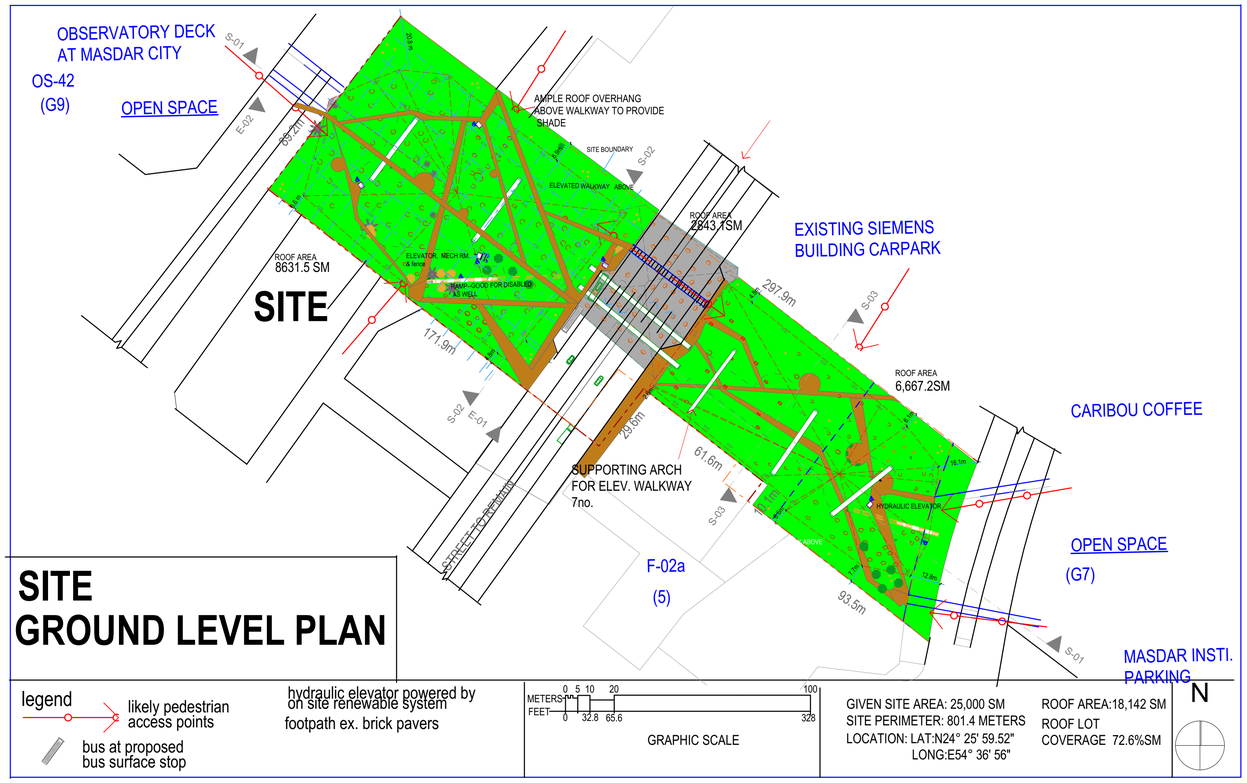


SITE GROUND LEVEL PLAN

legend
likely pedestrian access points
bus at proposed bus surface stop

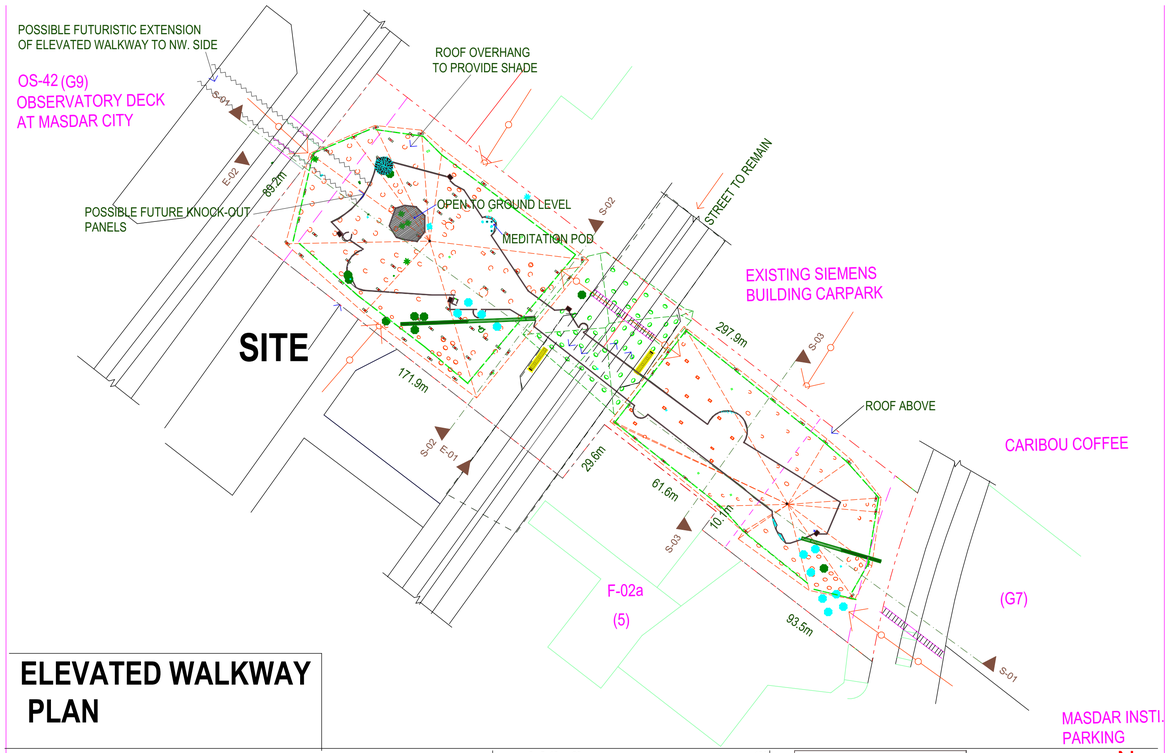
hydraulic elevator powered by on site renewable system
footpath ex. brick pavers

METERS 0 5 10 20 100
FEET 0 32.8 65.6 328
GRAPHIC SCALE

GIVEN SITE AREA: 25,000 SM
SITE PERIMETER: 801.4 METERS
LOCATION: LAT:N24° 25' 59.52"
LONG:E54° 36' 56"

ROOF AREA:18,142 SM
ROOF LOT
COVERAGE 72.6%SM

N



ELEVATED WALKWAY PLAN

legend
likely pedestrian access points
bus at proposed bus surface stop

METERS 0 5 10 20 100
FEET 0 32.8 65.6 328
GRAPHIC SCALE

GIVEN SITE AREA: 25,000 SM
SITE PERIMETER: 801.4 METERS
LOCATION: LAT:N24° 25' 59.52"
LONG:E54° 36' 56"

N

DESCRIPTIVE NARRATIVE

A. OVERVIEW OF PROPOSAL

The aims of this ideas competition have been achieved in this submission which was produced solely by myself. I was interested in teaming up but this did not materialize. The process of conceptual design began: (1) firstly with perusing the requirements and terms of reference of the competition brief (2) Analysis of the site and peripheral conditions and constraints (3) Otaining cultural allusions that can be integrated in the design--hence tent-like roof--relating to historical desert life of bygone days; dome-shaped skylights relating to domes in the local architecture. (4) Obtaining bio-morphic references about the geography/ecology such as the Y-shapes columns symbolizing inverted mangrove tree roots found in the UAE shorelines (5) Obtaining geographical data such as latitude and longitude, sun paths, etc. which I used in rendering on my CAD-BIM software (6) Deterimining the system of the solar electricity generator which will push the boundaries of conventional present systems, but a system that is presently being researched and developed and may become a reality in the near future.

(7) The system met my criteria which is:

- must be unobtrusive architecturally and must be environmentally-friendly in both its production and results--clean renewable abundant energy at very low cost--about 100 times cheaper than conventional photovoltaic panel system.

B. SYSTEM/TECHNOLOGY

The solar capture system is liquid-applied, can be translucent in a variety of colors on any type of glass including plastics, laminated glass that will transform the sun's rays into electicity---even without direct sunlight, in the shade, on all sides of the building.

In this concept the roof is the main element which will house the solar glass in the form of skylights --domes--sizes can vary and can be placed in any array configuration.

This can push the envelope in present systems which require supports for photovoltaic panels sometimes outside of the buidling as we can see in the nearby solar photovoltaic farm at Masdar City.

The proposal here is a gamechanger--easy to integrate into a roof--hence the dome-shaped collector sky-lights which can bring filtered light into the space below--even trees can grow underneath the roof, while shade can be provided as well below.

C. ESTIMATED COST OF ELECTRICITY

This has been alluded to in section C--looking at $11USD per Kwatt inclusive of the plant development cost. Over time this can be much cheaper after the initial cost has been paid back; excess electricity can be channelled to the grid as well.

D. DESCRIPTION OF THE PHYSICAL PLANT PROPOSED

In determining the building form the criteria given by Lagi was considered such as the maximum height restriction--not to exceed 45 meters as in tower. A maximum height of 37 meters is achieved.

Another requirement is to provide as much shade on the ground as possible for people passive recreation such as meditation, sitting, relaxing, etc. This consideration impacted the roof design as well which resulted in a lot coverage of 72.6%

Since a street bifurcates the site, three (3) basic roof components are provided. Below all roof components is an elevated mezzanine-type walkway which is continuous even above the street--proper clearance is provided, more than the minimum required. (Refer to Elevated Walkway Plan on above right)

The roof material is a tensile type fabric--Teflon--which can come with accessories for supports but I have provided special columns as noted above in extruded aluminum material.

The following ancillary features are provided:

- Hydraulic elevators for comfort of disabled and public
- Ramps for comfort of disabled and public
- Mechanical room behind the elevators for housing equipment such as inverter for the electricity generation.
- Outdoor light fixtures to utilize LED lighting
- Fence around the Mechanical room
- Seats for the general public
- Meditation "pods" at the elevated walkway level
- Trees and shrubs

E. ARCHITECTURAL/STRUCTURAL FEATURES

- Arches above street and under elevated walkway
- Y-shaped columns
- Hip-type roofs
- Predominant colours--red and blue--UAE flag colors White can be added .

F. OTHER PUBLIC CONVENIENCE ITEMS

- Bus stop loops if needed at street
- Portable washrooms

G. PUBLIC CONVENIENCE ITEMS NOT SHOWN

The following amenities may be considered by client such as:

- Electric car charging station possibly on north or south side of the site
- Drink dispenser machines, etc.
- Garbage disposal bins

H. LANDMARK --RELATIONSHIP TO EXISTING

Main intention is to make this building a landmark in spite of the material used; the material can be changed, however; the form will not be affected. The form should be striking vis-a-vis the peripheral buildings which are generally different in design but an overall harmony with the entire fabric is envisioned.

I. PAYBACK ON INVESTMENT

This will depend mainly on the price that the utility comapany will pay for the excess electricity which will be sent to the grid but all things being equal there will be a remarkable payback period,much better than the normal PV systems.

J. SOME CAUTION

I have been careful in not imposing my professional values in this conceptual design. I have great respect for the people of Abu Dhabi, UAE, etc. Should any of my proposals unintentionally offend any one of the citizens I will be obliged to explain any misunderstanding and would certainly be apologetic.

K. QUANTITATIVE SUMMARY/PEAK OUTPUT/YIELD

- TOTAL SKYLIGHT DOME AREA = 5443 SM
  =30% of roof area
- Skylights/domes total approx. =1732

E = A x **r** x **H** x **PR**
E = Energy (kWh)
A = Total solar panel Area (m2)
r = solar panel yield or efficiency(%)
H = Annual average solar radiation on tilted panels, can be used for skylights
PR = Performance ratio, coefficient for losses (range between 0.5 and 0.9, default value = 0.75)
RESULT
kWh 110,848 kWh (per hour) 2,660,359.5kWh in one day
5443 x 100 x 3568x .5=971,031,200 kWh annually

L.OUTLINE SPECIFICATIONS & ESTIMATED BALLPARK/ CONCEPTUAL COSTS

(costs in USD)

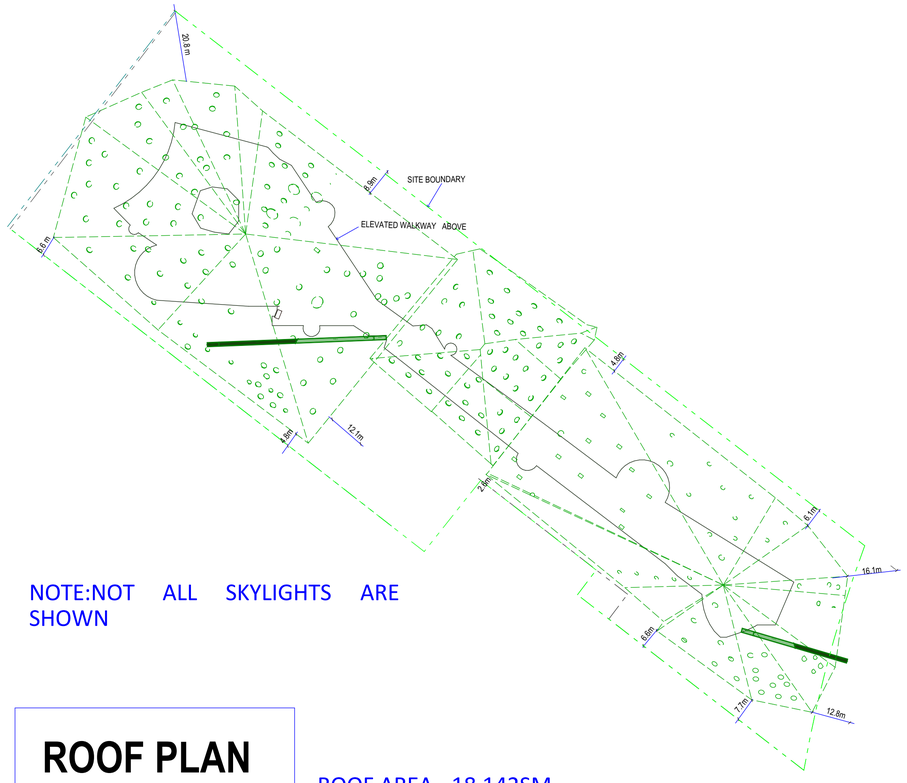
NO	MATERIAL/ITEM	NO./QUANTITY	MATERIAL COST	LABOUR COST	REMARKS	TOTAL COST
1	Skylight, solar domes integrated, solar panels for solar electric capture	1,732 (1 sm ea)	$1,732,000	$1,385,600	Flexible laminated glass double glazing	$3,117,600
2	Teflon Fabric Roof	18,142SM	$ 9,071,000	$ 9,071,000	Fibreglass w/ Teflon coating, 25yr warranty	$18,142,000
3	Fabric Roof Accessories	lump sum (Ls)	$1,000,000	$ 500,000	Carbon steel clamps, bracing, etc.	$1,500,000
4	Y-shaped columns with foundations	approx 100	$306,000	$300,000	includes bases	$606,000
5	Rein. Concrete Arches	40m³	$7,000	$6,000	includes bases	$13,000
6	Site Paving & Grassing trees, seating, etc.	lump sum (Ls)	$3,000,000	$2,000,000		$5,000,000
7	Ramps ex. rein.conc.	81.5m³	$12,877	$12,877	$158/m³ incl conc.rails	$25,754
8	Elevators (hydraulic)	4 nos@$30,000	$120,000	$40,000		$160,000
9	Elevated walkway	991m³ rein. conc.	$166,770	$166,770	$170/m³ incl 67ml conc.rails	$333,540
10	Lighting fixtures/poles	4o no. @ $548	$21,920	$15,000	LED energy saving	$36,920
11	Sanitary facilities	—	—	—	not shown to be decided by owner	in contingency
12	Mechanical /Room & Fence		$7,000	$7,000	3 small louver windows to be provided in mech rm.	$14,000
13	Misc. Site Markings, signs, etc	(Ls)	—	—	—	in contingency
14	Security	—	—	—	—	in contingency
15	Mechanical Equipment, inter skylight wiring, meter	(Ls)	$1,000	$1,000	inverter mainly wiring included in 1	$2,000
16	Sub-total		$15,445,567	$13,505,247		$28,950,814
17	15% Contingency		$ 2,317,135	$ 2,025,787		$4,242,922
18	Sub-total		$17,762,402	$15,531,034		$33,193,736
19	Estimated Professional fees					$4,994,015
20	ESTIMATED TOTAL DEVELOPMENT COSTS					$38,187,751

M. ENVIRONMENTAL IMPACT ASSESSMENT/SUMMARY

The tent-like roof selected is definitely environment-ally-friendly and will not cause major disruptions in traffic flow on the street during erection as compared to a material like concrete or metal roofs. At post-construction maintenance should be minimal.

Since the building masses are separated, that is not continuous at the roof line, the visual impact has been substantially reduced.

Relative to the renewable system used the environmetal hazards are non-existent. In fact due to the efficiency of this system which will be tied to the grid no batteries will be needed, just an inverter with a meter.



NOTE:NOT ALL SKYLIGHTS ARE SHOWN

ROOF PLAN

ROOF AREA...18,142SM

1