- Offices
- Labor camps
- Service stations
- Shopping centers

Institutional

- Schools
- Exhibition halls
- Hospitals
- Theaters/auditoriums
- Sports halls

Recreational

- Gymnasiums
- Swimming pool enclosures
- Indoor tennis courts

Aviation & Military

- Aircraft hangars
- Administration buildings
- Residential barracks
- Support facilities

Agricultural

- Poultry buildings
- Dairy farms
- Greenhouses
- Grain storage
- Animal confinement

The Merits of Pre-Engineered Buildings :

The advantages of pre-engineered steel buildings are numerous and are the major reason for the spectacular growth of the PEB industry during the past 50 years. These advantages include:

- **Low Initial Cost.**
- **Superior Quality.**
- **Fast Project Construction.**
- **Functional Versatility.**
- **Architectural Flexibility.**
- **Low Maintenance & Operating Costs.**
- **20% of Cost Can Be Saved Than R.C.C Buildings.**
- **Easy to Relocate The Existing Building in another Place.**
- **High Resale Values Along With There Are Many Scope of Materials Reuse Facilities.**
- **Unique Environment Friendly Criteria & High Energy Saving Efficiency.**
- **Supreme Structural Integrity During Strong Earthquake & more Structural Durability.**
- **Very long span is Possible in PEB That's Why Can Ensure Maximum Building Efficiency & Proper Utilization of Building Space.**
- **PEB is Factory Based Manufactured Building System That's Why It Can Ensure More Dimensional Accuracy with Noteworthy Precision.**
- **Client Can Launch Their Business Production Within Very Shortest Time That is a Lucrative Offer From PEB System.**

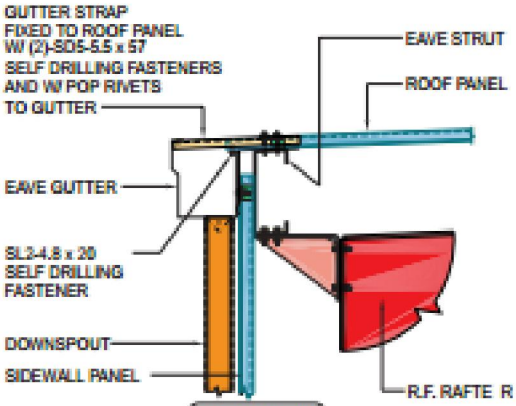
Materials Specifications:

Sl. No.	Components	Specifications	Strength
01.	Built-up Section	M.S. Plate - ASTM A570 – 50	F_y = 345 MPa
02.	Purlin and Girt	Rolled Formed steel. Minimum yield stress 275 MPa	F_y(min) = 275 MPa
03.	Exterior Roof and Wall Cladding including Gutter, Down Pipe, Capping, Flashing etc. **(Painted)**	Hi-Ten **Painted** 0.47mm thick Steel Profile Sheets with min. yield strength of **550 N/mm2** coated with an alloy of 55% aluminum, 45% Zinc, coating mass shall be **150** gm/m2 conforming to Australian standard AS1397 : 1993-G550-**AZ150**.	F_y= 550 N/mm2
04.	Anchor Bolts	Galvanized/Naturally Quenched Black	F_y = 24.50 kN/cm^2 F_y = 35.0 kN/cm^2
05.	Bubble (McCool) Insulation	a) Roll Size – 55M × 1.20M b) Thermal Conductivity – 0.001 W/m.k at 30°C d) Heat Resister: 2.98	
06.	Translucent Sheet for Sky Light	2 mm thick Fiber Glass profile sheets made of UV-Resistance Resin.	
07.	High Strength Bolts	A325 M Type 1 Hot Dip Galvanized / Naturally Quenched Black	F_t = 55 kN/cm^2
08.	Fastener	Imported heavy duty Hex head self taping screws with Neoprene washer	Screw Gauge 12 = 5.43mm Tensile Breaking load = 1852 kg; Pull out load = 148 kgs (Test plate = steel A36 5mm thick)

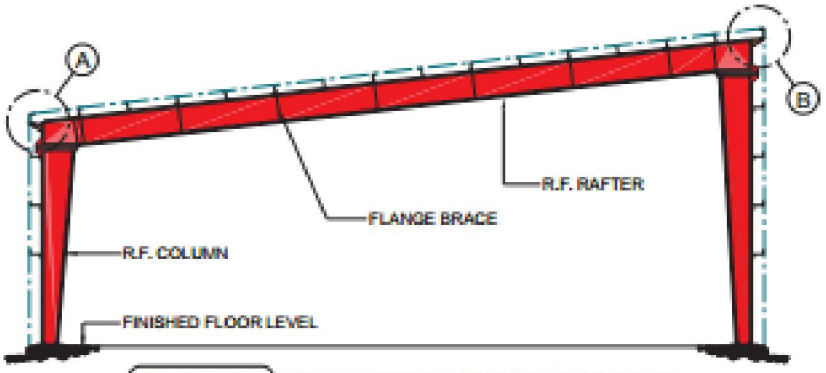
Applicable Design Code:

NO	Items	Codes
1	Built up section	AISC "America Institute of Steel Construction" Manual of Steel Construction Allowable Stress design, 1989 Edition, East Wacker Drive Suite 3100, Chicago, Illiois 60601-2001,USA.
2	Cold framed components	AISI "American Iron and Steel Institute" Cold formed Steel Design Manual, 1986 edition.
3	Welding	Structural Welding Code Steel Manual ,1996 American Welding Society (AWS D.1.96)
4	Design load	A. The 1986 edition of the load Rise Building System Manual – Metal Building Manufacture Association (MBMA) B. Bangladesh National Building Code (BNBC) (2006)

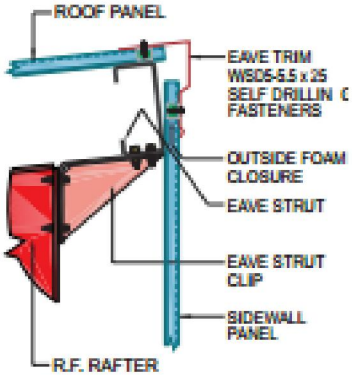
Structural Systems:



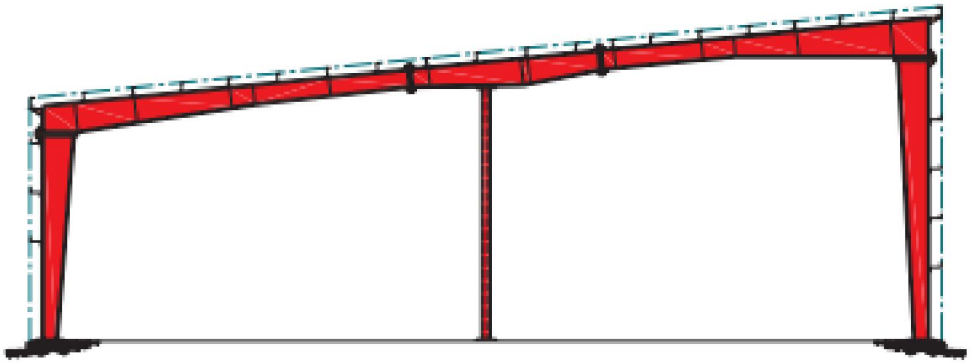
DETAIL-A



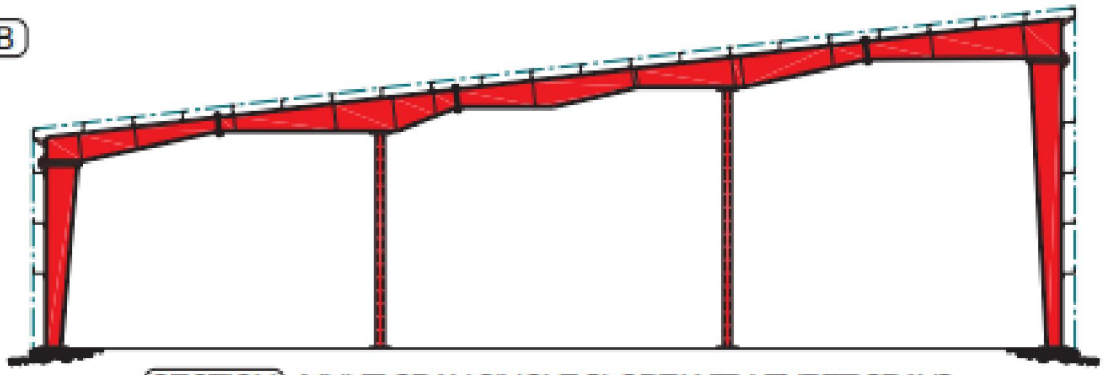
SECTION: CLEAR SPAN SINGLE SLOPE



DETAIL-B



SECTION: MULTI-SPAN SINGLE SLOPE WITH TWO SPANS



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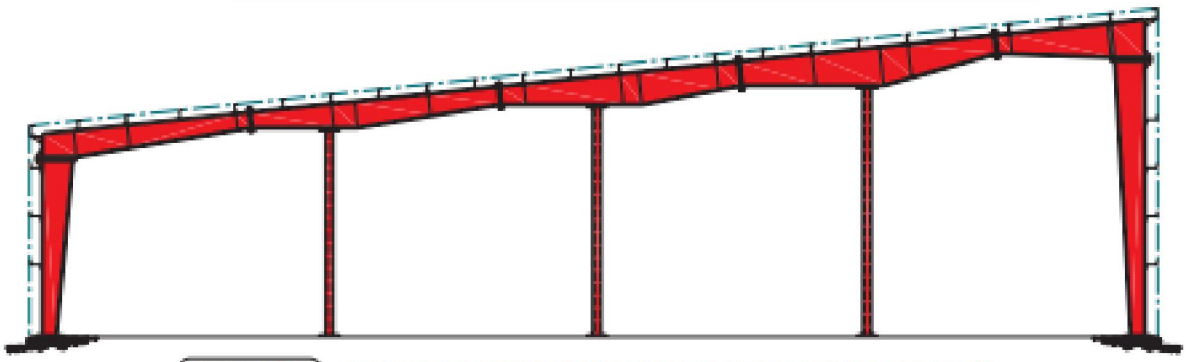

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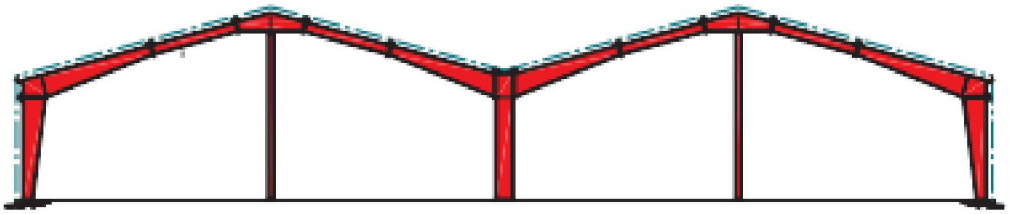
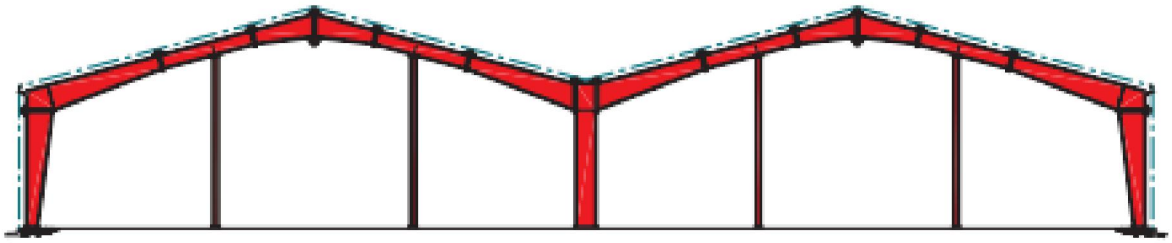


CROSS SECTION : MULTI-GABLE BLDG. WITH TWO GABLES EACH W/ TWO SPANS



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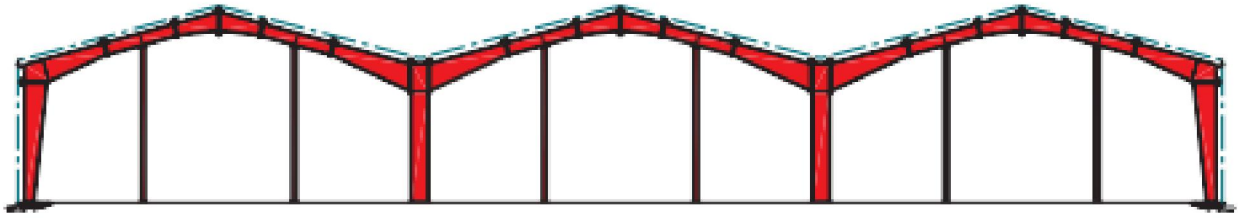

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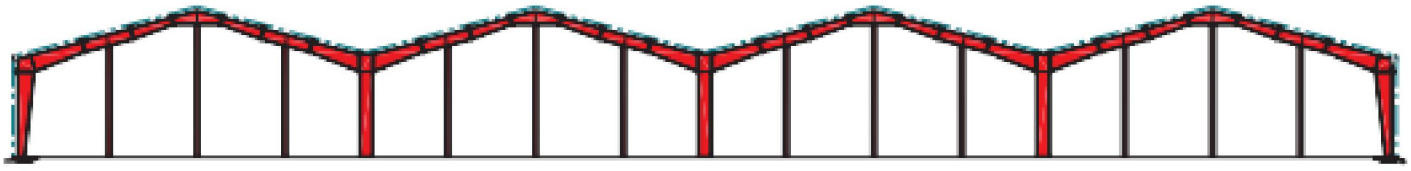

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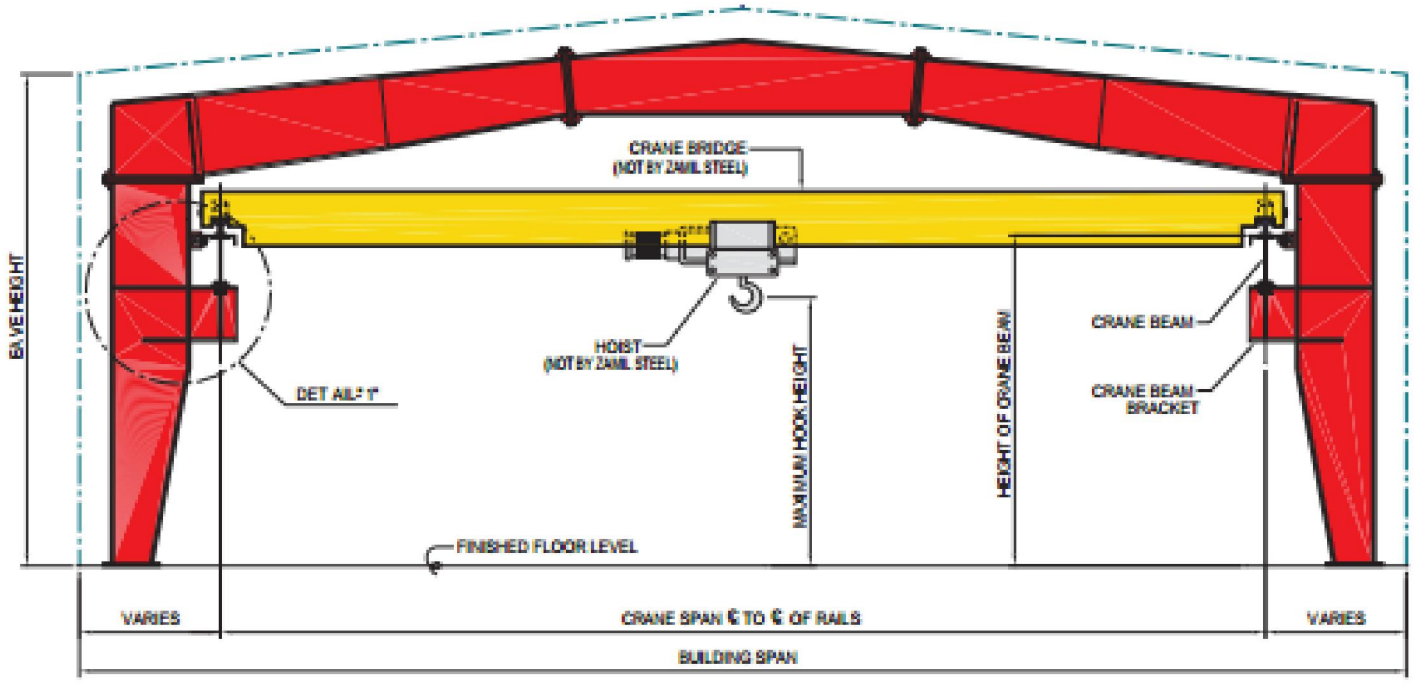
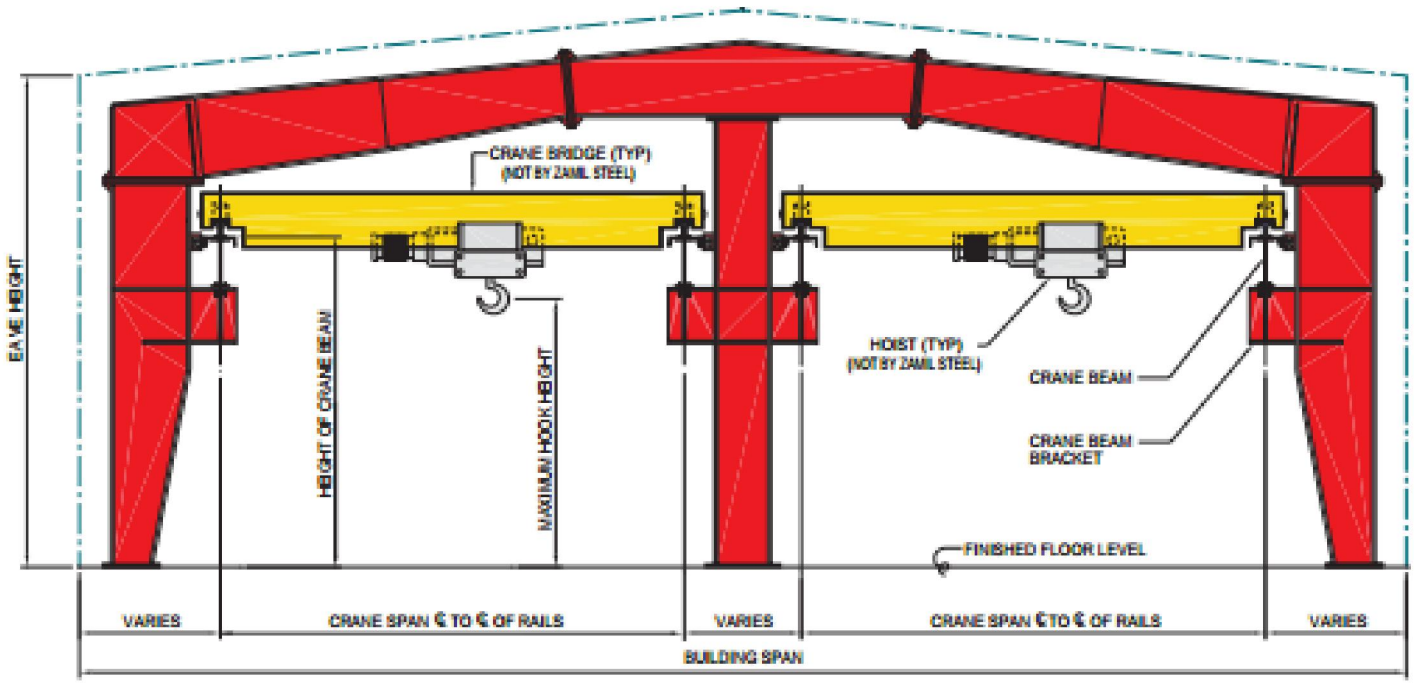


ELEVATION : TOP RUNNING CRANE IN A CLEAR SPAN BUILDING



ELEVATION : TOP RUNNING CRANE IN A MULTI-SPAN BUILDING

Exterior & Interior View of PEB Shed Buildings:







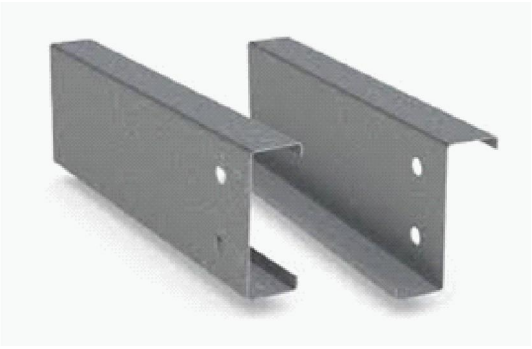





PEB Building Accessories:

ANCHORBOLTS

NUT BOLTS



PURLIN

DECK SHEET

LOUVER

COLOR PROFILE SHEET

NATURAL VENTILATOR

GUTTER & DOWNPIPES

SCREWS

TURN BUCKLE

SANDWICH PANEL

RIDGE CAP

PEB Building Accessories:

ANGLE

CABLE BRACING

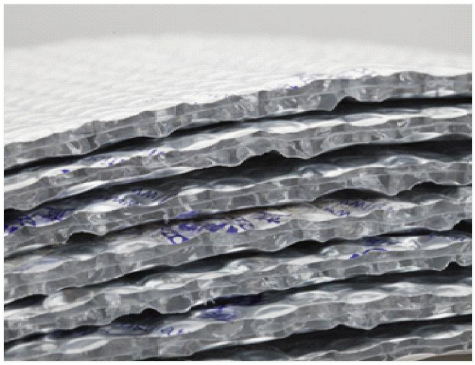
CHECKERED PLATE

TRANSPARENT SHEET

SAG ROD

SILICON SEALENT

SINGLE BUBBLE INSULATION



DOUBLE BUBBLE INSULATION

PE INSULATION

ROCK WOOL

STEEL STAIR

DOUBLE SLIDING DOOR

Universal Steel & Concrete Technology

....From concept to creation

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