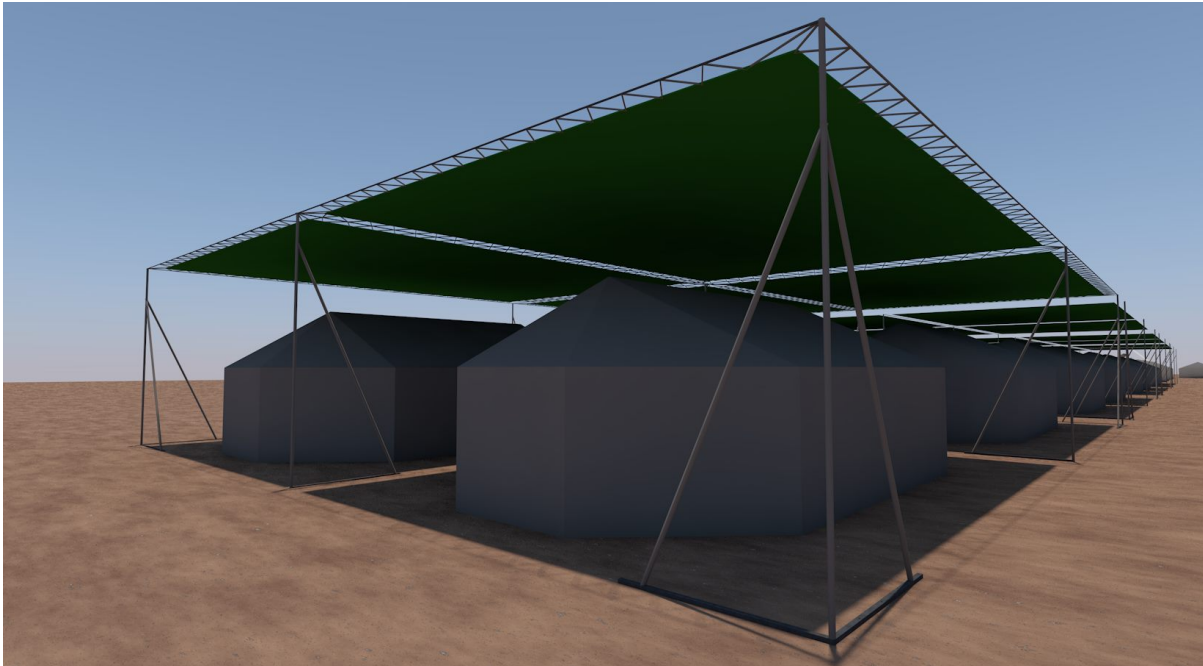


Summerisation

Sun Shading of Tented Camps



144 tents in Elliniko III Refugee Camp, Athens & 193 tents in Lagkadikia Refugee Camp in Thessaloniki

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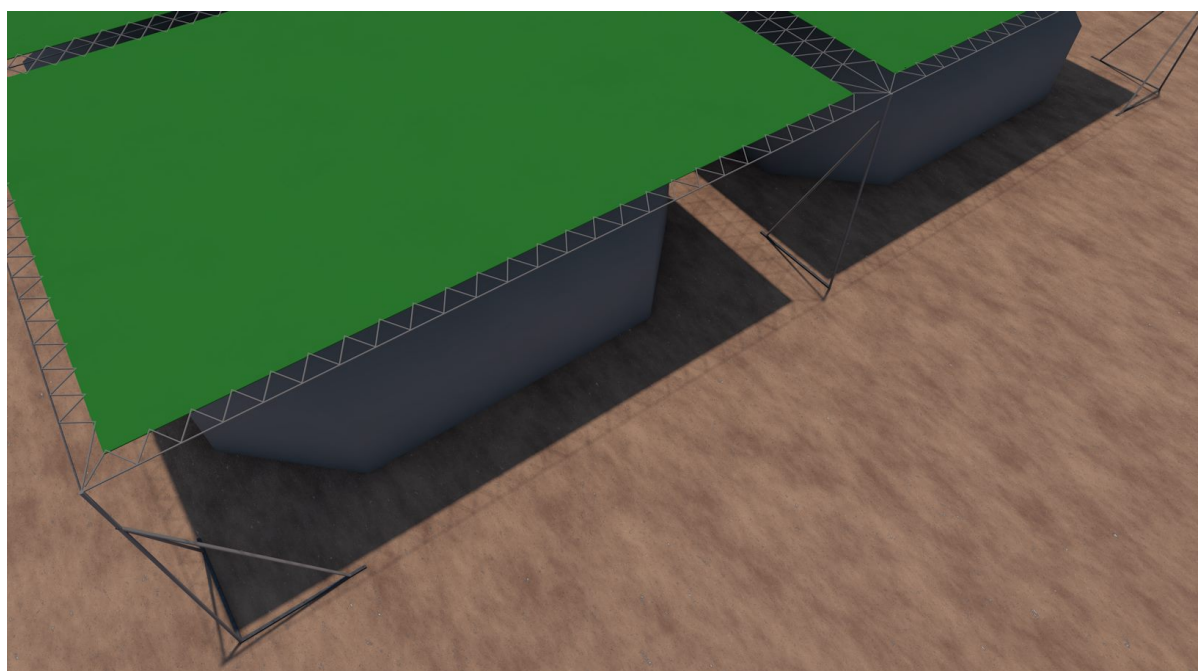
Annex I — BoQ Sun Shading of Elliniko III Refugee Camp
Annex II — BoQ Sun Shading of Lagkadikia Refugee Camp

Design Brief

Sun Shading of Family Tent

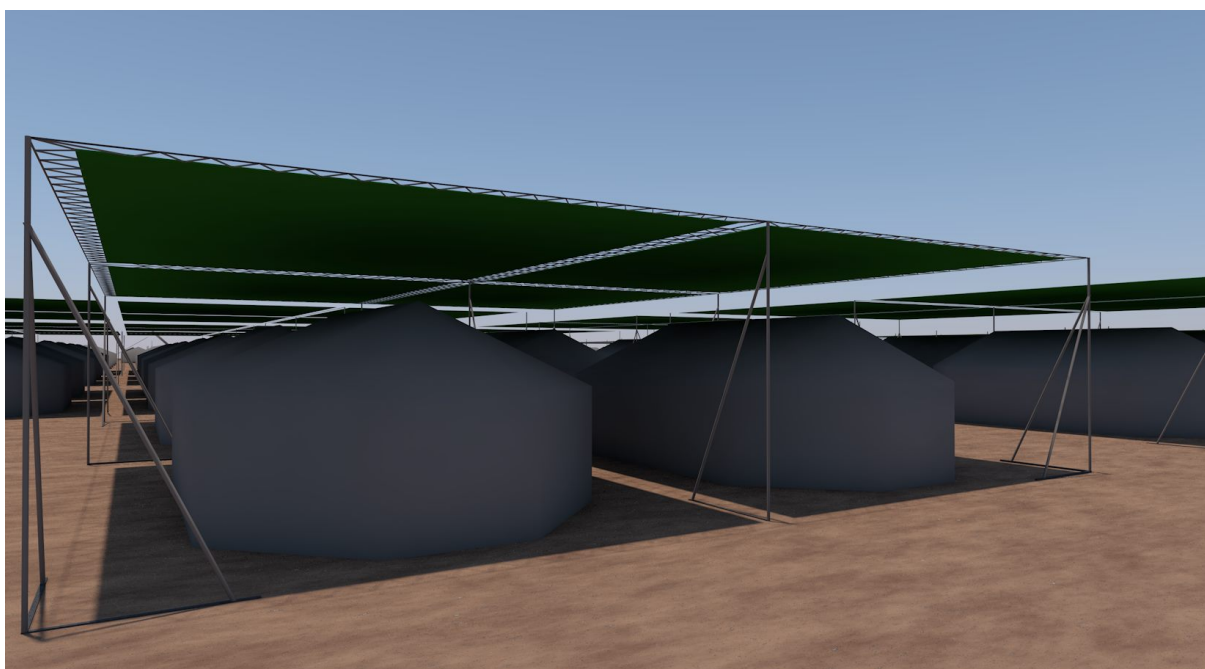
Performance standards and indicators for shelters		
Indicators	Standard	Remarks
Key data		
Timeframe	Design 1 week Building a prototype 1 week Tendering 3 week Execution 3 weeks Handover	Shading system needs to be operational in the beginning of August.
Life span	Materials and construction should allow for a use until the 31st of October 2016. Materials should allow for easy maintenance.	In autumn a change from sun to rain protection can be considered based on the same metal structure.
Cost	500-550€ per family unit.	Consider supplying only some of the materials when existing materials remain.
Covered area	In Elliniko III provide sun shading for 144 family tents. In Lagkadikia provide sun shading for 193 family tents.	
Hazard resistant construction		
Sun	The shading structures should protect the beneficiaries from direct sunlight.	70-80% shade rate
Winds and storms	Poles fixed to the ground must secure the metal structure in strong winds. The shading net should have a reinforced edge either band or rope sewn in order withstand heavy winds.	Depending on the cohesiveness of base material, the depth of the poles and pegs will vary from 30 to 60cm.
Corrosion/Decay	Galvanized quality steel should be used to protect against corrosion and rust. The shading net should be anti-UV treated.	
Clear Passages	Main pathways and emergency exits should be kept clear of ropes and poles used to support the shading structures. Secondary or back pathways should also be kept clear of hazards (peg tips or stretching ropes).	
Sun		
Suitability for relocation/material Reuse	Shading units should be easily dismantled and relocated. Materials are to be reusable.	The shading units may later be used to provide shadow for community, vehicle or material/supplies spaces etc. Almost all of the metal construction is reusable. Pending the life cycle, net should be Anti-UV treated.
Hazard resistant learning	Shading units should provide practical learning examples of principles of good construction (e.g. pegs and stretching ropes should not cause stumbling hazard.)	To promote good evacuation and/or circulation practice.

Ventilation, thermal comfort	In hot climates, adequate space between the family tent and the shading unit should be provided for air circulation. Allow for adequate ventilation between the shading units rows.	A minimum of 0,5m above the family tent height should be kept. A minimum of 2,7- 2,8m from the ground to the shading net.
Privacy	The shading unit poles will aid the defining of a plot site for the family unit.	
Culturally appropriate	Shading unit layouts, materials and construction techniques to be used are familiar to beneficiaries, and can be easily understood and regularly maintained.	
Access	Shading structure should take into account access by disabled and other people of concern.	
Site and services		
Location	The shading units should not be built next to dangerous buildings or structures, on land liable to flood, on land at risk of landslide, or in locations that expose the occupants to other hazards.	
Plot preparation	Site needs to be clear of any physical dangers.	In some cases a tent relocation should be considered.
Consultation	The project will be done with the consultation of the Shelter Sector/Camp Manager/Protection Team/Beneficiaries	

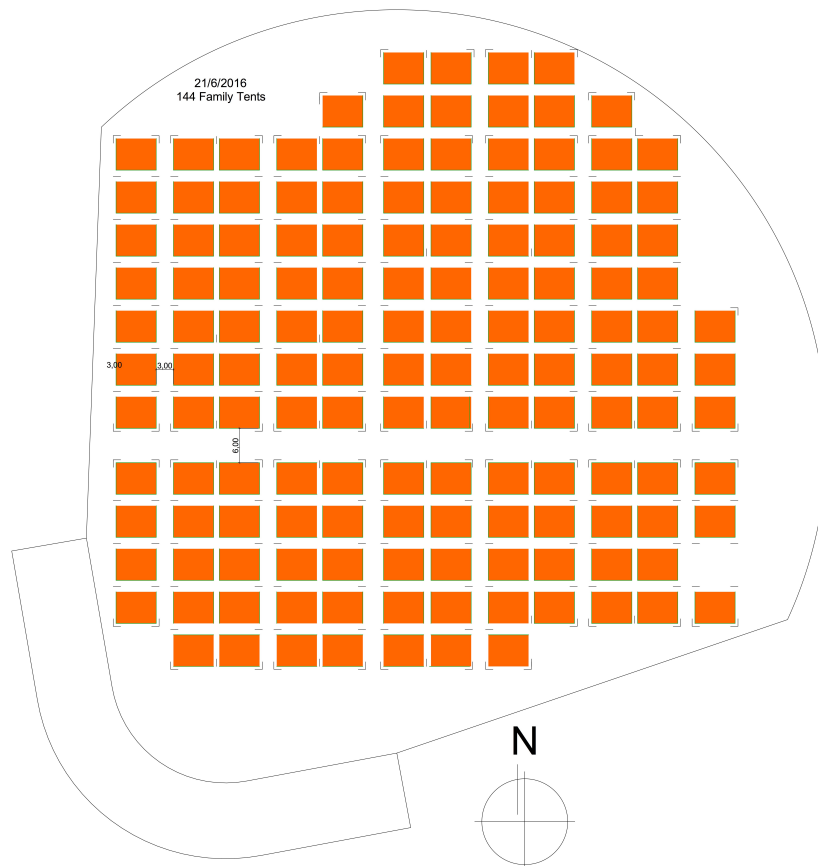


Material Specifications

#	Material	Material Type	Specification	Required Properties
1	Steel 1	Cold formed galvanized steel	Cold formed, hot dip galvanized steel. Steel quality ST 37-2 DIN 17100. Galvan quality DIN 2444 of min 400 g/m2.	diameter $\Phi 42(5/4")$ 2mm thickness.
3	Steel 2	Steel reinforced bar	s325 steel quality	diameter $\Phi 22$ or $\Phi 25$
4	Steel 3	Cold formed galv. plate steel	Cold formed, hot dip galvanized steel U-profile. Steel quality ST 37-2 DIN 17100. Galvan quality DIN 2444 of min 400 g/m2.	4x25x50 mm
4	Wire	Steel Wire	Galvanized steel wire	6 mm diam.
5	Metal clip	Metal wire lock clip	Galvanized lock clip for 8mm metal wire.	
6	Fabric	Shading Net	Tape knitted, any color except from red and white, sun block factor min of 70-80%, min weight of 140gr/m2, anti-UV treated. The shading net shall be reinforced with a sewing rope edge and metal eyelets per 30 cm.	Parametric reinforced band or rope/wire sewn.
7	Rope	Plastic Rope	Polyester or PET woven rope, 8 or 10mm diameter	Rope endings should be applied.
8	Bolts	Galvanized Steel Bolts	M10 diameter	
9	Screws	Galvanized Steel Screws	M10 diameter, butterfly screw	



Ellinico III Site Plan



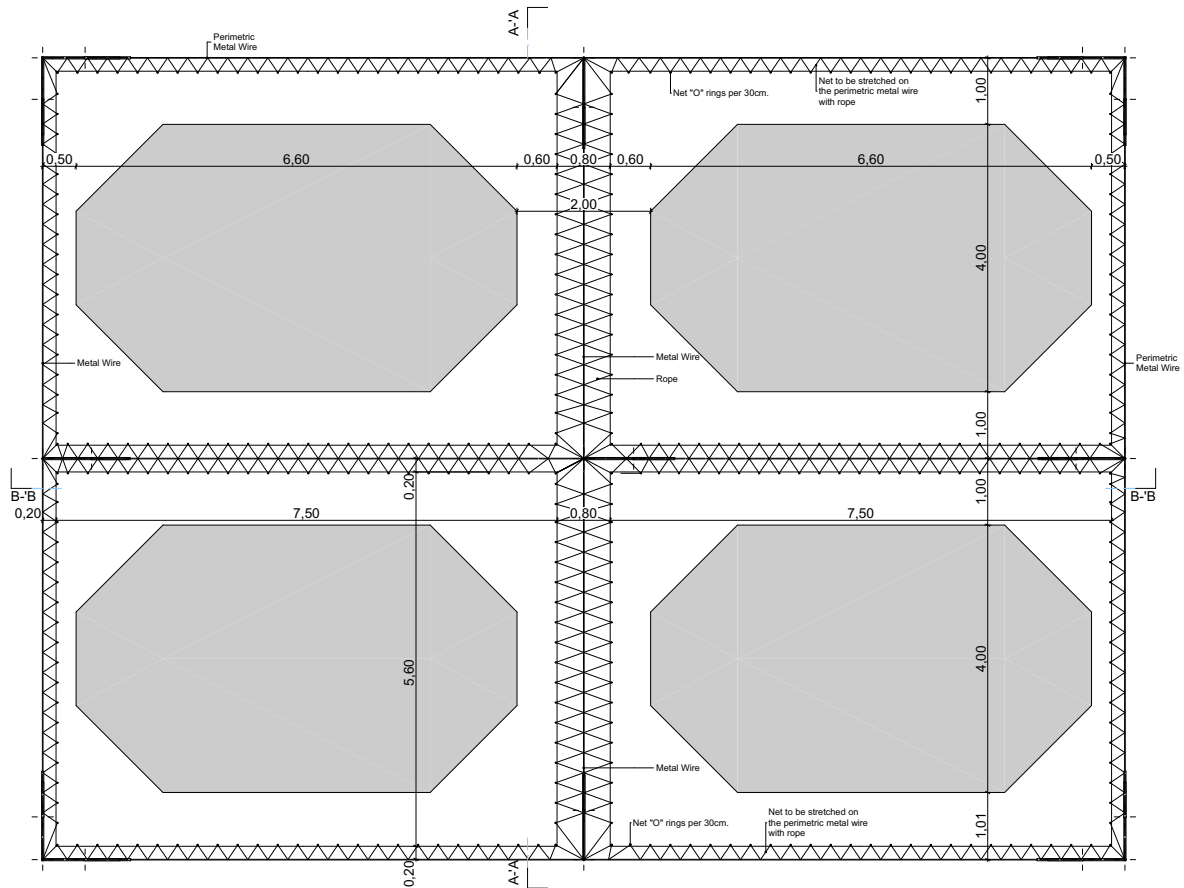
Quantity of materials for Ellinico III		
Items	Unit	Qty
Net, wire and rope	Pcs.	144
Tripod pole	Pcs.	124
Triangle pole	Pcs.	177

Lagkadikia Site Plan



Quantity of materials for Lagkadikia		
Items	Unit	Qty
Net, wire and rope	Pcs.	193
Tripod pole	Pcs.	161
Triangle pole	Pcs.	264

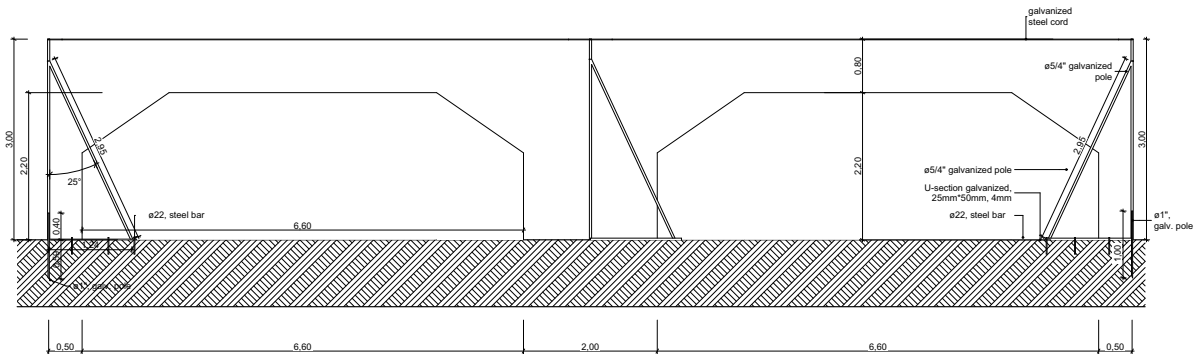
Plan section of 4 family units



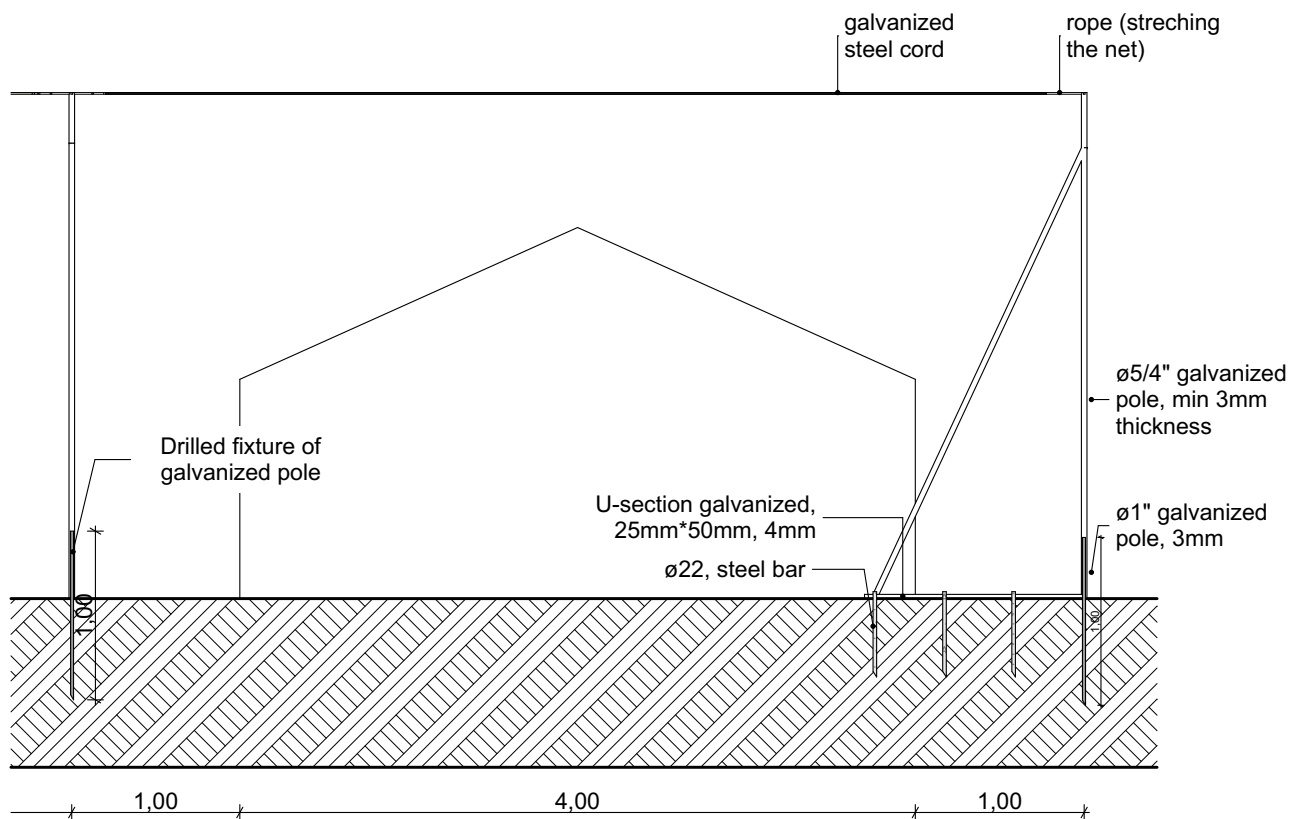
Specification of Shading Net, Wire and Rope

Item	Material	Unit	Qty
Consumption for 4 family units as per illustration above			
Shading net	Net 1	m2	128
Wire	Wire 1	m2	84
Rope	Rope 1	m2	242
Averages consumption for one family units			
Shading net	Net 1	m2	42
Wire,	Wire 1	m2	21
Rope	Rope 1	m2	60.5

Sections

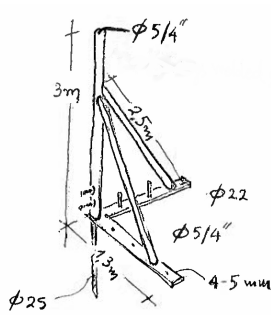


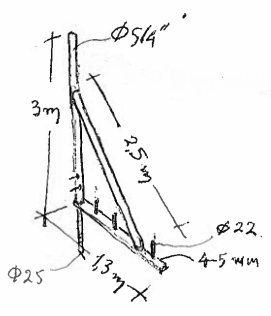
Longitudinal Section
(not measurable)



Transverse Section
(not measurable)

Details - poles

Tripod pole — ground fixe				
	Material	Unit	Qty	Total
	5/4Ø inch galv. pole	m	3	3
	5/4Ø inch galv. pole	m	2x2.85	5.7
	25x50x4 galvanized steel U-profile	m	2x1.3	2.6
	25Ø reinforcing steel bar	m	1	1
	22Ø reinforcing steel bar	m	0.6x6	3.6
	Steel screws M10, "butterfly" type	Pcs.	2	2
	Steel bolts M10	Pcs.	2	2

Triangle pole — ground fixe				
	Material	Unit	Qty	Total
	5/4Ø inch galv. pole	m	3	3
	5/4Ø inch galv. pole	m	2.85	2.85
	25x50x4 galvanized steel U-profile	m	1.3	1.3
	25Ø reinforcing steel bar	m	1	1
	22Ø reinforcing steel bar	m	0.6x3	1.8
	Steel screws M10, "butterfly" type	Pcs.	2	2
	Steel bolts M10	Pcs.	2	2

Time Frame

Tender and Implementation Schedule

ACTIVITIES	JUNE			JULY																														
Tender period	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Tender announcement	■																																	
Sample and Site visit			■																															
Tender closing								■																										
Awarding of contractor									■																									
Implementation period																																		
Contracting										■																								
Manufacturing of poles and shade											■			■	■	■	■	■				■	■	■										
Approval of manufacturing of shade and poles															■																			
Start assembling on the site																	■																	
Assembling on site																			■			■	■	■	■	■	■			■	■	■	■	
Approval of assembled Sun Shade on site																					■													
Finalising and handover																																	■	

ANNEX I

BoQ Sun Shading of Elliniko III Refugee Camp

Detailed pricing

	Shading Net, Wire and Rope	Unit	Qty	Rate	Amount
1.01	Shading net, 42m2	Pcs.	1		
1.02	Wire, 21m	Pcs.	1		
1.03	Rope 60,5m	Pcs.	1		
1.00	Total - Shading Net, Wire and Rope				
	Tripod pole	Unit	Qty	Rate	Amount
2.01	5/4Ø inch galv. pole	m	3		
2.01	5/4Ø inch galv. Pole	m	5.6		
2.03	25x50x4 galvanized steel U-profile	m	2.6		
2.04	25Ø reinforcing steel bar	m	1		
2.05	22Ø reinforcing steel bar	m	3.6		
2.06	Steel screws M10, "butterfly" type	Pcs.	2		
2.07	Steel bolts M10	Pcs.	2		
2.00	Total - Tripod pole				
	Triangle pole	Unit	Qty	Rate	Amount
3.01	5/4Ø inch galv. pole	m	3		
3.02	5/4Ø inch galv. pole	m	2.6		
3.03	25x50x4 galvanized steel U-profile	m	1.3		
3.04	25Ø reinforcing steel bar	m	1		
3.05	22Ø reinforcing steel bar	m	1.8		
3.06	Steel screws M10, "butterfly" type	Pcs.	2		
3.07	Steel bolts M10	Pcs.	2		
3.00	Total - Triangle pole				
Amalgamation					
	Summary	Unit	Qty	Detail pricing	Amount
1.00	Shading nets, Wires and Ropes	Pcs.	144		
2.00	Tripod poles	Pcs.	124		
3.00	Triangel poles	Pcs.	177		
0.00	Total - Summary				
	Signed By authorized contractor				
<div> <div>Sign & Stamp</div> <div>Date: / 2016</div> </div>					

ANNEX II

BoQ Sun Shading of Lagkadikia Refugee Camp

Detailed pricing

	Shading Net, Wire and Rope	Unit	Qty	Rate	Amount
1.01	Shading net, 42m2	Pcs.	1		
1.02	Wire, 21m	Pcs.	1		
1.03	Rope 60,5m	Pcs.	1		
1.00	Total - Shading Net, Wire and Rope				
	Tripod pole	Unit	Qty	Rate	Amount
2.01	5/4Ø inch galv. pole	m	3		
2.01	5/4Ø inch galv. Pole	m	5.6		
2.03	25x50x4 galvanized steel U-profile	m	2.6		
2.04	25Ø reinforcing steel bar	m	1		
2.05	22Ø reinforcing steel bar	m	3.6		
2.06	Steel screws M10, "butterfly" type	Pcs.	2		
2.07	Steel bolts M10	Pcs.	2		
2.00	Total - Tripod pole				
	Triangle pole	Unit	Qty	Rate	Amount
3.01	5/4Ø inch galv. pole	m	3		
3.02	5/4Ø inch galv. pole	m	2.5		
3.03	25x50x4 galvanized steel U-profile	m	1.3		
3.04	25Ø reinforcing steel bar	m	1		
3.05	22Ø reinforcing steel bar	m	1.8		
3.06	Steel screws M10, "butterfly" type	Pcs.	2		
3.07	Steel bolts M10	Pcs.	2		
3.00	Total - Triangle pole				
Summary					
	Summary	Unit	Qty	Detail pricing	Amount
1.00	Shading nets, Wires and Ropes	Pcs.	193		
2.00	Tripod poles	Pcs.	161		
3.00	Triangle poles	Pcs.	264		
0.00	Total - Summary				
	Signed By authorized contractor				
<div> <div>Sign & Stamp</div> <div>Date: / 2016</div> </div>					