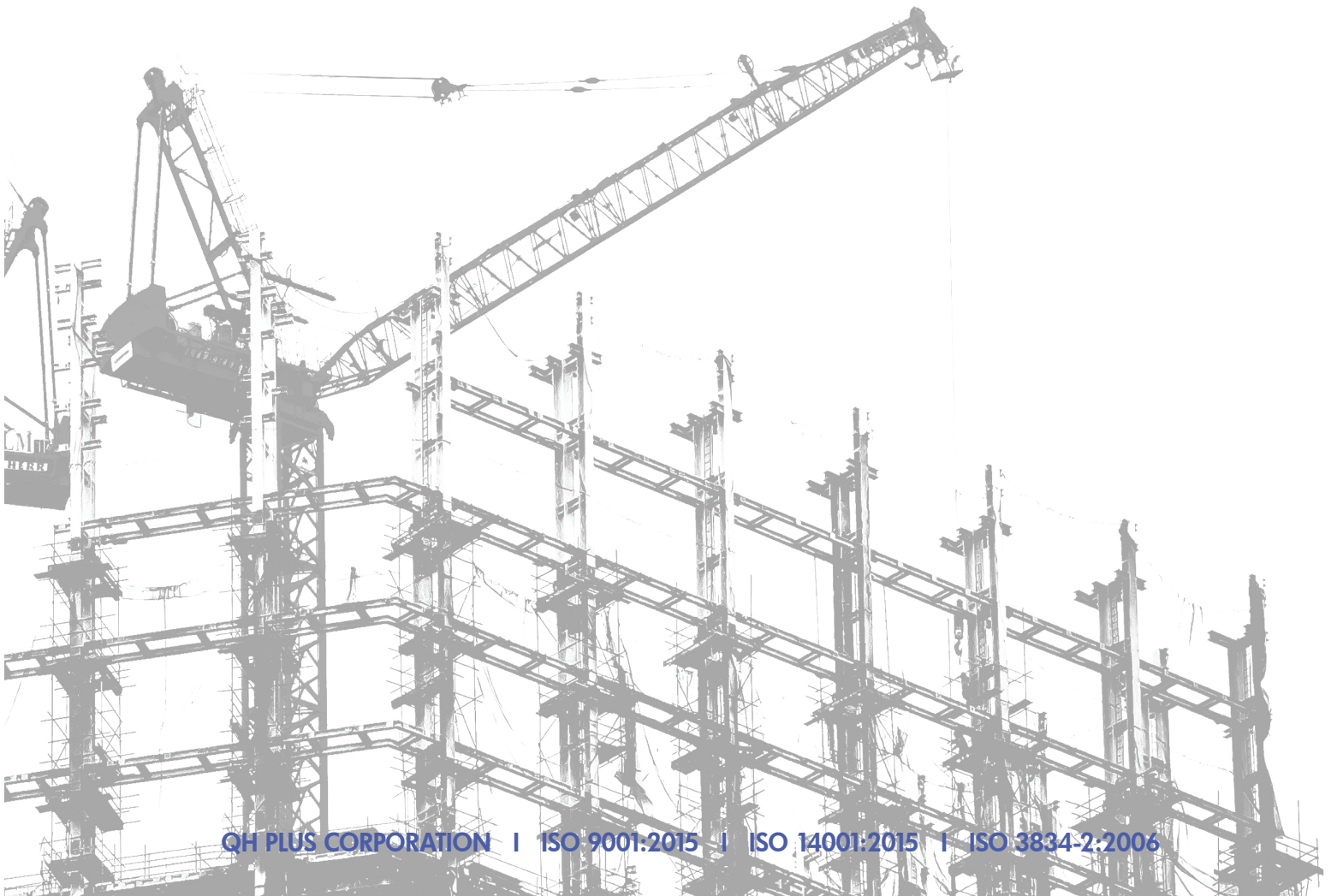


# STEEL BUILDINGS

## BROCHURE



# CONTENTS

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“

*Your life would be nice..  
..if you are safe.  
And..*

**WE ARE BUILDING IT**  
**QH Plus**



# STEEL BUILDINGS INTRODUCTION

**In today's construction industry, the standards of construction works have gradually changed to become faster, better and more cost-effective. For some constructions requiring specific requirements on scale, time and quality, then STEEL construction has met all those requirements.**

For a long time, industrial countries in the world have been using steel building to create magnificent works and buildings, such as: EIFFEL TOWER (FRANCE), BROOKLYN BRIDGE (USA), BUJI KHALIFA (SAUDI ARABIA), EMPIRE STATE TOWER (USA),...



EIFFEL TOWER



BURJ KHALIFA TOWER



BROOKLYN BRIDGE

In Vietnam, steel buildings has been increasingly used in many construction works.



LANDMARK 81 TOWER



MAPLETREE LOGISTIC CENTER



DONG TRU BRIDGE - HA NOI

QH Plus is proud to be a reliable supplier of steel building for many contractors and investors in Vietnam. With total area of 45,000 m<sup>2</sup>, QH Plus's factory has been equipped the modern production lines from Italy, USA and stringent quality control system. We can supply the highest quality products and services to customers in conformity with Vietnamese standards and International standards.

All producing processes have to meet all requirements of ISO 3834-2:2006 to ensure comprehensive product quality.

With a great investment on our services, QH Plus is completely trusted by contractors, investors in implementing many national and global projects, such as: Vinhomes Central Park complex center of Vingroup, included the Landmark 81 floors (Steel core system), high-end apartment (Kingpost), landscape park, pedestrian bridge, yacht station (Art steel structure), and important national constructions such as: Ben Thanh metro station, Ba Son factory,... Besides, we also provided our services for other civil constructions of many contractors & investors such as: Novaland Group, Nam Long Group, Hoa Binh Group, Cotecons, Unicons,...



# WHY QH PLUS?

## CUSTOMERS

### SAFETY ASSURANCE



Technical supervision, quality inspection & close monitoring every equipment used for erection.



### OPTIMAL DESIGN



Specialized structural engineering team with the latest calculation software such as: Tekla, Staad Pro, SAP 2000, CFS, Autocad,...

### PROFESSIONAL INSTALLATION



All erection standards of steel structure works are applied to ensure the safety, technical requirements, and project schedule.



### HIGHLY-GRADED MATERIALS



Qualified sources of materials from reputable partners, such as: Hyundai, Nippon Steel, JFE Steel,...meet all international standards such as: ASTM (USA), JIS (Japan), CIS (China),...

### CAREFUL PACKAGING AND FAST DELIVERY



All products are carefully packed & delivered to the site by QH Plus's transportation system.



### STRINGENT QUALITY CONTROL



The strict quality control are applied throughout the production process.



### TECHNOLOGY FROM ITALY - USA

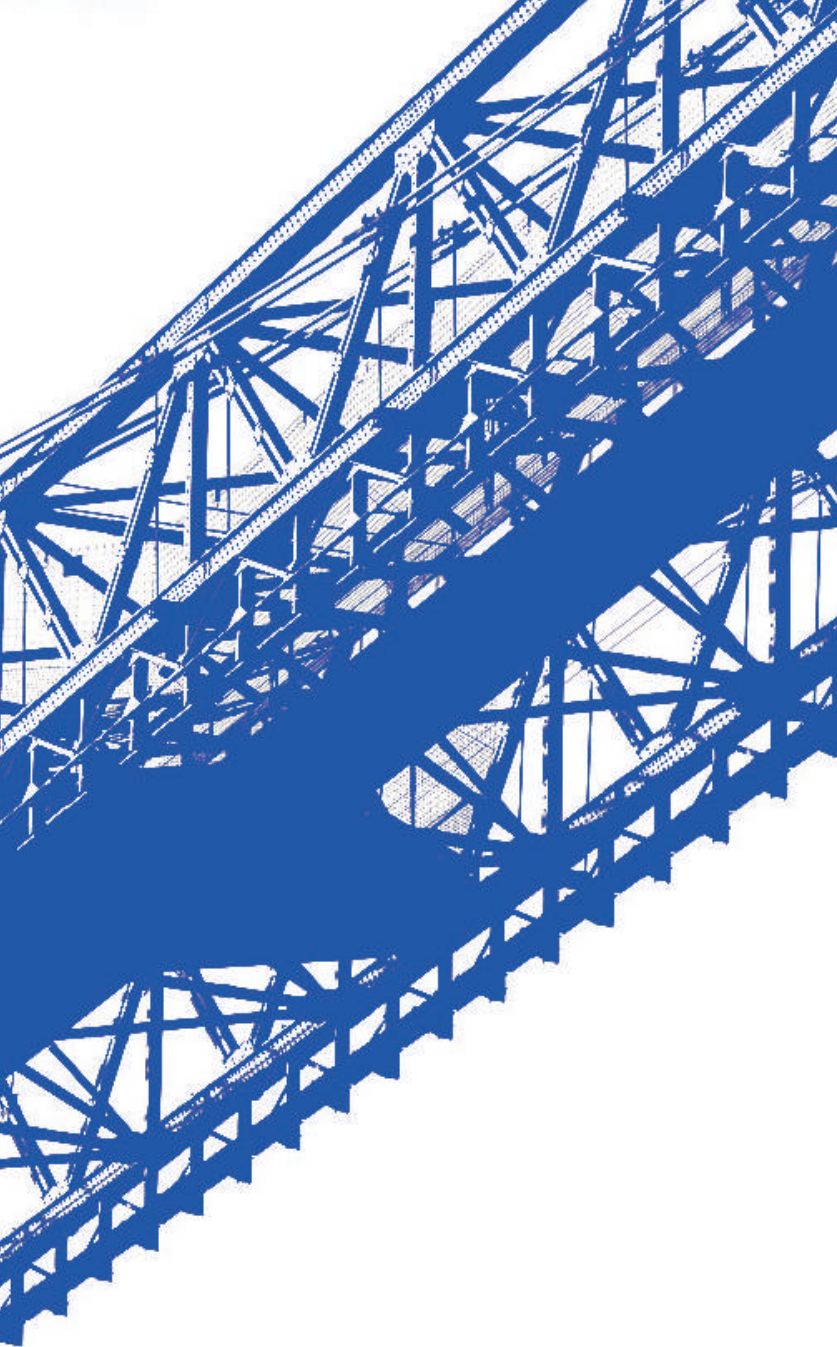


The state - of - the - art technology from Italy, USA, ...equipped in our large-scale factories.









# PRODUCTS & SERVICES

---

## ■ PRE-ENGINEERED BUILDINGS

1. PRE-ENGINEERED BUILDING INTRODUCTION
2. PRE-ENGINEERED BUILDING STRUCTURES

FOUNDATION SYSTEM  
FRAMING SYSTEM  
BRACING SYSTEM  
CRANE SYSTEM  
FLOORING SYSTEM  
PURLIN SYSTEM  
CLADDING SYSTEM  
BUILDING ACCESSORIES

3. ADVANTAGES OF PRE-ENGINEERED BUILDINGS

## ■ CONSTRUCTION & INSTALLATION

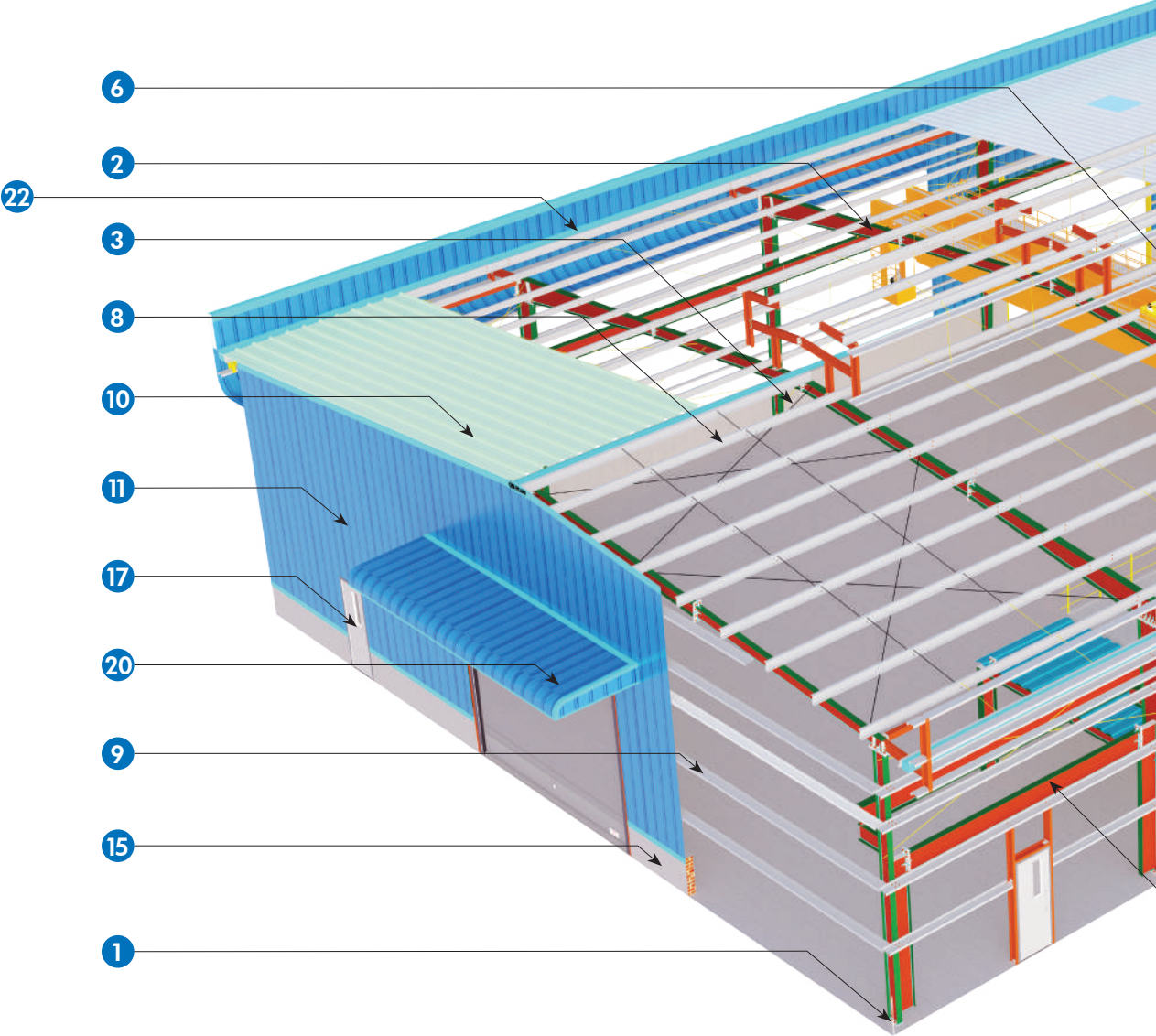
1. INTRODUCTION TO CONSTRUCTION  
& INSTALLATION SERVICE
2. TYPICAL CONSTRUCTION WORKS

## ■ STEEL STRUCTURES

1. STEEL STRUCTURE INTRODUCTION
2. TYPICAL CROSS SECTIONS OF STEEL MEMBERS
3. APPLICATIONS OF STEEL STRUCTURES
4. QH PLUS'S ADVANTAGES IN  
STEEL STRUCTURE PROCESSING SERVICES

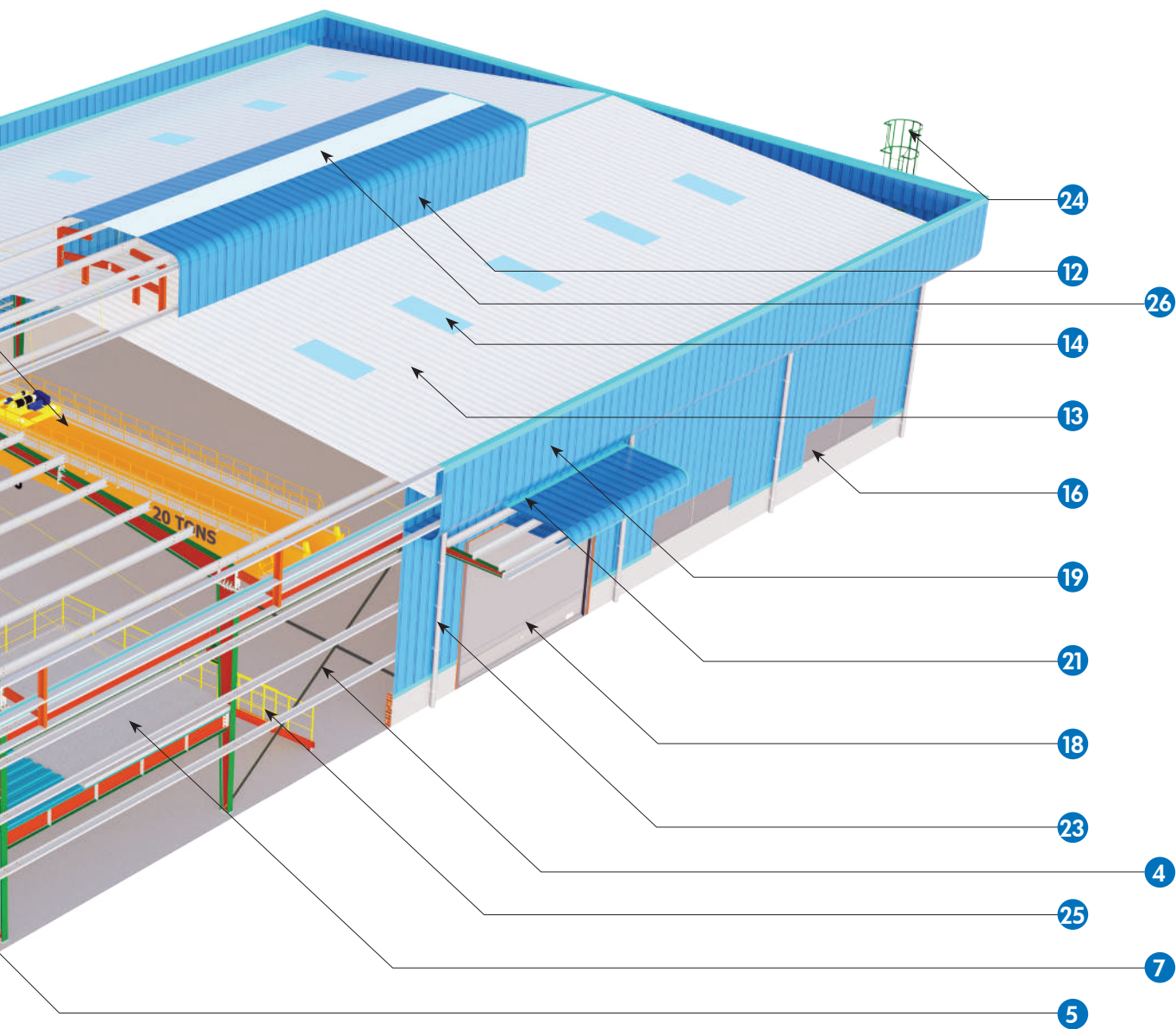
# PRE-ENGINEERED BUILDINGS INTRODUCTION

“Pre-engineered steel buildings” are those which are fully fabricated in the factory after designing, shipped to construction site to be assembled and erected; thereby reducing the time of completion.



## 2. PRE-ENGINEERED BUILDING STRUCTURE

- |                          |                       |                        |                        |
|--------------------------|-----------------------|------------------------|------------------------|
| <b>FOUNDATION SYSTEM</b> | <b>BRACING SYSTEM</b> | <b>FLOORING SYSTEM</b> | <b>CLADDING SYSTEM</b> |
| 1 Anchor bolt            | 3 Sag rod             | 7 Decking floor        | 10 Seamlock roof panel |
| <b>FRAMING SYSTEM</b>    | 4 Rob bracing         | <b>PURLIN SYSTEM</b>   | 11 Wall panel          |
| 2 Rigid frame rafter     | 5 Portal bracing      | 8 Roof purlin          | 12 Ridge ventilator    |
|                          | <b>CRANE SYSTEM</b>   | 9 Sidewall girt        | 13 9 ribs roof panel   |
|                          | 6 Top running crane   |                        | 14 Skylight            |



## ■ BUILDING ACCESSORIES

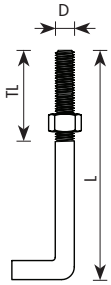
- |                      |                |                       |
|----------------------|----------------|-----------------------|
| 15 Partial blockwall | 20 Canopy      | 24 Cage ladder        |
| 16 Louver            | 21 Trims       | 25 Staircase          |
| 17 Personnel door    | 22 Eave gutter | 26 Insect screen mesh |
| 18 Roll-up door      | 23 Downspout   |                       |
| 19 Fascia            |                |                       |



## FOUNDATION SYSTEM

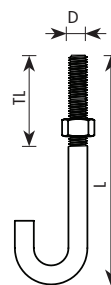
QH Plus owns modern production line which can provide anchor bolts with various specifications and galvanized to meet all customer's requirements.

### 1. L TYPE



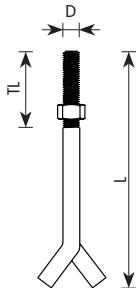
ITEM CODE	D (mm)	THREADING SPEC. M (mm)	L (mm)	MATERIAL GRADE
FAB-LT-D16L400	16	M16	400	4.6, 5.6, 8.8
FAB-LT-D18L500	18	M18	500	
FAB-LT-D20L600	20	M20	600	
FAB-LT-D22L700	22	M22	700	
FAB-LT-D24L800	24	M24	800	
FAB-LT-D26L900	26	M26	900	
FAB-LT-D28L1000	28	M28	1000	
FAB-LT-D30L1150	30	M30	1150	
FAB-LT-D33L1200	33	M33	1200	
FAB-LT-D36L1250	36	M36	1250	
FAB-LT-D42L1300	42	M42	1300	
FAB-LT-D48L1350	48	M48	1350	

### 2. J TYPE



ITEM CODE	D (mm)	THREADING SPEC. M (mm)	L (mm)	MATERIAL GRADE
FAB-JT-D16L400	16	M16	400	4.6, 5.6, 8.8
FAB-JT-D18L500	18	M18	500	
FAB-JT-D20L600	20	M20	600	
FAB-JT-D22L700	22	M22	700	
FAB-JT-D24L800	24	M24	800	
FAB-JT-D26L900	26	M26	900	
FAB-JT-D28L1000	28	M28	1000	
FAB-JT-D30L1150	30	M30	1150	
FAB-JT-D33L1200	33	M33	1200	
FAB-JT-D36L1250	36	M36	1250	
FAB-JT-D42L1300	42	M42	1300	
FAB-JT-D48L1350	48	M48	1350	

### 3. Y TYPE (PLAIN)

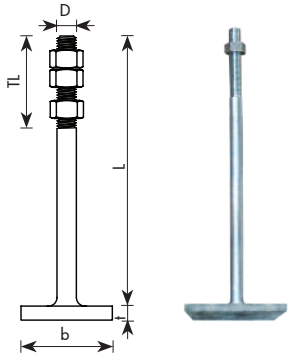


ITEM CODE	D (mm)	THREADING SPEC. M (mm)	L (mm)	MATERIAL GRADE
FAB-YT-D16L400	16	M16	400	4.6, 5.6, 8.8
FAB-YT-D18L500	18	M18	500	
FAB-YT-D20L600	20	M20	600	
FAB-YT-D22L700	22	M22	700	
FAB-YT-D24L800	24	M24	800	
FAB-YT-D26L900	26	M26	900	
FAB-YT-D28L1000	28	M28	1000	
FAB-YT-D30L1150	30	M30	1150	
FAB-YT-D33L1200	33	M33	1200	
FAB-YT-D36L1250	36	M36	1250	
FAB-YT-D42L1300	42	M42	1300	
FAB-YT-D48L1350	48	M48	1350	



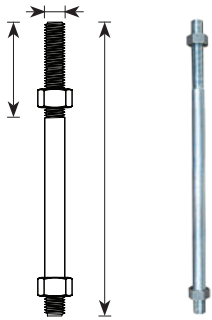
*Note: For special requirement, please contact QH Plus to be recommended the best solution.*

## 4. WELDED PLATE TYPE



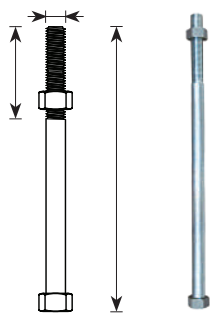
ITEM CODE	D (mm)	THREADING SPEC. M (mm)	L (mm)	t (mm)	TL (mm)	b (mm)	MATERIAL GRADE
FAB-WP-D30L440	30	M16	440	14	150	50	4.6, 5.6, 8.8
FAB-WP-D40L540	40	M20	540	16	170	50	
FAB-WP-D45L645	45	M24	645	20	210	50	
FAB-WP-D55L790	55	M30	790	25	240	60	
FAB-WP-D65L930	65	M36	930	30	260	60	
FAB-WP-D75L1065	75	M42	1065	35	390	60	
FAB-WP-D85L1200	85	M48	1200	40	310	60	

## 5. NUT TYPE



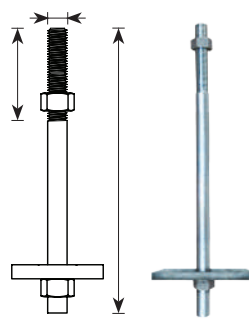
ITEM CODE  
FAB-NU

## 6. STANDARD TYPE



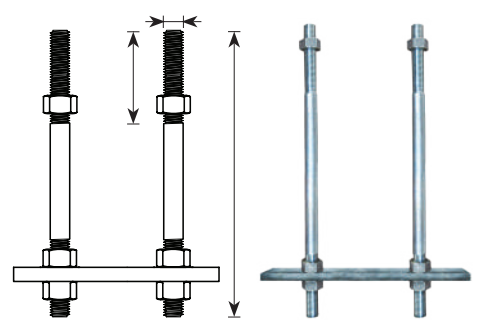
ITEM CODE  
FAB-ST

## 7. WELDED PLATE & NUT TYPE



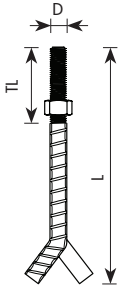
ITEM CODE  
FAB-WPN

## 8. THREAD PLATE & NUT TYPE



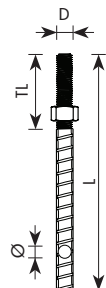
ITEM CODE  
FAB-TPN

## 9. Y TYPE (RIBBED)



ITEM CODE	D (mm)	THREADING SPEC. M (mm)	L (mm)	MATERIAL GRADE
SYN4-D18M16L235	18	16	235	4.6, 5.6, 8.8
SYN4-D20M18L240	20	18	240	
SYN4-D22M20L240	22	20	240	
SYN4-D25M22L290	25	22	290	
SYN4-D28M24L290	28	24	290	
SYN4-D32M27L340	32	27	340	
SYN4-D32M30L360	32	30	360	
SYN4-D36M33L360	36	33	360	
SYN4-D43M36L410	43	36	410	
SYN4-D43M39L460	43	39	460	
SYN4-D51M48L460	51	48	460	

## 10. O TYPE

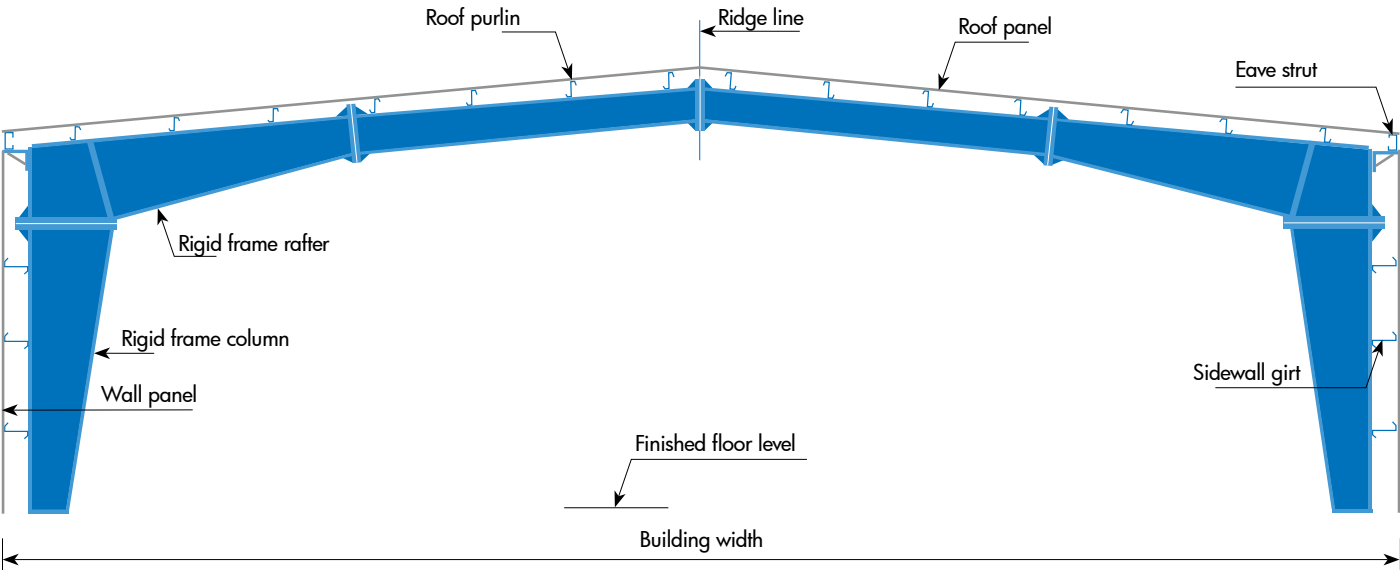


ITEM CODE	D (mm)	THREADING SPEC. M (mm)	L (mm)	HOLE Ø (mm)	MATERIAL GRADE
SON4-D16M10L180	16	10	180	10	4.6, 5.6, 8.8
SON4-D16M12L185	16	12	185	10	
SON4-D18M14L185	18	14	185	11.5	
SON4-D18M16L240	18	16	240	11.5	
SON4-D20M18L240	20	18	240	15	
SON4-D22M20L310	22	20	310	15	
SON4-D25M22L310	25	22	310	15	
SON4-D28M24L360	28	24	360	15	
SON4-D32M27L410	32	27	410	19	

Note: For special requirement, please contact QH Plus to be recommended the best solution.

FRAMING SYSTEM

Primary frames are the main load-carrying structural steel components. They consist of columns and rafters connected together by bolts. All technical standards of materials, sections, welding specifications, ...ensure that the carrying capacity of the main frame can reach or exceed the design loads.

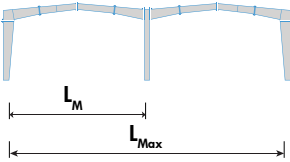

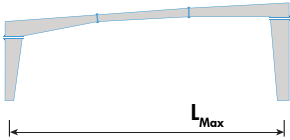

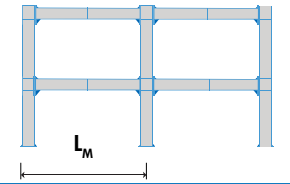

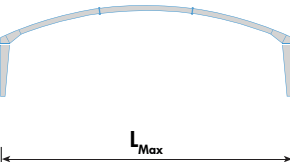

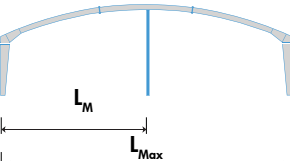

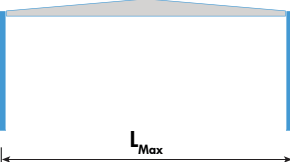

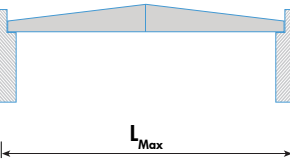

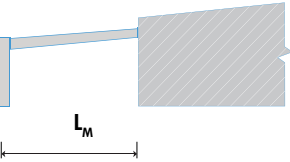

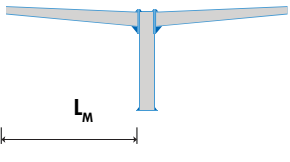



A TYPICAL CROSS SECTION

MAIN FRAME TYPES

Besides common framing types of pre-engineered buildings, QH Plus can discuss and recommend the best solution to meet customer's special requirements.

NO.	MAIN FRAME NAME	SECTION DETAIL	WIDTH MODULE ( $L_M$ )	MAX PRACTICAL WIDTH ( $L_{MAX}$ )	SAMPLE IMAGE
01	CLEAR SPAN BUILDINGS (CLR-SPN)			100 (m)	
02	MULTI-SPAN 1 BUILDINGS (MLT-SPN-1)		75 (m)	150 (m)	
03	MULTI-SPAN 2 BUILDINGS (MLT-SPN-2)		70 (m)	210 (m)	
04	MULTI-SPAN 3 BUILDINGS (MLT-SPN-3)		70 (m)	280 (m)	

NO.	MAIN FRAME NAME	SECTION DETAIL	WIDTH MODULE ( $L_M$ )	MAX PRACTICAL WIDTH ( $L_{MAX}$ )	SAMPLE IMAGE
05	MULTI-GABLE BUILDINGS (MLT-GBN)		100 (m)	200 (m)	
06	SINGLE SLOPE BUILDINGS (SNGL-SLP)			60 (m)	
07	MULTI-FLOOR-SPAN BUILDINGS (MLT-FLR-SPN)		12 (m)		
08	ARCHED CLEAR SPAN BUILDINGS (ARC-CLR-SPN)			100 (m)	
09	ARCHED CLEAR SPAN 1 BUILDINGS (ARC-CLR-SPN-1)		70 (m)	140 (m)	
10	SPACE SAVER BUILDINGS (SPC-BLD)			50 (m)	
11	ROOF SYSTEM BUILDINGS (ROF-STM)			50 (m)	
12	LEAN TO BUILDINGS			24 (m)	
13	BUTTERFLY CAR CANOPY		6 (m)	12 (m)	

*Note: For special requirement, please contact QH Plus to be recommended the best solution.*



BRACING SYSTEM

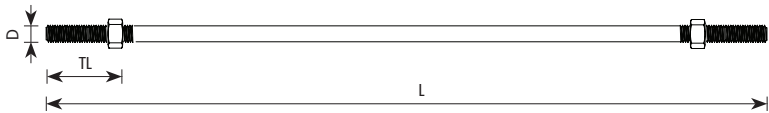
1. CABLE BRACE



Hot dip galvanized steel cable according to EN 12385 or GB/T20118-2006 standard or equivalent.

Tensile strength:  
 $F_u = 157 \text{ kN} / \text{cm}^2$

2. SAG ROD

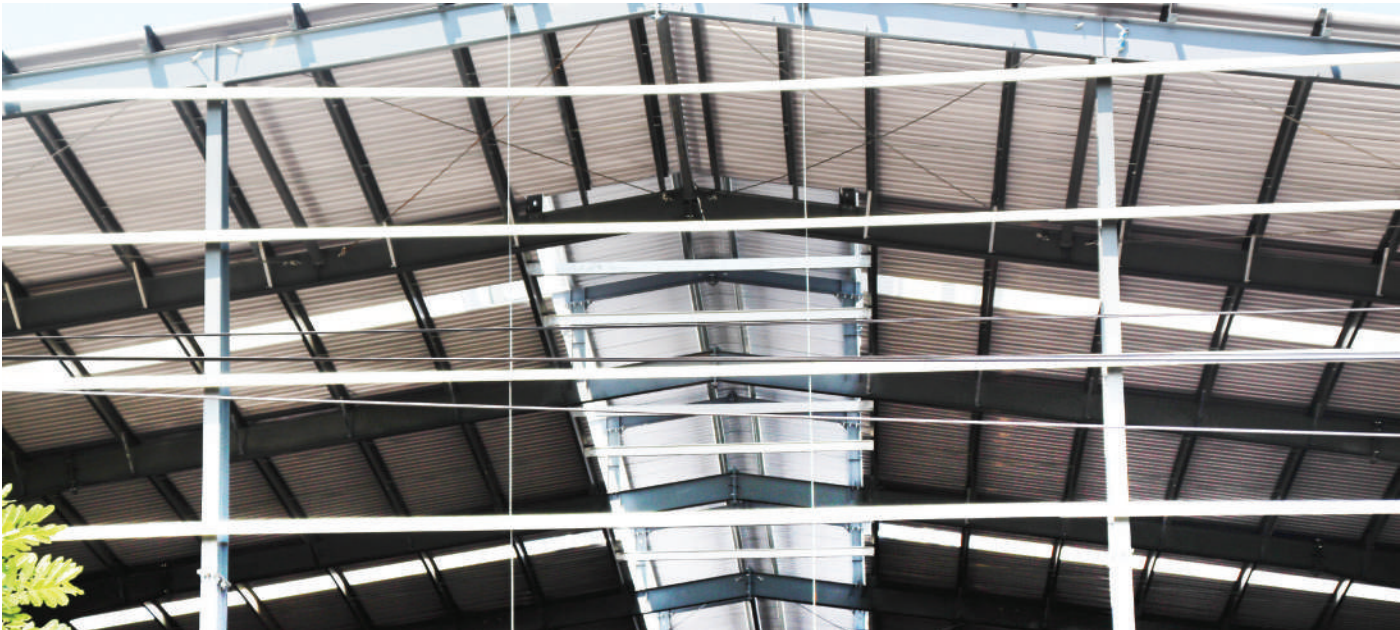


ITEM CODE	THREADING SPEC. M (MM)	L (mm)	L1/L2 (mm)	MATERIAL GRADE
TRD-M6	6			
TRD-M8	8			
TRD-M10	10			
TRD-M12	12			
TRD-M16	16	50 - 3000	5 - 200	4.6, 5.6, 8.8
TRD-M18	18			
TRD-M20	20			
TRD-M22	22			
TRD-M24	24			

3. ANGLE BRACE



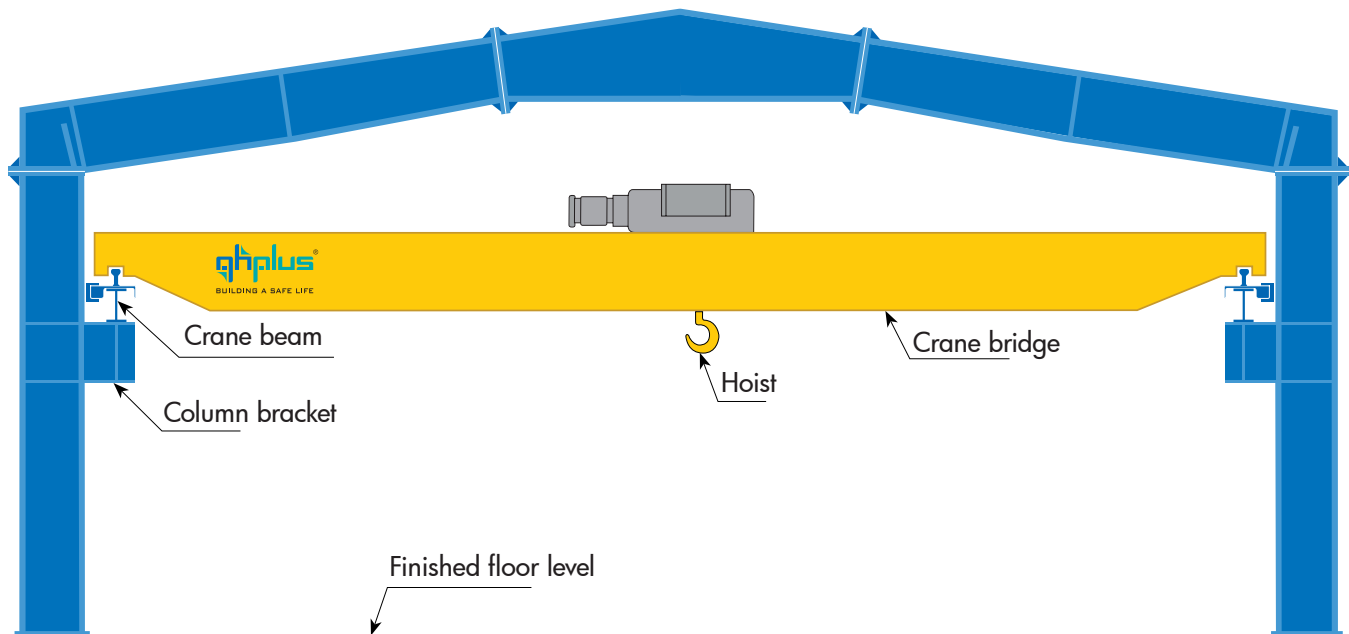
Galvanized, silver-plated rod bracing for rafters, columns,...





## ■ CRANE SYSTEM

QH Plus processes and provides many types of overhead cranes with various shapes and lifting capacity



**TOP RUNNING CRANE (TPR-CRN)**



**DOUBLE GIRDER CRANE**

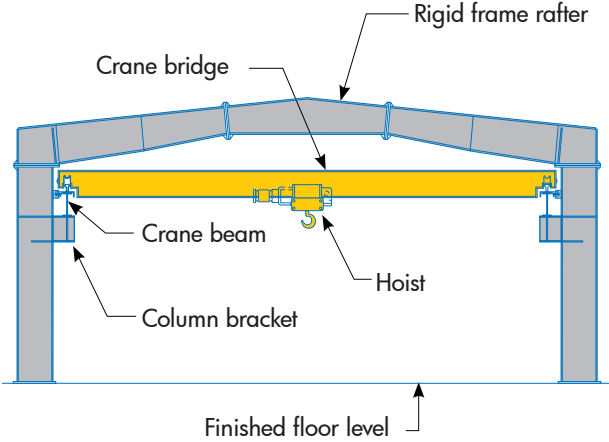

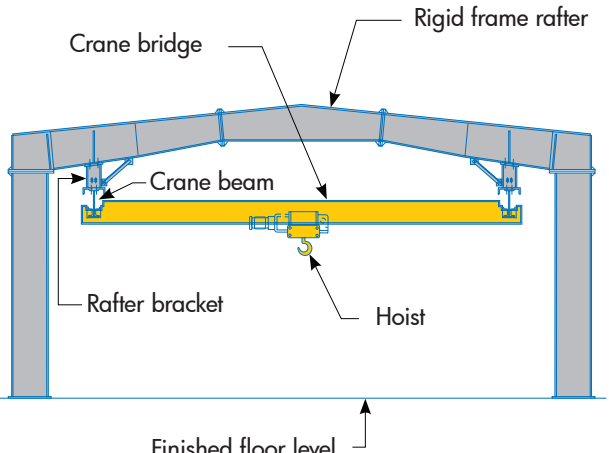

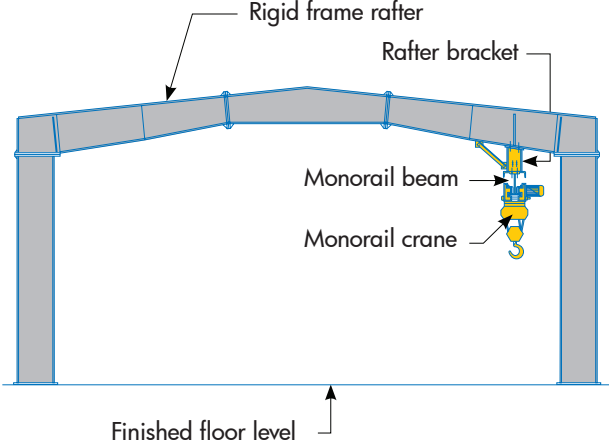



**DOUBLE GIRDER CRANE**



**SINGLE GIRDER CRANE**

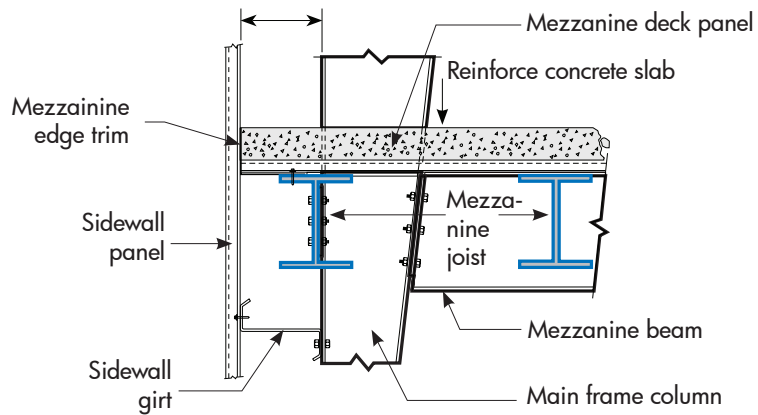
STANDARD CRANE SYSTEM

NO.	CRANE NAME	SECTION DETAIL	SAMPLE IMAGE
01	TOP RUNNING CRANES		
02	UNDERHUNG CRANES		
03	MONORAIL CRANES		

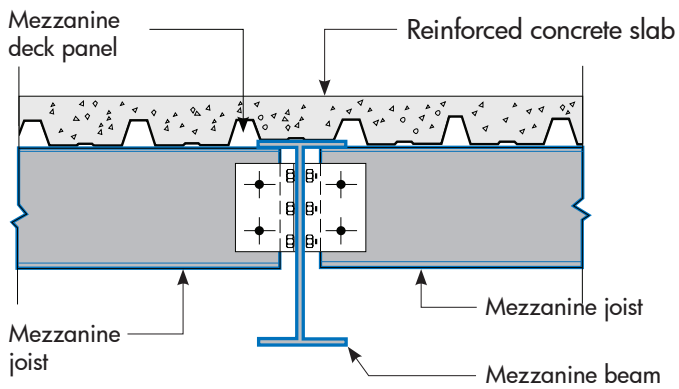


## FLOORING SYSTEM

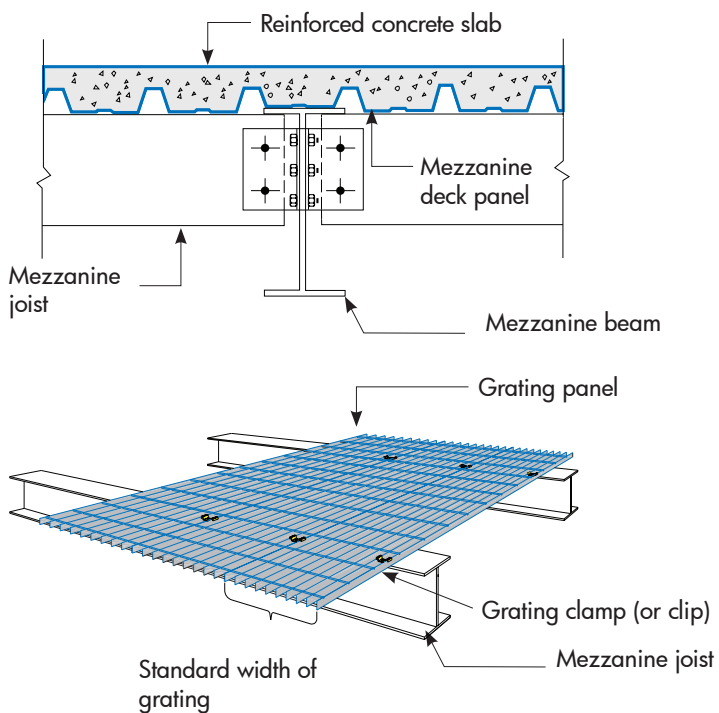
### 1. MEZZANINE BEAM



### 2. MEZZANINE JOIST

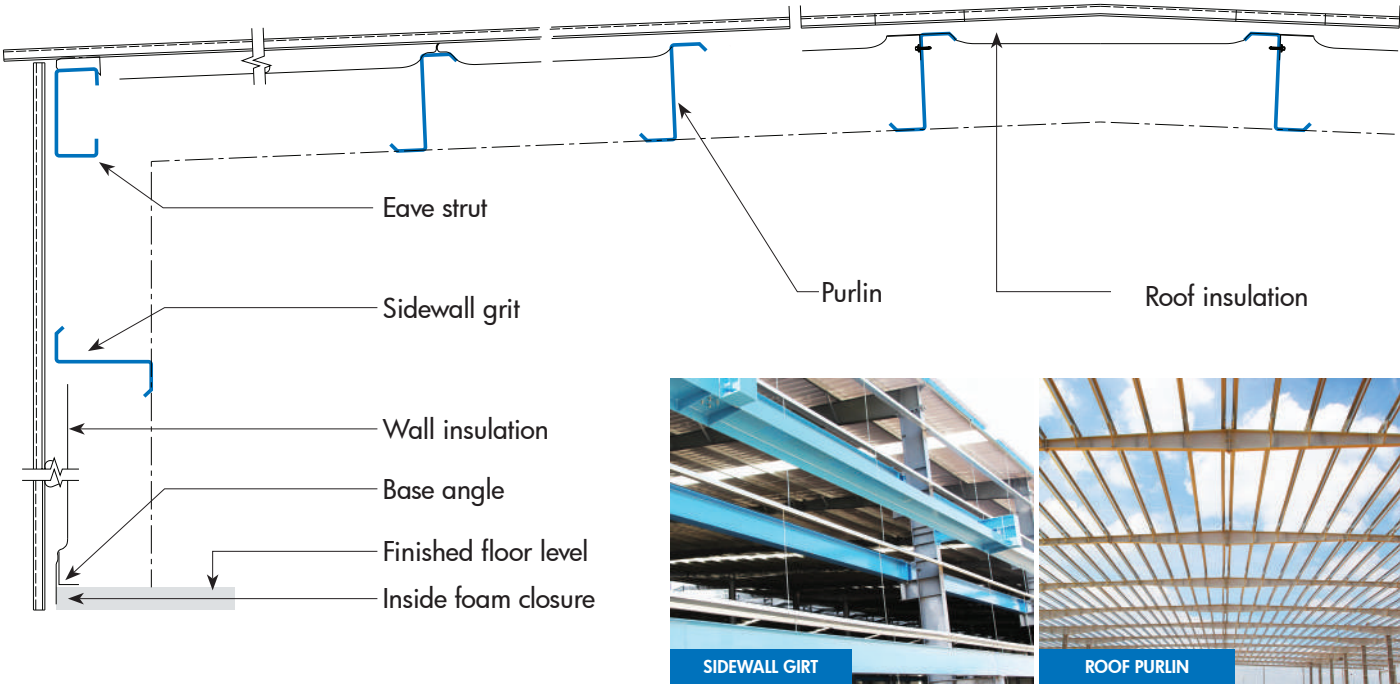


### 3. DECKING & GRATING FLOOR



PURLIN SYSTEM

QH Plus is proud to provide 2 types of common purlins that can meet the most rigorous quality requirements: C purlins and Z purlins.



1. Z PURLIN

ITEM CODE	H (mm)	B (mm)	C (mm)	SECTION DETAIL	ILLUSTRATION	APPLICATION
Z150	150	65	25 max			
Z200	200	58	25 max			
Z250	250	65	25 max			
Z290	290	90	25 max			

2. C PURLIN

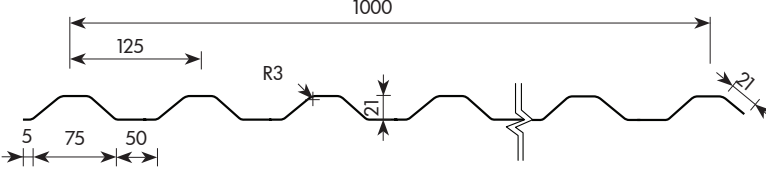
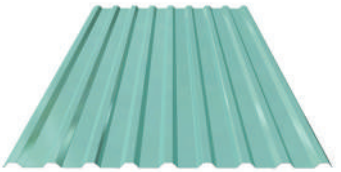
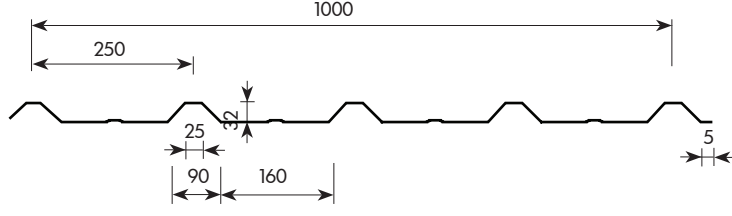
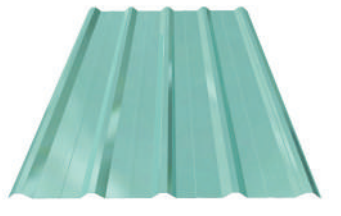
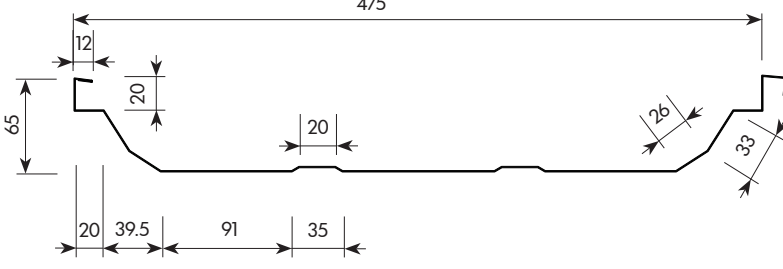
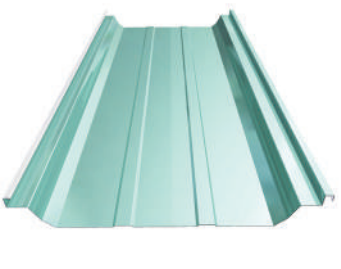
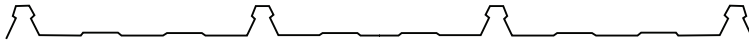

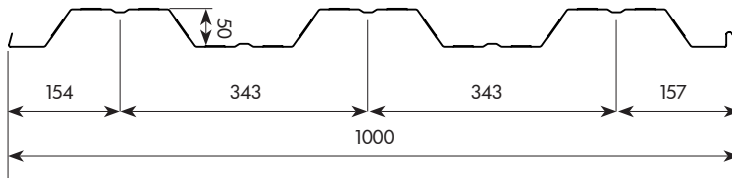

ITEM CODE	H (mm)	B (mm)	C (mm)	SECTION DETAIL	ILLUSTRATION	APPLICATION
C150	150	65	25 max			
C200	200	58	25 max			
C250	250	65	25 max			

Note: For special requirement, please contact QH Plus to be recommended the best solution.

## CLADDING SYSTEM

QH Plus invests production lines with new technologies for the best of roofing, walling & flooring products, according up-to-date standards in order to provide total solutions to customers.

### 1. CLADDING & FLOORING PANEL

NO.	PANEL NAME	SECTION DETAIL	SAMPLE IMAGE
01	9 RIBS PROFILE PANEL		
02	5 RIBS PROFILE PANEL		
03	LOCKSEAM PANEL		
04	KLIPLOCK PROFILE PANEL		
05	DECKING PANEL		

*Note: For special requirement, please contact QH Plus to be recommended the best solution.*



■ CLADDING SYSTEM

2. RIDGE VENTILATOR



3. SKYLIGHT



4. LOUVER



5. PERSONNEL DOOR



6. ROLL-UP DOOR



*Note: For special requirement, please contact QH Plus to be recommended the best solution.*

## 7. FASCIA

### SIDEWALL FASCIA

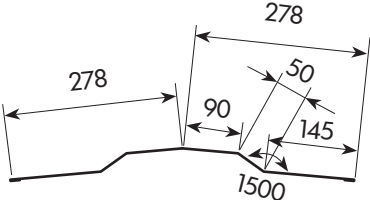

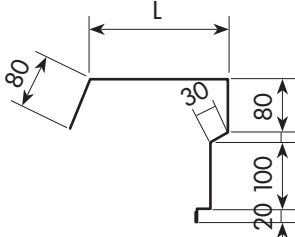

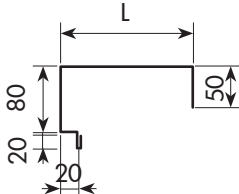

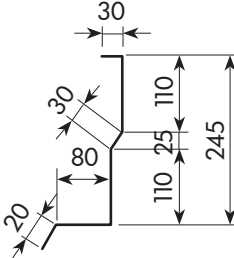

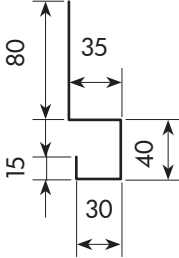

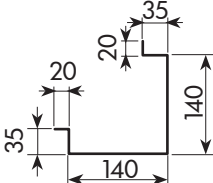
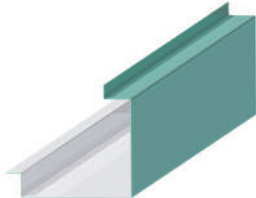
According to the purpose of customer that QH Plus can design, process and erect different types of fascias as listed below.

#### STANDARD TYPES OF FASCIAS

NO.	FASCIA NAME	SECTION DETAIL	SAMPLE IMAGE
01	PARAPET FASCIA	<p>Cap flashing Screw Back-up panel Valley gutter Sidewall panel Rigid frame Sidewall girt</p>	
02	VERTICAL FASCIA	<p>Cap flashing Screw Back-up panel Valley gutter Sidewall panel Rigid frame Sidewall girt</p>	
03	CURVED EAVE	<p>Curved eave panel Wall panel Valley gutter Rigid frame Sidewall girt</p>	
04	TOP & BOTTOM CURVED FASCIA	<p>Top curved fascia panel Wall panel Valley gutter Rigid frame Bottom curved fascia panel</p>	

■ CLADDING SYSTEM

8. TRIM

NO.	TRIM NAME	SECTION DETAIL	SAMPLE IMAGE
01	RIDGE CAP		
02	GABLE TRIM		
03	CAP FLASHING		
04	TRANSFER FLASHING FOR ROOF-TOP		
05	DRIP TRIM		
06	OUTSIDE CORNER TRIM		



# 9. GUTTER

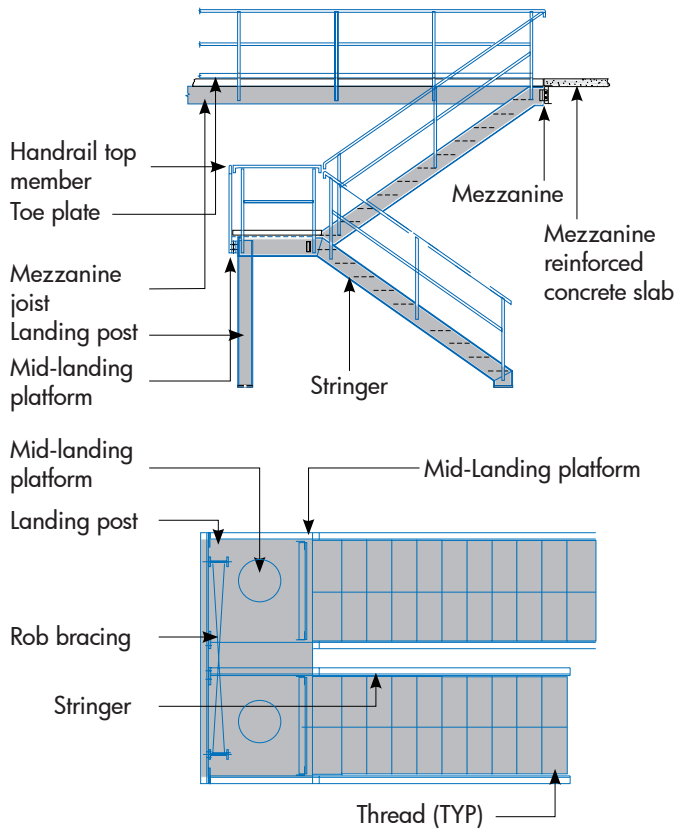
NO.	GUTTER NAME	SECTION DETAIL	SAMPLE IMAGE
01	EAVE GUTTER		
02	VALLEY GUTTER		
03	DOWNSPOUT		

For special requirement, please contact QH Plus to be recommended the best solution.

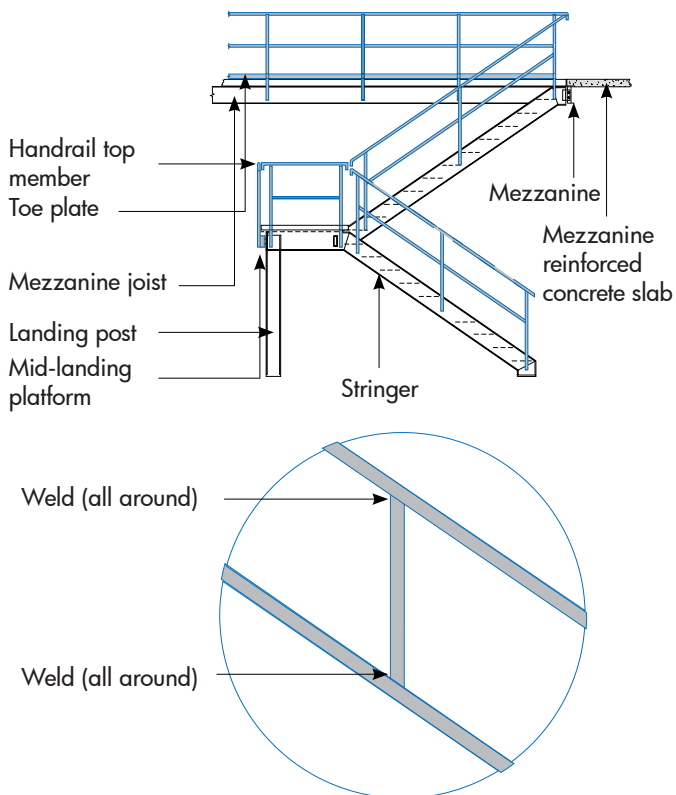


## BUILDING ACCESSORIES

### 1. STAIRCASE



### 2. HANDRAIL





### 3. ADVANTAGES OF PRE-ENGINEERED BUILDINGS

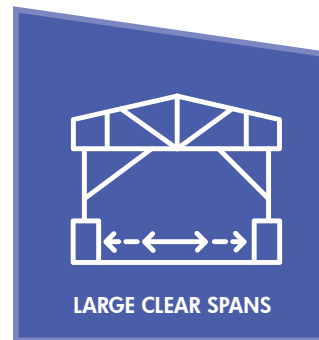
Pre-engineered buildings have gradually replacing the traditional on-site concrete construction due to its advantages and benefits provided:



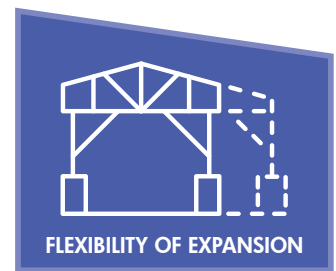
Reducing loads on foundation and offer greater resistance to seismic forces.



Reduce foundation cost due to light weight structure and shorten construction time.



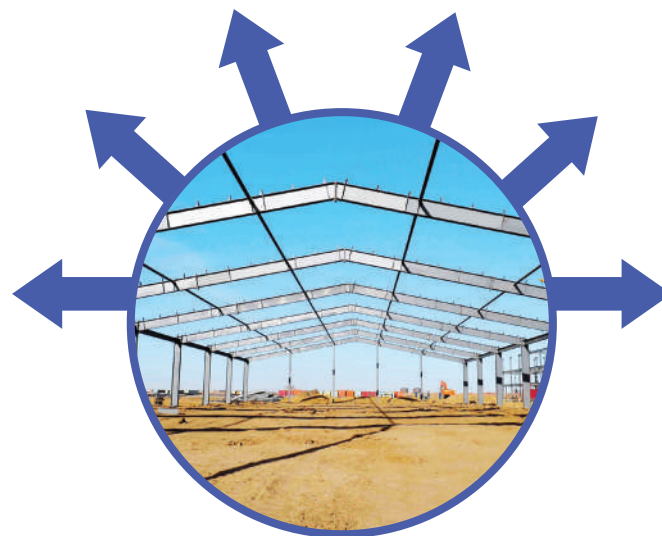
Optimize using space compared with concrete structures in public constructions: trade centers, exhibition centers, airports, stadiums,...



All steel members are connected by bolts, connecting sections have been designed beforehand from raw materials in stock.



All components have been produced in factory and shipped to construction site to be erected by bolts. It can reduce total construction time by at least 2/3 in compared with concrete buildings.



#### ADVANTAGES OF PRE-ENGINEERED BUILDINGS



All steel members are manufactured in a factory with strict quality control. Then they are coated with high quality paint to increase the durability and lower maintenance cost.

## CONSTRUCTION & INSTALLATION

### 1. INTRODUCTION TO CONSTRUCTION & INSTALLATION SERVICE

To ensure total construction quality, after designing and processing the steel components in the factory, QH Plus takes the initiative in getting contractor in construction and installation.

**Professional site engineer team specializes in steel buildings:** QH Plus has many years of practical construction experience with excellent site supervisor team and well trained workers specialize in steel structures. We are proud to be the contractor of steel core system and crown spire at over 400m in height for The Landmark 81 building project - the most prominent construction in 2017.

**Capacity to supply & manage erection equipment:** QH Plus owns & manages specialized equipment, machinery, vehicles for transportation & installation on site. All machinery and equipment must be inspected and tested prior to commissioning on site.

**Highly-effective project management:** QH Plus has its own Steel Buildings division consists of professional engineers who manage the project through the stages of Design, Production, Installation to Warranty Service. With the specialized software such as Tekla, MS. Project, Social Intranet Network,...Project Management Department (PMD) works closely with customers and Construction Management Department (CMD) to control the quality, progress and cost of the whole project.





With the capabilities and experiences of steel buildings construction over the past 11 years, QH Plus commits to every investor and contractor using our services:

- 1** Ensure continuous progress of construction works: with the available erection equipment and highly skilled professional site engineering team, help reducing the construction time and contribute to the early use of the project.
- 2** High quality standards: strict adherence to international construction standards helps to optimize the process of construction & ensure the highest quality products.
- 3** Professional & safety installation services: the Quality Control is carried throughout various stages of erection process, include: quality test of each finished components and technical supervision all erection tools and equipment for each worker in accordance with safety and quality standards.
- 4** Maintenance services: After finishing the project, QH Plus continues to provide after-sales services in terms of design and materials, giving customers the peace of mind on quality assurance.





2. TYPICAL CONSTRUCTION WORKS



INSTALLING STEEL BUILDING FRAME AT HOA SEN HA NAM FACTORY



INSTALLING STEEL BUILDING FRAME AT NAM HUNG FACTORY

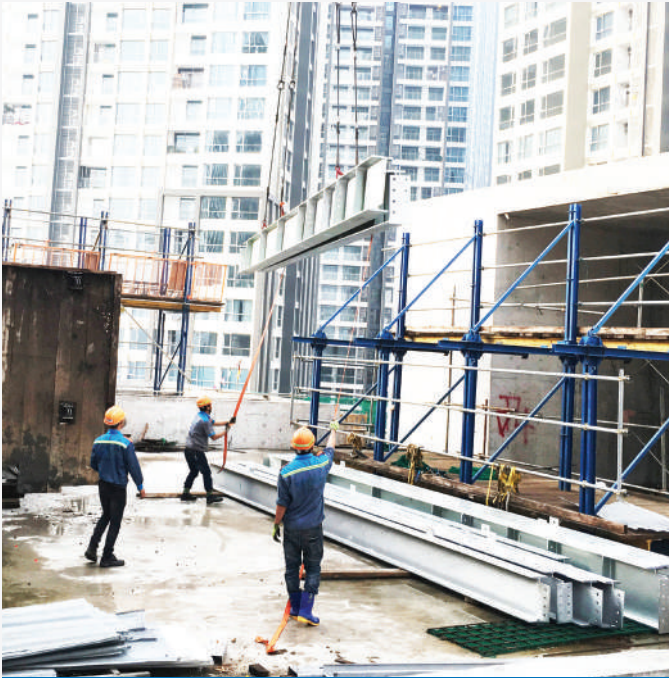


INSTALLING FRAMING RAFTERS AT HOA SEN HA NAM FACTORY



INSTALLING OFFICE BUILDING AT NAM HUNG FACTORY





INSTALLING STEEL CORE SYSTEM AT VINHOMES LANDMARK 81 FLOORS



INSTALLING STEEL CORE SYSTEM AT VINHOMES LANDMARK 81 FLOORS



INSTALLING STEEL CORE SYSTEM AT VINHOMES LANDMARK 81 FLOORS



INSTALLING STEEL CORE SYSTEM AT VINHOMES LANDMARK 81 FLOORS



## 2. TYPICAL CONSTRUCTION WORKS



INSTALLING KINGPOST AT THE PARK AVENUE CONSTRUCTION



INSTALLING KINGPOST AT ETOWN CENTRAL CONSTRUCTION



INSTALLING FRAMING RAFTERS AT HOA SEN NHON HOI - BINH DINH FACTORY



INSTALLING PRE-ENGINEERED BUILDING AT BA SON SHIP YARD



A photograph of two construction workers in blue uniforms and orange hard hats standing on a horizontal steel beam. They are surrounded by a dense, white safety netting that hangs from the structure. The background shows a clear blue sky with some clouds. The text is overlaid on the left side of the image.

# PRE-ENGINEERED BUILDINGS INSTALLATION SERVICE

FAST ERECTION

SAFETY ASSURANCE

**MAPLETREE LOGISTICS CENTER PROJECT**

Architectural designed by **MAPLETREE LOGISTICS VIETNAM CO., LTD**

Fabricated & erected by **QH PLUS CORPORATION**



# STEEL STRUCTURES

## 1. STEEL STRUCTURES INTRODUCTION

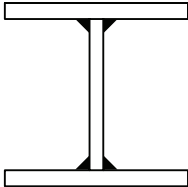

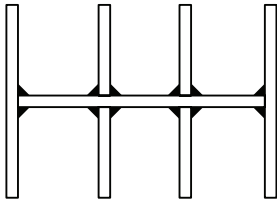

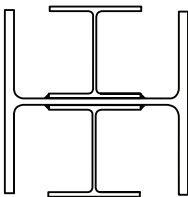
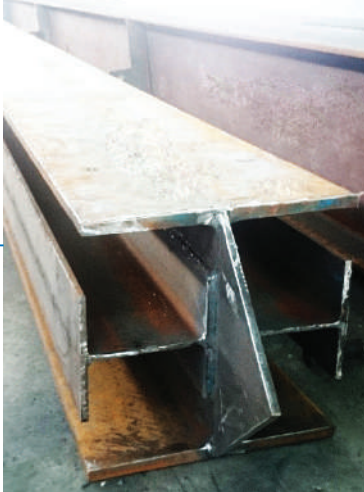
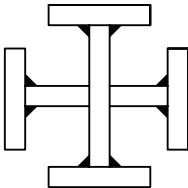

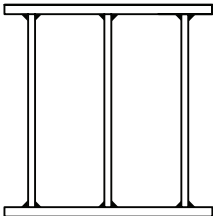

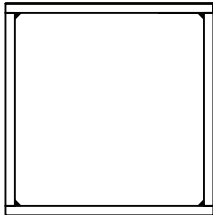

Steel structure is a metal structure which is made of structural steel components connect with each other to carry loads and provide full rigidity.

Steel structures are widely used in building industry, especially in large-scale construction due to its advantages.



## 2. TYPICAL CROSS SECTIONS OF STEEL MEMBERS

With state-of-the-art manufacturing lines and qualified workers, QH Plus can process and fabricate various types of structural sections, from simple to complex to meet the diverse needs of customers.

NO.	ITEM	SECTION DETAIL	SPECIFICATION	SAMPLE IMAGE
01	I BEAM H BEAM		<ul style="list-style-type: none"> <li>- Width: 50mm -&gt; 1.000mm</li> <li>- Height: 80 -&gt; 2.000mm</li> <li>- Thickness: 3mm -&gt; 120mm.</li> </ul>	
02	STAR BEAM		<ul style="list-style-type: none"> <li>- Width: 50mm -&gt; 1.000mm</li> <li>- Height: 80 -&gt; 2.000mm</li> <li>- Thickness: 5mm -&gt; 120mm.</li> </ul>	
03	CROSS BEAM SHAPED STEEL		As per request	
04	CROSS BEAM PREFABRICATED STEEL		<ul style="list-style-type: none"> <li>- Width: 50mm -&gt; 1.000mm</li> <li>- Height: 80 -&gt; 2.000mm</li> <li>- Thickness: 5mm -&gt; 120mm.</li> </ul>	
05	BOX BEAM		<ul style="list-style-type: none"> <li>- Width: 150 -&gt; 1.000mm</li> <li>- Thickness: 5mm -&gt; 80mm.</li> </ul>	
06	BOX BEAM 2		As per request	

*Note: For special requirement, please contact QH Plus to be recommended the best solution.*



### 3. APPLICATIONS OF STEEL STRUCTURES

With many useful and flexible features, steel structures are widely used in many types of buildings and construction works, such as:

#### ■ INDUSTRIAL & CIVIL BUILDINGS

The processing and erection of industrial & civil buildings by steel structures has many advantages such as speeding up the progress, high durability and meeting all the project's functions.

#### ■ LARGE CLEAR SPAN CONSTRUCTIONS

Steel structures are also applied in projects which need large area and use space such as commercial centers, stadium roofs, airport terminals... to ensure aesthetic and technical requirements of those construction.

#### ■ PIPE RACK SYSTEM

For this type of construction, the processing assembled modules by steel structures will be more flexible according to investor's purpose such as: pipe rack, pipe bridge...

#### ■ TRANSPORTATION CONSTRUCTION

In terms of fabrication, structural steel is easy to be processed such as cutting, punching, welding, beveling,...This helps the construction can meet architectural requirements as well as load bearing capacity, such as: bridges, roads, toll stations, advertising billboards,...

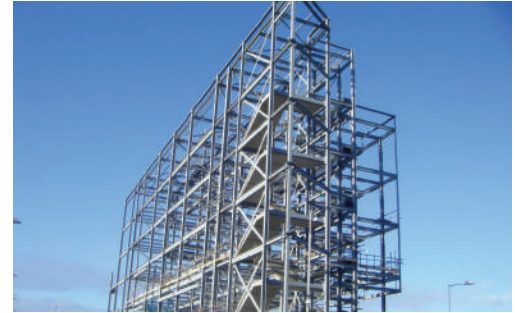
#### ■ AUXILIARY WORKS

Besides, steel structures are widely used for many auxiliary structures such as piles, kingpost, bracing system,...

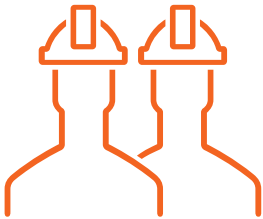
#### ■ SUPER HIGH-RISE BUILDINGS

With Multidirectional wind loads acting on super-high-rise buildings, it is necessary to have the building core system made of complex steel structures such as transfer beams, steel core, STEEL LINTELS,...

*And many other applications of steel structures such as power poles, broadcasting towers, drilling rig system,...*

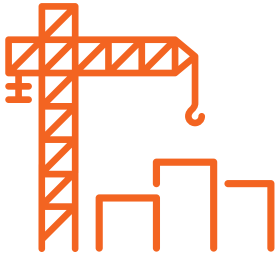


## 4. QH PLUS'S ADVANTAGES IN STEEL STRUCTURE PROCESSING SERVICES



### ■ PROFESSIONAL AND EXPERIENCED ENGINEER TEAM

QH Plus has more than 300 steel buildings staffs including specialized engineers, qualified workers, site supervisors with many years of experience in steel structures. In addition, our experts provide comprehensive recommendation and budgeting for all related activities of the project including design, production, transportation and installation.



### ■ ON SITE SUPPORTING SERVICES

We always follow to support customers from the time the contract is signed until the end of the project; including:

- Guiding how to open and unsealed products in the right order
- Supporting material inspection
- Guiding the contractor how to store materials
- Safety advice and technical assistance during the erection
- Receiving all requests, feedback from customers and timely propose effective solutions



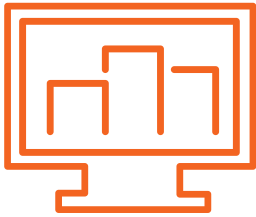
### ■ QUICK AND FLEXIBLE DELIVERY

The delivery process is carried out by QH Plus's transportation & logistics team. Therefore, the delivery time is faster and meet the construction timeline. QH Plus has 14 tractor trailers (cart load: 31.6 tons, 25.6 tons) and 02 crane trucks (12.9 tons) with experienced drivers who are well-trained in the skills of loading and unloading in the right manner for each type of goods; Therefore, the product quality is guaranteed and not affected by external factors.





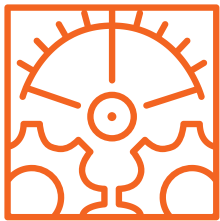
## 4. QH PLUS'S ADVANTAGES IN STEEL STRUCTURE PROCESSING SERVICES



### ■ SYSTEMATIC PROJECT MANAGEMENT WITH SPECIALIZED SOFTWARE

We carry out the design and management project on licensed software such as:

- TEKLA STRUCTURE - Shop drawings
- STAAD PRO - Steel plate, shaped steel structural analysis & design
- CFS - Cold rolled steel design
- AUTOCAD LT 2016 - Technical drawings
- SAP, ERP - Project management system



### ■ MODERN PRODUCTION LINES WITH STATE-OF-THE-ART TECHNOLOGY

QH Plus's modern machine lines are imported with newest technology from Italy USA, Japan,...for complete steel fabrication from the foundation to roofing structures:

- Foundation systems: Production line of anchor bolts, cutting, punching, milling steel sections line,...
- Framing systems: Rigid rafters, columns fabrication lines,....
- Roofing system: Purlins & sections production line,....



### ■ SEAMLESS QUALITY ASSURANCE AND CONTROL

The whole production process is delivered according to the latest quality management standards:

- ISO 9001:2015: Quality control system certificate
- ISO 14001:2015: Environmental control system certificate
- ISO 3834: Comprehensive quality requirements

In addition, all procedures are closely inspected by operator & Quality Control engineer with specialized equipment to ensure product quality before delivery.





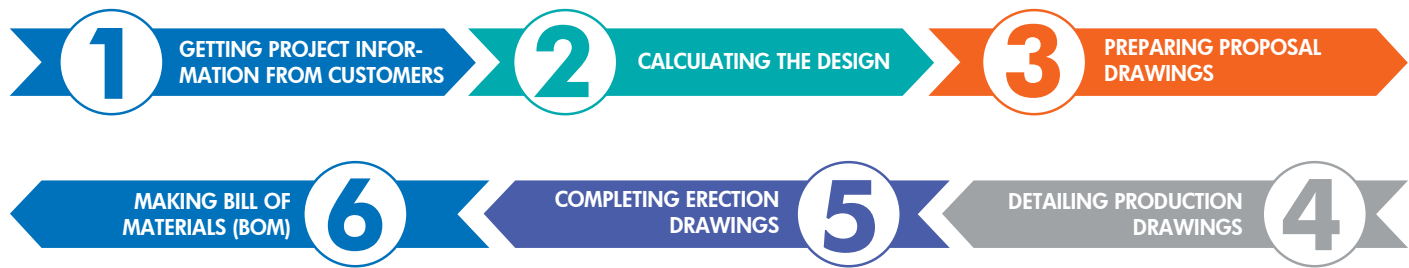
# ENGINEERING & DESIGN

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- ENGINEERING & DESIGN WORKFLOW
- ENGINEERING & DESIGN SOFTWARE
- ENGINEERING & DESIGN CODES



## 1. ENGINEERING & DESIGN WORKFLOW



1

Getting customer's brief on: architectural drawings, building parameters, design load, construction location, ...to discuss and recommend the suitable solution with customer's purpose and investment cost.

2

Based on the project building data from customers, engineer department will calculate and offer the best design options.

Design calculations include: analyze the structural design of main frame system and sub-frame system.

3

After thorough analyzed and calculated, the proposal drawings are given to customers for approval, includes: floor plan, facades, cross sections and structural details needed.

6

All the materials used in the building are listed with detailed description and quantities. It is used to verify the quantities received in the delivery packing lists and corresponds to the quantities shown on the erection drawings.

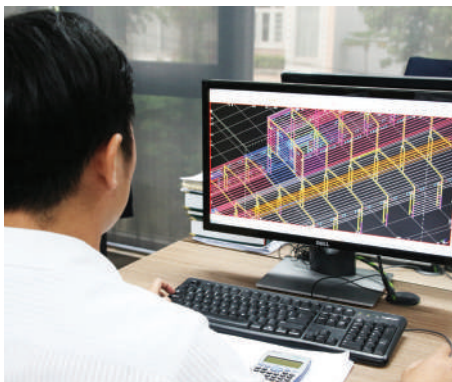
5

The erection drawings are thoroughly analyzed and designed by engineering department to create best installation plan using specific construction technology prior to execution. High standard detailing is applied to ensure the safety and technical requirements for installation at site.

4

The returned approval drawings are reviewed and passed to engineering department for preparation of production engineering output.

If no changes is noted, the production drawings are immediately passed to the factory for production. At present, QH Plus's modern machinery line with Italy technology allow the drawings are directly sent to manufacturing line via SAP, ERP software for automatic production.





## 2. ENGINEERING & DESIGN SOFTWARE

To commit increasing demands of today complex construction and to computerize the producing process of pre-engineered buildings and steel structures, QH Plus has invested in many professional & up-to-date technical software that covers all stages of design, from concept to completion drawings.

All of our engineers are trained to latest Design Codes in calculating & detailing to bring out the most error free design from approval drawings to the shop drawings that needs minimum revision or modification.

### ENGINEERING & DESIGN SOFTWARE



- 1 TEKLA STRUCTURE – Shop drawings software
- 2 TEKLA 21 – Tekla Structure version
- 3 STAAD PRO – Structural analysis & design (Steel plate, shaped steel)
- 4 CFS – Cold rolled steel design
- 5 AUTOCAD LT 2016 – Architectural design software

## 3. ENGINEERING & DESIGN CODES

QH Plus follows international accepted codes of practice in the analysis, design and fabrication all of our steel buildings, including:



**AISC – AMERICAN INSTITUTE OF STEEL CONSTRUCTION**

Manual of Steel Construction Allowable Stress Design (ASD)



**AISI – AMERICAN IRON & STEEL INSTITUTE**

Cold Formed Steel Design Manual



**MBMA – METAL BUILDINGS MANUFACTURERS ASSOCIATION**

Authoritative guide for the design and manufacture of pre-engineered steel buildings



**ASCE – AMERICAN SOCIETY OF CIVIL ENGINEERS**

Minimum Design Loads for Buildings and Other Structures



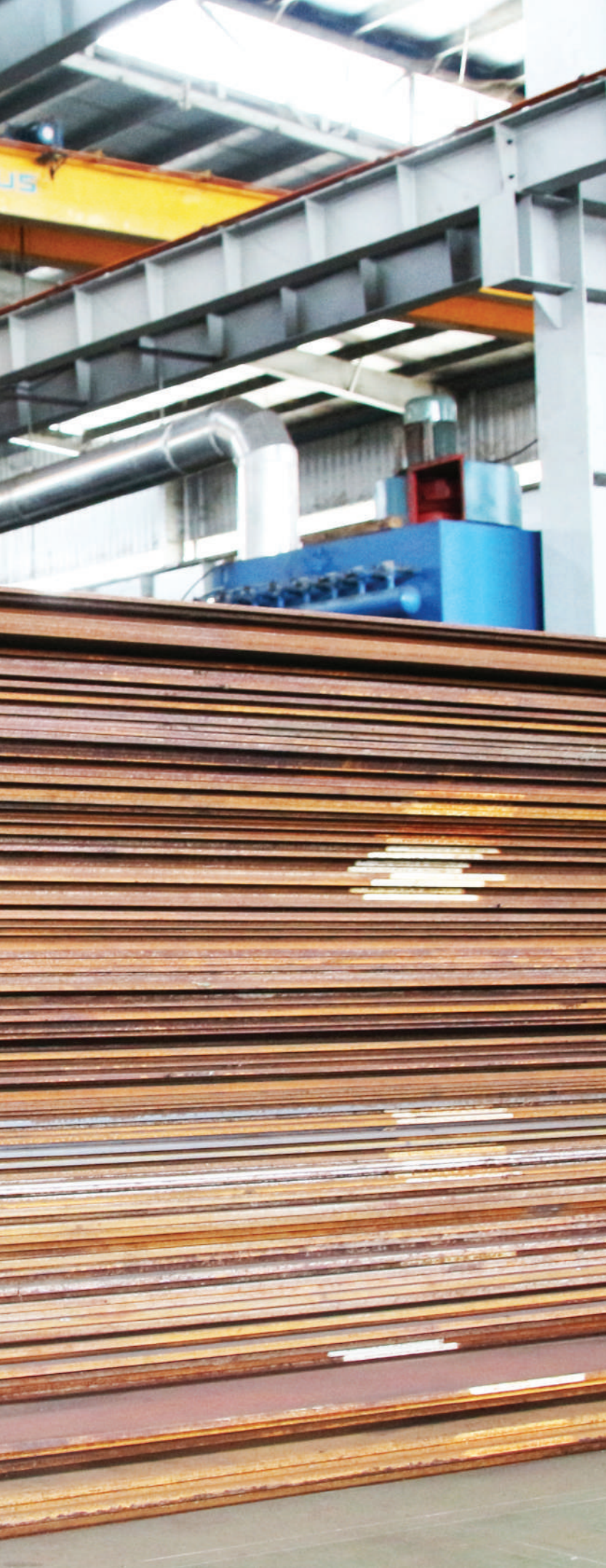
**AWS – AMERICAN WELDING SOCIETY**

Structural Welding Code-Steel Manual









# MATERIALS

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- PRE-ENGINEERING  
BUILDINGS MATERIALS
- STEEL STRUCTURE  
MATERIALS



## IV. MATERIALS

### 1. PRE-ENGINEERED BUILDING MATERIALS

NO.	MATERIAL		STEEL GRADE/ MATERIAL SPECIFICATIONS	YIELD STRENGTH	TENSILE STRENGTH	
1	Built-up members (Steel plates)		SS400, Q235, ASTM A36, S235	Fy = 23.5 kN/cm <sup>2</sup>	Fu = 40.0 kN/cm <sup>2</sup>	
			Q345, ASTM A572 Gr.50, SM490/ SS490, S355	Fy = 34.5 kN/cm <sup>2</sup>	Fu = 45.0 kN/cm <sup>2</sup>	
			S460	Fy = 46.0 kN/cm <sup>2</sup>	Fu = 54.0 kN/cm <sup>2</sup>	
2	Shaped steel (Hot-rolled members)		SS400 (JIS), ASTM A-36 (or equivalent)	Fy = 23.5 kN/cm <sup>2</sup>	Fu = 40.0 kN/cm <sup>2</sup>	
3	Cold rolled members		JIS G3112, ASTM G340/G450	Fy = 34.0 kN/cm <sup>2</sup>	Fu = 45.0 kN/cm <sup>2</sup>	
4	Roof panel		G300 - G550	Fy = 30.0 kN/cm <sup>2</sup>	Fu = 55.0 kN/cm <sup>2</sup>	
5	X bracing	Round bar/Angle steel/Steel pipe	SS400 (JIS), ASTM A-36 (or equivalent)	Fy = 23.5 kN/cm <sup>2</sup>	Fu = 40 kN/cm <sup>2</sup>	
6		Bracing cable (If any)	EN, GB, JIS (or equivalent)	-	Fu = 147 kN/cm <sup>2</sup>	
7	Anchor bolts		Grade 4.6, SS400 (JIS), ASTM A-36 (or equivalent)	Fy = 23.5 kN/cm <sup>2</sup>	Fu = 40 kN/cm <sup>2</sup>	
8	High strength bolts (for primary structure)		A325, DIN grade 8.8 (or equivalent)	-	Fu = 72 - 83 kN/ cm <sup>2</sup>	
9	Bolts (for secondary structure)		A307, DIN grade 4.8 (or equivalent)	-	Fu = 40 kN/cm <sup>2</sup>	
10	Welding rod/ Welding wire	Use for welding steel with yield strength of 23.5 kN/cm <sup>2</sup>	Shielded Metal Arc Welding (SMAW)	AWS A5.1 E6013	Fy = 33.0 kN/cm <sup>2</sup>	Fu = 43.0 kN/cm <sup>2</sup>
11				AWS A5.1 E7018	Fy = 40.0 kN/cm <sup>2</sup>	Fu = 48.3 kN/cm <sup>2</sup>
12		Use for welding steel with yield strength of 34.5 kN/cm <sup>2</sup>	Flux Cored Arc Welding (FCAW)	AWS A5.20 E71T-1C	Fy = 40.0 kN/cm <sup>2</sup>	Fu = 49.0 kN/cm <sup>2</sup>
13			Submerged Arc Welding (SAW)	AWS A5.17 EM12K	Fy = 40.0 kN/cm <sup>2</sup>	Fu = 51.0 kN/cm <sup>2</sup>

Noted:

- $F_y$ : Yield strength
- $F_u$ : Tensile strength
- ASTM: American Society for Testing and Materials
- AWS: American Welding Society
- JIS: Japanese Industrial Standards
- EN: Europe Standards
- GB: Chinese Standards

### 2. STEEL STRUCTURE MATERIALS

The material which used for manufacturing steel structures are hot-rolled steels & shaped steels imported from many reliable suppliers to meet the technical & quality requirements.



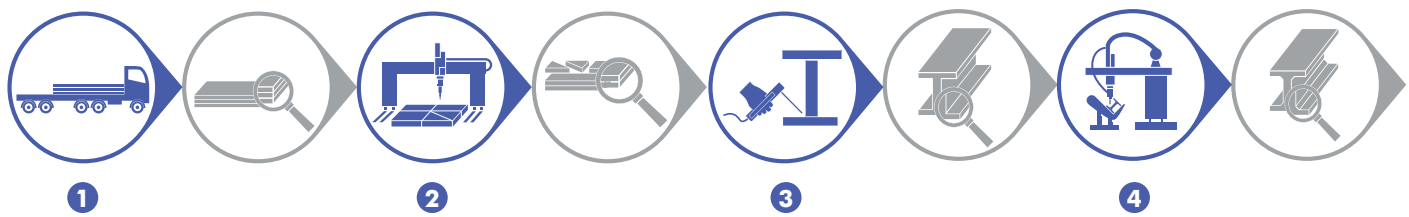
# QUALITY MANAGEMENT SYSTEM

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- FABRICATION & INSPECTION FLOW
- QUALITY INSPECTION & CONTROL SYSTEM
- QUALITY CONTROL EQUIPMENT



## 1. FABRICATION & INSPECTION FLOW



### BUILT-UP BEAM FABRICATION FLOW



### SHAPED STEEL FABRICATION FLOW



- 1 Importing raw material - Steel plate
- 1b Importing raw material - Shaped steel
- 1 Material inspection



- 2 Cutting - Steel plate
- 2b Cutting - Shaped steel
- 2 Inspection



- 3 Fitting up  
Processing steel plate
- 3b Drilling - Shaped steel
- 3 Inspection



- 4 Auto welding
- 4 Inspection



- 5 Straightening
- 5 Inspection



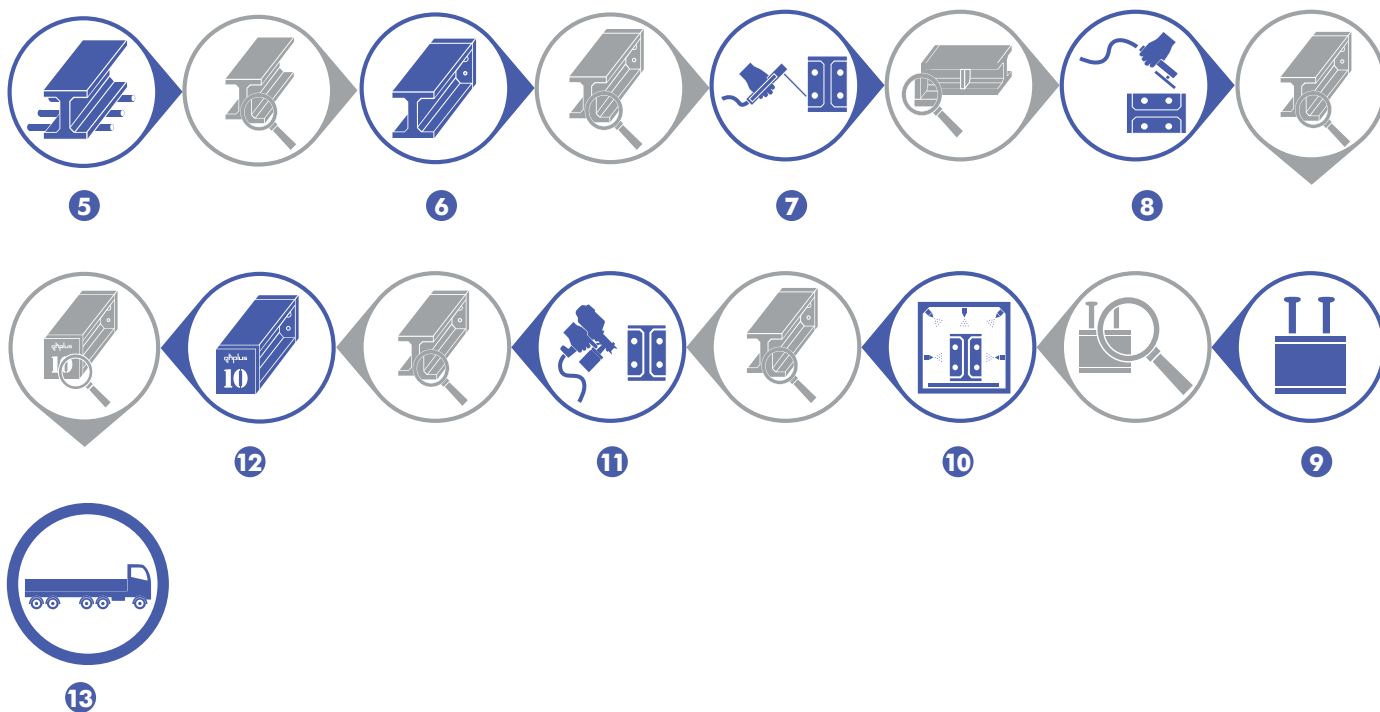
- 6 Assembling
- 6 Inspection



- 7 Completed welding
- 7 Inspection



- 8 Surface milling
- 8 Inspection



9 Welding shear stud

9 Inspection



10 Shot-blasting & cleaning

10 Inspection



11 Painting

11 Inspection



12 Packing & marking

12 Inspection



13 Shipping

QH Plus follows a stringent quality control program at each stage in its manufacturing process.

All procedures are inspected by operators & QC engineers in accordance with ISO 9001:2015 Quality Management Standard & ISO 3834-2:2006 Comprehensive Quality Requirements



## 2. QUALITY INSPECTION &amp; CONTROL SYSTEM

NO.	STAGE OF INSPECTION	APPLICABLE SPECIFICATIONS /PROCEDURES	TEST SCOPE	RECORD & REPORT FORMS	ACTIVITIES			REMARKS
					QHPI	CONSULTANT	OWNER	
I	WPS/PQR/WQTR/NDT PROCEDURE	AWS D1.1:2015 or equivalent codes						
01	Welding Procedure Specification	AWS D1.1:2015	100%	WPS/PQR	V	R	R	
02	Welder/Operators Qualification List, Records & Certificates	AWS D1.1:2015	100%	WQTR/Certificates	V	R	R	
03	NDT Procedures/ NDT Technician Certificates	AWS D1.1:2015	100%	Procedures/Certificates	R	R	R	
II	PROJECT KICK-UP MEETING (Before starting of the job)		One time	MOM	A	A	A	
III	RAW MATERIAL VERIFICATION & INSPECTION	ASTM/JIS/EN or Equivalent standards						
01	Steel Plates and Steel: • Visual Inspection • Dimension Inspection • Mill Test Certificates review	Material Specification Tolerance check by JIS G3192, G3193	10% Min. 10% Min. 100%	F-QHPI-KCT-01.01/02	I&R	M/R	R	
02	Welding consumable follow AWS D1.1:2015 • Visual Inspection • Mill Test Certificates review	Welding Consumable Specification	25% Min. 100%	F-QHPI-KCT-01.03	I&R	R	R	
03	Paint • Visual Inspection • Mill Test Certificates review	Painting Material Specification	25% Min. 100%	MTC	V&R	R	R	
04	Fastener ASTM A307 Grade C, A325/325-F: • Visual Inspection • Mill Test Certificates review	Material Specification	10% Min. 100%	F-QHPI-KCT-01./02.01	I&R	R	R	
05	Cutting sample test	Material Specification	Sample Test Specification	Testing result	W	R	R	
IV	CUTTING INSPECTION	Shop Drawing						
01	Visual Inspection	Shop Drawing/ MBMA:2010	10% Min.	F-QHPI-KCT-01.05	I	M/R	R	
02	Dimension Inspection	Shop Drawing/ MBMA:2010	10% Min.					
V	AUTOMATIC WELDING BEAM INSPECTION	AWS D1.1:2015						
01	Visual Inspection	Shop Drawing/ AWS D1.1:2015	25% Min.	F-QHPI-KCT-01.05	I	M/R	R	

NO.	STAGE OF INSPECTION	APPLICABLE SPECIFICATIONS /PROCEDURES	TEST SCOPE	RECORD & REPORT FORMS	ACTIVITIES			REMARKS
					QHPI	CONSULTANT	OWNER	
02	Dimension Inspection	Shop Drawing/ AWS D1.1:2015	10% Min.	F-QHPI-KCT-01.05	I	M/R	R	
VI	FIT-UP INSPECTION	Shop Drawing/ MBMA:2010/ AWS D1.1:2015						
01	Visual Inspection	Shop Drawing/ MBMA:2010	10% Min.	F-QHPI-KCT-01.06	I	M/R	R	
02	Dimension Inspection of Main Frames	Shop Drawing/ MBMA:2010	25% Min.					
03	Dimension Inspection of Secondary Members	Shop Drawing/ MBMA:2010	10% Min.					
04	Checking Weld joint preparation before full welding	Shop Drawing/ AWS D1.1:2015	15% Min.					
VII	FINAL INSPECTION	Shop Drawing/ MBMA:2010/ AWS D1.1:2015						
01	Visual Welding Inspection	Shop Drawing/ AWS D1.1:2015	25% Min.	F-QHPI-KCT-01.07	I	M/R	R	
02	Size Weld Inspection	Shop Drawing/ AWS D1.1:2015	10% Min.					
03	Visual & Dimension Inspection	Shop Drawing/ MBMA:2010/ AWS D1.1:2015	50% Min.	Factory inspection report (FIR) QHPI-FIR-No. (External form)	H	I/W/R	M/R	
VII	NON-DESTRUCTIVE TESTING	AWS D1.1:2015/ NDT Procedures						
01	Magnetic Particle Inspection (MPI)	AWS D1.1:2015/ NDT Procedures	10% Min.	Factory inspection report (FIR) QHPI-FIR-No. (External form)	I*	W/R	R	I* Third Party conduct the NDT testing
02	Ultrasonic Testing (UT) Butt Welds (Flange/ Web splice joints/ Critical joints)	AWS D1.1:2015/ NDT Procedures	15% Min.	NDT Third Party Reports form	I*	W/R	R	
VIII	SURFACE PREPARATION & PAINTING INSPECTION	ISO 8501-1 (2007) & SSPC-PA 2 (2012)						
01	Surface Cleaning	ISO 8501-1 (2007)/ Job Specification	20% Min.	F-QHPI-KCT-01.09	I	M/R	R	
02	Paint DFT For Primer Coating/ Intermediate coat/ Final coating	SSPC-PA 2 (2012)/ Job Specification	20% Min.	F-QHPI-KCT-01.09	I	M/R	R	
03	Visual Inspection of Coatings	SSPC-PA 2 (2012)/ Job Specification	50% Min.	F-QHPI-KCT-01.09	I	M/R	R	
04	Touch-up (Repair)	SSPC-PA 2 (2012)/ Job Specification	10% Min.	NCR Form: QH-PI-QTKSSPKPH-01	W	M/R	R	
IX	GALVANIZING	ASTM A123/A385/ Job Specification						



## 2. QUALITY INSPECTION &amp; CONTROL SYSTEM

NO.	STAGE OF INSPECTION	APPLICABLE SPECIFICATIONS /PROCEDURES	TEST SCOPE	RECORD & REPORT FORMS	ACTIVITIES			REMARKS
					QHPI	CONSULTANT	OWNER	
01	Surface Preparation	ASTM A385/ Job Specification	10% Min.	F-QHPI-KCT-01.09 (just use the surface treatment only)	I	R	R	
02	Visual Inspection of Zinc Coating	ASTM A123/ Job Specification	50% Min.	Galvanizer Report	M/R	R	R	
03	Zinc Coating Thickness	ASTM A123/ Job Specification	20% Min.					
04	Repair Galvanizing/ Touch up	ASTM A123/ Job Specification	10% Min.					
X	PACKAGING & SHIPPING	Job Specification						
01	Shipment Package Inspection	Job Specification	10% Min.	F-QHPI-KCT-01.11	I	M/R	R	
02	Packing Inspection (Truck Load)	Job Specification	10% Min.					
XI	HAND OVER MANUFACTURING DATA RECORDS - MDR	As per the MDR Index sheet enclosed with	All documents as per approved ITP	Manufacturer's Data Reports (MDR) 1 set hard/soft copy	S	R	R	

## ABBREVIATIONS

AWS	AMERICAN WELDING SOCIETY
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
DFT	DRY FILM THICKNESS
EN	EUROPEAN STANDARD
FIR	FACTORY INSPECTION REPORT
JIS	JAPANESE INDUSTRIAL STANDARD
ISO 8501-1	CORROSION PROTECTION OF STEEL STRUCTURES BY PAINTING
MTC	MILL TEST CERTIFICATE
MBMA	METAL BUILDING MANUFACTURERS ASSOCIATION
NCR	NON-CONFORMANCE REPORT (FORM: QHPI-QTKSSPKPH-01)
PQR	PROCEDURE QUALITY RECORD
SSPC-PA 2	STEEL STRUCTURES PAINTING COUNCIL-COATING APPLICATION STANDARD NO.2
WQTR	WELDER/ WELDING OPERATOR QUALIFICATION TESTING RECORD
WPS	WELDING PROCEDURE SPECIFICATION
H	HOLD POINT
I	INSPECTION POINT
W	WITNESS
V	VERIFY
A	ATTEND
M	MONITORING
R	PREVIEW

### 3. QUALITY CONTROL EQUIPMENT

NO.	EQUIPMENT	FUNCTION	SAMPLE PICTURE
1	<b>METAL TAPE MEASURES</b>	Checking dimension of materials & finished products	
2	<b>SET SQUARE RULERS</b>	Measuring the squareness of materials & finished products	
3	<b>STAINLESS STEEL RULERS</b>	Checking dimension of materials & finished products	
4	<b>CALLIPERS</b>	Checking the thickness & diameter of materials & finished products	
5	<b>MITRE SAW PROTRACTORS</b>	Measuring angles of finished products	
6	<b>WELDING GAUGES</b>	Measuring fillet weld size	
7	<b>COATING THICKNESS GAUGES</b>	Measuring of dry-film coating thickness	
8	<b>WET-FILM THICKNESS GAUGES</b>	Measuring of wet-film coating thickness	
9	<b>ULTRASONIC TESTING MACHINE</b>	Ultrasonic testing of fillet welds	
10	<b>MAGNETIC TESTING MACHINE</b>	Checking defects on welded joints	
11	<b>HAMMER</b>	Checking the quality of welded joints, shear stud,...	





5T

SAFETY FIRST - 10F

gh plus

SAFETY

Lắp đặt  
30m x 1

Vanguard





# PRODUCTION EQUIPMENT

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- PROCESSING STEEL PLATES & V ANGLES
- ASSEMBLING & COMPLETED WELDING
- PROCESSING ROLLED & BUILT UP BEAMS
- CLEANING & PAINTING
- COLD FORMING & BENDING



## 1. PROCESSING STEEL PLATES & V ANGLES

CATEGORY	SPECIFICATION
Thickness (mm)	2 – 150
Width (mm)	500 – 4,000
Length (mm)	500 – 30,000
Cutting	All shapes
Drilling (mm)	Max 40
Beveling (°)	15 – 75
Taping (mm)	Max 40
Punching (mm)	Max 30 ≈ Max thick 20
Milling	As requested
Lathing (mm)	(L: max 3,000; D: max 400)

In steel plates & V angles processing area, the machinery lines are used to handle the cutting, drilling, punching, taping, lathing, milling, beveling,...from raw materials to different steel shapes and specifications.



1.1 CNC OXY GAS - PLASMA STEEL PLATE CUTTING MACHINE



1.2 CNC MULTI DRILLING - MILLING - CUTTING MACHINE



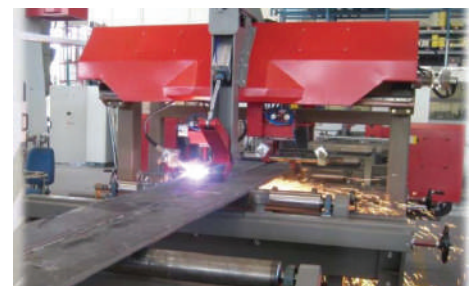
1.3 CNC HYDRAULIC PLATE SHEARING MACHINE



1.4 CNC STEEL PLATE DRILLING MACHINE



1.5 CNC STEEL PLATE PUNCHING MACHINE



1.6 CNC STEEL PLATE MILLING & BEVELING MACHINE



1.7 CNC V-ANGLE PUNCHING & SHEARING MACHINE



1.8 CNC MULTI PUNCHING & CUTTING MACHINE



1.9 HYDRAULIC PLATE SHEARING LINE



## 2. ASSEMBLING & COMPLETED WELDING

Assembled steel sections are transferred to automatic welding stage with a combination chain of fitting-up, vertical and horizontal welding line. This process creates finished steel members of pre-engineered buildings such as: box beam, cross beam, rafters, columns,...



2.1 HORIZONTAL H BEAM WELDING LINE 1 (2 WELDING GATES)

CATEGORY	SPECIFICATION
Thickness (mm)	4 – 80
Width (mm)	100 – 1,000
Height (mm)	100 – 3,000
Length (mm)	25,000
Box beam (mm)	Max 1,000
Star beam (mm)	Max 1,000



2.2 VERTICAL H BEAM WELDING LINE 2



2.3 VERTICAL H BEAM WELDING LINE 3



2.4 H BEAM ASSEMBLING & FITTING UP LINE



2.5 STRAIGHTENING LINE



### 3. PROCESSING ROLLED & BUILT UP BEAMS

After being assembled, steel sections are put into 3D cutting, drilling, milling, beveling,...according to the required size by specialized machines using cold forming technology. This method ensures not to destroy the physical structure of steel.

CATEGORY	SPECIFICATION
Thickness (mm)	4 – 107
Width (mm)	50 – 1,200
Height (mm)	50 – 700
Length (mm)	Max 15,000
Drilling (mm)	Max dia. 40
Beveling (°)	15° – 75° for H,I beams
Cutting	As requested by 3D or band saw
Milling	Head of beams



3.1 CNC CUTTING & DRILLING LINE 1



3.2 CNC CUTTING & DRILLING LINE 2



3.3 CNC MILLING FOR HEAD BEAMS



3.4 3D PLASMA & OXYGAS CUTTING LINE

# 4. CLEANING & PAINTING

Finished welding sections are cleaned by shot-blasting line with specified standards. The high-pressure shot-blasting system ensures that components are removed from dirt and create roughness before being painted.

CATEGORY	SPECIFICATION
Height (mm)	Max 4,500
Width (mm)	Max 5,000
Length (mm)	Max 24,000
Shot blasting	By steel balls
Painting	By spray



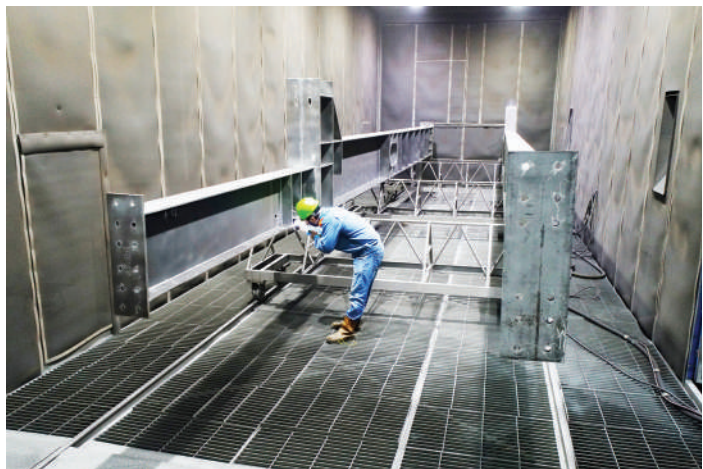
COMPLETED WELDING



4.1 SHOT BLASTING LINE



4.2 SHOT BLASTING ROOM



4.2 SHOT BLASTING ROOM



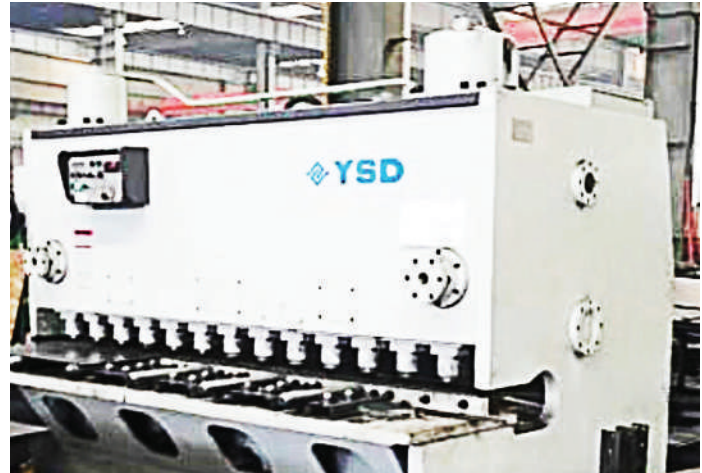
## IV. PRODUCTION EQUIPMENT

### 5. COLD FORMING & BENDING

All of the machines in the cold forming & bending area are equipped with advanced technology used for processing cladding systems, such as: roofing, walling, trims, gutters, drain pipes, ... Then, finished products are carefully packed and preserved for delivery to customers or to the construction site.



5.1 CNC HYDRAULIC SHEARING MACHINE 8 MM



5.2 CNC HYDRAULIC SHEARING MACHINE 20 MM



5.3 CNC PUNCHING MACHINE



5.4 CNC BENDING MACHINE



5.5 CNC C&Z PURLIN FORMING MACHINE



5.6 5-RIBS ROLL FORMING MACHINE

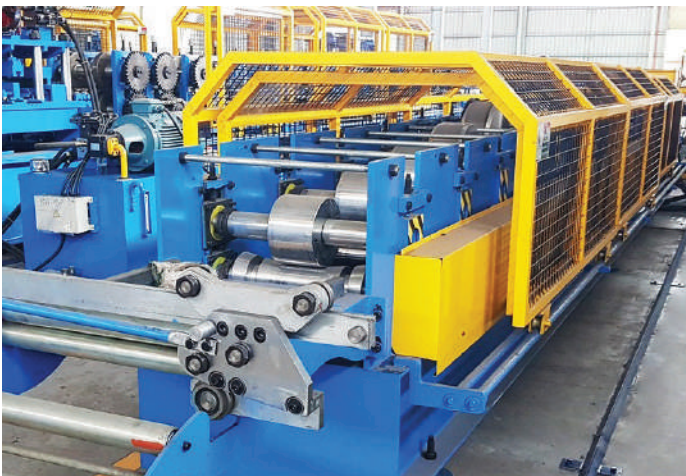




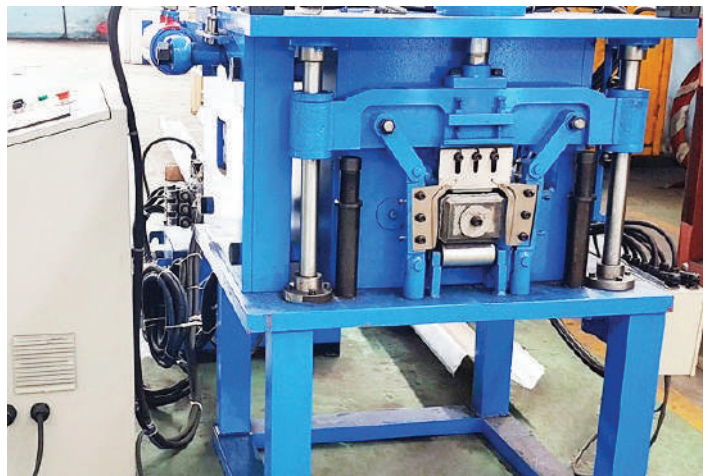
5.7 SEAMLOCK COLD FORMING MACHINE



5.8 AUTO CRIMPING CURVED MACHINE



5.9 GUTTER COLD FORMING MACHINE



5.10 RAINSPOUT ROLL FORMING MACHINE



5.11 SLITTING & SHEARING LINE



5.12 CNC HYDRAULIC FOLDING MACHINE







# DELIVERY SERVICE

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## VII. DELIVERY SERVICE

### DELIVERY SERVICE

In order to meet the project progress, QH Plus has invested in various kinds of transportation vehicles with heavy load and diverse functions to deliver our products to construction site:

- 02 tractor trailers: 31,6 tons
- 10 tractor trailers: 25,6 tons
- 02 crane trucks : 12,9 tons

With professional transportation system managed directly by QH Plus, we always maintain a stable transportation cost for our customers. Our delivery/forwarding team has a lot of experience as well as trained on loading technique for each kind of product. Therefore, we ensure absolute quality and safety for the goods during delivery process.





# FEATURE BUSSINESS PARTNERS

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## VIII. FEATURE CUSTOMERS PARTNERS

With more than 11 years of experience in steel buildings industry, QH Plus has expanded a profound strategic network of partners and customers in the country and foreign market.











## SIGHTSEEING TOWER PROJECT

Located at Vinhomes Central Park  
Complex Center

Architectural designed by Vingroup  
Fabricated & Installed by QH Plus corporation

# PROJECTS & CONSTRUCTIONS

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## FEATURE PROJECTS &amp; CONSTRUCTIONS

NO.	CUSTOMER	PROJECT NAME	SCALE	PRODUCT & SERVICE	ADDRESS
1	Intimex Nha Trang JSC.	<b>INTIMEX GIA LAI FACTORY</b>	6,200 m <sup>2</sup>	Design, process and install pre-engineered building	Hai Thuong Lan Ong St., Yen The Ward, Pleiku City, Gia Lai Province
2	Intimex Bao Loc JSC	<b>INTIMEX BAO LOC - COFFEE FACTORY</b>	21,900 m <sup>2</sup>	Design, process and install pre-engineered building	Loc Son Industrial Zone, Bao Loc City, Lam Dong Province
3	Vingroup	<b>VINMEC HOSPITAL</b>	400,000 m <sup>2</sup>	Q-coupler, kingpost, Q Welded mesh, process & install elevator beam & fence	208 Nguyen Huu Canh St., Ward 22, Binh Thanh Dist., HCMC
4	Vingroup	<b>VINHOMES LANDMARK 81 TOWER</b>	2,500 m <sup>2</sup> 81 floors	Steel core system, Q-Coupler, thread rolling, H beam	208 Nguyen Huu Canh St., Ward 22, Binh Thanh Dist., HCMC
5	Shimizu-Maeda Joint Operation	<b>HO CHI MINH CITY METRO SYSTEM (BEN THANH - SUOI TIEN)</b>	19,700 m	Round tube, pipe coupler, pipe cap, Q welded mesh, SYT insert, PTD insert, Kingpost	Saigon Opera House Station & Ba Son Station, HCMC
6	Coteccons Construction JSC Unicons Construction JSC	<b>THE GOLD VIEW APARTMENT</b>	260,000 m <sup>2</sup>	Kingpost, SYT insert	346 Van Don St., Ward 1, Dist. 4, HCMC
7	Vingroup General Vincom Construction Management LLC	<b>VINCOM SHOPPING MALL - CAN THO</b>	18,000 m <sup>2</sup>	Kingpost, Threaded rod	209, St. 30/4, Xuan Khanh Ward, Ninh Kieu Dist., Can Tho City
8	Coteccons Construction JSC	<b>THE ONE SAI GON COMPLEX</b>	24,000 m <sup>2</sup>	Kingpost	Pham Ngu Lao St., Nguyen Thai Binh Ward, Dist. 1, HCMC
9	Novaland Group Duc Lap Service Trading Co., Ltd	<b>THE PRINCE RESIDENCE APARTMENT</b>	4,647 m <sup>2</sup>	Steel fabrication, providing steel beam and column, steel fabrication for roof-top	19-21 Nguyen Van Troi St., Ward 12, Phu Nhuan Dist., HCMC
10	Novaland Group	<b>SUNRISE CITY VIEW APARTMENT</b>	15,152 m <sup>2</sup>	Kingpost	45 Nguyen Huu Tho St., Tan Hung Ward, Dist. 7, HCMC
11	Vingroup JSC	<b>VINCOM SHOPPING MALL - BIEN HOA</b>	25,054 m <sup>2</sup>	Steel frame, steel fabrication, painting roof-top	Pham Van Thuan St., Tan Mai Ward, Bien Hoa City
12	Vingroup JSC	<b>VINHOMES CENTRAL PARK</b>	400,000 m <sup>2</sup>	Kingpost, Q-Coupler, thread rolling service, install car park, balcony, galvanized rectangular steel tube, shape steel, gate of model houses	208 Nguyen Huu Canh St., Ward 22, Binh Thanh Dist., HCMC
13	Hoa Binh House Corporation	<b>E-TOWN CENTRAL HIGHRISE BUILDING</b>	66,000m <sup>2</sup>	Kingpost, Q Welded mesh, Q-Coupler, thread rolling service	11 Doan Van Bo St., Dist. 4, HCMC
14	HCMC Investment Service Trading JSC	<b>BA SON FACTORY TRANSITION ZONE</b>	24,000 m <sup>2</sup>	Design, process and install pre-engineered building & supplemental construction	Cai Mep Town, Tan Thanh Dist., Ba Ria - Vung Tau Province
15	Nhat Nguyen An Co., Ltd Binh Dinh Construction Co.,Ltd	<b>SOUTHERN SAI GON HOSPITAL</b>	18,000 m <sup>2</sup>	Kingpost	No. 8 St., Trung Son, Dist.8, HCMC

## FEATURE PROJECTS & CONSTRUCTIONS

NO.	CUSTOMER	PROJECT NAME	SCALE	PRODUCT & SERVICE	ADDRESS
17	Vingroup	VINHOMES GOLDEN RIVER APARTMENT	250.000m <sup>2</sup>	Kingpost, Q-coupler & thread rolling service	02 Ton Duc Thang St., Ben Nghe Ward, Dist.1, HCMC
20	Novaland Group	THE PARK AVENUE APARTMENT	9,000 m <sup>2</sup>	Kingpost, coupler, thread rolling service	Ba Thang Hai St, Ward 15, Dist. 11, HCMC
21	Coteccons Construction JSC	THE EVERRICH 8 COMPLEX CENTER	113,557 m <sup>2</sup>	Kingpost, Q Welded mesh	132 Ben Van Don, Ward 6, District 4, HCMC
22	COFICO Construction JSC	BOTANICA PREMIER COMPLEX CENTRE	17,777 m <sup>2</sup>	Kingpost	108 Hong Ha St., Ward 2, Tan Binh Dist., HCMC
23	Vingroup	YATCH STATION PROJECT	1,100 m <sup>2</sup>	Process & install steel structures, aluminium glass	208 Nguyen Huu Canh St., Ward 22, Binh Thanh Dist., HCMC
24	Vingroup	BRIDGE FOR WALKING - VINHOMES CENTRAL PARK	754 m <sup>2</sup>	Process & install steel structures	208 Nguyen Huu Canh St., Ward 22, Binh Thanh Dist., HCMC
25	Novaland Group	SAIGON ROYAL RESIDENCE LUXURY APARTMENT	6,669 m <sup>2</sup>	Kingpost	34-35 Ben Van Don - Ward 12, Dist.4, HCMC
26	Vingroup	VINHOMES SKY LAKE APARTMENT	13,555 m <sup>2</sup>	Kingpost	E13, Cau Giay New Urbanism, Pham Hung St., Tu Lien, Ha Noi
27	Capital Land Holding Pte.Ltd	FELIZ EN VISTA LUXURY APARTMENT	20,000 m <sup>2</sup>	Process & install steel structures	Dong Van Cong St., Thanh My Loi Ward, Dist.2, HCMC
28	Steel Builder Corporation	STEEL BUILDER FACTORY	13,000 m <sup>2</sup>	Design, process & install pre-engineered building	Phu My 2 Industrial Zone - Ba Ria Vung Tau Province
29	Vingroup JSC Vincom Construction Management LLC	VINCOM TAY NINH BUILDING	22,000 m <sup>2</sup>	Design & install kingpost, steel structures	1 Town, Ward 3, Tay Ninh City, Tay Ninh Province
30	Buu Long JSC Bachy Soletanche Vietnam	HILTON HOTEL	2,200 m <sup>2</sup>	H beam	11 Cong truong Me Linh St., Dist.1, HCMC
31	Nam Hung Metal JSC	NAM HUNG FACTORY	23,040 m <sup>2</sup>	Design, process & install pre-engineered building	Thuan Dao Industrial Zone, Ben Luc Dist., Long An Province
32	Kim Nguon JSC	TAN THANH TRADE CENTER	15,000 m <sup>2</sup>	Steel building	Tan Thanh Dist., Ba Ria Vung Tau Province
33	Trung Thuy Lancaster Group Bachy Soletanche Viet Nam	LANCASTER LINCOLN APARTMENT	8,414 m <sup>2</sup>	Kingpost, structural steel, welded mesh, U bolt, H beam	428-430 Nguyen Tat Thanh St., Ward 18, Dist.4, HCMC
34	Hoa Sen Ha Nam One-member Co., LTD	HOA SEN HA NAM FACTORY	25,080 m <sup>2</sup>	Design, process & install pre-engineered building	Kien Khe Industrial Zone, Kien Khe Town, Thanh Liem Dist., Ha Nam Province



## FEATURE PROJECTS &amp; CONSTRUCTIONS

NO.	CUSTOMER	PROJECT NAME	SCALE	PRODUCT & SERVICE	ADDRESS
35	Hoa Sen Phu My One-member Co., LTD	HOA SEN PHU MY FACTORY	19,200 m <sup>2</sup>	Design, process & install pre-engineered building	Phu My Industrial Zone, Phu My Town, Tan Thanh Dist., Ba Ria Vung Tau Province
36	Trung Thuy Lancaster Group Bachy Soletanche Viet Nam	LANCASTER NGUYEN TRAI TOWER	5,000 m <sup>2</sup>	H beam, Welded mesh	230 Nguyen Trai St., Nguyen Cu Trinh Ward, Dist. 1, HCMC
37	Hoa Binh House Corporation	SAIGON PEARL APARTMENT	103,700 m <sup>2</sup>	Kingpost	92 Nguyen Huu Canh, Ward 22, Binh Thanh District
38	Thanh Dat Infrastructure Development JSC	RENTING FACTORY OF THINH VUONG INTERNATIONAL INVESTMENT JSC	3,799 m <sup>2</sup>	Process & install pre-engineered buildings	Street No.1, Nhon Trach 1 Industrial Zone, Phuoc Thien Commune, Nhon Trach District, Dong Nai Province
39	Binh Dinh Construction Co., Ltd	VIRGO CONDOTEL NHA TRANG	1,490 m <sup>2</sup>	Kingpost	39-41 Nguyen Thi Minh Khai, Loc Tho, Nha Trang City, Khanh Hoa Province
40	Vinaconex Corporation	MAPLETREE LOGISTICS CENTER	61,600 m <sup>2</sup>	Design, process & install pre-engineered building, welded mesh	18 L2-3, 5 Tao Luc St., VSIP II Industrial Zone, Binh Duong Province
41	Pomina steel corporation	POMINA 2 FLAT STEEL FACTORY	26,500 m <sup>2</sup>	Providing and installing pre-engineered building	Phu My Industrial Zone, Ba Ria Vung Tau Province
42	Hoa Sen Nhon Hoi Binh Dinh One-member Co., Ltd	HOA SEN NHON HOI - BINH DINH FACTORY - PHASE 2	24,000 m <sup>2</sup>	Providing and installing pre-engineered building	Hoi Son Hamlet, Nhon Hoi Village, Quy Nhon City, Binh Dinh Province
43	Vingroup	NHA TRANG CONVENTION CENTER	7,300m <sup>2</sup>	Steel structures	Hon Tre Island, Vinh Nguyen Dist., Nha Trang City, Khanh Hoa Province
44	LUAN Garment Co., Ltd.	LUAN GARMENT FACTORY	10,048 m <sup>2</sup>	Steel structures & roof panels	Binh Hoa Industrial Zone, Chau Thanh Dist., An Giang Province
45	Verne Haus Co., Ltd.	MINI RESORT VILLA	3,960 m <sup>2</sup>	Steel frame structures	Palawan Island, The Philippines
46	Alpha King Real Estate Development JSC. BAUER Vietnam Co., Ltd.	GOLDEN HILL (ALPHA 4) BUILDING COMPLEX	7,209 m <sup>2</sup>	Design, fabricate & install shoring system, kingpost & building accessories	87 Cong Quynh St., Dist.1, HCMC
47	Hoa Binh Corporation	LIM TOWER 3 - COMMERCIAL AND OFFICE COMPLEX BUILDING	3,018 m <sup>2</sup>	Kingpost for basement system	29A Nguyen Dinh Chieu St., Da Kao Ward., Dist.1., HCMC
48	Jin Guo Yuan Vietnam - Tropical fruit import export Co., Ltd	OFFICE BUILDINGS	980m <sup>2</sup>	Provide & install steel structures	Lot 6-4, Phan Thiet Industrial Zone, Ham Liem, Ham Thuan Bac Dist., Binh Thuan Province
50	Vingroup FDC Investment Construction JSC.	VINFAST AUTOMOBILE PRODUCTION COMPLEX	3,350,000 m <sup>2</sup>	Steel frame structures GL.7-13/A-M	Cat Hai Island, Hai Phong City

# FEATURE PROJECTS & CONSTRUCTIONS



## 1. VINHOMES LANDMARK 81 FLOORS



Steel  
structures



Couplers



Threading  
services



Shaped  
steel





FEATURE PROJECTS & CONSTRUCTIONS



2. BA SON SHIP YARD



Pre-engineered  
building



Design &  
Engineering



Processing &  
Fabrication



Erection







### 3. BRIDGE FOR WALKING IN VINHOMES CENTRAL PARK COMPLEX CENTER



Steel  
structures





FEATURE PROJECTS & CONSTRUCTIONS



4. NAM HUNG WAREHOUSE



Pre-engineered  
building



Welded  
mesh



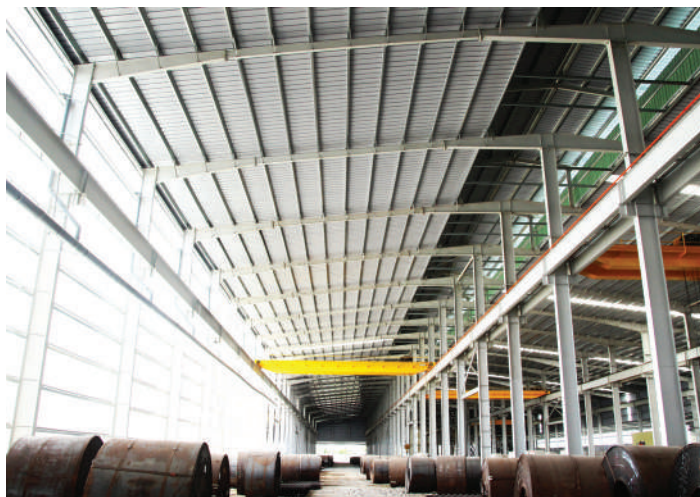
Design &  
Engineering



Processing &  
fabrication



Erection







## 5. TAN THANH TRADE CENTER





FEATURE PROJECTS & CONSTRUCTIONS



6. HOA SEN HA NAM FACTORY



Pre-engineered building



Design & Engineering



Processing & fabrication



Erection







## 7. HOA SEN PHU MY FACTORY



Pre-engineered  
building



Design &  
Engineering



Processing &  
fabrication



Erection





FEATURE PROJECTS & CONSTRUCTIONS



8. MAPLETREE LOGISTICS CENTER

mapletree



Pre-engineered  
building



Processing &  
fabrication



Erection







## 9. HOA SEN NHON HOI BINH DINH FLAT STEEL FACTORY



Pre-engineered  
building



Design &  
Engineering



Processing &  
fabrication



Erection





FEATURE PROJECTS & CONSTRUCTIONS



10. POMINA 2 FLAT STEEL FACTORY



Pre-engineered  
building



Design &  
Engineering



Processing &  
fabrication



Erection





# CERTIFICATES

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## ■ CERTIFICATES



X. CERTIFICATES

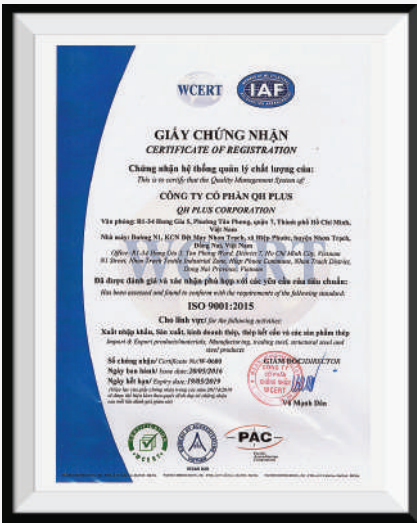
1. CERTIFICATES



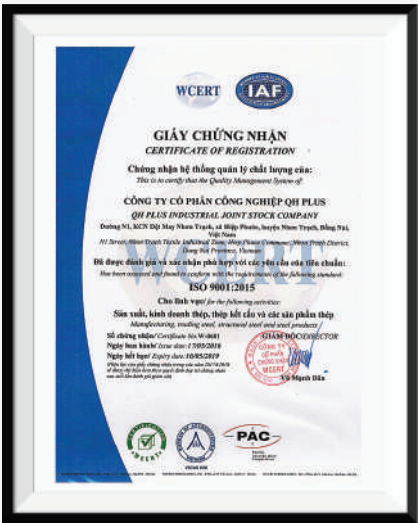
Comprehensive Quality Requirements



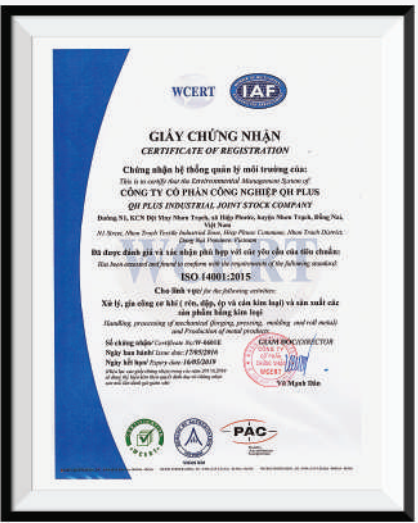
Typical Welder's Certificate



Quality Management System Certificate (QH Plus Corporation)



Quality Management System Certificate (QH Plus Industrial JSC.)



Environmental Management System Certificate (QH Plus Industrial JSC.)







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