Mustafa & Kamal Ashraf Trading Co. LLC

PRE ENGINEERED BUILDING & STEEL STRUCTURE MANUFACTURING





TOTAL SOLUTION IN DESIGN, FABRICATION & ERECTION

TÜV NORD
TÜV Middle East
ISO 9001

About Us

MUSTAFA AND KAMAL ASHRAF TRADING Co. LLC (MK) was established over 38 years ago in 1983 to facilitate its growth in the Steel fabrication and Pre-Engineered building industry. Today MK is well positioned as the leading Steel Building contractor in the Sultanate of Oman. MK also further expanded its services in Civil & MEP Contracting and manufacturing of Switchgears.

We are a turnkey building solutions company providing design, detailing, fabrication, and erection of Pre-engineered steel building. We are well known to our client and contractors for providing cost effective and customized building solutions. MK steel building can be delivered to project site through Oman and we are able to export to GCC countries.

Our steel buildings are designed and manufactured to international standards and specification for a broad range of applications such as: Warehousing, industrial building, poultry sheds, Multistoried building, commercial building, Carpark canopy and others.

We are also involved in the fabrication of Specialized products such as Core-loc/Accropod shuttering for marine application and various shuttering works. MK is an ISO certified company in respect of:

- Quality Management System (QMS) 9001 - 2015
- Environmental Management System (EMS) 14001 - 2015
- And OHSAS 18001 Occupational Health and Safety Standard

to ensure quality and safety in various fields of operation.



Pre-Engineered Building

Advantages

MK has been in service for more than 35 years in Pre-Engineered Building (PEB) and its application in all industrial, commercial buildings and special products. MK has supplied and installed more than 1000 Pre-Engineerd Buildings in Oman. PEB system is popularly known and offers many advantages:

- Strength and Durability
- Low Investment Cost
- Faster Completion of projects
- Fast Modular Expandability
- Larger Clear span at economical cost
- Architectural Flexibility

Application

- Industrial Steel Buildings
- High rise Multi-storeyed buildings
- Commercial Buildings
- Showrooms
- Malls & Hypermarkets
- Schools & Colleges
- Auditorium / Theatre / Sports Hall
- Fuel Stations
- Logistic Buildings
- Warehouses
- Cold Storages
- Car Park / Railway / Bus Shelters
- Aircraft Hangers
- Special Shuttering Works
- Multilevel Car Park

Design & Engineering Department

Design Services

MK Design department has a team of highly skilled and trained engineers, detailers and checkers. The design team uses the latest internationally recognized design and detailing softwares in the industry. All buildings are designed and manufactured to comply with American, British and Euro design codes.

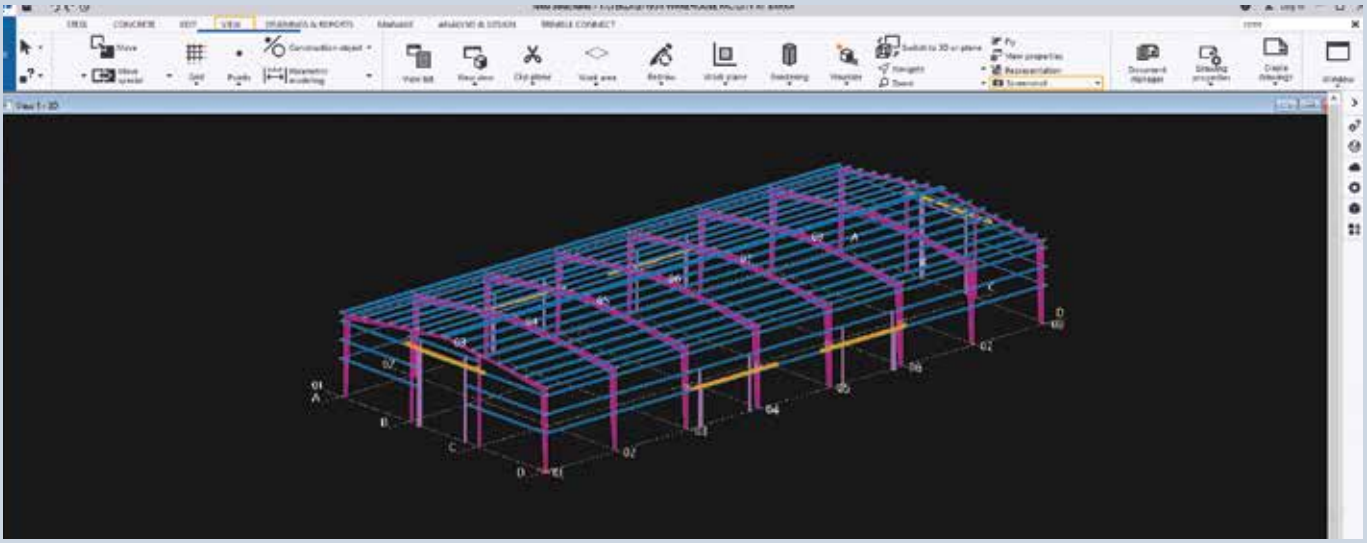
Software		Description
STAAD.Pro®	• Staad Pro	3D structural analysis and design engineering software
mbs	• Metal buildings software Inc (mbs)	Complete package from design, detailing, bill of materials, shop drawings and erection drawings
AutoCAD	• Autocad	Drafting software
Tekla Structures	• Tekla	3D Detailing software
masterSERIES	• Master series	Connection & Composite beam design software

Codes Followed:

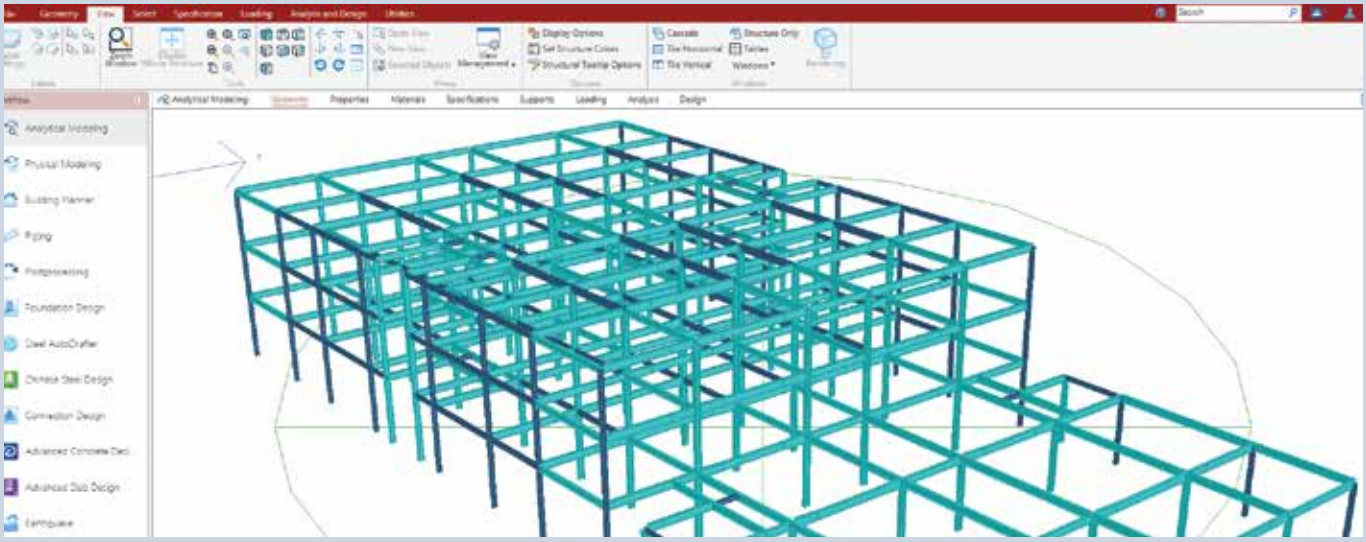
- Load on all buildings are applied in accordance with: **IBC, ASCE, BS 6399 & Euro code-1**
- Manufacturing & erection tolerance applied as per: **MBMA, BS 5950**
- Hot rolled & Built-up designed as per: **AISC, BS 5950 & Euro code-3**
- Cold Formed member design as per: **AISI**
- Welding done in accordance with: **AWS D.1.1:2010**

MBMA METAL BUILDING MANUFACTURERS ASSOCIATION AWS American Iron and Steel Institute AISC

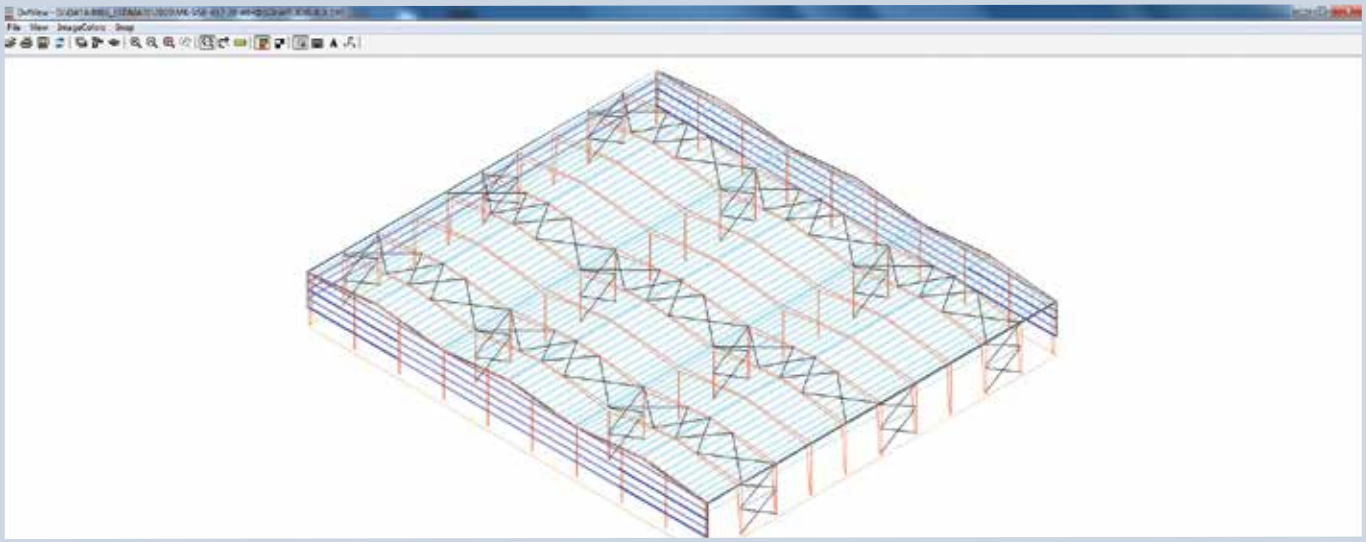
Design & Engineering Department



TEKLA STRUCTURES



STAAD PRO

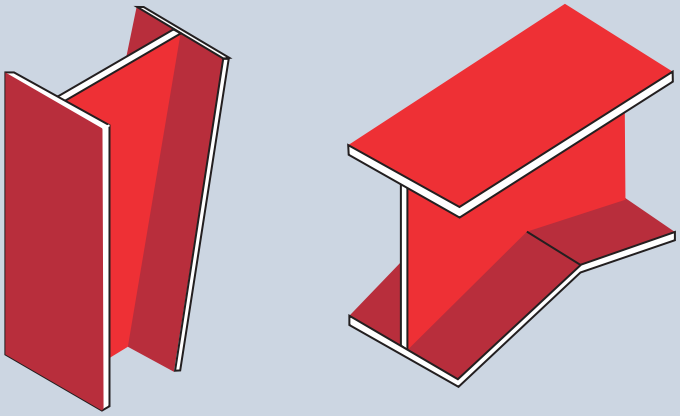


METAL BUILDING SOFTWARE (MBS)

Building Parameters

Primary Members

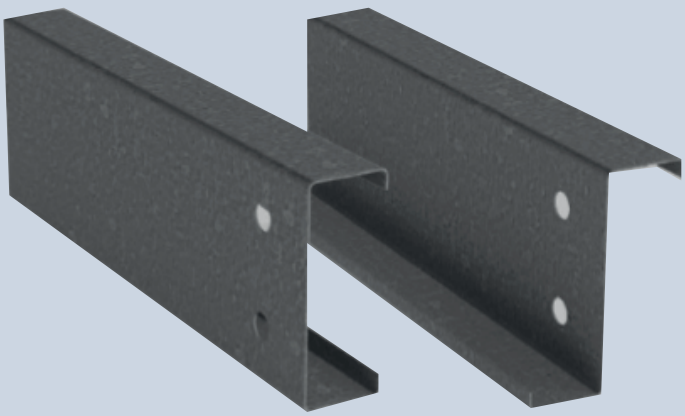
Primary built-up members are fabricated by using high tensile steel plates welded with automated beam welding machine.



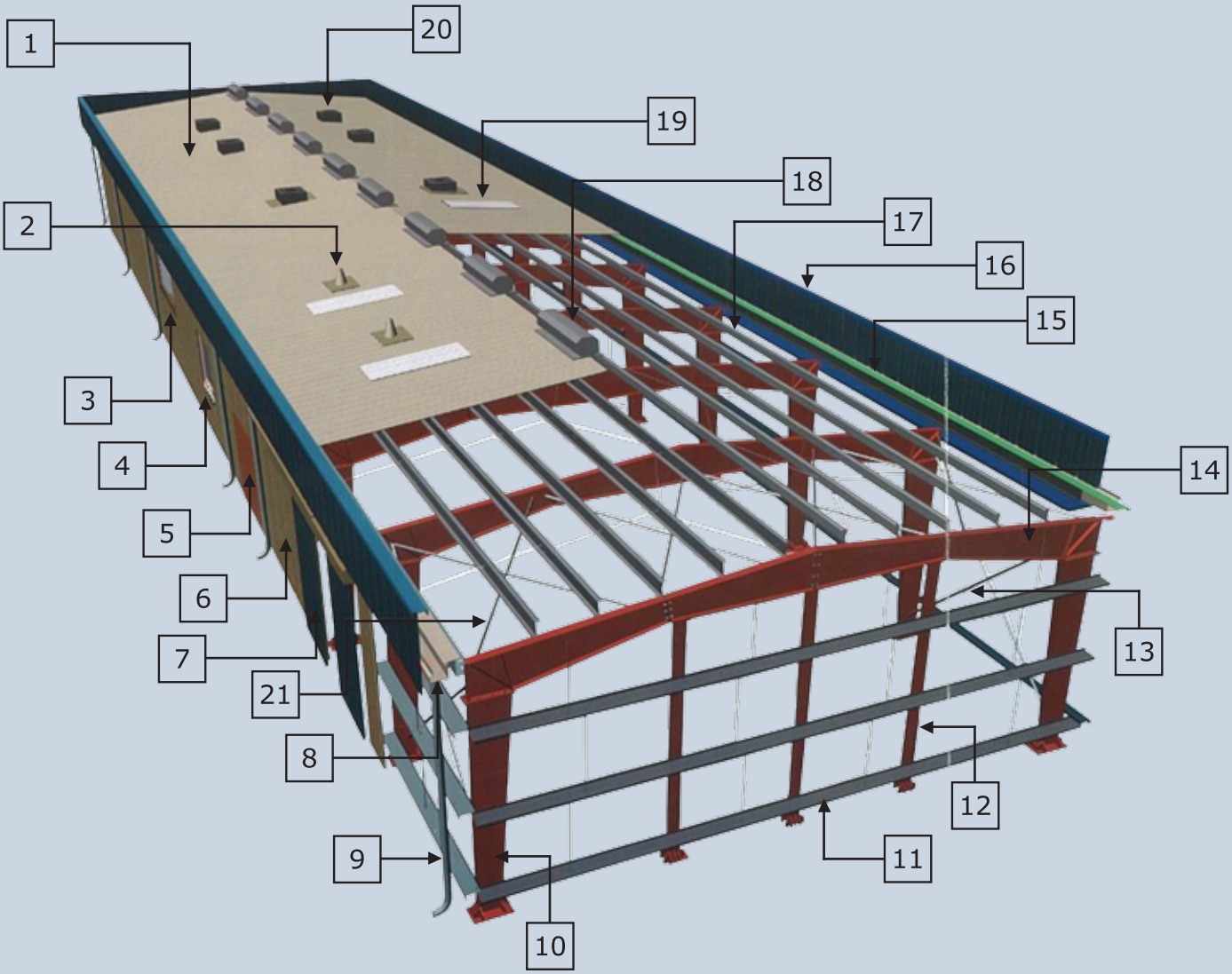
Typical Primary Members

Secondary Member

Secondary structural members provide an efficient and economical solution for all roofing and cladding used in wide range of industrial and commercial applications. They include roof purlins, wall girt, Eave struts, C-section, flange brace, gable angles and brace angle. They are available in galvanized, thickness of: 1.5, 1.8, 2.0 & 2.5 mm. Secondary members are made of galvanized steel conforming to astm A653 grade 50.



Building Parameters



1. ROOF CLADDING
2. ROOF JACK
3. LOUVERS
4. ALUMINIUM WINDOWS
5. DOOR
6. WALL CLADDING
7. DOUBLE SLIDED DOOR
8. EAVES GUTTER
9. DOWN SPOUT
10. MAIN FRAME COLUMNS
11. WALL GIRT
12. ENDWALL COLUMN
13. COLUMN BRACNG
14. RAFTER
15. EAVE STRUT
16. VERTICAL FASCIA
17. PURLIN
18. RIDGE VENTILATOR
19. SKY LIGHT
20. ROOFCURB
21. ROOF BRACING

Building Parameters

Building Width: The distance from outside of one sidewall girt to opposite side wall girt.

Building Length: The sum of all bays. For flush end walls, the distance between the outside flanges of end wall columns in opposite end walls is considered the building length. For bypass end walls the distance between the outside of wall girts in opposite end walls is considered the building length.

Roof Slope: The angle of the roof with respect to the horizontal. The most common roof slope is 1/10. Any practical roof slope is possible.

Interior Bay Length: The distance between the center lines of columns of two adjacent interior rigid frames. Most interior bay lengths in the PEB industry are 6.0 to 8.0 m.

End Bay length: The end bay length is the distance from the outside of the outer flange of end wall columns to center line of the columns of the first interior rigid frame.

Building Height: The distance from finish floor level to the top outer point of the eave strut.

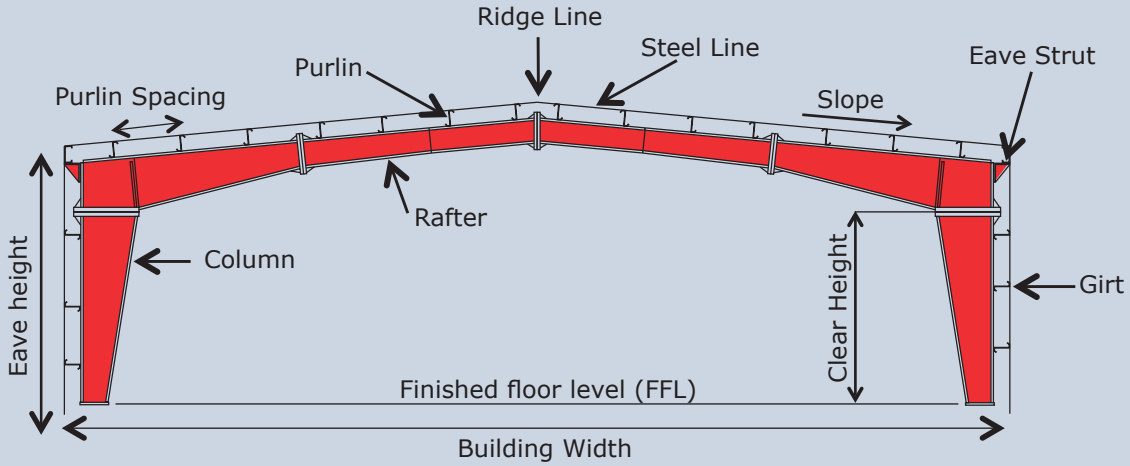
Steel Line: The plane of the out of secondary "Z" & "C" members.

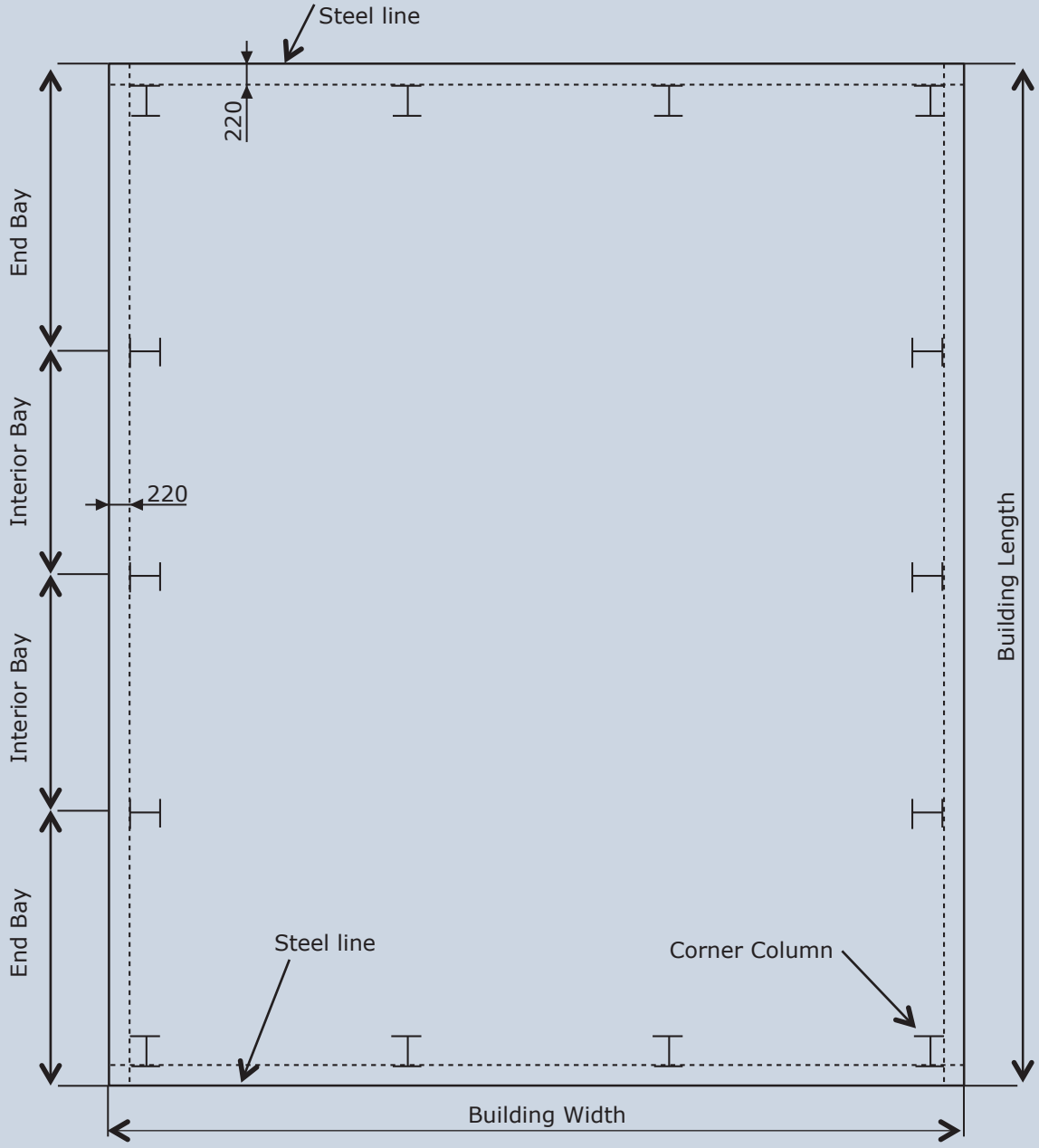
Typical Purlin Spacing: Preferred Purlin Spacing is 1500 mm but may be higher or lower as required by design.

Ridge Purlin Spacing: It is 200:200 mm. 300:300 mm to accommodate optional ridge gravity ventilators. It is higher when a roof monitor is specified.

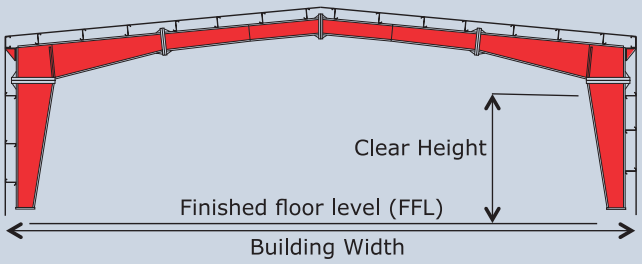
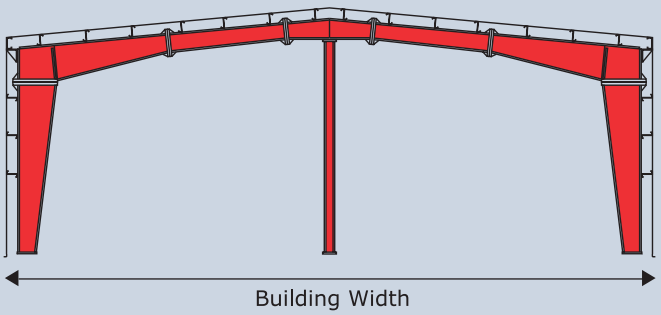
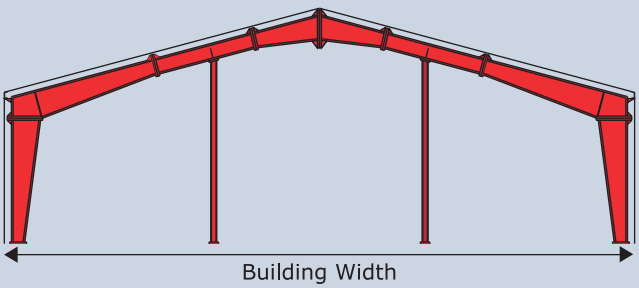
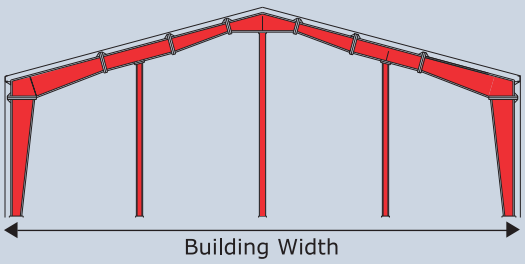
Eave Purlin Spacing: It is the remaining distance of all roof purlins spacing unless it exceeds 1500 mm / roof sheeting capacity, in which case it is divided into two spaces.

Basic Framing System

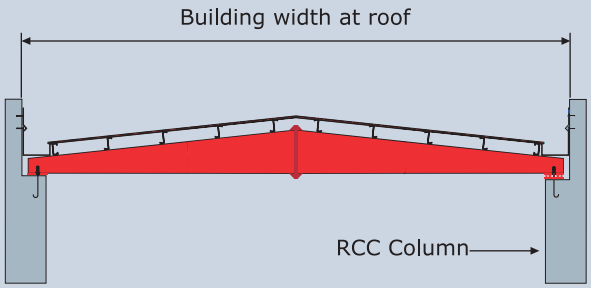
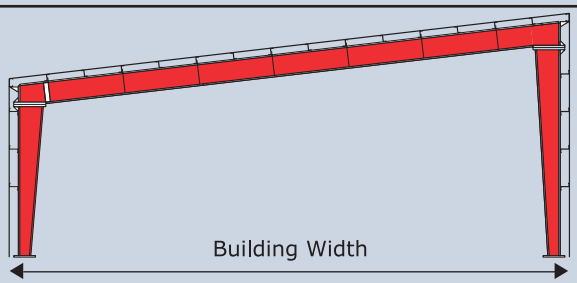
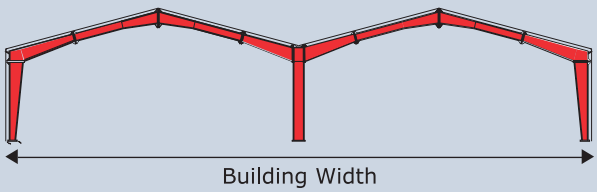
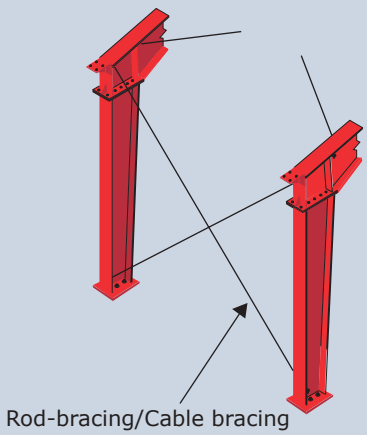




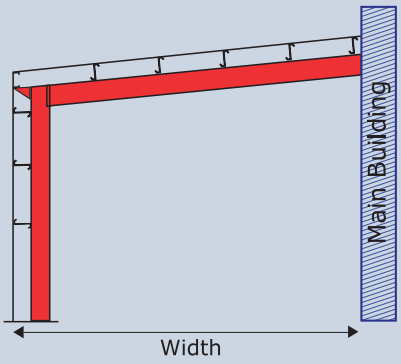
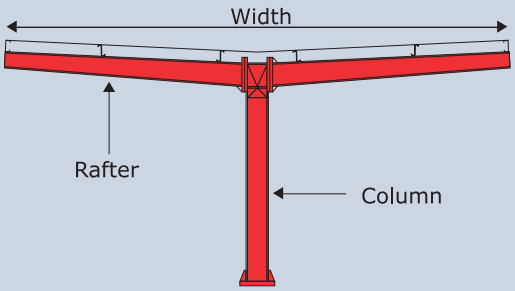
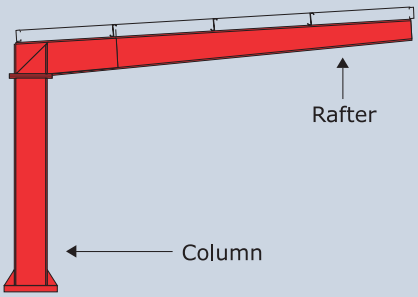
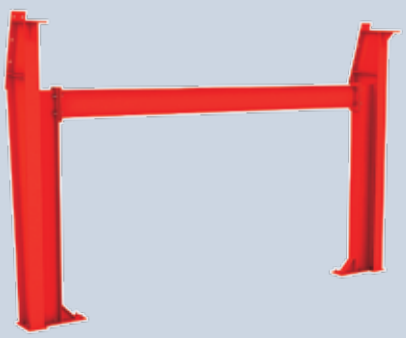
Basic Structural Frame

BUILDING TYPE		Preferred Width
Clear Span		Preferred Width: 20m – 30m
MULTI SPAN WITH ONE INTERIOR COLUMN		Preferred Width: 30m – 60m
MULTI SPAN WITH TWO INTERIOR COLUMNS		Preferred Width: 45m – 80m
MULTI SPAN WITH THREE INTERIOR COLUMNS		Preferred Width: 60m – 120m

Basic Structural Frame

BUILDING TYPE		Preferred Width
ROOF SYSTEM		Preferred Width: 10m – 24m
SINGLE SLOPE		Preferred Width: 8m – 25m
MULTI GABLE		Preferred Width: 30m – 80m
BRACING SYSTEM This system is required when all horizontal loads result from wind forces, seismic forces and overhead cranes on a structure must be carried to columns and to foundation.		

Basic Structural Frame

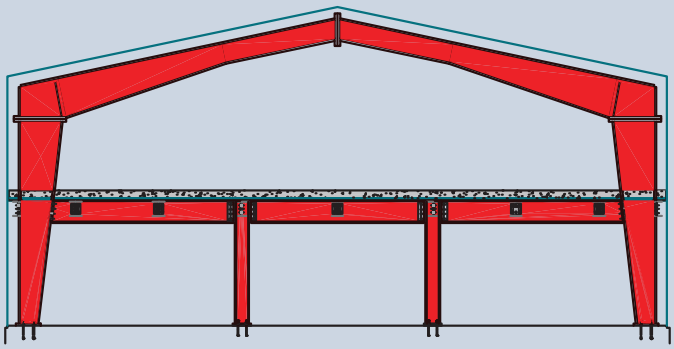
BUILDING TYPE		Preferred Width
LEAN TO		Preferred Width: 3m - 16 m
BUTTERFLY CANOPY		Preferred Width: 10m - 12 m
CANOPY		Preferred Width: 3m - 6 m
Portal Bracing		This is provided between exterior sidewall or interior columns in multispan or multigable where diagonal bracing is not permited due to design to have non obstructed space

Mezzanine

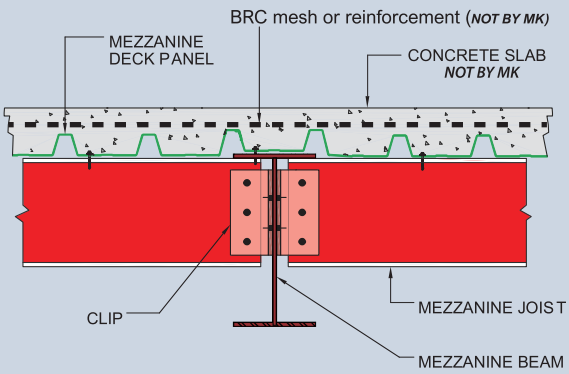
A mezzanine is an elevated flooring system located inside the outer shell of a Pre-engineered building. The most common use of a mezzanine is to accommodate offices or to serve as a storage area.

Standard mezzanine structure consists of mezzanine beams that supports mezzanine joists (hot rolled or built-up sections), which in turn supports metal decking system. A reinforced concrete slab is casted on the metal deck structure (not by MK).

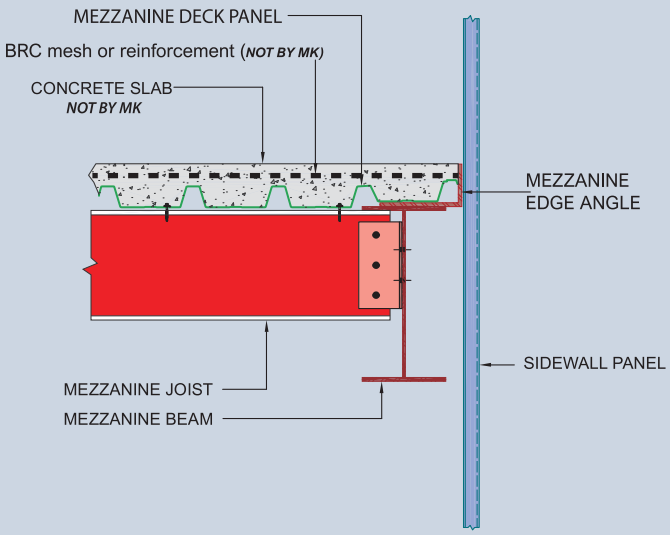
Our team can help you to determine the most economical mezzanine design and column spacing for you for your future building project



MEZZANINE

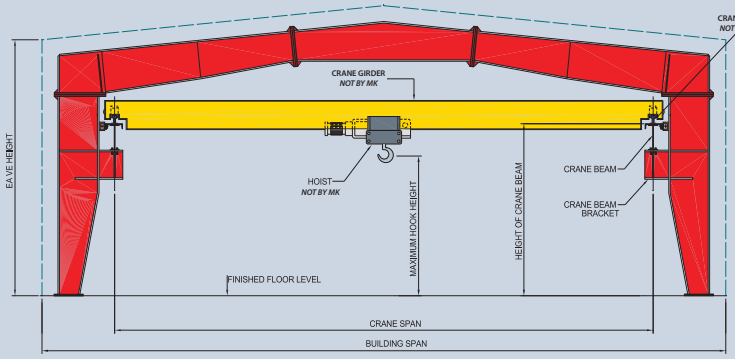


MEZZANINE JOIST TO BEAM CONNECTION

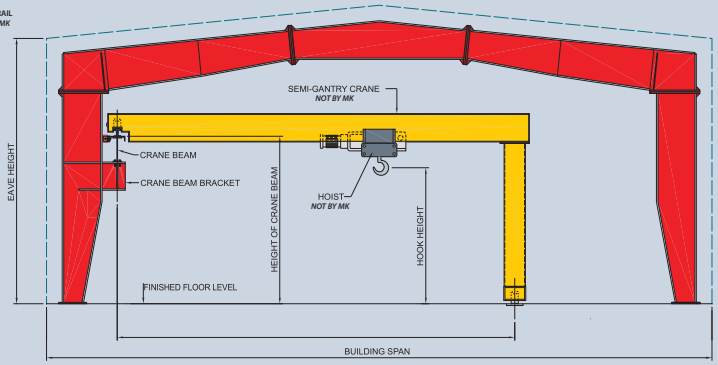


MEZZANINE BEAM AT ENDWALL

Crane System



OVERHEAD CRANE IN A CLEAR SPAN BUILDING



SEMI-GANTRY CRANE

An overhead crane system improves material handling productivity within a building, improves safety and allows more efficient utilization of space by reducing obstructions due to material handling equipment such as a forklift. The additional investment of designing a building to accept a crane system can be justified, when considering the long-term benefit of a crane system, The most common types of crane system in pre-engineered steel buildings are: **EOT Overhead Cranes, Monorail cranes, JIB cranes, Semi-Gantry Cranes**

Mk Engineering provides crane system to steel building consist of but limited to:

1. Frames to support the crane loads.

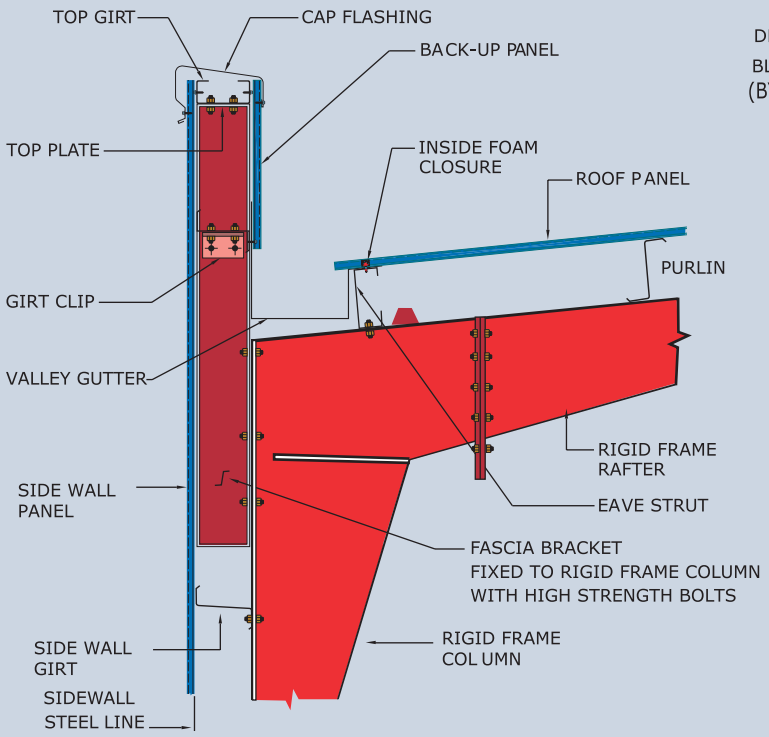
2. Supply crane brackets and crane runway beams that support the crane system.

The remaining items : Suppling of crane rails, installing and commissioning the crane system are handled by the Crane supplier.

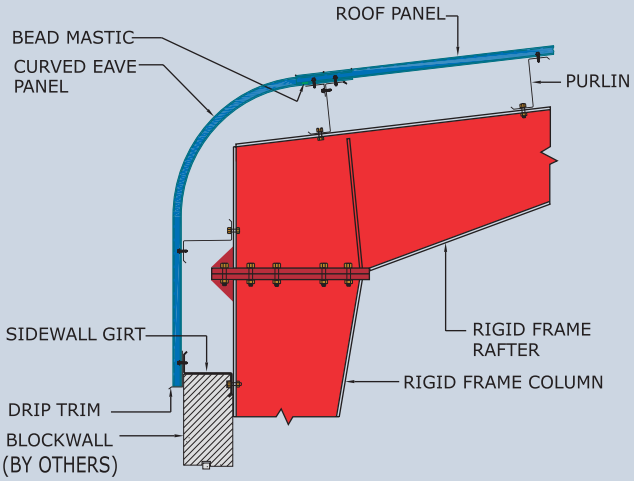
Building Fascia

FASCIAS

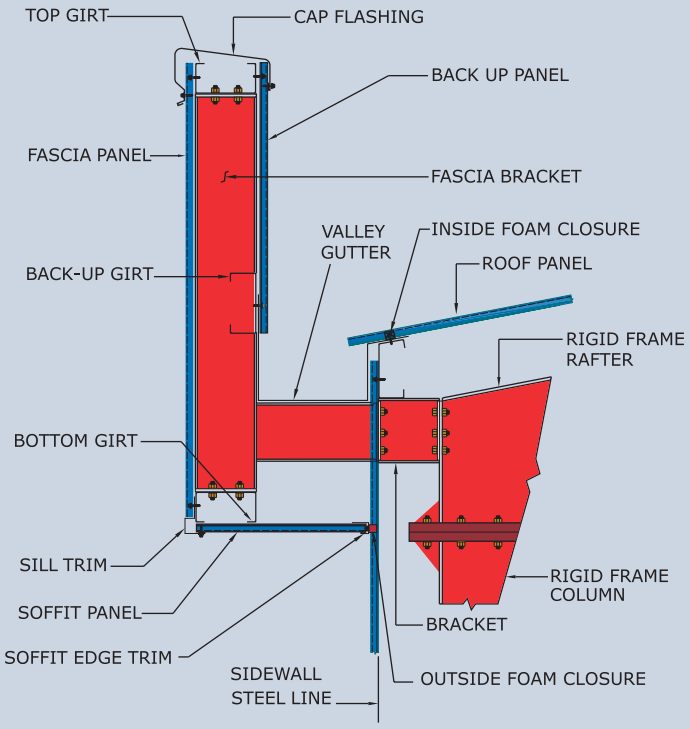
The function of fascia is to conceal the roof slope of a building. Fascia can be either flush with wall sheeting or projected to enhance the architectural look of the building. Curved eave can also be used as an alternative option.



Flush Fascia



Curved Eave

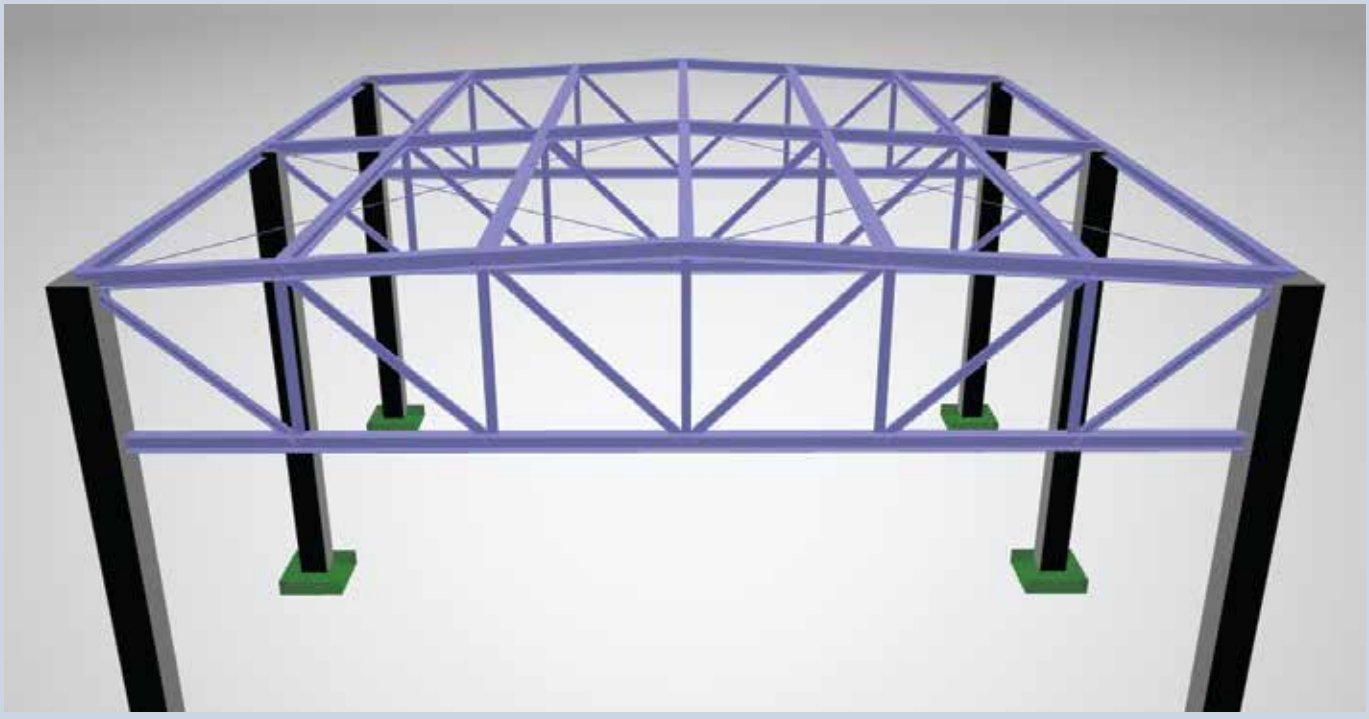


Projected Fascia

Steel trusses

Steel trusses are an economical structures which is ideally used in buildings which requires large clear span roof system. Truss is used in broad range of buildings such as: Airport terminal, hangers, sports hall, auditorium and many more. Truss are also used to carry heavy loads and are used to transfer structure.

An advantage of the truss design for roofs is that ducts and pipes that are required for operation of the building services can be installed through the truss web.



Specialised Steel Fabrication

We undertake all types of structural steel works from design to execution stage. Our steel works include:

- Equipment support structure
- Process structures
- Pipe racks
- Space Frame
- Pier columns shuttering
- Shuttering for bridge girders

We also have rich experience in fabrication of shuttering steel works such as:

- Core-loc shuttering
- Accropode shuttering
- Shuttering for quay block walls

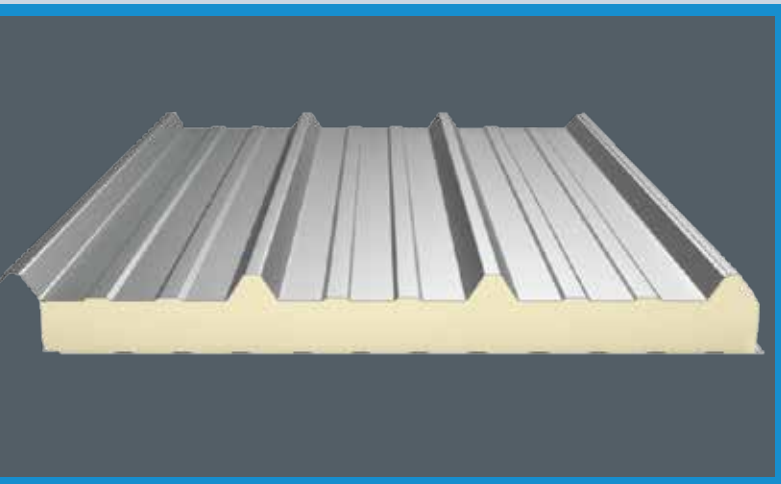
Cladding System

Sandwich Panels

Polyurethane or PIR injected composite/insulated panels are available in various thickness and density. The sandwich panels are a composite of metal skin with a polyurethane foam core in between. Roof and wall a factory-bonded with a coverage width of 1000 mm. The panels are available in thicknesses of 50mm, 80 mm, 100mm, 120mm.

The surface of the exterior metal skin is coated with polyester or PVDF paint depending on the customer's requirement. MK can provide sandwich panel in variety of colour finishes.

For more information please consult MK representative.



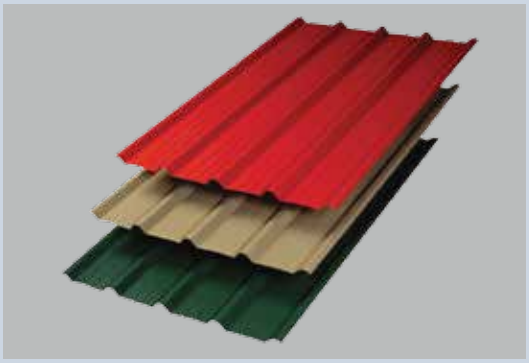
Cladding System

Roof & wall panels

The pre-painted roof and wall panels shall be of 0.5mm-0.9mm steel or aluminium roll-formed sheet. The sheet shall have a minimum yield strength 29kn/cm^2 and shall conform to astm A653.

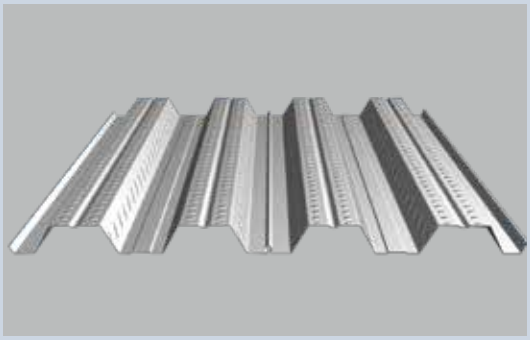
Zinc coating on steel is achieved by continous hot-dip galvanization that equals or exceeds astm A527 standard.

Exterior surface shall be precision polyester coated type top finish with dry film thickness of 25 (+-5 minron). The reverse side shall be of grey/white colour with 5 micron of dry film thickness.



Decking panels

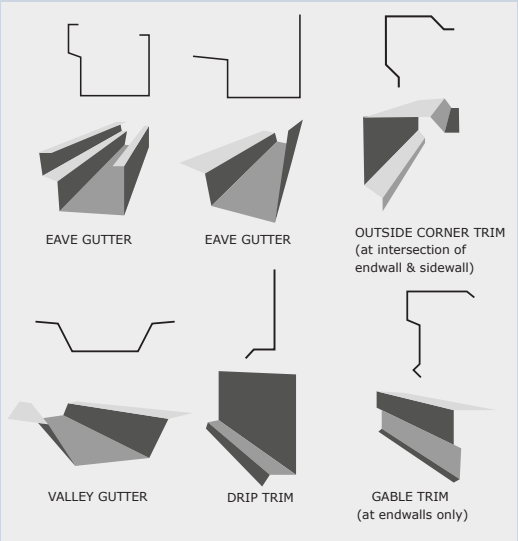
Steel decking panels a cold formed corrugated steel sheet are used to support concrete membrane and provide structural efficient product for use in floor systems. Decking panels are available in various thickness and profile.



Metal Trims and flashing

Metal flashing completes the ends and corner of roof sheets to cover the metal sheet intersects or where a roof meets a wall flashing product help improve the looks of a roof and its building as well as protecting the edge of roof and wall.

Standard wall trim: CORNER TRIM, EAVE TRIM, GABLE TRIM, EAVE GUTTER AND DOWN SPOUT are made of 0.5 to 0.9mm aluminum/Aluzinc/GI steel. They are strong less prone to damage and can be supplied in longer length to provide good appearance.



Sundry Items & Standard Panel Colours

Anchor Bolts

Connection Bolts & Nuts

Hill side Washers

Pop rivits & Sheeting fastners

Foam Closures & Flowable Mastic

PANEL COLOURS

Standard colours are shown below (actual colour may differ slightly from the printed examples). Alu zinc/GI metal profile sheets are available from 0.5 to 0.9 mm, nominal thickness in all standard colours. Profile sheets may be specifically ordered to any base metal specification, coating finish, colour and thickness. Consult a MK Trading representative for pricing and delivery.

Off White (RAL 9002)

Beige (RAL 1014)

Green (RAL 12B21)

Blue (RAL 5012)

Accessories

ROLLING SHUTTERS

RIDGE VENTILATOR

ACCESS PLATFORM / WALKWAY

STAIRCASE

TURBINE VENTILATOR

TRANSLUCENT SHEET

Accessories

LOUVERS

DOUBLE SLIDING DOOR

CAT WALK

CAGE LADDER

SAND TRAP LOUVERS

STEEL DOOR

Manufacturing Facility

Our Manufacturing plant for steel fabrication is located in Rusayl Industrial Estate and has the production capacity of 7500 Metric tons per annum of built up members alone. We will be able to cover up to 300,000 SQM of floor area per annum.

We have invested in one of the most comprehensive manufacturing facilities in the industry. Computer generated details are transferred to state of the art CNC machinery to ensure all products are produced with high degree of accuracy and quality.

- Automatic Welding Machine with submerged Arc welding unit
- Straight section 250 mm to 2000 mm web x 12 m long (upto 36 m length)
- Tapered section Web 250 mm to 1900 mm x 12 m long (upto 36 m length)
- Plate shearing machine capacity up to 13 mm thicknesses x 6m long
- MIG, SAW & ARC welding machines
- Flashing / bending machine of plate bending up to 16 mm thick x 3 m long
- CNC plasma cutting machine with multiple cutting torch
- CNC drilling machine up to 40 mm drilling capacity
- CNC beam drilling line with bandsaw
- Bending / threading of anchor bolts up to 50 mm Dia
- Sand blasting / painting
- Telescopic boom man lift (up to 21 m height)
- Forklifts – 3 tons and 7 tons
- 20 ton & 25 ton mobile cranes

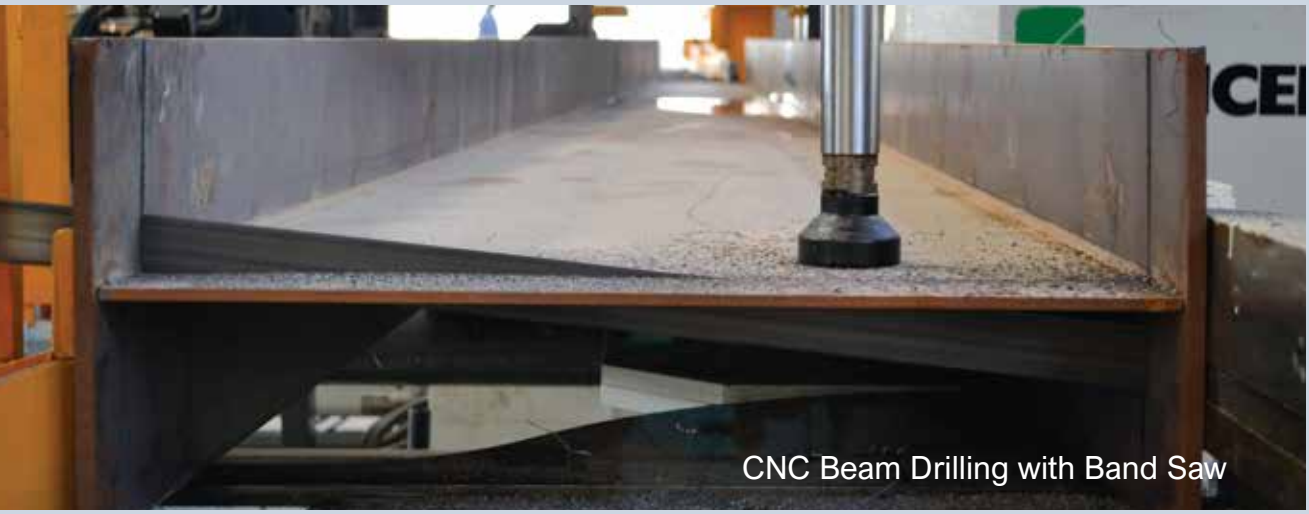
Manufacturing Facility

Beam Welding Machine

MK Facility

Shot Blasting Unit

Manufacturing Facility



CNC Beam Drilling with Band Saw

CNC Punching Unit

CNC Plasma Cutting System

Manufacturing Facility

Fit-up & Welding Bay

Our Trusted Customers

OSMOFLO World class desalination	ABU HATIM GROUP	Petroleum Development Oman	LARSEN & TOUBRO	DOUGLAS OHI
Galfar	Dredging International Marine & Waterway Solutions	sue2 environnement	ARCHIRODON	al madina
DAWOOD	serka MSF	adhi beyond construction	TAYLOR WOODROW	KR كيمجي رامداس KHIMJI RAMDAS
ABENGOA fisia italimpianti salini impregilo group	Arabian Industries	SAROOJ CONSTRUCTION COMPANY	Orpic	Zawawi Powertech Engineering
SENER OHL Industrial	ATLANTIC CONSTRUCTION LLC	DynCorp INTERNATIONAL	OMAN CHLORINE S.A.O.G.	عمان ريفكو Oman Refco
amjaad	OmanCables	SAIPEM	LuLu Where the world comes to shop.	al Maha
SAM ENGINEERING L.L.C.	Shell Oman	OXY Occidental of Oman Inc.	Skyline International LLC	STS SPECIAL TECHNICAL SERVICES L.L.C.
Oman LNG L.L.C.	arkan majan	DUQM REFINERY	Amiantit Oman	MHD

P.O. Box 2756, Postal Code 112
Ruwi, Sultanate of Oman

Tel: +968 24810725
Fax: +968 24811427
Email: mktho@omantel.net.om
Web: www.mktrad.com