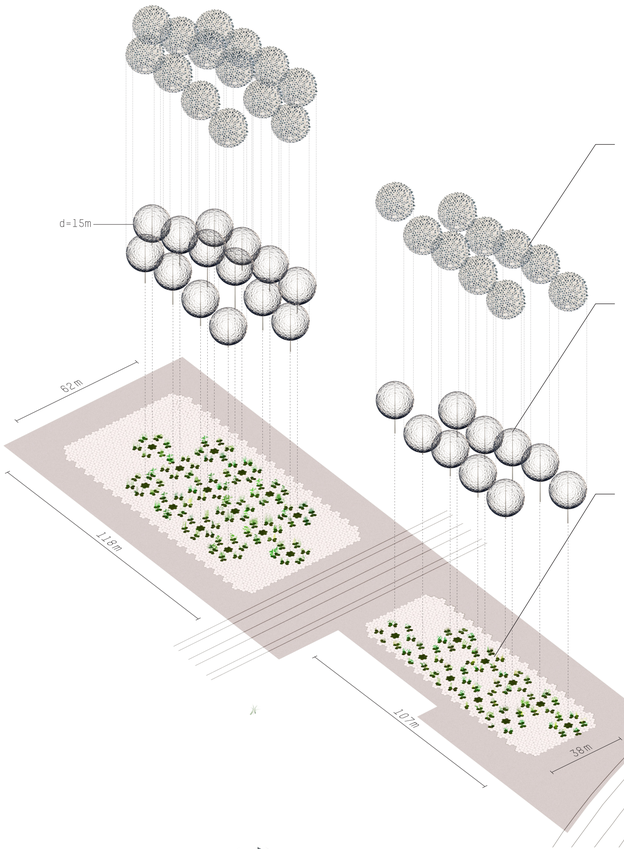
PROJECT SUMMARY

Renewable Oasis is inspired by the leaf trembling of certain tree species such as aspen (lat. *populus tremula*). This movement caused by the slightest breeze, modulates sunlight penetration and optimizes the plant's photosynthetic capacity.

The concept comprises a forest of solar and wind energy harvesting trees with an oasis underneath it, featuring native plants. The tree canopy geometry is derived from delicate Arabic geometrical patterns. The density of the structure in combination with the movement of the solar leaves creates a subtle and ever-changing shadow pattern that provides a vibrant space.

The landscape consists of tiles arranged in a geometrical pattern that follows the principle of the canopy structures. The floor build up is designed to be able to accommodate future installation of electomagnetic generators that produce electricity from the visitors' footsteps.

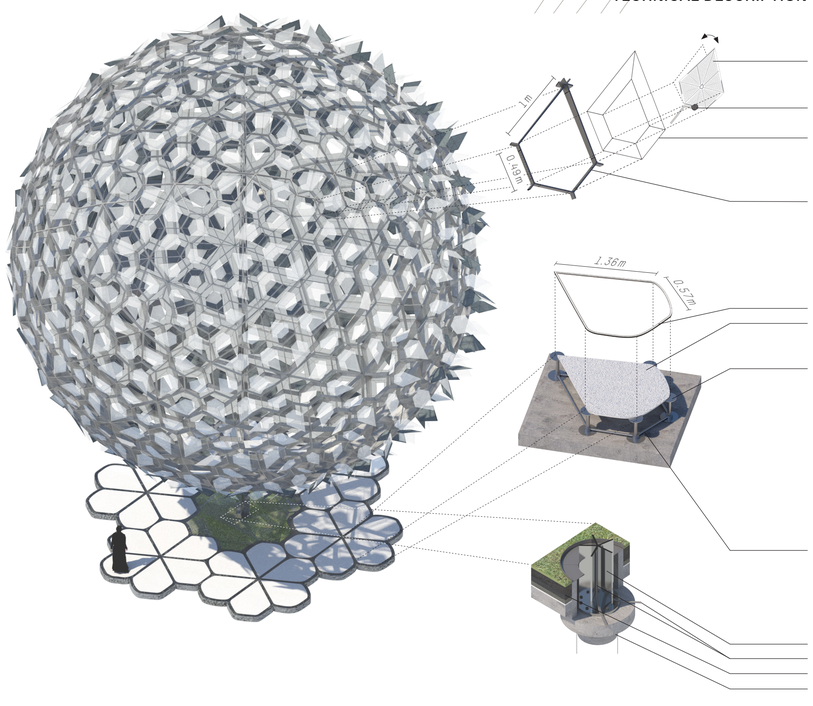
The overall energy (solar + wind) harvested is stored or fed back to the power grid. A percentage of it is used to power LED lights mounted in the gaps between the floor tiles, enhancing visually the paving pattern and the visitor experience at night. The intensity of the light is gradient and corresponds to the amount of power generated at each tree structure, depending on the local exposure to climatic conditions. This creates an ambient light environment that mitigates the need for pole lights, contributing to less light pollution.



CONCEPTUAL COST ESTIMATE

	Quantity	Price/Unit	Cost in $
Skin			
- DSSC PV modules laminated on ETFE sheets	6,000m²	300$/m²	1,800,000
- Piezoelectric vibration sensors	17,300pcs	5$	86,500
Installed Material Cost Subtotal			**1,886,500**
Structure			
- Stainless steel tension wires with ferrules	105,650m	0.5$/m	52,825
- Steel plate framing	527t	2500$/t	1,317,500
- Steel columns (AESS 2)	103t	2500$/t	257,500
- Metallic finish powder coating	6,720m²	10$/m²	67,200
Material & Construction Cost Subtotal			**1,695,025**
Site			
- Composite tiles	3,700m²	150$/m²	555,000
- Linear LED fixtures with electrical infrastructure	1,400m	160$/m	224,000
- Native vegetation	1,000m²	180$/m²	180,000
- Concrete slab with foundation	2,700m³	185$/m³	499,500
- PV electrical infrastructure	5,500m²	70$/m²	385,000
Installed Material Cost Subtotal			**1,843,500**
TOTAL COST ESTIMATE			**5,425,025**

TECHNICAL DESCRIPTION



Skin
- Custom shape Dye Sensitized Solar Cell (DSSC) laminated on clear ETFE sheets
- 'Stalk' with piezoelectric vibration sensor
- Stainless steel tension wires

Secondary Structure
-'Floret tessellation' with powder coated steel plates and welded joints. Bolted splices facilitate transportation and assembly.

Site Paving
- LED fixture
- Anti-slip composite tile in high Solar Reflectance Index (SRI>80) white finish
- Electromagnetic generators (currently excluded from cost estimate) allowing 5-10mm vertical displacement for future installation, once technology becomes cost competitive to standard paving. By then the paving will be working as a standard raised access flooring solution allowing services to be placed below it where needed.
- Electrical infrastructure below grade accessible by removing tiles

Primary Structure
- Powder coated steel column
- Electrical services
- Planter
- Concrete foundation pile