



Assalamu Alaikum,

Dear Valued Clients

Our Company was established 4 years ago, with a vision of offering high-quality metal buildings at an affordable Price, exclusive for the rural community. We attribute our success over the past 4 years with our things.

Superior Design

We believe that, Design is the language of all structures”. We strictly follow and maintain all the rules and codes of designing. A structure cans perfectly build only by proper design. Our design tea is well organized, qualified and equipped with modern latest software’s.

High-Quality Materials

Our Buildings are constructed with 0.47mm thick galvanized panel for roof and walls. We use long-life roof screws, which rust over time. We remove metal shavings from roof after installation. Our company constructs the framework with new pipe. Also, we paint the framework with a high-quality red/grey oxide primer.

Professional workmanship

Our crews are company Employees. This enables us to maintain a high level of quality control which is not always the case with sub-contractors. Annex Engineering Services is a fully-insured company. Erecting metal building is a high-risk occupation, and carrying adequate insurance coverage is a must.

Conducting Business

A straight –forward approach is out motto. We want pre-Engineered steel building purchase to be an enjoyable experience from start to finish. Word-of-mouth is our biggest asset and we want you to be completely satisfied.

Thank You

Engr. Md. Ataur Rahman
B.Sc Engg.(CE,MIEB)
CEO, Annex Engineering Services

Annex Engineering services is a renowned Pre-Engineered Steel Building manufacturer company in Bangladesh. The Company has immense experience in all type of designs, fabrications, supplies and erection of Pre- Fabricated Steel Structure and Civil Construction works since 2018.

In Annex Engineering services Pre-Engineered Buildings (PEB) division, we focus on providing the needs of our nationwide customers for durable, affordable and versatile steel structures. More than 4 years in business, our customer remains our first priority. Every building that we design, manufacture and deliver for erection is created with the satisfaction of the future occupants and owner in mind. As a company, we attribute our success to the unmatched value of our products and the flexibility and agility of our employees in meeting the needs of our customers.

Our Vision

To be the world's most reliable and innovative manufacturer, Service and solution provider in the steel industry.

Our Mission

To supply high-quality steel products, providing related services and solutions to a worldwide client base while utilizing innovative technologies within an environment of motivated employees, focused on continuous improvement, highest business standards, work ethics and corporate citizenship, leading to added value for our customers and sustainable return on investment to our shareholders.

Our Core values

Honesty and Transparency
Creative and innovative thinking
Team work
Quick Response
Deliver on time

Advantages of Steel Structure

VALUE OF MONEY

Steel framing system including decking and fire protection will typically cost 5% to 7% less than a concrete framing system.

AESTHETIC APPEAL

Can be bent and rolled to create non-linear members to further enhance the aesthetic appeal of the structure.

SPEED

Enhances construction productivity because of its shop fabrication while maintaining tight construction tolerance.

HIGH STRENGTH

Has a yield stress of 50,000psi in both compression and tension.

SUSTAINABLE

Structural steel is made of 88% recycled product, is fully recyclable in the future and can be reused without further processing.

MODIFIABLE

Buildings can be modified in the future for new applications, loading conditions, critical expansions and changes in owner desires in ways that other framing systems can never accomplish.

EFFICIENT

Typical steel column occupies 75% less floor space than an equivalent concrete column and it also allows longer spans that eliminate intermediate columns creating open floor areas.

RELIABLE AND PREDICTABLE

Structural steel is manufactured and fabricated under controlled conditions and the material is verified at the point of production.

Our Strength

- No compromise with quality
- Design Flexibility
- Value customer's time
- Competitive Price
- Deliver on time
- After Sales Service
- Promises for superior service, experience and excellence partnership

Our Expertise

- Industrial Building & Shed
- Multi-storied Steel Building
- Garments Factory
- Warehouse
- Showrooms & Rack Structures
- Filling Station
- Commercial Building
- Paper Mills
- Textile & Spinning Mills
- Shopping Malls
- Auto Rice Mills
- Stadium
- Bridge
- Power Station
- Refinery



Engineering Team

The Engineering services combine the excellence of technology with sound Engineering skills to result in greater quality steel design and detailing services, management and delivery. We have a team specialized in Engineering software and their proficiency helps our clients to achieve the most economical and structural efficient engineering solutions. To increase the efficiency and accuracy of a design for various types of complex structures we use design software STAAD PRO Connect Edition V22, ETABS, SAP by highly qualified structural Engineers for Structure design.

Sales and Customer Team

We have an experienced sales team that is highly talented, dedicated and objective oriented. Having customer satisfaction is their top priority. The sales staffs identify the customer's requirements and responds to them professionally on time. Our sales team covers all over the country with a prime goal to continuously expand to new markets having customer satisfaction uppermost on their mind. Upon receiving any inquiry, the sales Engineer in co-ordination with the Estimation department makes sure that the proposal is ready and submitted on time. Our Customer service team is enriched with expert and experienced engineers monitoring and accomplishing a project from signing contract to till handing over to client.

Manufacturing Team

We continually strive to find the latest methods, technology and machines to ensure the highest levels of productivity, quality and delivery. We are one of the best steel structures manufacturing facilities providers in Bangladesh. It is housed in an area of 15,000 square feet and owned by the company itself. Yearly Production of our factory is 5,000 MT. Production Department of this factory has number of sections like, Cutting & Fitting, Fabrication, Welding, Grinding, Painting, Cold forming and Fiber Shop. Welders and other technical staff members are well trained and certified in their respective

Quality Control Team

Quality Control Department of this factory is adequately equipped to conduct all relevant QC Tests relevant to steel structures. It has sample arrangement for storage of raw materials as well as finished products both in open yards as well as inside the production Building.

Erection Team

All the projects are carried out by Annex Engineering Services personnel of subcontracted to qualified contractors who work under the direct management and supervision of our erection team. A qualified site construction engineer from our company will manage the project whenever erection is under our responsibility. Our erectors are familiar with piece marking system and erection methods. This will reduce time required during erection.

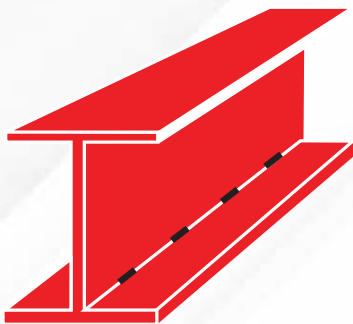
M.S Plate

Parameter		Min.mm	Max. mm
Flange	Width(B)	100	600
	Thickness (tf)	6	40
Web	Height-(H)	100	1500
	Thickness (tw)	4.5	32

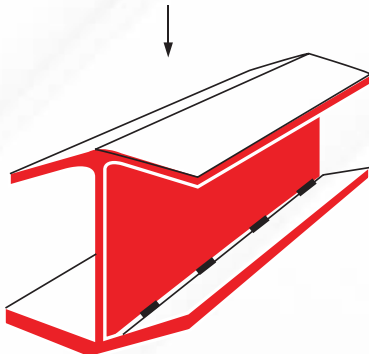
Material : Hot Rolled Plates
Standard : ASTM A572 M Grade-50 (G-345)
Yield Strength : 345MPa
Surface : Red Oxide/Gray Oxide
Length : 6m
Application : Column, Beam, Rafter, Bracing etc.



Hot Rolled Strip
(by Gas Cutting or Shear Cutting)

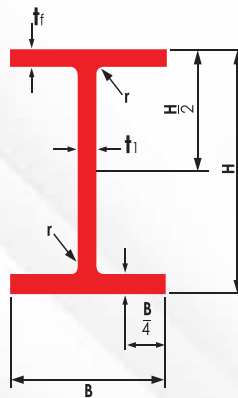


H-beam assembling
(by auto Spot Welding)



H-beam Fabrication straighten
(by submerge arc welding)

H-Beam Section	
Material	Build up Section
Standard	ASTM A572 M Grade-50 (G-345)
Yield Strength	345 MPa
Ultimate Strength	450 MPa



Geometrical moment of inertia
 Radius of gyration of area
 Modulus of section
 (A = sectional area)

$$\begin{aligned}
 I &= Ar^2 \\
 r &= \sqrt{I/A} \\
 Z &= I/Y
 \end{aligned}$$



Cee & Zed Section

CEE & ZED Sections used as purlins or girt in three structural configuration

- | | |
|------------------------|---|
| a. As simple spans | for both Cee & Zed Sections. |
| b. As double spans | for both Cee & Zed Sections continuous over the centre support. |
| c. As continuous spans | limited to Zed section lapped over each internal support |

Base Steel	Cold Rolled Steel
Standard	ASTM A607 Grade 50
Yield Strength	345 Mpa
Tensile Strength	450 MPa

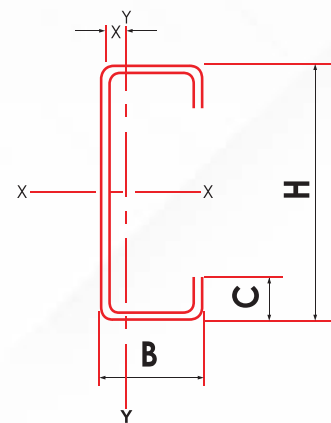
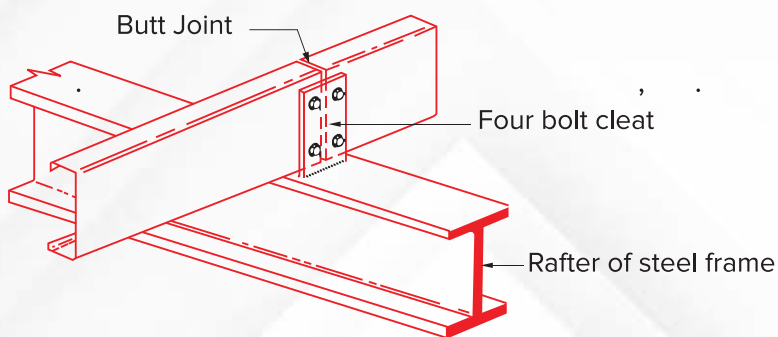


Fig: Cee Section

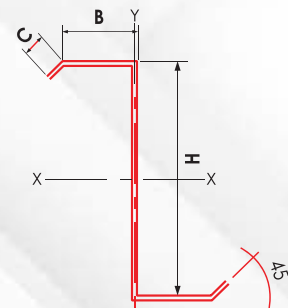
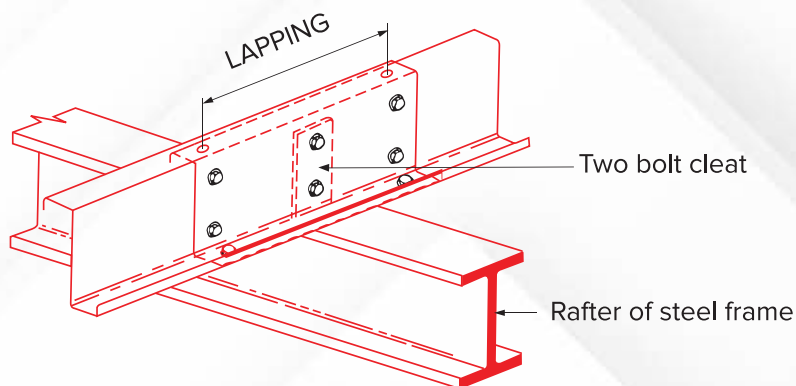


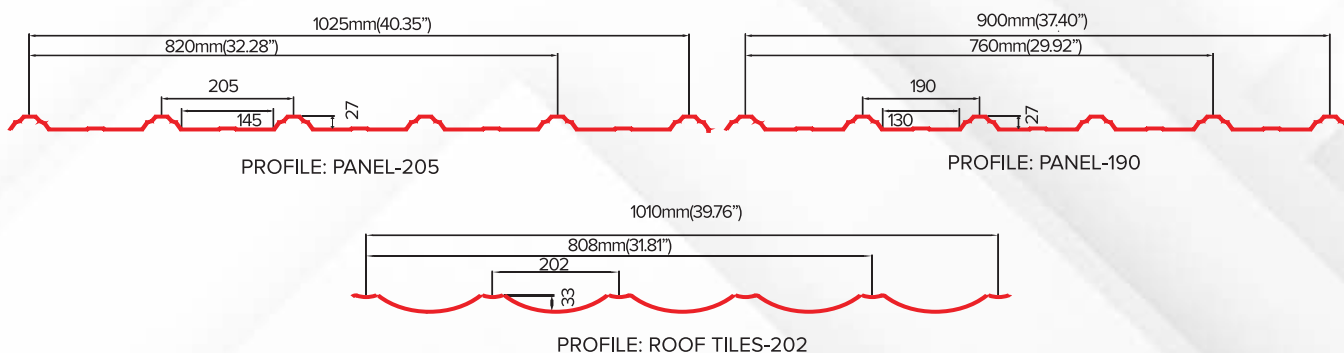
Fig: Zed Section

Profile Panel

Aztec Gold GS-001	Ash Gray GS-002	Charcoal Grey trim only GS-003	Koko Brown trim only GS-004
Hawaiian Blue GS-005	Crimson Red trim only GS-006	Burnished Slate GS-007	Fern Green GS-008
Colony Green trim only GS-009	Rustic Red GS-010	Light Stone GS-011	Deep Grey GS-015
Gallery Blue trim only GS-013	Saddle Tan GS-014	Polar White GS-012	White GS-016

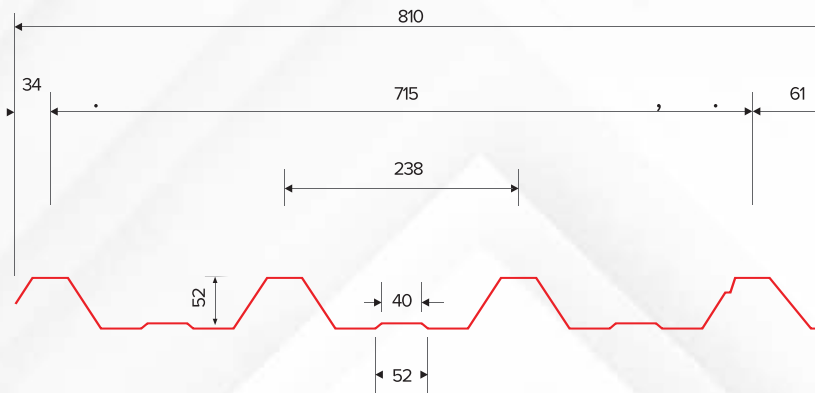
PHYSICAL PROPERTIES	PANEL -205		PANEL-190		ROOF TILES-202	
Feeder width	1000mm(39.37")	1220mm(48.00")	940mm(37.00")	1170mm(46.00")	1000mm (39.37")	1220mm (48.00")
Effective width	820mm(32.28")	1025mm(40.35")	760mm(29.92")	950mm(37.40")	808mm(31.81")	1010mm (39.76")
Total Coated Thickness(TCT)	0.47mm	0.47mm	0.47mm	0.47mm	0.47mm	0.47mm
Mass per unit area	4.32kg/m ²	4.26kg/m ²	4.35kg/m ²	4.28kg/m ²	4.51kg/m ²	4.43kg/m ²
Coverage	232 m ² /MT	235 m ² /MT	230 m ² /MT	234 m ² /MT	222 m ² /MT	226m ² /MT
Profile	Single Skin Trapezoidal					
Fastener	#12-16x50mm, Hex-Head Self-Drilling or Self-Tapping Screw depending on support thickness					

Base Steel	Cold Rolled Steel (.42mm BMT)
Standard	AS 1397-1993 Grade80(G550)
Yield Strength	550 MPa
Pre-Treatment	Proprietary Corrosion Converting Coating
Substrate	Aluminium-Zinc alloy Coating AZ-150 (150 g/ m ²) or depending on the product . Aluminium (55%), Zinc (43.4%)
Paint System	Primer Coating-Epoxy Primer Finish Coating-Polyvinylidene Fluoride(PVDF)
Profile	Single Skin Trapezoidal
Fastener	#12-16x50mm, Hex-Head Self-Drilling or Self-Tapping Screw depending on support thickness



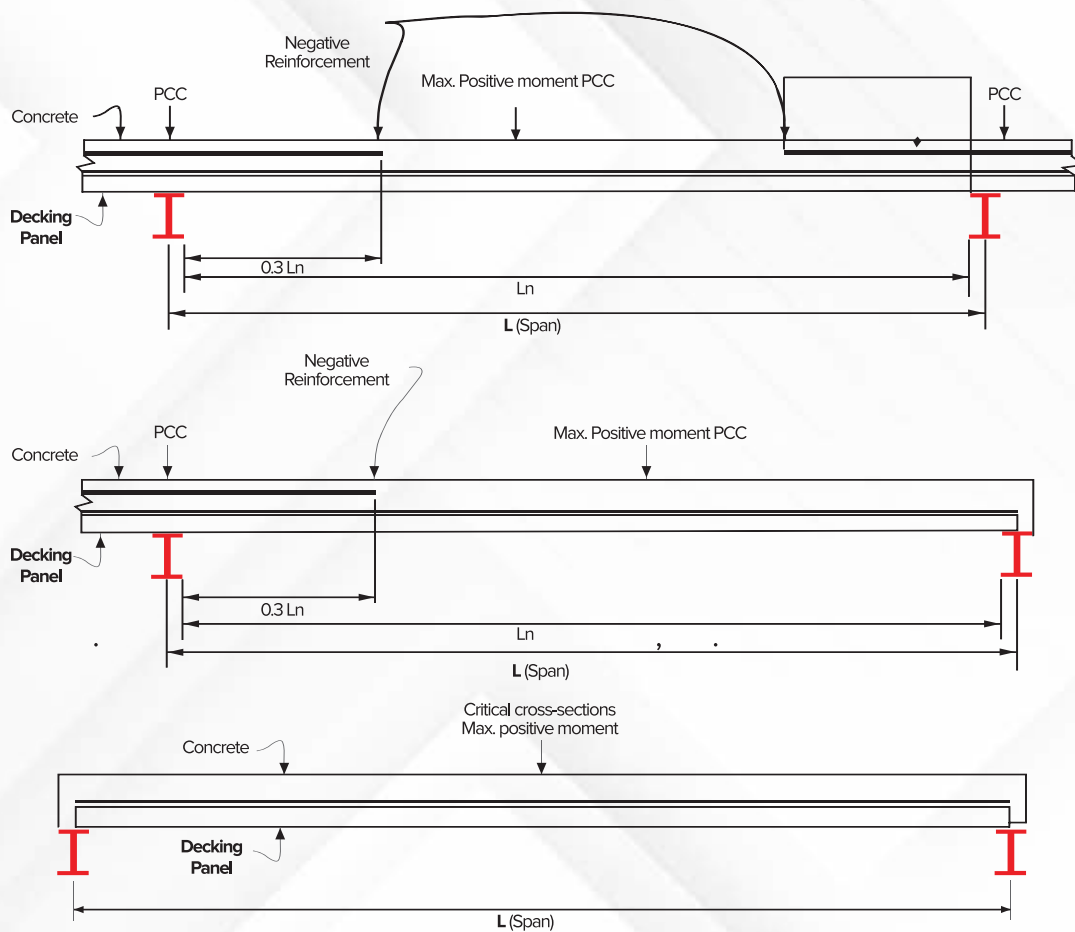
Decking Panel

Base Steel	Cold Rolled Steel
Standard	JIS G3322 CGCC or A792(M)-01 a SS Grade 50(345)
Yield Strength	345 MPa
Tensile Strength	450 Mpa
Substrate	The metal coating vary from Z-200 (200g/m ²) to Z-450 (450g/m ²)
Profile	Single Skin Trapezoidal
Profile Specification	YX52-238-715
Fastener	No.12-24x30mm, Hex-Headed Self-Drilling Screw or depending on support condition



PHYSICAL & SECTION PROPERTIES	STANDARD		
Thickness, BMT mm [Gauge]	1.00[19]	0.75[21 ~ 22]	0.60 [23]
Mass per unit area, kg/m ² [kg/sft]	11.31[1.05]	8.43 [0.78]	6.76 [0.63]
Coverage, m ² /MT [sft/MT]	88.44[952]	118.64 [1.277]	147.90 [1,592]
Section Modulus, Z _x [10 ³ mm ³ /m]	8.32	10.44	13.91
Cross-Sectional area, Ash[mm ² /m]	839	1,049	1,399
Second moment of area, I _x [10 ⁴ mm ⁴ /m]	31.97	40.07	53.43





PCC: Potentially Critical Cross-Sections
FIG: Conventional Reinforcement

Anchor Bolt

Bolt Dia (mm)	Weight/pc (kg)	A (mm)	B (mm)	C (mm)	Total Length (Tolerance=± 25mm)	Tension (Kip)	Pull Out (Kip)	Description (mmxmm)
16	0.84	380	70	100	450	4.62	5.41	AB16x450
20	1.55	460	90	125	550	7.56	8.88	AB20x550
25	3.25	660	90	125	750	10.54	11.03	AB25x725
30	6.20	875	125	150	1000	17.02	16.88	AB30x1000



Self-Drilling Fastener

Fasteners are sundry parts used to fasten side laps of wall and roof sheeting and for attaching trims or flashing. Roof Panel must be crest fixed to supports. On the other hand, profile sheet for wall can be crest fixed or vally fixed

Upport Thickness, Steel	Fastner	Application
Up to 4.5mm	#12-16x25mm	Wall
	#12-16x50mm	Roof & Wall
	#12-16x65mm	With insulation Blanket
Exceed 4.5mm	#12-24x25mm	Wall
	#12-24x50mm	Roof & Wall
	#12-24x65mm	With insulation Blanket

Ridge Ventilator

Ridge Ventilator will provide natural air circulation at ridge line in any pre-engineered steel building. Ventilator can be installed as continuous or single unit considering throat opening 300mm to 600mm

Type	zrv-300, zrv-450 & zrv-600
Structure	Ridge Frame (cold-formed channels)
	Vent Girt (Cee or Zed Channel)
	Wind Band (Cold-formed 0.47mm pre-painted panel)
Main Parts	Top Plate, Throat Flashing End Flashin
	(All 0.47mm Pre-painted steel)
	Bird Screen (12mm x 12mm opening galvanized mesh)

Translucent Panel

Translucent panels are used to provide additional light in any pre-engineered building. It may used at roof panel as well as panel respective to the steel profile shape.

Base Materials	Thickness	Length	Color	Profile
UV-Ray Resistant Plastic Resin Reinforcement by Mesh	1.5mm-3.0mm	Max .6100mm	Std. transparent red, blue & green	S-profile Panel-190 Panel-205

Louver

Louver are used to provide natural air flow into a building. There are two type of louver, (i.e fixed louver & adjustable louver)

Capacity

Thickness	0.35mm-1.5mm
Width	400mm-3050mm
Surface	Pre-painted color steel, Galvanized steel & Red Oxide Painted steel

Structural Bolts

Structural bolts are used to fasten structural steel connection. Structural bolts should have one bolt, one nut & two washer.

M12x60mm, M12x65, M14x60, M14x65,
M16x60, M16x65, M16x80,
M18x60, M18x65, M18x80, M18x100,
M20x65, M20x80, M20x100, M22x100, M24x100 etc.

Sag Rod



SAG-ROD DETAIL (with four nut & four washers)

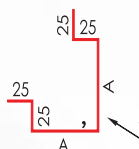
Shipmark	Length (mm)	Weight/PC (kg)	Purlin or girt distance (mm)	
			Minimum	Maximum
SR 1200	1200	0.81	1060	1140
SR 1350	1350	0.90	1210	1290
SR 1500	1500	1.00	1360	1440

Capping, Flashings & Gutter System

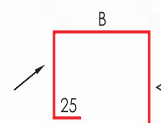
01. Ridge Capping



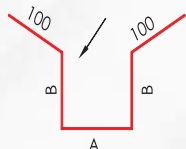
02. Corner Capping (External)



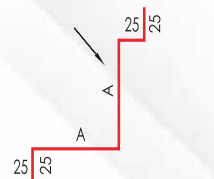
03. Down Pipe



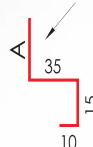
04. Valley Gutter



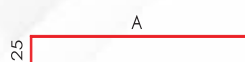
05. Corner Capping (Internal)



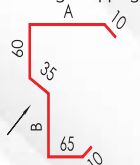
06. Bottom Flashing



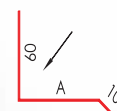
07. Down Pipe Clamp



08. Barge Capping



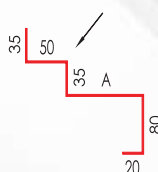
09. Parapet Flashing



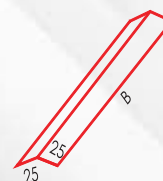
10. Fascia Capping



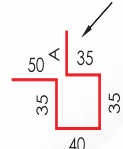
11. Hood Trim



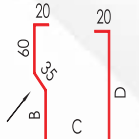
12. Gutter Strap



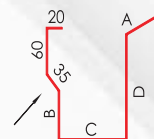
13. Seal Trim



14. Eave Gutter (Type-A)

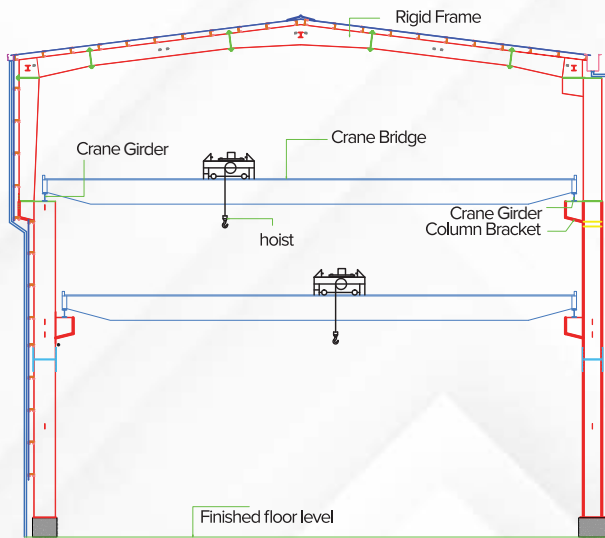


15. Eave Gutter (Type-B)

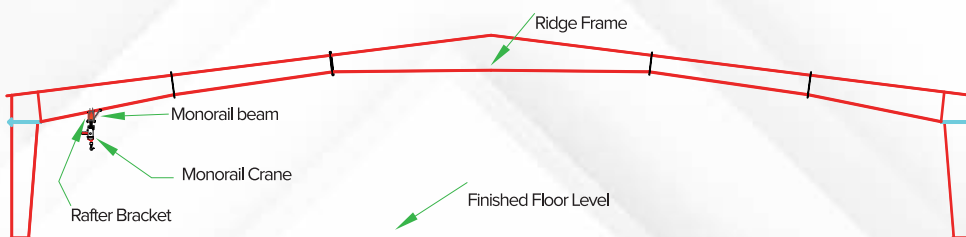


Crane Systems

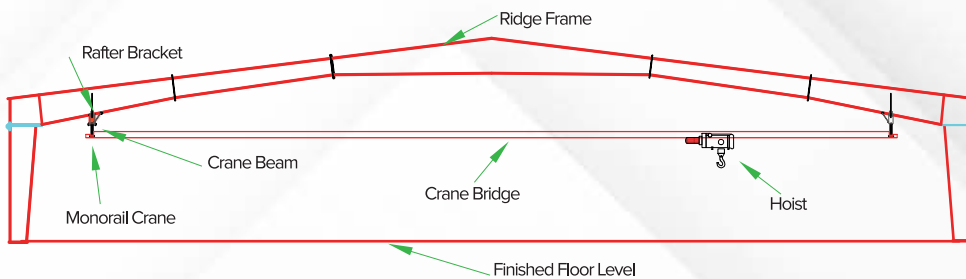
Geo steel structures can be designed to support any required crane system. Scope of Supply usually limited to the supply of column and rafter brackets, Crane runway beams and bracings. Runway beam can be done in both rolled and welded section.



Top Running Crane



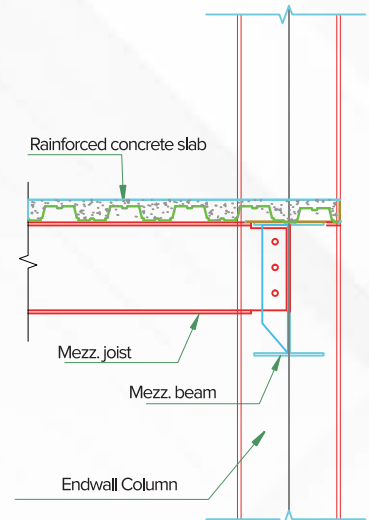
Monorail Crane



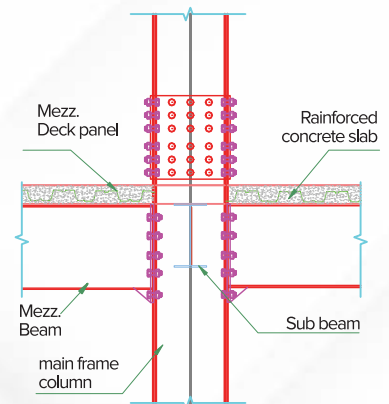
Underhung Crane

Mezzanines

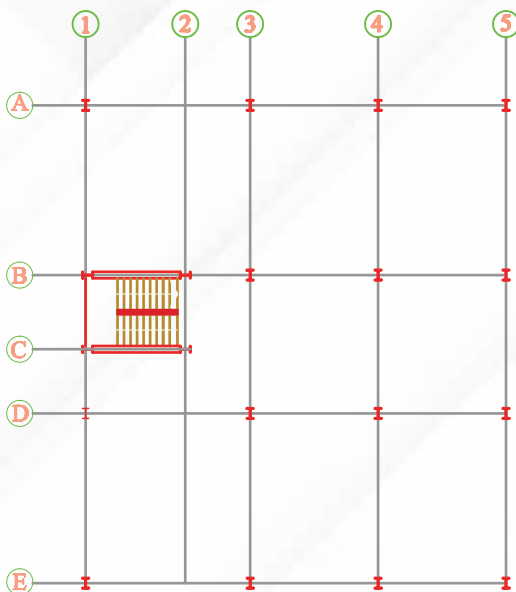
Standard mezzanine floor system consists of intermediate support columns, main beams, joist and a deck. The main beams will be supported by intermediate columns when it will be required by design loads. The economy of a mezzanine system depends on applied loads (dead, live and collateral) and mezzanine column spacing. Multi-level mezzanines, interior equipment platforms, catwalks and staircase can be accommodated if required as per complete given design data.



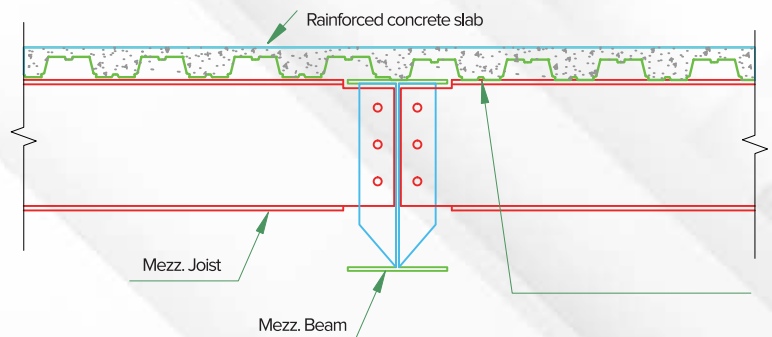
Joist Connection to endwall column



Mezz. column beam connection

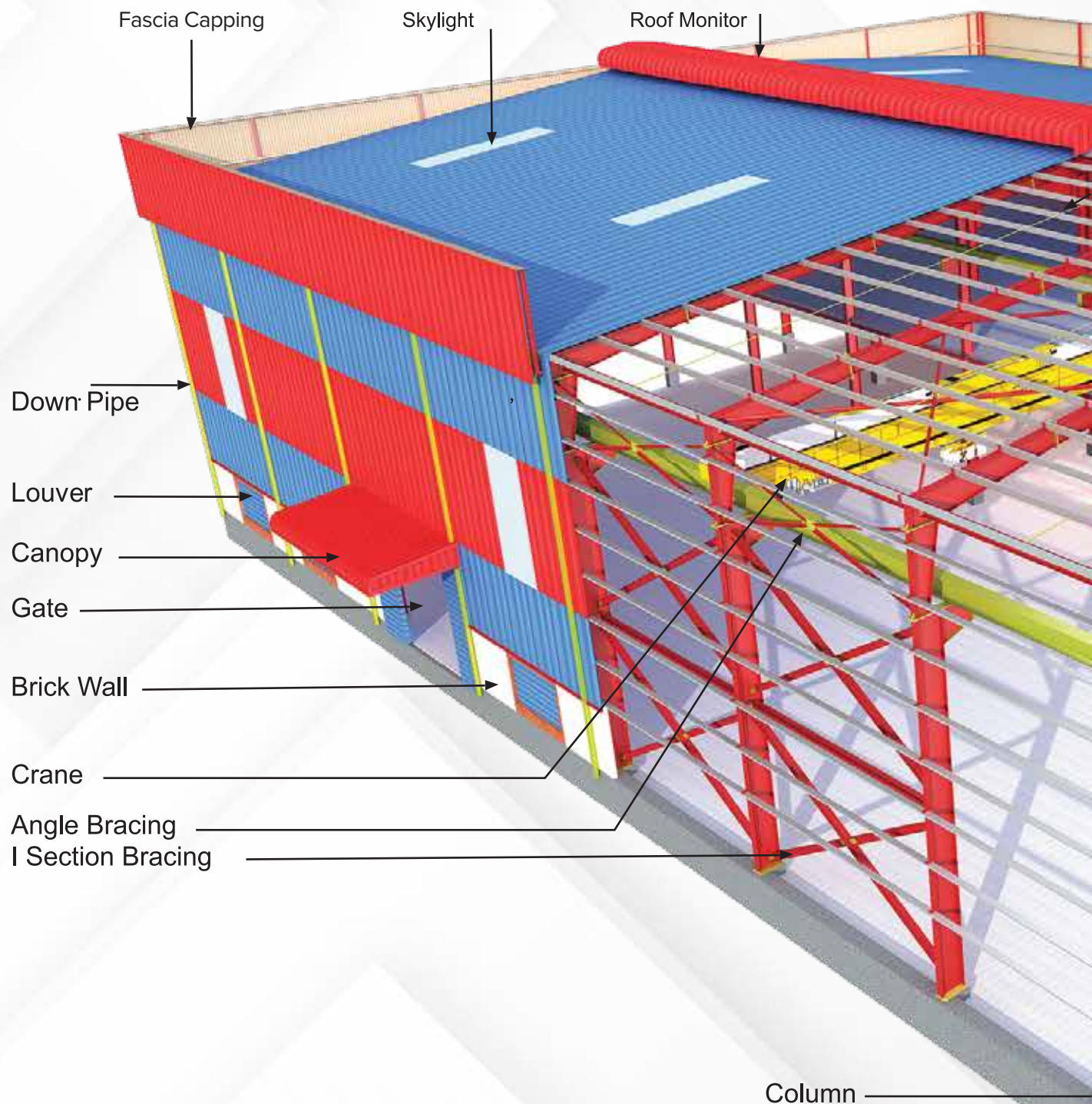


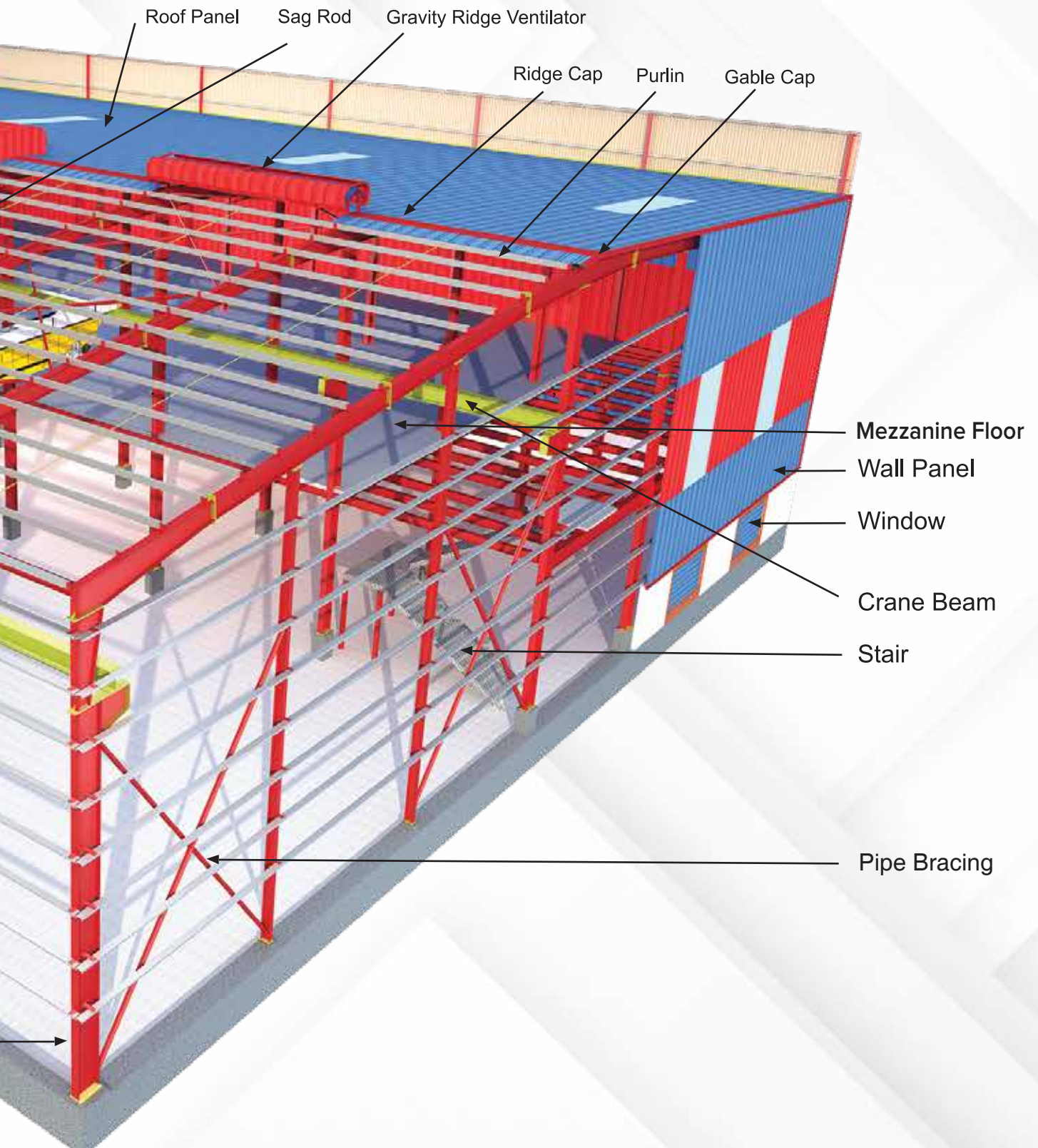
Mezzanine Floor Column Layout Plan



Mezz. Joist Connection to Mezz. beam

The Pre-engineered Steel Structure





The Building are designed in accounting with the following codes:

Bangladesh National Building Code (BNBC)
International Building Code “IBC-2009”.
Metal Building Manufacturers Association (MBMA)
Metal Building Systems Manual (MBSM) 2006
ASCE-7 Minimum Design Loads for Buildings and others structures Edition: 2005
American Society of Civil Engineers (ASCE)

Built up sections and Hot Rolled sections are Designed in accordance with:

Manual of Steel Construction-Allowable Stress Design (ASD)
1989 American Institute of Steel Construction , Inc. (AISC)
Manual of Steel Construction-Load Reduction Factor Design (LRFD).-American Institute of Steel Constriction, Inc. (AISC)

Structural Analysis, Design and Detailing is done by the aid of following softwares:

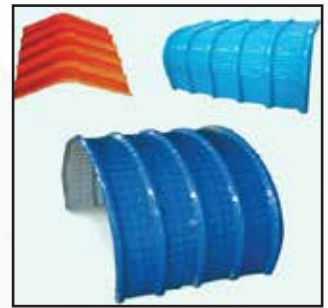
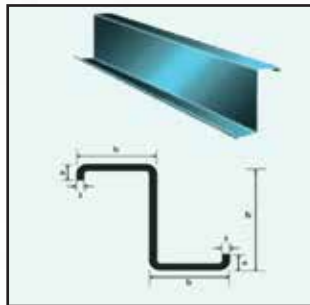
STAAD Pro V8i, ETABS Non-Linear 2018,
SAP-2010, STAAD Foundation 5.0,
AUTO CAD-2018, SAFE12.1.1, Tekla Structures 17.0

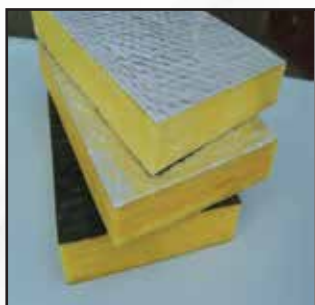
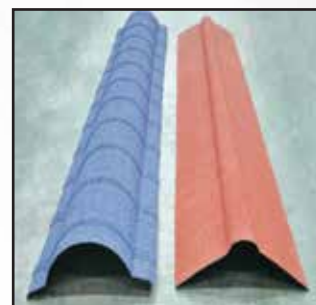
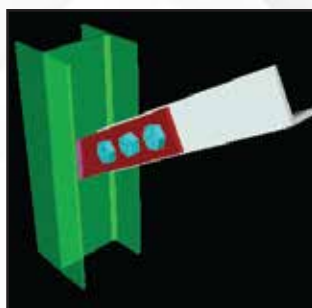
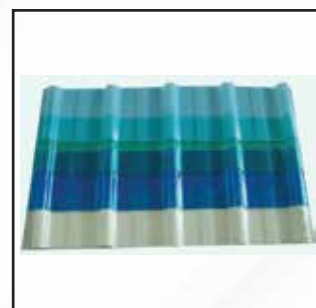
Cold formed members are designed in accordance with:

2002 Edition of Cold Formed Steel design Manual American Iron and Steel Institute (AISI)

Welding is applied in accordance with:

American Welding Society (AWS D. 1. 1. 96)

**Anchor Bolts****Coil****Color-Coated Sheet-Coil****Curved Sheet****Checker Plate****C Purlin****Z Purlin****Nut Bolts****Fasteners****Royal Bolts****Sag Rod****Washer****Decoiling System****Fascia Capping****Down Pipe****Decking Panel**

**Gravity Ventilator****Gutter****Louvers****Natural Ventilator****Sandwich Panel****Glass Wool****Buble Insulation****Ridge Panel****Cable Bracing****Bracing Cleat****Sliding Door****Translucent Sheet****Silicon Sealant****Turn-Buckle****Stair****Sky Light**





2-Storeyed I wash House at Bashila, Mohammadpur



Army Camp by PU for 20 ECB



2-Storeyed Restaurant at Narayngonj



4-Storeyed School Building at Chittagong



Multi Storied Feed Mill Shed at Trishal, Mymensigh



Single Storied Cow shed at Dinajpur



2-Storeyed Warehouse Shed at Gazipur



Feed Mill Shed Structure at Dinajpur



Connecting Bridge at Malibug,Dhaka



Feed Mill Shed structure at Bogura



Single Storied Pharmaceutical shed at Noakhali



Single Storied Shed at Tangail



Connecting Bridge at Kallynpur, Dhaka



Feed Mill Shed Structure at Dinajpur



Tower



4-Storey Lift Core of BAEC at Dhaka



Tower



Tower



Feed Mill Shed at Tangail



2-Storeyed Shooting Range at Bashundhara, Dhaka



Single Storied Brick Filled Shed at Sylhet



Single Storied Hatchery shed at Bogura




Single Storied Feed Mill Shed at Bogura




Single Storied warehouse shed at Narayngonj






 +880 1718 380154

 annex.engineering16@gmail.com

 www.annexsteelbd.com

 Corporate Office: House- 69 (1st Floor), Road-03, Janata Housing, Ring Road, Adabor, Dhaka
Factory: West Shalna, Desipara, Notun Bazar, Gazipur, Bangladesh.