



QSB STEEL CO., LTD.

40 Hoang Viet Str, Ward 4, Tan Binh District, HCM City
Tel : (+84-8) 399 173 48 - Fax : (+84-8) 399 173 49
Email: qsb@qsbsteel.com - Website : www.qsbsteel.com

YOUR RELIABLE PARTNER

PRE-ENGINEERED STEEL BUILDING MANUFACTURER

QSB STEEL CO., LTD.



SAFETY
QUALITY SOLUTION BUILDINGS
SCHEDULE





QSB STEEL CO., LTD.

QSB Steel specializes in Design, Manufacture, Supply and Erection of Pre-Engineered Steel Building for projects such as: Factory, Exhibition Center, Showroom, Warehouse, Workshop, Cold-storage and many kinds of steel structure buildings.

All buildings come with 10-year structural warranty.

We can provide solutions for any design challenges and we feature flexible clear-span building up to 100 meters that is perfect for buildings requiring larger clear width interiors such as: factory, steel aircraft hangars and sports arenas.

We feature energy efficient structures that are easily insulated. We can help you save on energy costs.

Our buildings are expandable. If your business is going to grow in the near future we can help.

Over the years, QSB Steel has earned a reputation for providing Quality & Cost Effective Solution for buildings, manufactured in according to international Standards.

Our office is staffed with qualified engineers and specialized software of design & calculation to provide you with quick response and solution for your projects and comprehensive quotations including proposal drawings.

QSB Steel is committed to being a professional supplier of industrial steel building and on innovative Products, outstanding quality and uncompromising Customer Service.

CONTENTS

Introduction	2
Contents	3
Why QSB Steel Is Your Correct Choice?	4
Manufacture	6
Safety First	7
Total Quality Solution	8
The Model Building	10
Standard Building	12
Main Frame Types	13
Structure Details	14
Standard Accessories	17
Vehicle Parkings	18
Panel Profiles	19
Panel Accessories	20
Insulations	21
Standard Panel Colors	22
Major Projects	24
Management Experienced Projects	30

WHY QSB STEEL IS YOUR CORRECT CHOICE?

THE MAIN REASONS

Quality products: All members of the QSB Steel Producers Association enjoy International Standards Organization certification ISO 9001: 2008 and QSB steel products enjoy certification of recommendations of many large repeated clients.

Competitive pricing: Modern production lines, level of good management, experience, professional, help make the most reasonable prices.

Experienced and skilled workforce: Excellent standards of training and education ensure an expert workforce for highest production standards.

Fast schedule: With the large extent manufactory with engineer and worker trained professionally, QSB commit to ensure the best quality to customers together with supplying and assembling schedule.



Unless otherwise required by Authority conditions, all QSB Steel Buildings are designed and manufactured in accordance with the latest editions of the following American codes.



(MBMA) Low Rise Building Systems Manual.
Metal Building Manufacturer's Association, Inc.



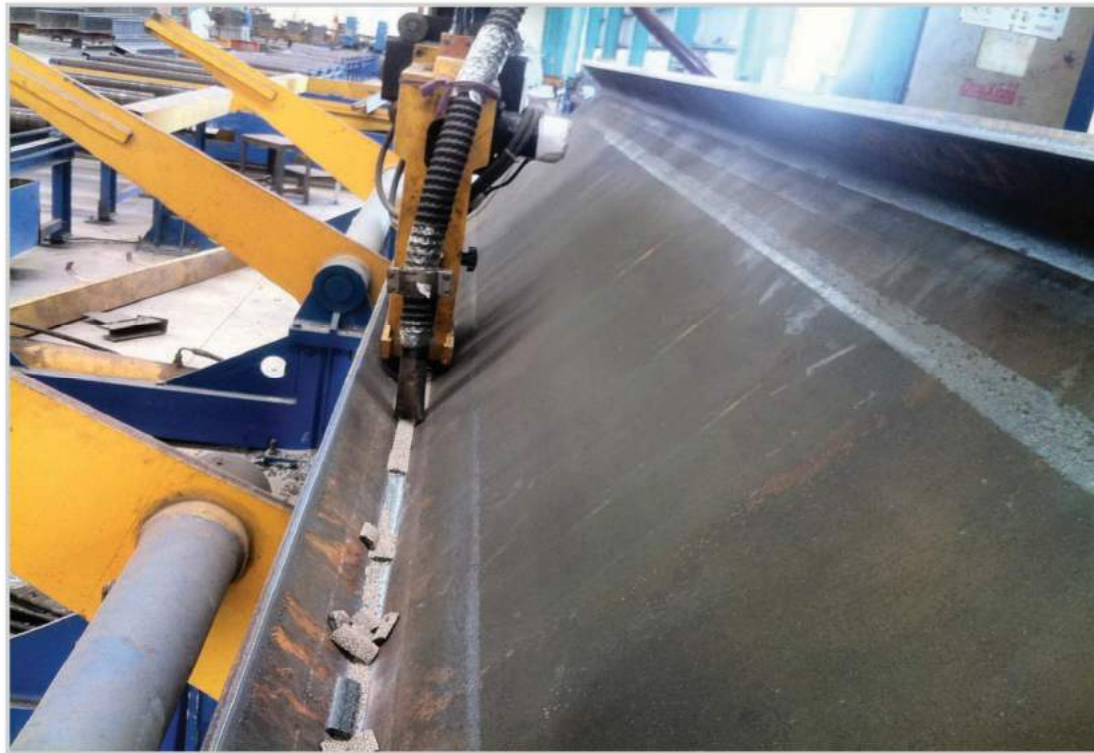
(AISC) Manual of Steel Construction, Allowable Stress Design.
American Institute of Steel Construction, Inc.



(AWS) Structural Welding Code-Steel.
ANSI/AWS, D1.1-2008, American Welding Society.



(AISI) Cold Formed Steel Design Manual.
American Iron and Steel Institute.



 SAFETY FIRST	
We, as a team, commit to finish this project and operation with ZERO ACCIDENT	Commitment Signature Cam Kết Ký Tên
"NO WORK IS SO IMPORTANT OR URGENT THAT IT CAN NOT BE PERFORMED SAFELY"	
	
Chúng tôi cùng nhau cam kết hoàn thành dự án và đi vào hoạt động với mục tiêu là KHÔNG CÓ TAI NẠN	
"Không có công việc nào quan trọng và khẩn cấp đến mức bạn không thể thực hiện một cách an toàn"	

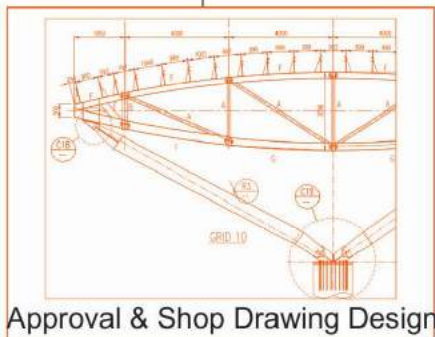
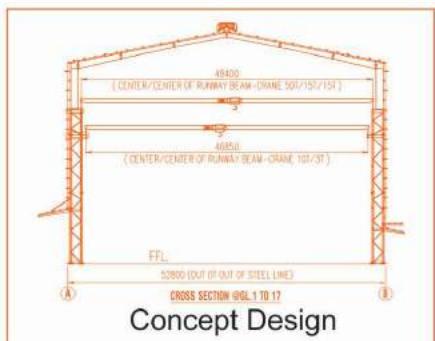


DESIGN - FABRICATION- ERECTION

DESIGN

FABRICATION

ERECTION



Passed



Passed Checking



Passed Checking



Passed Checking



Passed Checking



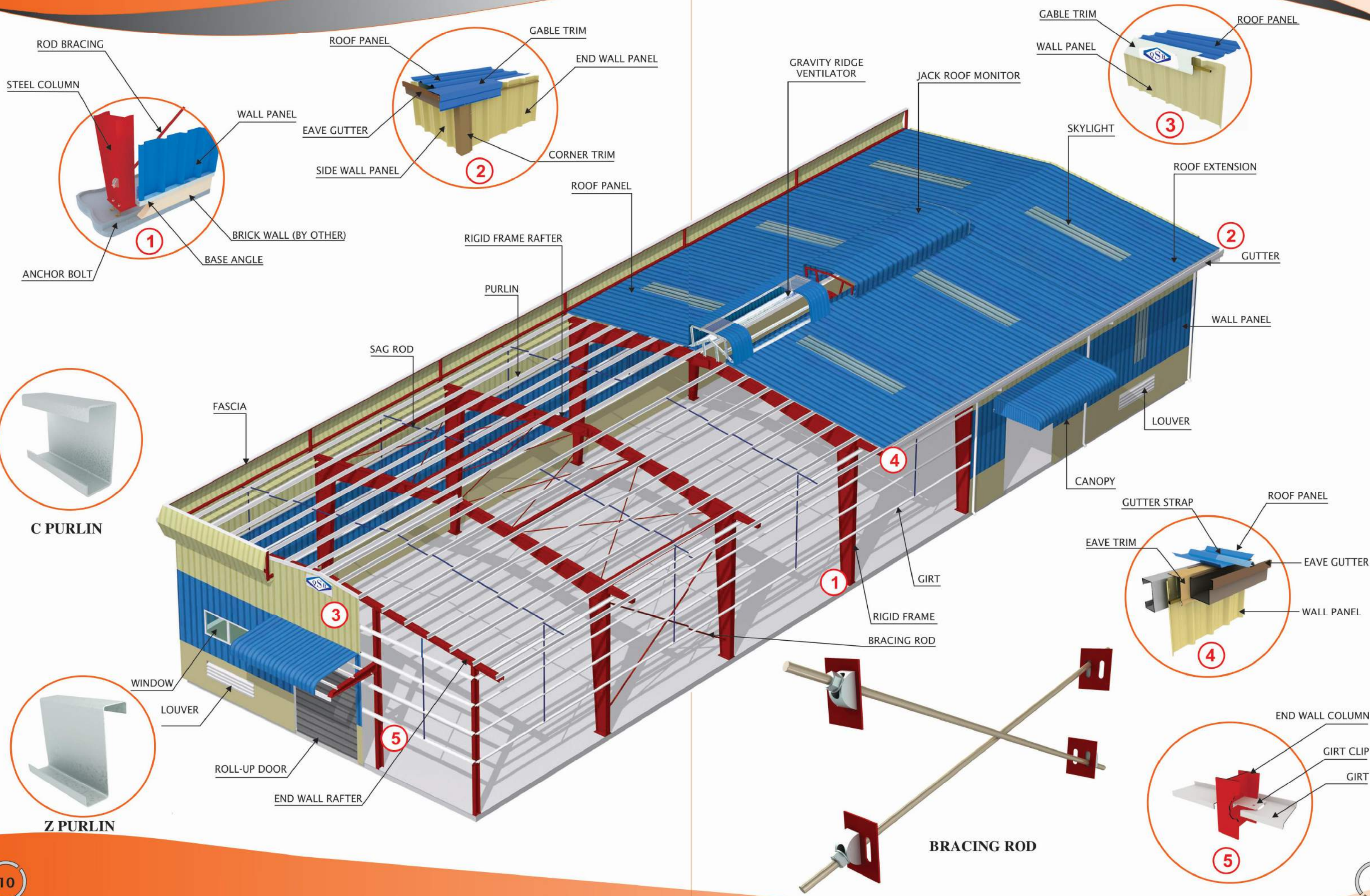
Passed Checking



Passed



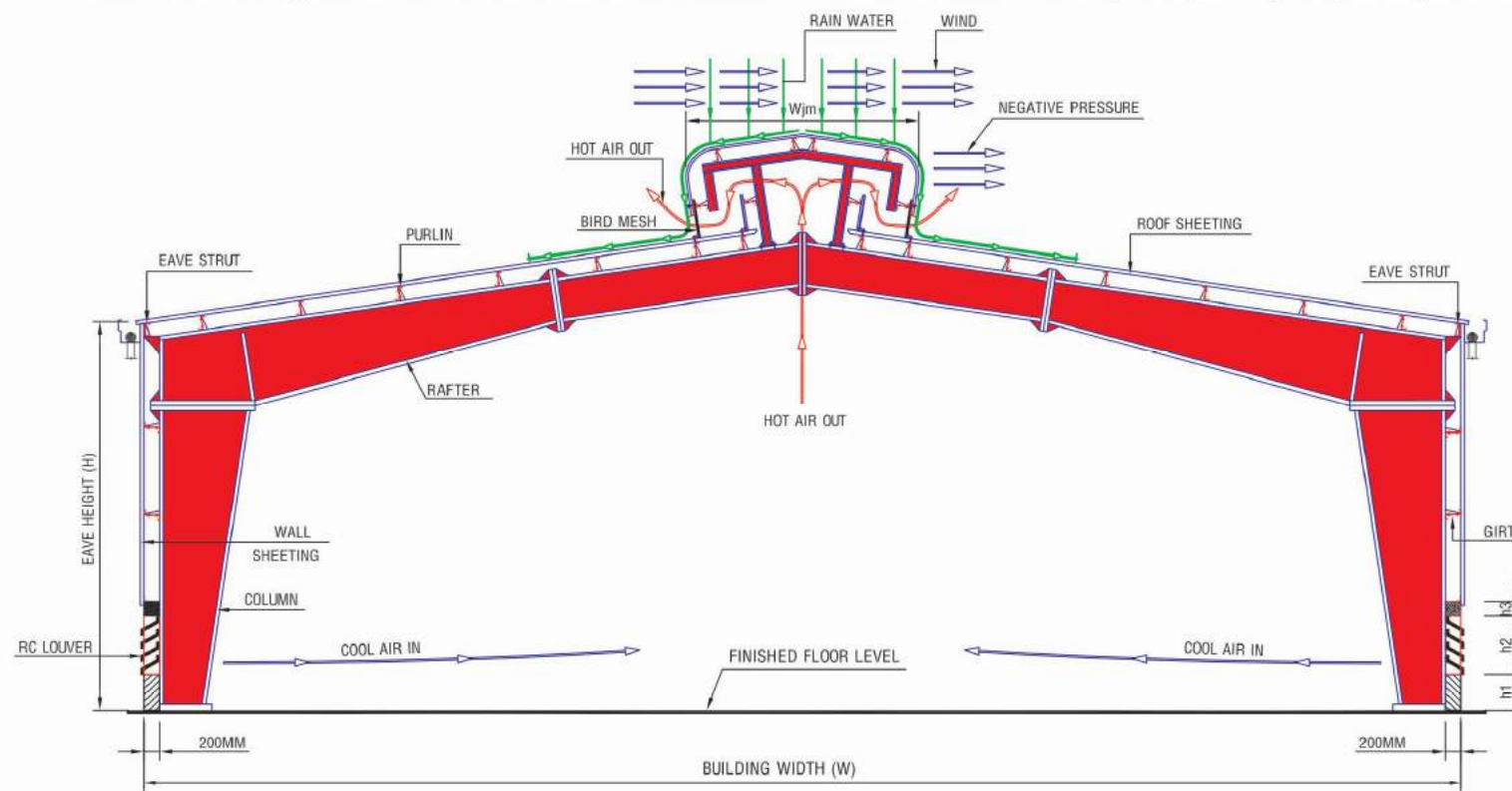
THE MODEL BUILDING



Design Load: unless otherwise specified the pre-engineered buildings are designed for the following standard loads:

- ▶ Live load on roof: 0.57 KN/m^2
- ▶ Wind load speed: 110/130/140/160 ... Km/h
- ▶ Earthquake load, snow load, collateral loads or any other must be specified in quotation.

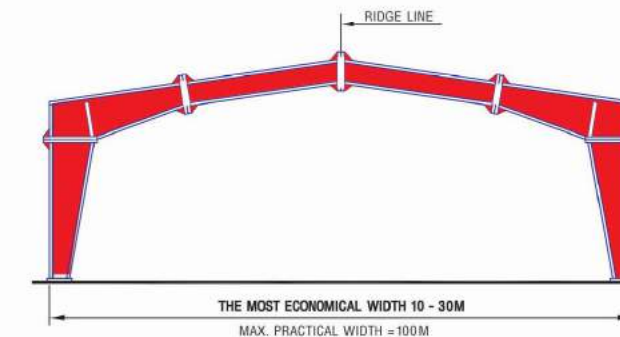
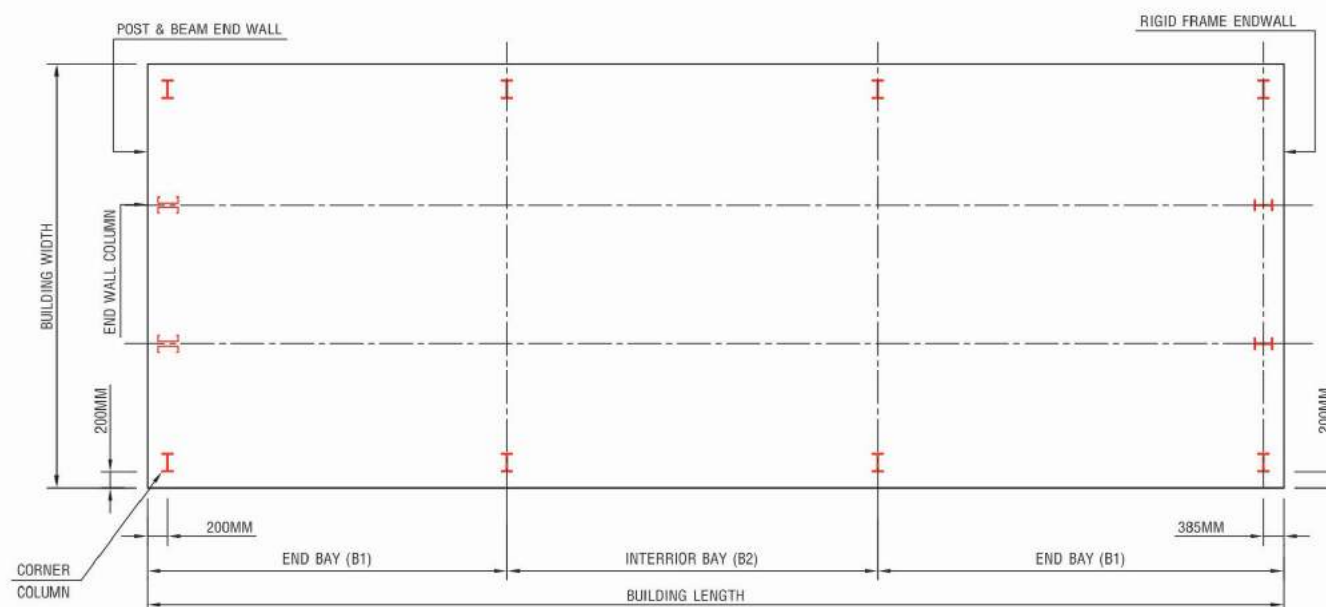
Loads are designed in accordance with the latest American codes: MBMA, AISC, ASD, AISI, AWS, ASTM.



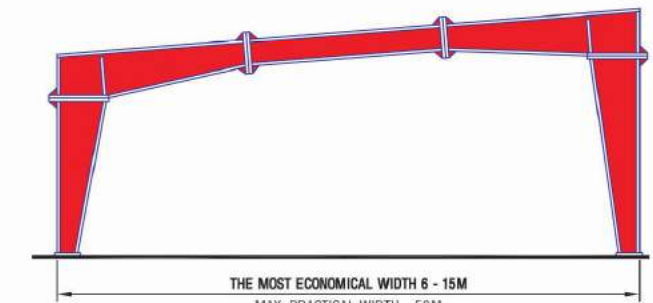
TYPICAL CROSS SECTION

QSB RECOMMENDATION

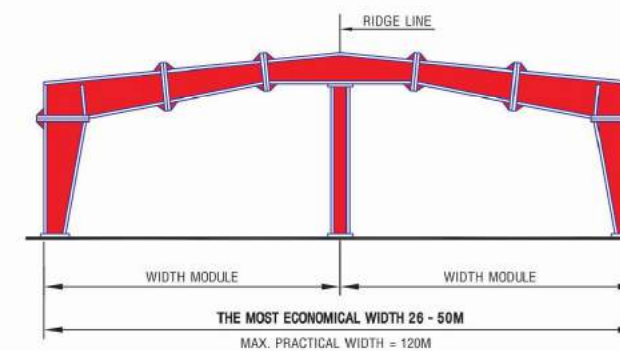
H: 5M - 9M
 $W_{jm} = W/(10-15)$
 $B2 = 6000\text{MM}, 8000\text{MM}, 9000\text{MM}$
 $B2 \geq B1$
 $h1 = 500\text{MM}$
 $h2 = 600\text{MM} - 1000\text{MM}$
 $h3 = 200\text{MM}$



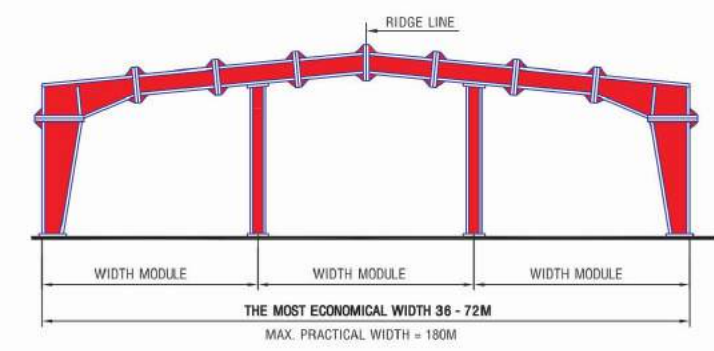
CLEAR SPAN



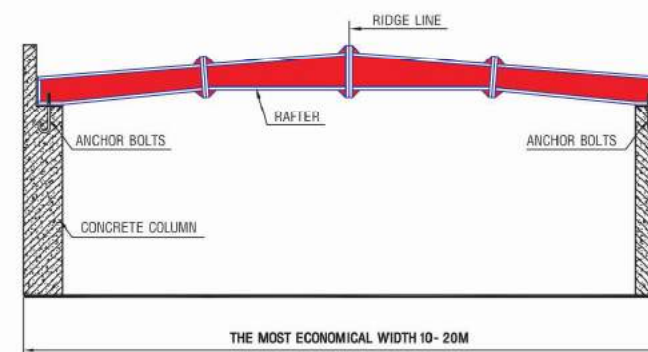
SINGLE SLOPE



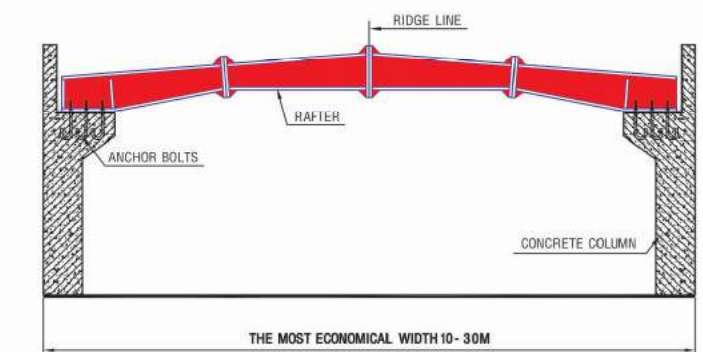
MULTI-SPAN "1"



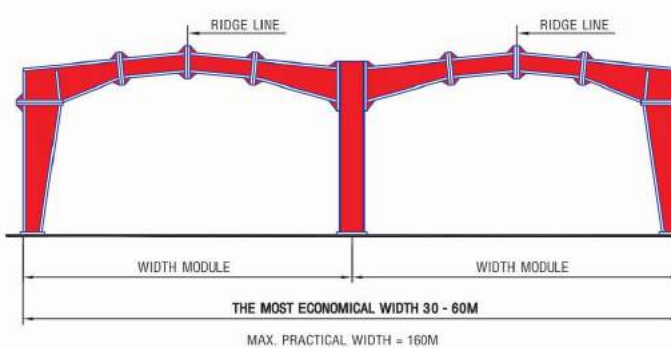
MULTI-SPAN "2"



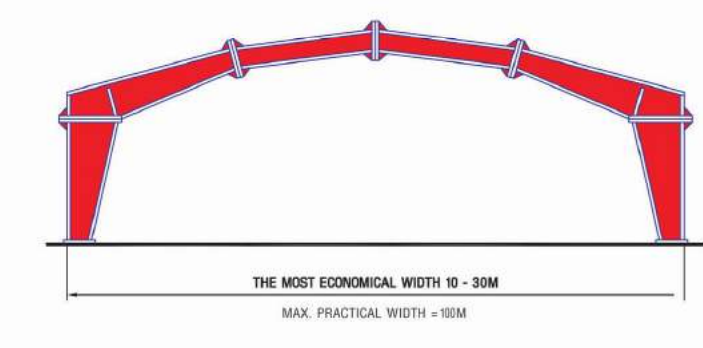
ROOF SYSTEM RELEASED JOINT



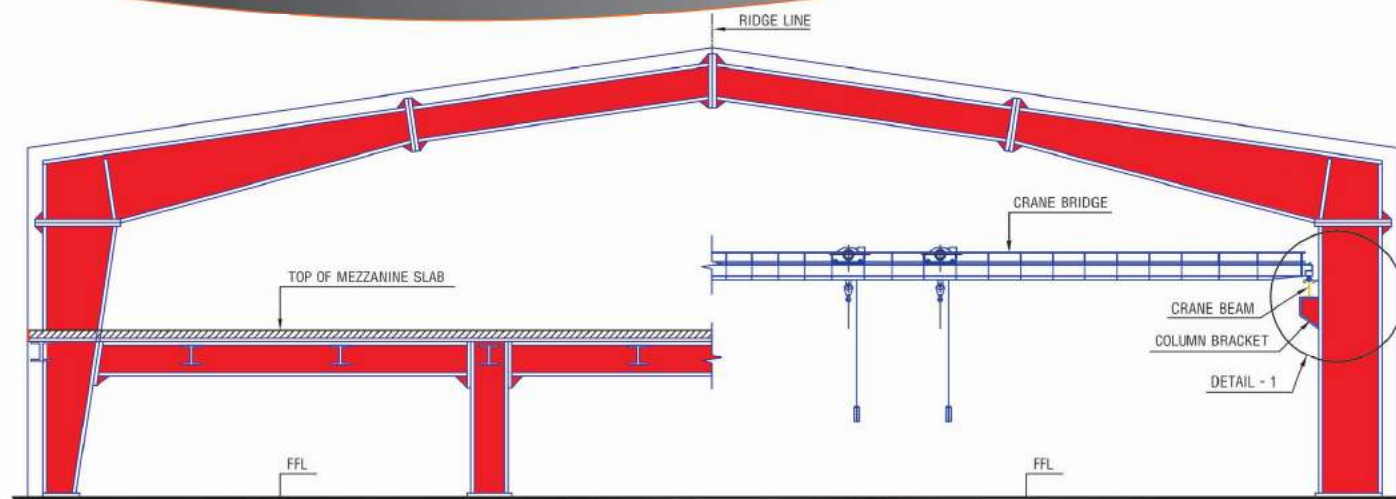
ROOF SYSTEM FIXED JOINT



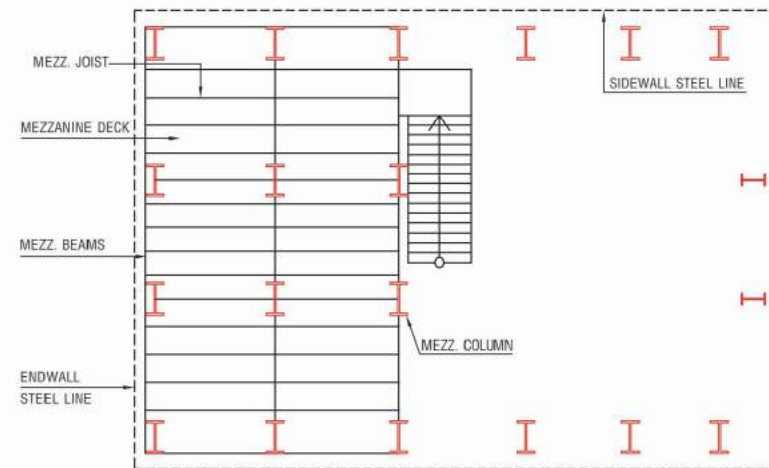
MULTI-GABLE



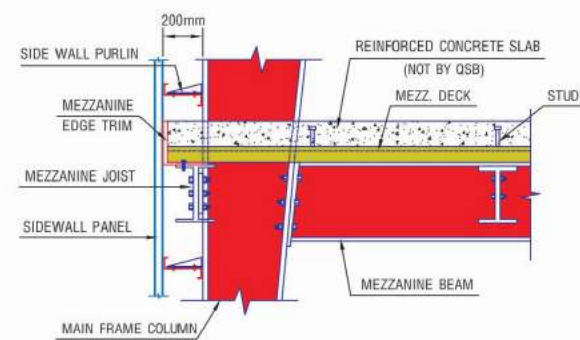
CURVED RAFTER



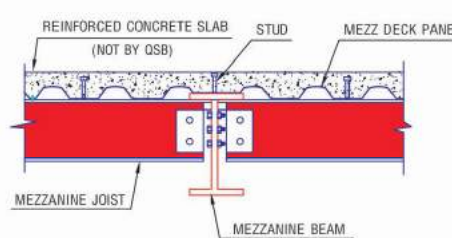
MEZZANINE AND CRANE SYSTEM



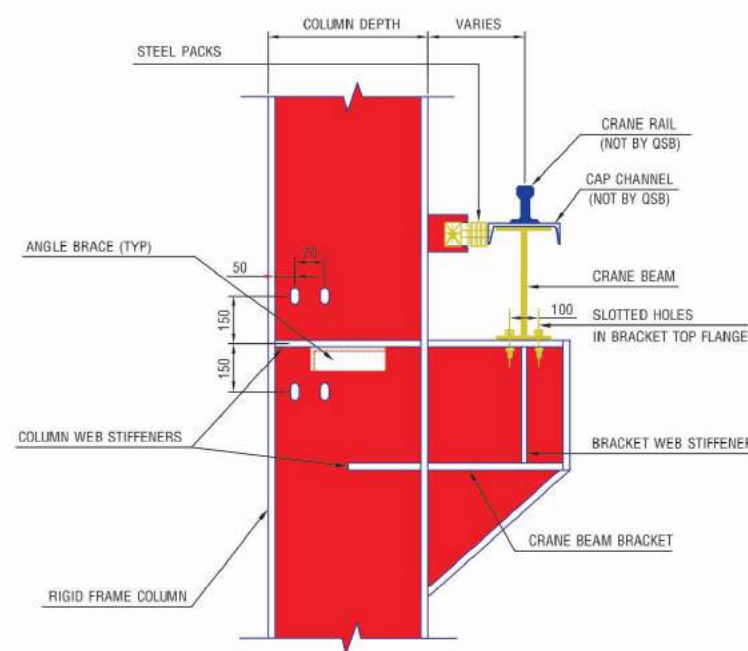
MEZZANINE PLAN



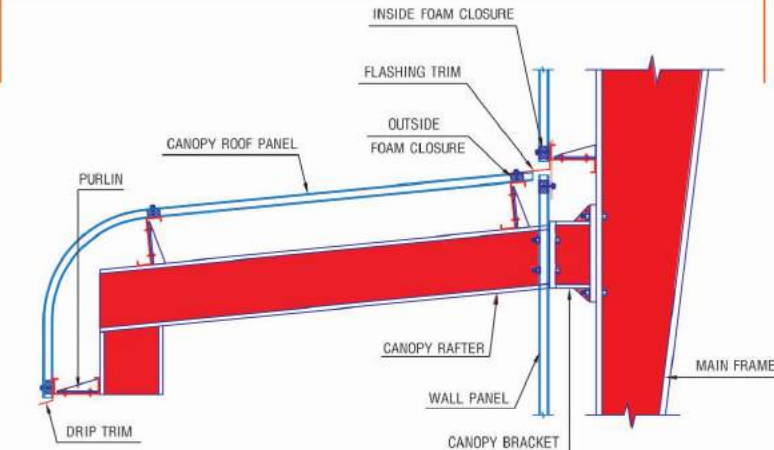
MEZZ. BEAM AND COLUMN



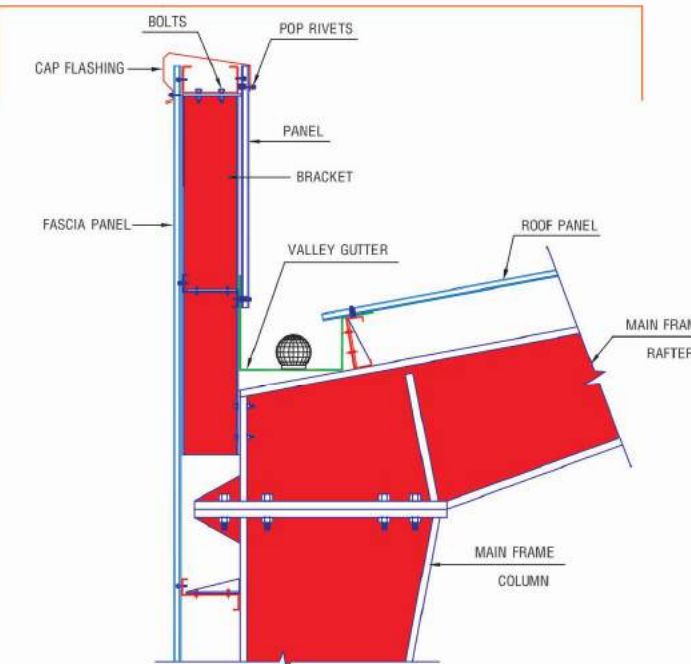
JOIST AND BEAM



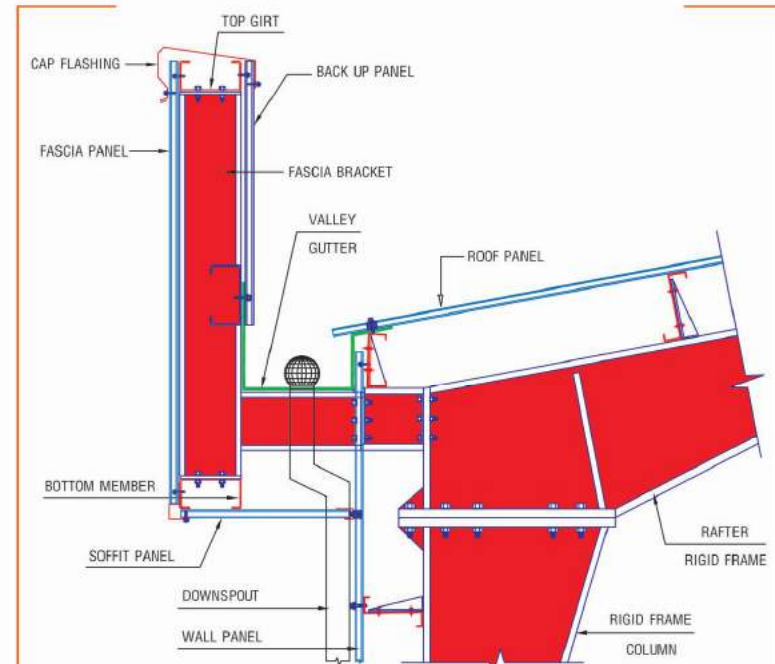
DETAIL - 1: CRANE BEAM AND BRACKET



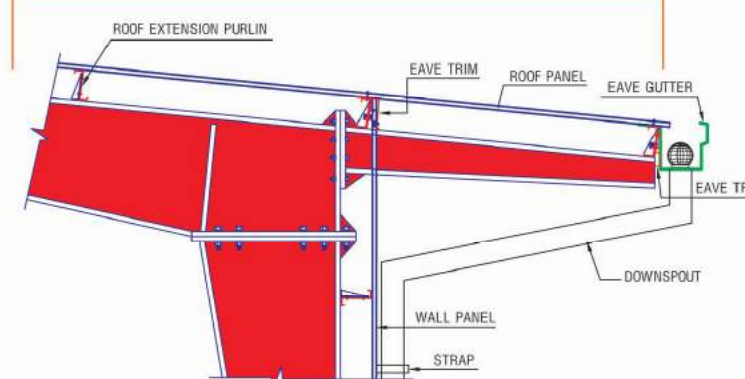
CURVED EAVE CANOPY



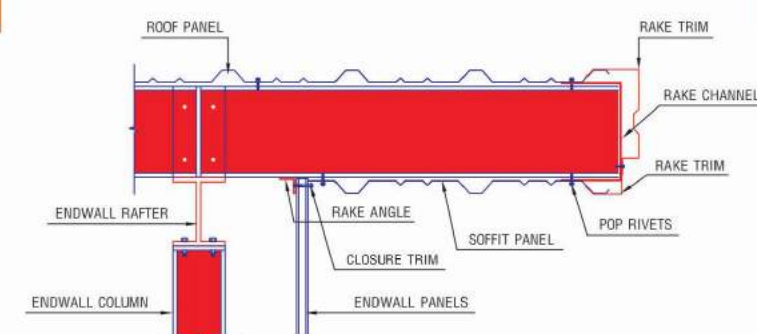
PARAPET FASCIA



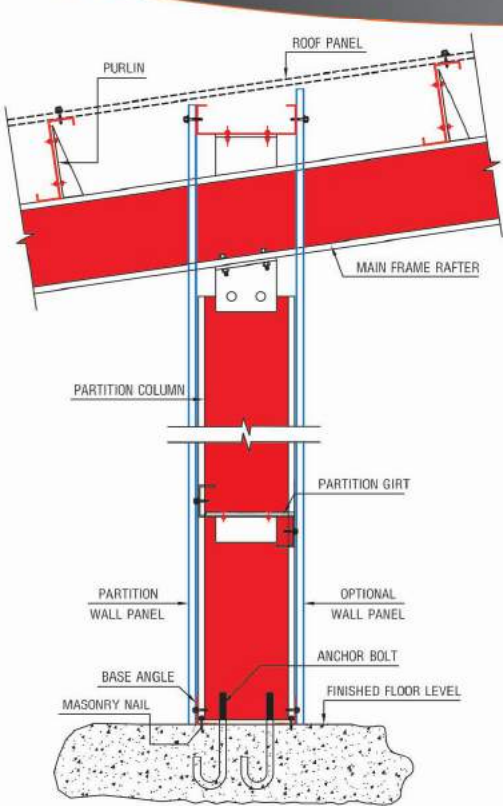
VERTICAL FASCIA



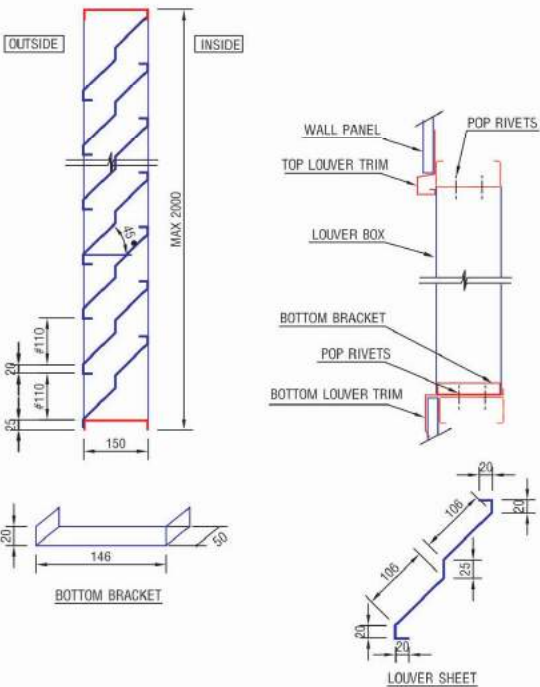
SIDE WALL ROOF EXTENSION



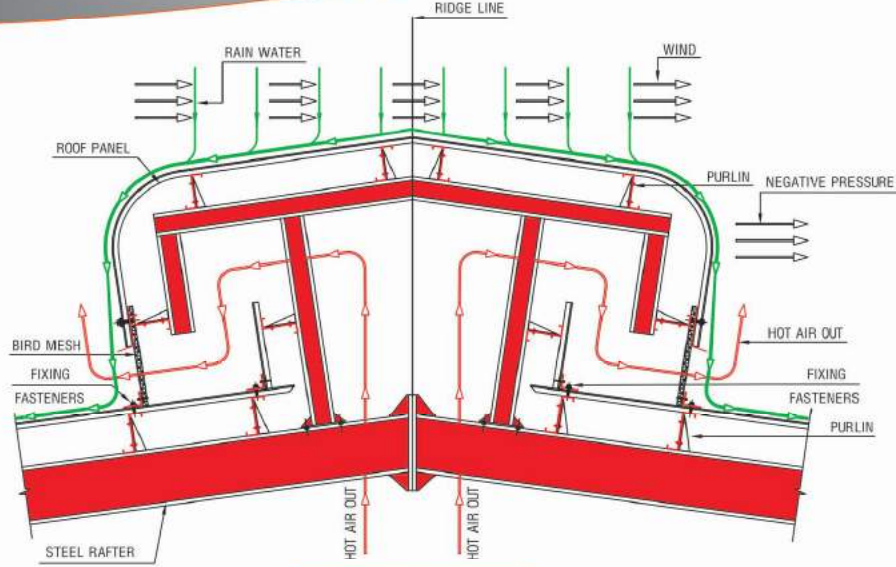
END WALL ROOF EXTENSION WITH SOFFIT



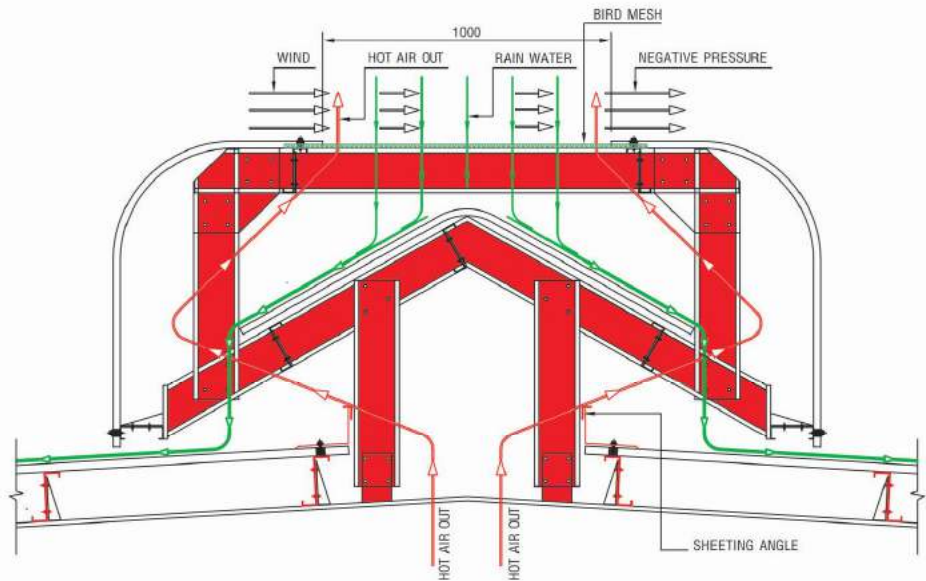
LONGITUDINAL PARTITION



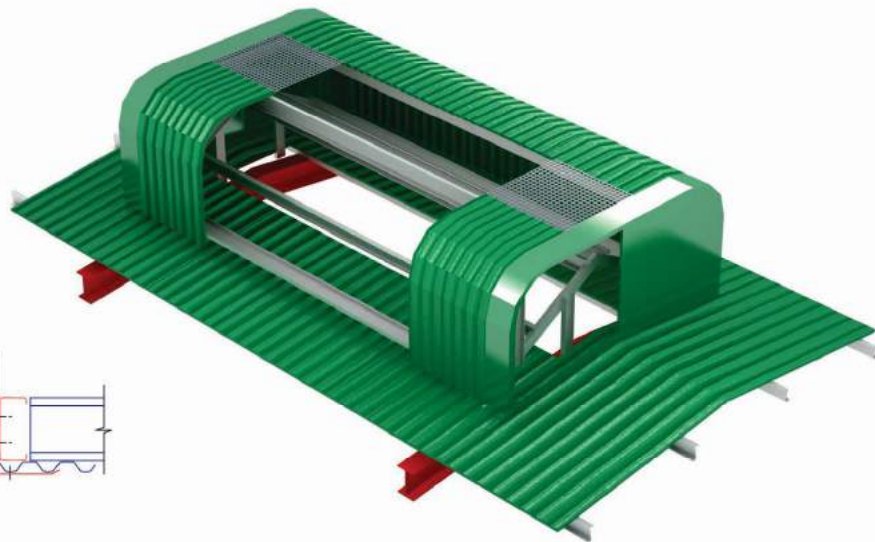
STANDARD BOX LOUVER



JACK ROOF MONITOR



RIDGE VENTILATOR



ROLLING DOOR



SLIDING DOOR



PIPE RACK



CHECKERED PLATE



WINDOWS



PLATFORM



STAIRS



STEEL STAIRS



ROOF SKYLIGHT



WALL SKYLIGHT



LOUVERS



GRATING

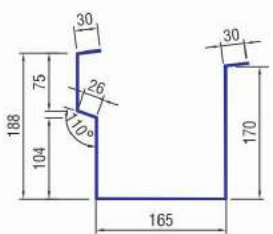




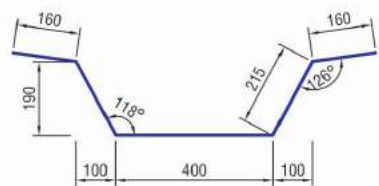
WALL PANEL: Pre-painted Zinc - Alume alloy coated steel sheet, which is not only good corrosion resistance but also good decoration as well.

Diagram showing a cross-section of a roof structure. The total width is 1000, divided into four segments of 250 each. The roof profile shows a series of peaks and valleys. A vertical dimension line on the right indicates a height of 32.

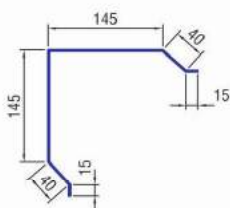




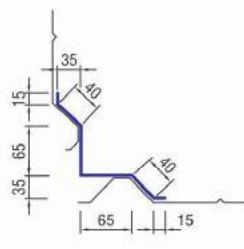
EAVE GUTTER



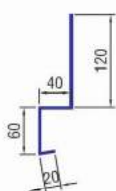
WALEY GUTTER



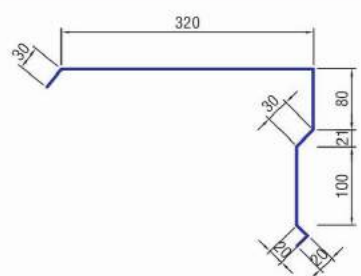
OUTSIDE CORNER TRIM



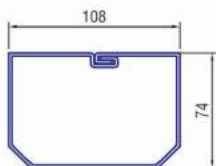
INSIDE CORNER TRIM



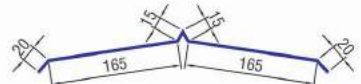
DRIP TRIM



GABLE TRIM



DOWNSPOUT



RIDGE CAP



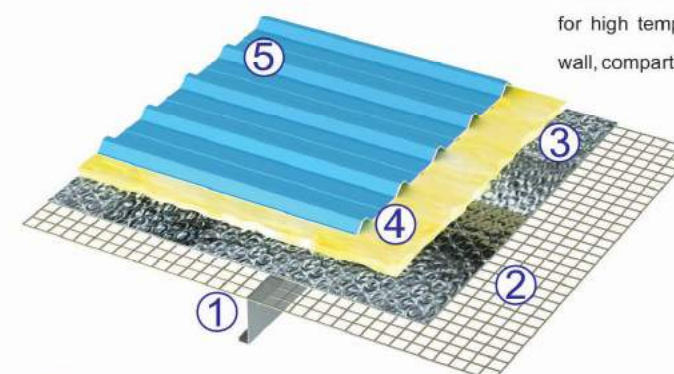
AIR BUBBLE FOIL with one / two aluminum foil side(s). The products are fiber-free and manufactured of pure aluminum foil bonded to polyethylene bubble sheeting. It is a safe, non-toxic fiber, easy-to-install, maintenance-free and not affected by humidity.



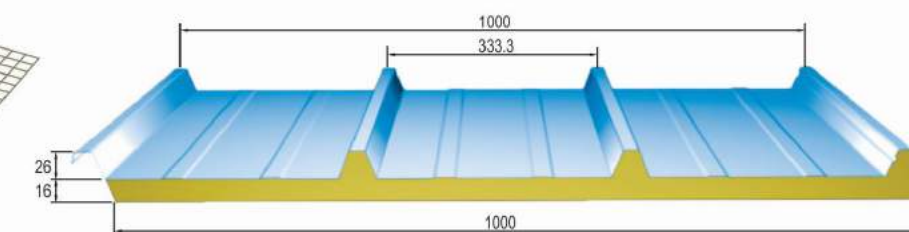
GLASS WOOL It maintains the heat insulating and preserving function and has very good shock reducing and sound absorbing property. Glass wool felt with aluminum facing has strong capacity to resist heat radiation and is an excellent material for the inner lining for high temperature workshops, control rooms, inner wall, compartments and ceiling of equipment rooms.



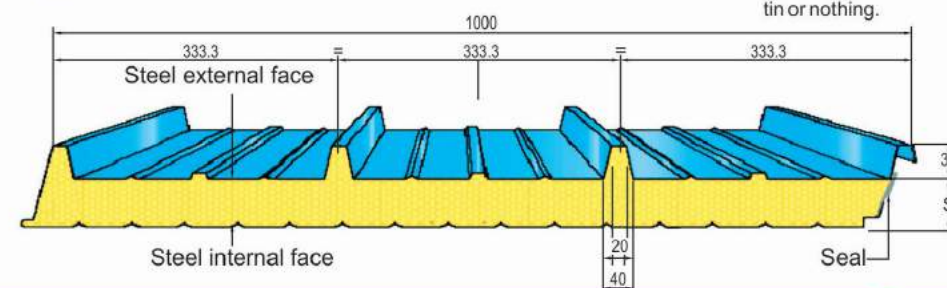
ROCK WOOL Rock wool provides protection against fire, heat, cold and noise for the building, process, marine and offshore industries. The great advantage of Rock wool products is that thermal insulation can be combined with excellent noise reduction capabilities and high mechanical strength. Adding to this provides the best guarantee for effective fire protection and water repellent properties.



- ① PURLIN
- ② GALVANIZED WIRE MESH
- ③ ALUMINUM
- ④ FIBER GLASS
- ⑤ ROOF PANEL



PU Polyurethane is a energy-saving insulation materials, Light weight and hardness. It can be easily attached to almost all types of paper, plywood, steel plate, aluminum, concrete, tiles, etc. Our rigid PU insulated panels is widely used in the thermal insulation on walls and internal rooms of buildings, and used in thermal insulation of doors, cold storage, refrigerator and so on. The surface layer of two sides of the panels could be embossed aluminum foil, kraft paper, color tin or nothing.



SANDWICH Sandwich insulation panels are widely used in the thermal insulation on wall and roof of building, and construction of refrigeration and freeze, doors and windows of building, industrial instrument and special vehicles, etc. It is one of the most popular thermal insulation materials with excellent performance.

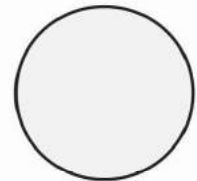
Reflectivity and Emissivity Coefficient			
No	Material Surface	Reflectivity Coefficient R	Emissivity Coefficient E
1	Silver foil	98%	2%
2	Aluminum foil	97%	3%
3	Glass wool	25%	75%
4	Zincalume sheeting	80%	20%
5	Galvanized sheeting (new)	72%	28%
6	Galvanized sheeting (old)	12%	88%
7	Alkyd paint (average of 16 colors)	4% -> 8%	92% -> 96%
8	Concrete	10%	90%
9	Mortar	13%	87%
10	Wood	9%	91%

The higher of R coefficient, the better for insulating

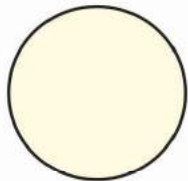
Thermal Conductivity Coefficient K		
No	Material	Thermal conductivity Coefficient K W/m.°K @ 25°C
1	Air	0,024
2	Glass wool	0,037
3	Rock wool	0,034
4	Polyurethane (PU)	0,026
5	Sandwich Panel (Expanded Polystyrene EPS)	0,038
6	Sheeting	50,2
7	Concrete (lightweight concrete)	0,80 (0,38)
8	Wood	0,12

The lower of K coefficient, the better for insulating

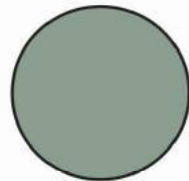
STANDARD PANEL COLORS



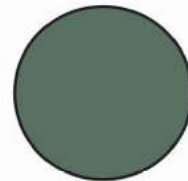
WHITE



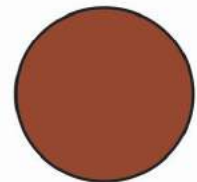
CREME



LEAF GREEN



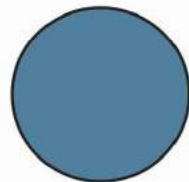
GREEN



RED



DARK RED

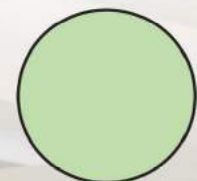


BLUE



ZINCALUME

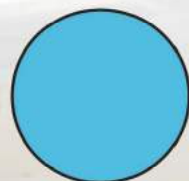
STANDARD FRAME PAINTING COLOR



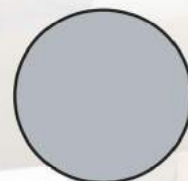
APPLE



GREY BLUE



BLUE



GREY

SUNDRY ITEMS



URC FACTORY



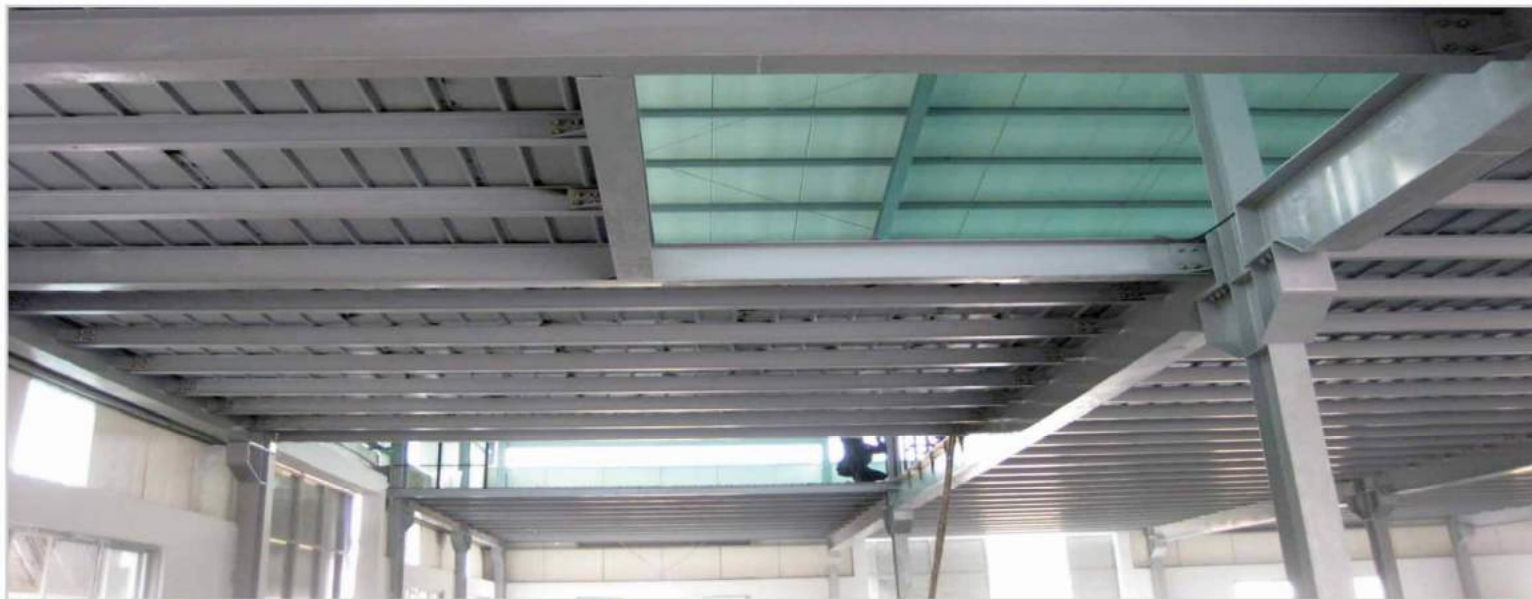
Project name : URC Factory.
Investor : UNIVERSAL ROBINA Corporation(URC VietNam).
Area : 10,000m²
Location : Road 6, VSIP 1, Binh Duong
Viet Nam Product : Beverages : C2
Biscuits : Cream-O, Magic
Snacks : Fun Bite, Potato Chip
Candies : Dynamite, Lush, Xcite



MAJOR PROJECTS



Project name : Duy Tan Factory Phase 1.
Investor : Duy Tan Plastic Company.
Area : 9,000m²
Location : Binh Tan - HCM.



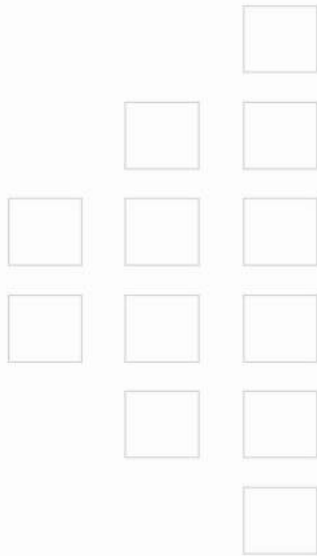
Project name : Duy Tan Factory Phase 2.
Investor : Duy Tan Plastic Company.
Area : 11,000m²
Location : Binh Tan - HCM.



MAJOR PROJECTS



MEZZANINE SLAB





Project name : CS Industries Factory
Investor : CS Wind Tower Co., Ltd (Korea)
Area : 15,000 m²
Location : Phu My 1 IP - Ba Ria Vung Tau



Manufacturing Wind Tower
(Generating Electricity From Wind Energy)



Project name : Preferred Freezer Services HCM
Investor : Antara Ltd. (America)
Area : 15,000 m²
140 m L - 80 m W - 18.2 m H
With 4 middle columns
Location : District 7, HCM City
The Most Modern Cold Storage In Vietnam
Fully Automated / Robotic Factory
10 Million Cu.ft (283,000 m³)





SOUTHERN AIRPORTS CORPORATION

Project name : Can Tho International Airport
Investor : Southern Airports Corporation
Design Consultant Company : PAE+CPG Consortium (Singapore)
Main Contractor : Hoa Binh Corporation (HBC)
Quantity : 15,000 m²
Location : Tra Noc, Can Tho City

The Most Complicated Structure
3 Main Roofs - 2 Sub-Main Roofs
200m in Width - 120m in Length
Using Crane Capacity 220T in Erecting

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>





Project name : Vina Kraft Paper Mill
Investor : Vina Kraft Paper Co., Ltd. (Siam Group - Thailand)
Area : 20,000 m² - 140 m W - 60 m L - 16 m H in curve
Location : My Phuoc 3 IP - Binh Duong
Canopy Width 21m - Jack Beam 30m in Length



Convert

Length 1 meter (m) = 39.3701 inches (in) = 3.2808 feet (ft) = 1.0936 yards (yd)
Weight / Force 1 metric ton (t) = 9.8 kilonewtons (kn) = 1.1023 short tons (tn) = 1,000 kilograms (kg)
 = 35274 Ounces = 2204.6 Pounds
Area 1 m² = 1550 in² = 10.764 ft² = 1.1968 yd² = 3.861x10⁻⁷ mile²
Energy 1 kWh = 3.6x10⁶ J = 3.671x10⁵ kpm = 859.9 kcal = 2.656x10⁶ ft lbf = 3.412x10³ Btu
Pressure 1 Pa = 10⁻⁶ N/mm² = 10⁻⁵ bar = 0.1020 kp/m² = 9.869x10⁻⁶ atm = 1.45x10⁻⁴ psi (lbf/in²)
 1 psi (lbf/in²) = 144 psf (lbf/ft²) = 6,894.8 Pa (N/m²) = 6.895x10⁻³ N/mm²
 = 6.895x10⁻² bar = 703.6 kg/m² = 0.06895 atm = 16 ounces
 1 psf (lb_f/ft²) = 47.88 N/m² (Pa) = 0.006944 lb_f/in² (psi)

Temperature

Centigrade = $\frac{5}{9}$ (F-32) Fahrenheit = $\frac{9}{5}$ C + 32

Thermal Expansion

$\Delta L = \alpha \times L \times \Delta t$
 ΔL = expansion (m)
 L = length (m)
 Δt = temperature difference (°C)
 α = linear expansion coefficient (m/(m°C))

Material	α Linear Expansion Coefficient (m/(m°C))	
	Temperature Range (°C)	
	High	Low
Alloy Steels	1.5×10^{-5}	1.1×10^{-5}
Alloy Steels (cast)	1.5×10^{-5}	1.4×10^{-5}
Stainless Steels (cast)	1.9×10^{-5}	1.1×10^{-5}
Coppers	1.8×10^{-5}	1.4×10^{-5}
Aluminum & its Alloys	2.5×10^{-5}	2.1×10^{-5}



CONTAINER		20' container	40' container	45' high-cube container
external dimensions	length (m)	6.058	12.192	13.716
	width (m)	2.438	2.438	2.438
	height (m)	2.591	2.591	2.896
interior dimensions	length (m)	5.758	12.032	13.556
	width (m)	2.352	2.352	2.352
	height (m)	2.385	2.385	2.698
door aperture	width (m)	2.343	2.343	2.343
	height (m)	2.28	2.28	2.585
volume (m ³)		33.1	67.5	86.1
maximum (kg)		24,000	30,480	30,480
empty weight (kg)		2,200	3,800	4,800
net load (kg)		21,600	26,500	25,680