Return to the Source

Sun tracker

Land Art Generator initiative

Sun tracker is a landmark sculpture dually inspired by solar trajectories and a traditional instrument for observation. To highlight the importance and beauty of sun’s presence and potential of it’s energy as a renewable source, this landmark formally depicts sun’s daily and yearly movements. A solar analemma curve is a projected diagram that shows the position of the Sun in the sky at a single location and at the same time of the day throughout the year. Perceived from the same spot at the same time every day for a year, sun creates a figure 8 shape, with one loop broader than the other.

By emphasizing the various angles on solar radiation throughout the day and year this landmark depicts the constant presence and there fore the permanent potential of gathering and exploring the solar energy.

The other formal inspiration is an Astrolabe (al-Asturlāb) historically used by astronomers An astrolabe can be used to measure the altitude of an object, including changes in the Sun's path over the course of the year. Tracking these changes can help explain why days are longer in the summer and shorter in the winter. Astrolabes were further developed in the [medieval Islamic world](https://en.wikipedia.org/wiki/Islamic_Golden_Age), where [Muslim astronomers](https://en.wikipedia.org/wiki/Astronomy_in_medieval_Islam) introduced angular scales to the design, adding circles indicating [azimuths](https://en.wikipedia.org/wiki/Azimuth) on the [horizon](https://en.wikipedia.org/wiki/Horizon). It was widely used throughout the Muslim world, chiefly as an [aid to navigation](https://en.wikipedia.org/wiki/Geography_in_medieval_Islam) and as a way of finding the [Qibla](https://en.wikipedia.org/wiki/Qibla), the direction of [Mecca](https://en.wikipedia.org/wiki/Mecca).

The landmark consists out of two segments called observatory dome and a light sculpture. The 52m wide dome is a semitransparent spherical surface covered with photovoltaic thin film. It serves as a cover, auditorium, solar collector, calendar and a sundial clock. The dome is perforated to track the sun’s path through out the day and year. By standing in the middle of the dome visitor is able to realize the time and date based on the position of the sun compared to the holes on the ceiling.

Related to the dome that is a solar energy collector during the day, the light sculpture across the street emits light during night by using the same energy. Formally, both parts follow the same shape of solar path perceived from the city of Masdar.