



LIGHT-HEX

LIGHT-HEX is a modular-based sustainable energy installation. It integrates advanced green technology with local Arabic culture to create not only an installation harvesting green energy, but also a poetic spiritual space to whole Masdar City. Inspired by the traditional Islamic pattern, the design takes hexagon as the primitive geometry to develop the design. Each hexagon unit is a 10-meter radius umbrella-shape steel structure and cover by perforated steel panel, which creates a fantastic rain of light. The modular-based design makes all the standard parts can be massively prefabricated in factory and largely reduce the cost of construction.

To maximize the amount of annual energy generation, the design seamlessly combines solar panel and vertical axis wind turbine to harvest local abundant solar and wind resource together. Meanwhile, the design also uses wind tower technology to cool down the plaza, which also can reduce the energy consumption of surrounding buildings. The design developed 3 different types of hexagon unit. The Solar Unit is 10-meter high and with flat top covered by semi-transparent flexible solar panel. The Solar + Wind Unit is extruded to 22-meter high and contains a 20KW large vertical axis wind turbine. The Solar + Wind Tower Unit has the similar profile but have a wind tunnel inside to blow the plaza with cool air. Those technology working together to provide Masdar City a sustainable and comfortable city living room.