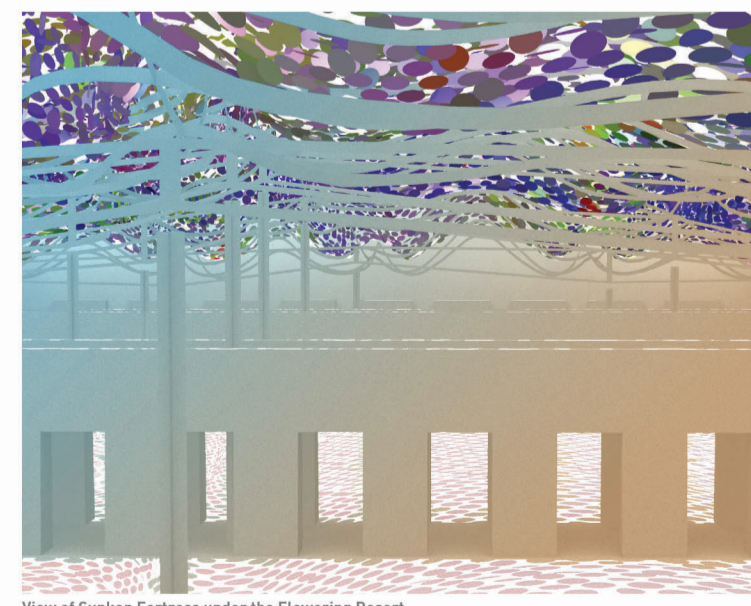
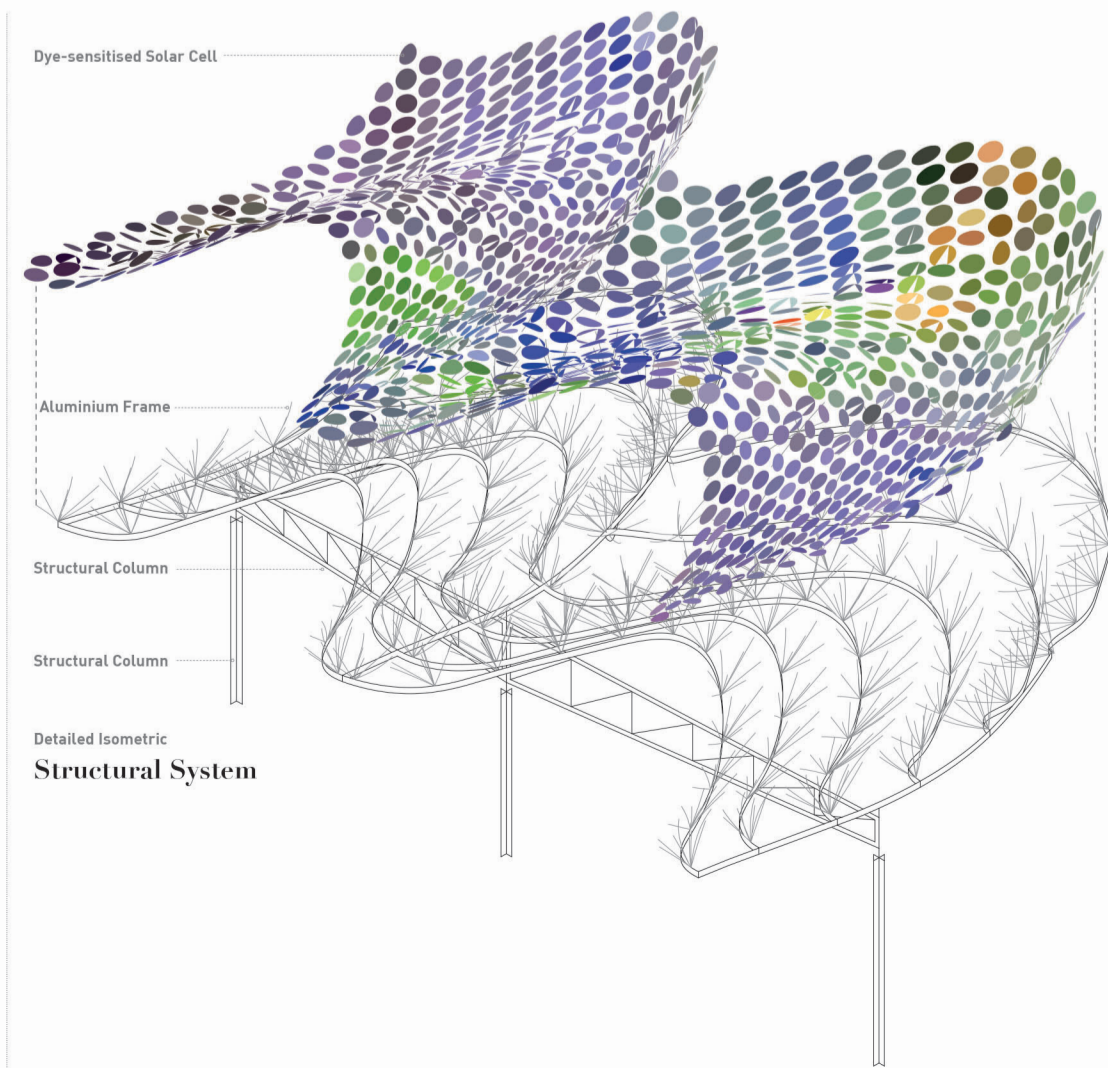


Cut-away Isometric Drawing

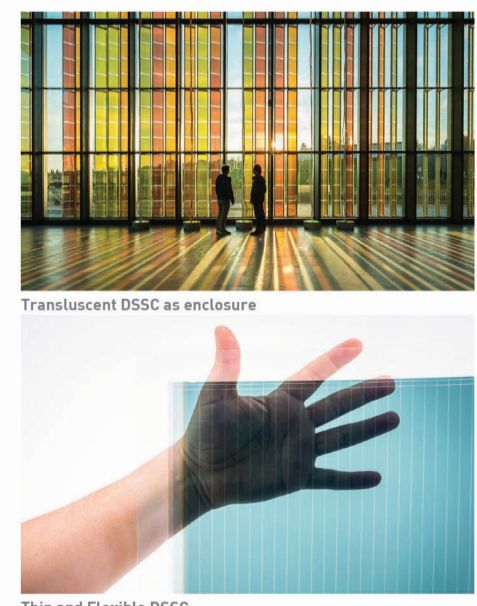
The Flowering Desert Photovoltaic Power as Land Art



View of Sunken Fortress under the Flowering Desert



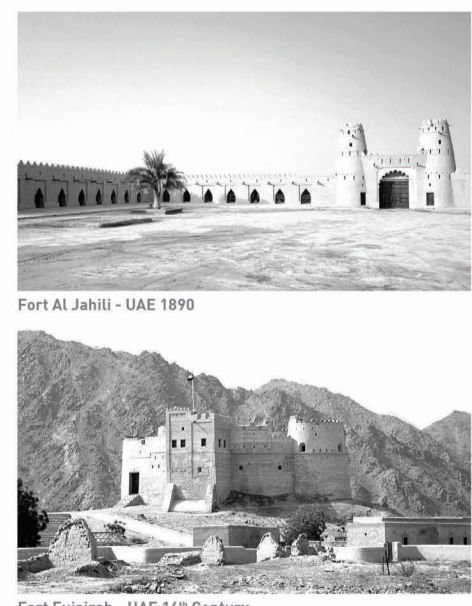
Materials
The overall dimension of the proposal is 200 m w x 52 l, with a depth of 12 m. The primary material to construct the Flowering Desert will have a low carbon foot print. The main lightweight structure and frame supporting the span on the DSSC panels will be fabricated with 90% Recycled Aluminium. The main walls of the sunken fortress will be constructed with Ultra-Low Carbon Cement, which uses by-products of power plants as a component. The estimated cost of the proposal will be 4500 Dirham per m2.



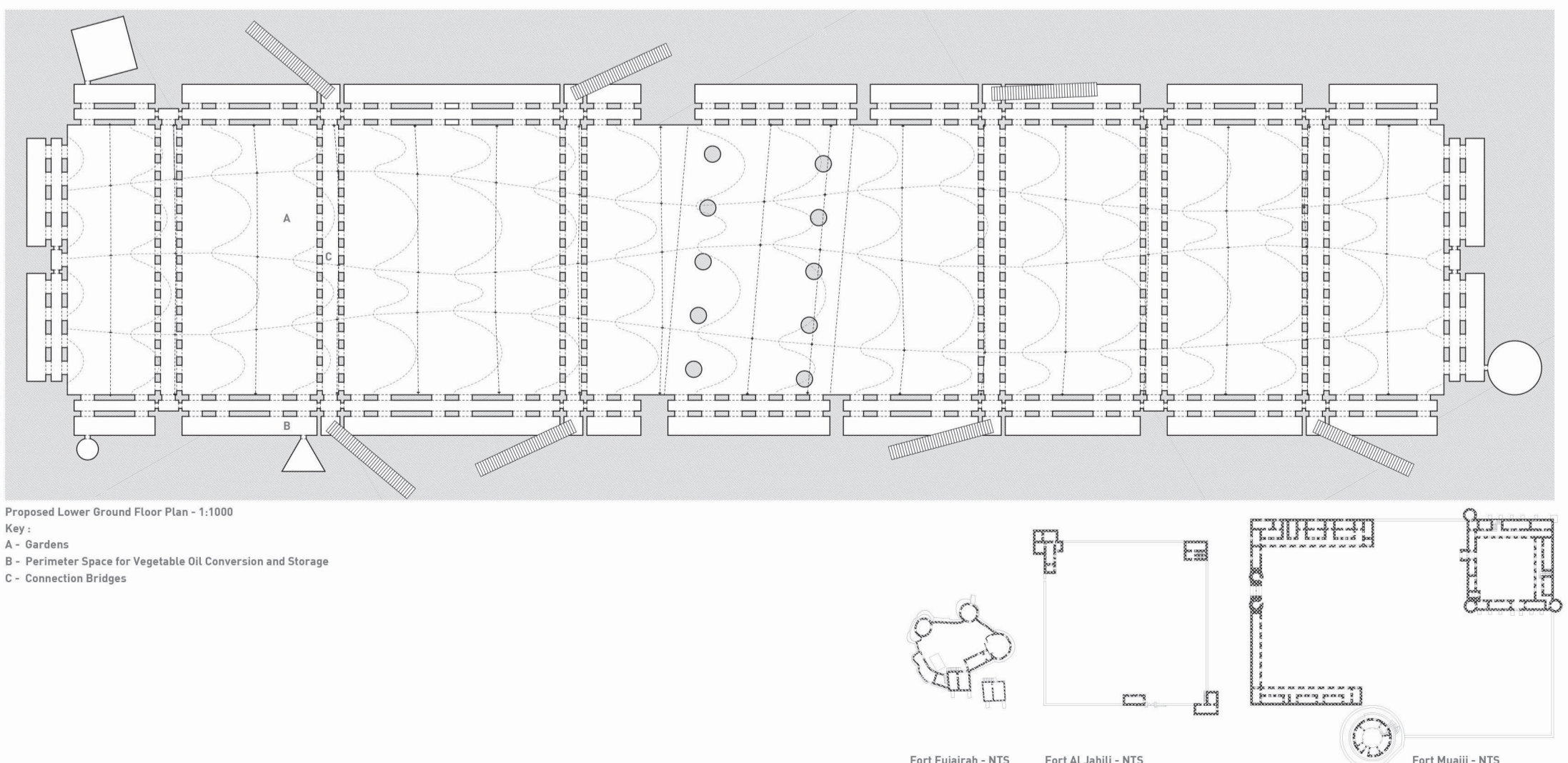
Dye-sensitized Solar Cell
The 44% petals are fabricated using dye-sensitized Solar Cell, or DSSC, is a form of regenerative photo-electro-chemical cells that convert sunlight energy into electric current but they do not store energy. DSSC uses low cost materials and it is very easy to manufacture. To generate the current, DSSC uses a sensitizer dye and nano particles of the semiconductor Titanium Dioxide, a cheap and widely available material used as pigment. It is a low cost alternative to silicon based photovoltaic cells, but it also has lower efficiency.



Waste Vegetable Oil Conversion & Energy Storage
When Masdar is fully developed and occupied, it can generate a vast amount of waste vegetable oil from the kitchens of domestic homes, restaurants and canteens of Masdar Institute of Science and Technology. The oil can be brought to the lower sunken fortress where specialist conversion and storage facilities are housed. The biofuel produced will be stored underground and used for transportation fuel.



Desert Fortress as City Portals
Ancient fortresses stand proud across the vast desert as city portals and guardians of oasis. One of the unique characters of Arab fortresses is the inclusion of a large public square within the complex for public activities, especially evident in the Al Jahili Fort. In the proposal, a large fortress complex is sunken as an empty void within the ground to contain the flowering desert floating above and to shelter a series of gardens within. The sunken fortress is a cool shaded space for gathering, relaxing and events.



Fort Fujairah - NTS Fort Al Jahili - NTS Fort Masji - NTS