

District	Baalback	<b>Steel Structure for Seeds Incubator</b>	
Village	la'at		
N.	Item Description	Unit	Qty
<p><b>Steel Structure: supply, manufacture and install</b>  steel structure bldg. over RCC columns of 6.30 m,  Dimensions: 40 meters length and 20 meters width  eave height 5.7 meters over RCC column of 6.30 m high  ridge height 13.0 meters  The paint application on steel structure must be brushed, cleaned then painted by one anti-corrosive epoxy primer followed by two final coats of epoxy paint grey color.  The codes and specifications used for load application and building elements must be indicated, the materials specifications, structural component specification, accessories, all should be according to the international standards and executed as per the attached drawings and according to the engineer's instructions.  Must study the design loads including dead and live loads on roof and frame, wind speed, rainfall intensity ... etc.  All needed accessories, elements and materials are required to complete the construction of the hangars per the attached drawings describing the type of bracing and trims.</p>			
1	<b>Painted PEB Main steel frames</b> including anchor bolts diameter 25 mm and 75 cm length and plates of 20 mm, PEB Steel Beams, main frame, of plates 6 mm, 10 mm, 12 mm, IPE 200 as end wall columns, (L shape) Bracing steel Angles 60 x60x6 mm, strut beams, Base and connection plates with connection bolts M22 Galva 8.8, <b>structure to include steel connections for future installation of solar panels.</b>	24000	kg
2	<b>Galvanized Purlins Z250 /2.5 mm</b> and side <b>girts Z250/2.5 mm</b> with all bolts including eave struts, base and gable angles.	1352	ml

3	<b>Roof Cladding:</b> 5cm thick <b>Painted (light blue)</b> Corrugated Sandwich panels outer and inner skin of 0.45mm thick pre-painted steel sheets off-white color of low ribbed isolated by 50mm thick injected polyurethane foam of 40kg/m3 density	880	m <sup>2</sup>
4	<b>Wall Cladding:</b> 5cm thick Flat Sandwich panels outer and inner skin of 0.45mm thick pre-painted steel sheets off-white color isolated by 50mm thick injected polyurethane foam of 40kg/m3 density	822	m <sup>2</sup>
5	Flashing and trims	110	ml
6	galvanized <b>steel gutters</b> , 2mm, grade 275g/m2, with <b>galvanized</b> steel downspouts	80	ml
7	<b>Single sliding steel Doors</b> , steel frame with corrugated galvanized steel sheets Height: 6.0 m Width: 4.0 m, Equipped with sliding mosquito net door with all needed accessories	3	Nos.
8	<b>Internal partitions:</b>	5900	kg
a	Steel supports of standard I beam IPE200, sag rods, Purlins Z250, 2.5 mm with necessary anchor bolts and plates		
b	Painted ( <b>light blue</b> ) <b>Corrugated sheets</b> partition		
c	Flashing		
		432	m <sup>2</sup>
		100	ml

Criteria	Condition	Submittals
<b>Technical Requirements</b>		

<p>Contractor shall visit the site and ascertain himself with all site conditions. All works shall be done in full coordination with <b>LOST</b> regarding approvals, materials entry permissions, supervision etc..</p>		<p>- Must provide shop drawings and details, steel dimensions and thickness, columns installation detail, plate thickness and bolts details, purlins, beams, columns, tubes, channels, angels and Sandwich panels' sheeting.</p>
<p>Materials used for the steel construction, Anchor bolts of diameter 25 mm and 75 cm length and plates of 20 mm, PEB Steel Beams, main frame, of plates 6 mm, 10 mm, 12 mm, (L shape) steel corners 60 x60x6 mm, galvanized steel purlins Z250 /2.5 mm, strut beams 5 cm thick Corrugated Sandwich panels pre-painted off-white for roof, density 40 kg/m<sup>3</sup> and Flat profile of 5 cm sandwich panels of density 40 kg/m<sup>3</sup> for wall cover 6 m from above, transparent cover sheets (320cmx100cm) of thickness 1.5 mm, Qty: 14 pcs Base and connection plates, 2mm galvanized steel gutters grade 275g/m<sup>2</sup>, Internal partitions: Steel supports of standard I beam IPE200 with necessary anchor bolts and plates, with sandwich panel partition of 5 cm, same specs as wall panels</p>	<p>☐ Must meet the specifications and must be according to international standards all steel components should comply with grade S275 Must include required grade for accessories and bolts.</p>	<p>- Brand, Pictures, data sheets</p>
<p>Applicable design loads</p>	<p>Design Live Load on Roof: 0.6 KN/m<sup>2</sup> Design dead load: 0.12 KN/m<sup>2</sup> Snow load on roof: 1.5 KN/m<sup>2</sup> (75 cm) Wind Speed: 135.6 Km/h (160 Km/h 3 seconds Gust Speed)</p>	<p>- Provide study of the dead loads, imposed loads, wind loads and earthquake loads.</p>
<p>Warranty</p>	<p>25 years warranty on steel structure</p>	<p>- Provide warranty period &amp; Coverage</p>

**General Specifications and Conditions**

1 -Applicable Codes

- DESIGN LOADS are applied in accordance with:
- Low Rise Building Systems Manual
- Metal Building Manufacturers Association, Inc. (MBMA)
- HOT ROLLED and BUILT-UP Sections designed in accordance with: 9191 Manual of Steel Construction - Allowable Stress Design
- American Institute of Steel Construction (AISC) 1 East Wacker Dr., Suite 3100, Chicago, IL 60601-2001, USA

- COLD FORMED MEMBERS are designed in accordance with: - 9191 Edition Cold Formed Steel Design Manual
- American Iron and Steel Institute (AISI) 911191 th St., NW, Washington, DC 20036, USA
- WELDING is applied in accordance with:
- 9111 American Welding Society (AWS) Structural Welding Code - Steel Manual, NW Lejeune Rd., Miami FL 33126, USA

## 2- Material Specifications

Built Up Section Members fabricated from plates or bar stocks shall have flanges and webs joined on one or both sides of the web, as required by American Welding Society design codes (AWS), by a continuous submerged arc welding (SAW) process and shall have a minimum yield strength of 50,000 psi and will conform to the physical specification of ASTM A-572.

Hot Rolled structural shaped sections shall have a minimum yield of (36,000 psi) and will conform to the physical specifications of ASTM A - 572.

Cold Roll Formed Sections shall have minimum yield strength of (50,000 psi) and will conform to the physical specifications of ASTM A - 607 or equivalent.

Primary Bolted Connections shall be furnished with high strength bolts conforming to the physical specifications of ASTM A - 325 or equivalent (8.8 grades).

Secondary Bolted Connections shall be furnished with machine bolts conforming to the physical specifications of ASTM A - 307 or equivalent.

## 3- Steel Work Finish

All primary steel members and secondary steel shall be shot blast cleaned to SA 2.5 and surface prepared for zinc rich primer 60µm + 1 undercoat of epoxy polyamide 80µm + 1 final coat of polyurethane paint 40µm (touch up paint included 5kg)

## 4- Building Description:

- Steel structure with 800 SQM areas approx.
- Width: 20 m
- Length: 40m
- Steel column Height: 6m Eave height at low end, over RCC column of 6.30 m height