APPENDIX C -- SCOPE OF WORK AND DOCUMENT OF QUANTITIES

DOCUMENT OF QUANTITIES FOR SUBMISSION OF OFFERS

Air Dome for leisure activities

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| General | Each one of the items in the document of quantities below will include in the price also: Provision, installation, ancillary material and accessories and all that is required for obtaining a finished, completed and properly operating product in accordance with the terms of the contract, plans and the specifications (technical, structural, safety and accessibility), all in accordance with the applicable Israeli Standards and Regulations). The supplier undertakes that the facility will operate under the existing conditions in various sites in Jerusalem. All of the elements will be easily disassembled, transported and reassembled at a different site as shall be required, (all with lifting hooks or carriers loaded onto "feet" via a forklift). All of the connections will be dismantleable and non-permanent and the equipment will be able to stand free at other sites as is customary. During the course of the work, the supplier will instruct and train a team of the client to carry out the disassembly and reassembly itself, for at least 2 weeks and until the team can carry it out by itself. | | | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| General | It is the responsibility of the supplier to plan, to provide, to assemble and to operate, and train how to operate a complete facility/s, including all of its parts, under the conditions currently prevailing in the location, without any malfunctions, at the required capacities and at a high professional level. The supplier must direct the attention of the client in advance to any contradiction and/or non-conformity and/or lack in the documents of engagement and to offer that which is required also in the event that it was not indicated in the documents attached. The company (the client) is entitled to order from the supplier the reassembly of the air dome at any site which shall be determined by the company within the bounds of the city of Jerusalem at the price indicated in Item 2(a). Including disassembly upon completion of the use.<br><br>The supplier shall include offers for different size AirDomes:<br>1. Membranes sizes – price per<br>a. Under 500 sqm<br>b. between 501-1000 sqm<br>c. between 1001-1500 sqm<br>d. over 1501 sqm<br>2. For all the other units – offers will be priced per unit (the amounts shall vary by the sizes of the membranes according to | | | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | regulations, standards or requirements) | | | | |
| 1.001 | **Double membrane system** – The Engineering membrane will be designed for extreme weather conditions suitable to the weather of Jerusalem. The insulating membrane will allow the entry of natural light during the day, which will further reduce the cost of lighting and contribute to the well-being of the users. The membranes will be joined by high-tension 100% secure connections and a double insulation membrane to create an air space for better heat and sound insulating properties. The membrane will be fireproof according to the Israeli Fire and Rescue Services Standards and international standards B1 or NFPA 701.<br><br>The membranes will be UV resistant with the use of a special lacquering finish such as Polyvinylidene difluoride (PVDF) or TITAN W increases the UV resistance, anti-static, self-cleaning and lifetime of the membrane.<br>Strength of Fabric – will have specifications on the strength of the fabric, which has been tested according to ASTM, DIN, or UL testing standards or equal standard specific for each strength test. | Sqm | | | |
| 1.002 | **Ventilation system –**<br>This Ventilation units will be designed to supply fresh air, as well as maintain overpressure and | unit | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | appropriate temperature in the dome according to the specific climate in Jerusalem. The air shall be heated by an indirect gas, oil or water high efficiency heat exchanger. The ventilation heating unit will consist of a casing made of aluminum, which is thermally insulated for use in extreme low temperatures. The control of the temperature and the pressure will be fully automatic with wind, snow and pressure sensors. The condensing unit will be high efficiency to reduce overall energy costs. The operation of ventilation heating unit will use a quiet radial fan. Ventilation heating units and its parts are made according to Israeli safety standards and regulations.<br>The Ventilation system will include air ducts, diffusers and optimal destratification system. Destratification system will consists of a network of ceiling fans to create the circulation of warm and cold air in the facility to lower heating costs and even distribution of hot air and pleasant climate in the building.<br>All components of the ventilation system have to be UL Listed standard or an equal standard. | | | | |
| 1.003 | **Emergency backup system**<br>The emergency ventilation unit will have a diesel engine that will serve as a secondary inflating system for emergency cases, such as power failures, pressure drops in the air supported structure, or | unit | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | strong winds. The system will automatically activate an additional independent ventilator powered by backup diesel engine which will also be equipped with wind and snow alarms, which, depending on the weather conditions, regulates the pressure and temperature inside the air dome. The main electrical box will be built-in double components to provide additional safety precaution. The Emergency backup system and its parts should be made according to Israeli standards and safety design appendix and regulations.<br>All components of the emergency backup system have to be UL Listed standard or an equal standard. | | | | |
| 1.004 | **Emergency door-**<br>Size and quantities shall be determined by the safety and accessibility design appendixes according to Israel Fire and Rescue Services laws and standards.<br>The structures will be equipped with an emergency exit, allowing fast evacuation in case of danger. The exit shall have a single-wing three point lock door, which consists of the metal frame and zinc-coated sheet with a thick tempered glass window and is coated with layers of protective coating. Emergency exit shall be marked with an emergency light which is automatically switched | unit | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | on in the event of a power failure. | | | | |
| 1.005 | **Revolving door**<br>Size and quantities shall be determined by the safety and accessibility design appendixes according to Israel Fire and Rescue Services laws and standards.<br>Revolving door will provide permanent access to the interior with minimal loss of overpressure. It will have three wings and is made of zinc-coated elements. The door is coated with layers of protective coating<br>For better visibility and more secure use, the door shall be equipped with thick tempered glass panes that will be fitted in the upper and lower half of each wing. | unit | 1.00 | | |
| | **Entrance for disabled persons** – Size and quantities shall be determined by the safety and accessibility design appendixes according to Israel Fire and Rescue Services laws and standards.<br><br>This entrance is intended for persons with disabilities. The entrance is fitted with a single-wing door with a mechanism (flap) which ensures pressure balancing. The support structure is made of metal hot dip zinc-coated profiles. The door will be coated with layers of protective coating. For better visibility and more secure use the door shall be equipped with thick tempered | unit | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | glass panes that will be fitted in the upper and lower half of each wing. | | | | |
| 1.006 | **CABLE HARNESS SYSTEM - Shall be determined if needed by the structural design appendix according to Israeli regulations and standards.** Air dome will consist of cable harness system which is a netting of cable that goes over the entire fabric envelope and attaches to the dome foundation. It will cover the entire dome, distributing the forces acting on the fabric of the dome evenly across the entire structure. The system shall include pulleys to adjust the cable harness system to constantly maintain even force distribution. The cable harness system will create a much more rigid and strong structure capable of handling much higher snow and wind loads according to the Israeli standards and specifications. | set | 1.00 | | |
| 1.007 | **Anchoring system - Shall be determined if needed by the structural design appendix according to Israeli regulations and standards.**<br><br>The anchoring system will use special anchors will be either installed in reinforced concrete or mounted subsequently onto an existing foundation. The anchors will distributed along the axis of | set | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | the foundation of the air supported structure. If a anchoring system is used, it will be as per the project specifications and the decision of the engineer of the project, to ensure it complies with the Israeli planning specifications and standards.<br>Galvanised "L" or "U" profile with anchor bolts will be used between the profiles and the membranes as a fastening technique to reduce air loss and the heating costs.<br><br>The Final Foundation Method will be determined by the supplier's engineers and the local project engineer, after making a geological site survey according to Israeli planning specifications and standards. | | | | |
| 1.008 | **Lighting System**<br>The Company will determine the optimal lighting system for the project by a calculation which will be used as basis for the selection of lamps with a power from 250W to 2000W and the option of direct or indirect light. The best type of lighting will be selected according to the activities that will take place in the Airdome. Switch box and cables are included.<br>Emergency Lighting according to the Israeli regulations and Israel Fire and Rescue Services standards will be included and shall be according to the safety appendix. | set | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| | All lights and their components have to be UL Listed standard or an equal standard. | | | | |
| 1.009 | **Vehicle & Equipment Airlock Access with electrical doors )optional)** –<br>used for the entry of vehicles and large equipment inside the dome. Transport tunnel will consists of a hot dip zinc-coated steel support structure, trapezoid sheets which will be padded with insulation material, and industrial sectional doors. Door sections are filled with 40 mm thick polyurethane foam for excellent thermal insulation . | unit | 1.00 | | |
| 1.010 | **Monitoring Unit** –<br><br>Will include preset programs for heating and lighting with possibility of operating them according to booking schedule, remote access (computer, tablet, smart phone), camera (live stream), snow alarm, toxic gas, smoke detection, notification via email and SMS, automatic and manual control of lighting and heating system, access to monitoring system settings.<br><br>The monitoring system will allow monitoring of the pressure, temperature, air quality, real-time power consumption, historical power consumption, and outside wind speed of the dome from any smart device. | unit | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| 1.011 | **Spare Parts** - The Supplier will include a kit of spare parts for normal maintenance of the Air Dome and all of its unit including a guide of how to make the repairs. | unit | 1.00 | | |
| 1.012 | **Installation Supervisors**<br>A team of experts from company (accommodation and travel cost included) for 14 days or longer if needed to complete a perfect initial set up and training for the air dome.<br>Processes in the project implementation stage will include: continuous supervision of the overall process, from design to implementation, technical support for the design procedure, quality control in material procurement, manufacture and transport to the customer, control of the work completed by the customer (the inspection of construction works, electrical installations, gas installation etc.), coordination of the work, structure installation and quality control of the executed works, the technical handover of the facility to the investor, training the investor's technical crew, regular and extraordinary servicing and technical inspections. | unit | 1.00 | | |
| 1.013 | **Promotional Printing**<br>The shell can hold all kinds of customized texts or graphics. | unit | 1.00 | | |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | PRICE PER UNIT | TOTAL |
|---|---|---|---|---|---|
| 1.014 | **Guarantee** – The Supplier will guarantee the Air Dome (membrane) for a period not less than 10 years and for all the machinery/electromechanical units minimum for 3 years. The Guarantee will start from the Delivery date. It includes spare parts kit and repairing or replacement of the defective material. | unit | 1.00 | | |
| 1.015 | | | | | |
| 1.016 | | | | | |
| Section 1 – list of work and equipment | | | Total for section | | |

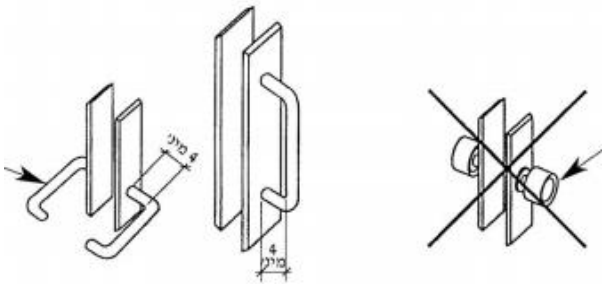
| | TOTAL |
|---|---|
| Amount for discount calculation | |
| General discount % | |
| Total after discount | |
| 17% VAT | |
| Total incl. VAT | |
| | A. |

**It is the responsibility of the supplier to plan and to provide a complete AirDome System according to Israeli regulation and standards. The Accessibility, Structural and Safety Design Appendixes are part of the Technical specifications and must be followed in the planning and execution stages.**

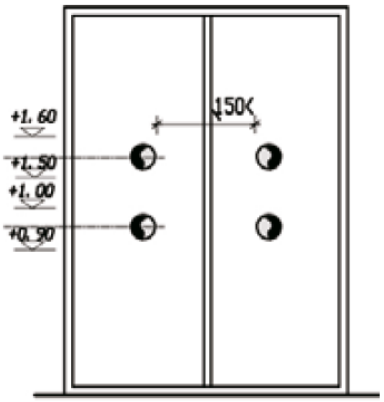
# Accessibility Design Appendix

**1. The width of the accesible door**- shall be at least 110 cm net.

**2. Opening handle** - handles and locks will be installed at the height of between 85 cm and 110 cm from the floor. The type of knob will not be a round revolving knob handle.



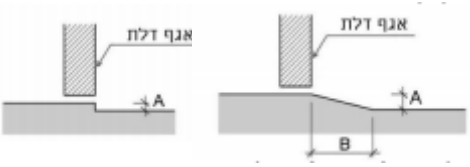
**3. Warning signs** - If the doors (all doors, not just the accessible front door) will be made of transparent glass, warning signs should be affixed to the glass as follows:
The size of the mark shall be in an area where a circle of at least 15 cm in diameter can be enclosed.
. The sign will be in two contrasting tones
The mark shall be at two heights - at a height of 150 to 160 cm, and at a height of 90-100 cm from the floor level.




**4. Door Handle** - If a door lock is installed, the door with a mechanism of delay will be adjusted so that the time required for closing the door wing from a 90° opening will not take less than 5 seconds.

**5. Functional area** - Before and after the door opening, a functional area will be maintained so that a person in a wheelchair will be able to maneuver while opening the door.
.When entering by <u>pushing,</u> the door the size of the floor area - 150/150 cm or at least 170/130 cm
When entering by <u>pulling,</u> the door the size of the floor area - 190/150 cm or 220/130 cm.

**6. Door threshold -** the height difference between the upper face of the threshold and the adjacent floor surface (A) shall not exceed 1 cm. If the height difference is between 1-3 cm, a sloping threshold shall be installed with a gradient not greater than 50% (B).




**7. Signage** - at the accessible door the international  accessibility symbol will be installed.

Structural Design Appendix

1. Design Phase,

1.1 The design of the DOME should be made for a specific project whose location is defined after performing a site survey and obtaining all the data t required for the design. Climatic conditions, geological survey etc.

1.2 The design should comply with the Israeli Standards indicated below as well as additional standards pertaining to the particular field of the design/project

SI 412 - Loads on structures: Characteristic loads

SI 414 - Characteristic loads in structures: Wind loads

SI 490 - Geotechnical design: Geotechnics and engineering in civil engineering

SI 1225- Steel structure code: General.

1.3 The design should be checked and approved by a local structural engineer. All the calculations made for designing the structure will be submitted for his examination. In addition, supplementary calculations will be made if required by him.

1.4 Alternative examination for the foundation and the connection between the structure to the foundation should be made. Load calculated, foundation alternative and recommendations should be delivered to a local geotechnical and structural engineer constants for determining the foundation method

2. Execution phase

2.1 The manufacturer will provide a detailed manual that specifies the construction execution phase.

The execution shall be accompanied by the supervision of the manufacturer throughout all the execution phase.

3. Maintenance phase,

3.1 The manufacturer will define how and when a structural competence test is required. Examination of the competence test of the structure shall be carried out by the manufacturer or anyone acting on his behalf, who will confirmed the condition of the building and sign to confirm that all structural elements are properly secured.

3.2 In case of transfer of the structure to another location, the design should be checked by the manufacturer engineer designers, taking into consideration all the parameters that were used in the original design.

Safety Design Appendix

1. **Introduction**
   1.1. This tender was checked in relation to Chapter C (Fire Safety in Buildings) in the ordinances of the Planning and Building Law (Amendment 5768 – 2008)
   1.2. The numbering of the list is according to the numbering of the tender.
   1.3. This document does not reference the building of the Airdome (henceforth **the facility**) or its placement.
   1.4. This document does not come in place of approval and/or correspondence of the local approved authorities, for instance the Fire Department authority.
2. **General**
   2.1. A Fireman's Panel shall be installed adjacent to the emergency exit closest to the Fire truck and Ambulance Path.
   2.2. The Fireman's Panel shall include the following:

2.2.1. A Fire Coordinator Panel.

2.2.2. A P.A. microphone station.

2.2.3. An Electricity Cutoff Switch.

2.2.4. A Generator Cutoff Switch.

2.3. A public address system (P.A. system) shall be installed in accordance with Israeli Standard (I.S.) 1220 Part 3.

2.4. Fire and smoke detectors shall be installed according to I.S. 1220 part 3.

2.5. Use of gas or open flames is not permitted.

2.6. Means of releasing smoke shall be installed according to the Fire services requirements, and also such that the lowest level of the smoke does not go below 2.2 meters from the level of the floor.

2.7. In the event of structural failure, the collapse of the facility shall be such that allows those present inside the facility to safely escape to outside.

2.8. The stability of the facility shall be checked and approved by a licensed construction consultant.

**1.001 Double Membrane System**

1.001.1 The material of the facility will be according to the requirements of I.S. 5093 according to the Israeli Standards Institute (I.S.I.).

**1.004 Emergency Backup**

1.004.1 The emergency generator shall be placed at a distance of at least 15 meters from the facility.

1.004.2 Electrical boxes and appliances shall be according to the Electricity Law and its Regulations, and shall be according to I.S. 61439.

1.004.3 Electrical boxes from 100 amp. or higher shall be protected by an automatic extinguishing system and shall be according to I.S. 5210 or 1597.

**1.005 Emergency Exit Doors**

1.005.1 All emergency exit doors will open outwards in the direction of the escape route.

1.005.2 All emergency exits shall be panic doors in accordance with I.S. 1212.

1.005.3 Level differences in the walking surface shall not be greater than 6 mm.

1.005.4 Level differences between the doorstep and the walking surface shall not be greater than 10 mm.

1.005.5 Emergency exits shall be according to the following conditions:

1) If the area of the facility does not exceed 500 square meters, two emergency exits are required.

2) If the area of the facility does is between 501-1000 square meters, three emergency exits are required.

3) If the area of the facility exceeds 1000 square meters, four emergency exits are required.

1.005.6 The width of the emergency exits shall be according to the following conditions:

1) The total width of the opening of the emergency exit shall not be less than 0.5 cm. per 1 square meter.

2) The net width of the unrestricted passageway opening in every exit door shall not be less than 1.10 meters.

1.005.7 The distance between exits shall not be less than half of the distance of the longest diagonal line of the facility.

1.005.8 The placement of the exits shall be approved by a Safety Consultant.

1.005.9 Illuminated "Exit" signs shall be installed over every exit and in accordance with I.S. 20 part 2.22.

**1.006 Revolving Doors**

1.006.1 The revolving door shall not be considered as an emergency exit.

**1.009 Lighting System**

1.009.1 Emergency lighting shall light the entire area and shall be in accordance to the requirements of I.S. 20 part 2.22.

1.009.2 The illumination strength shall not be less than 10 lux as measured from the floor surface.