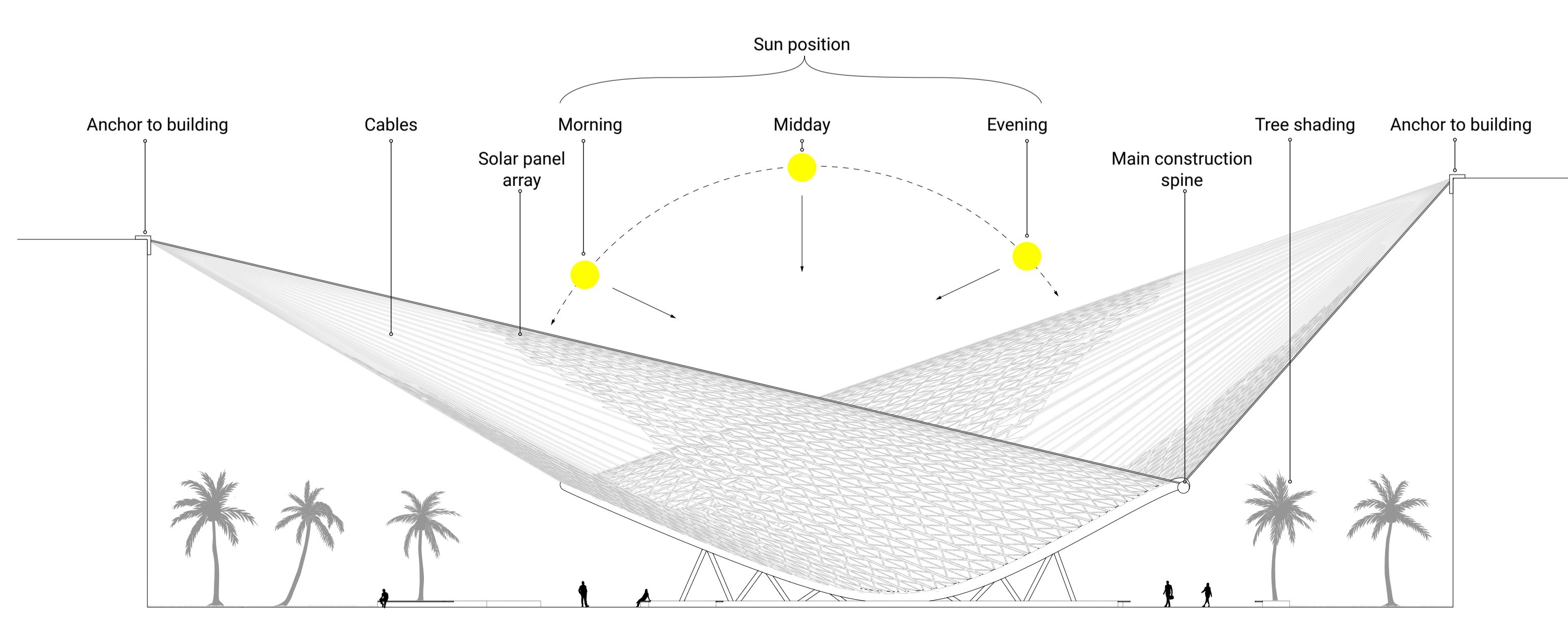


Cables anchored between the building and spine create the shading canopy while providing an anchor for the electrical cabling of the solar panels

Solar panel modules are clustered into subarrays for a higher system voltage to minimize transmission losses

Main spine construction is hollow on the inside, providing a conduit for solar electrical cabling to be run through.



Section - Green Spine

Generation Modules are daisy-chained electrically into equal length series sub-arrays in order to achieve the desired system voltage.

The higher system voltage results in lower current requirements, permitting the use of thinner cables for connection back through the main spine into the main system including batteries and ultimately the grid.

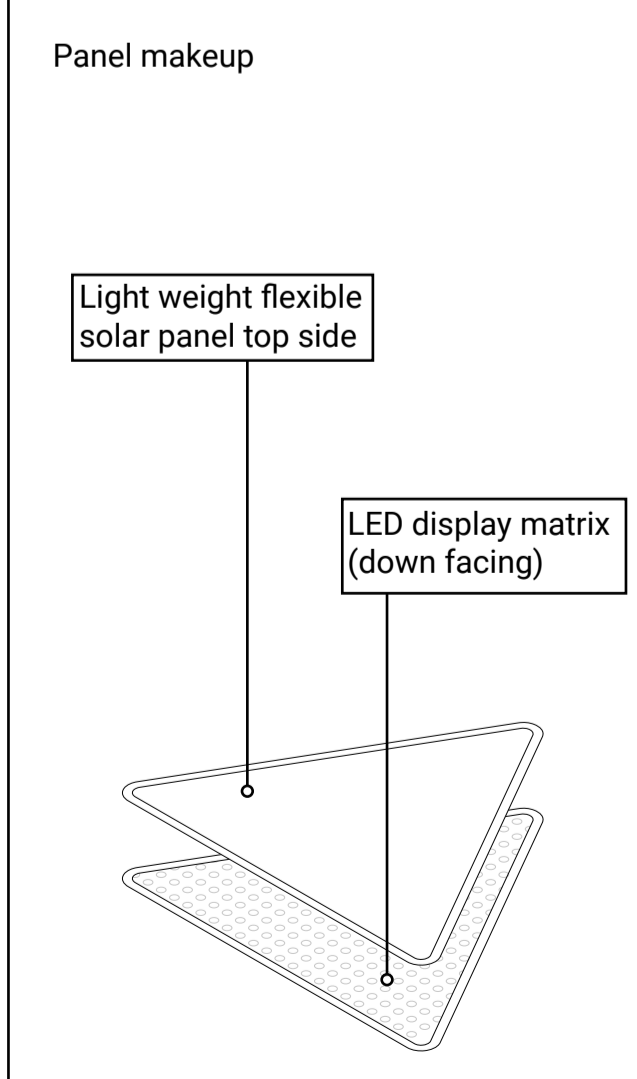
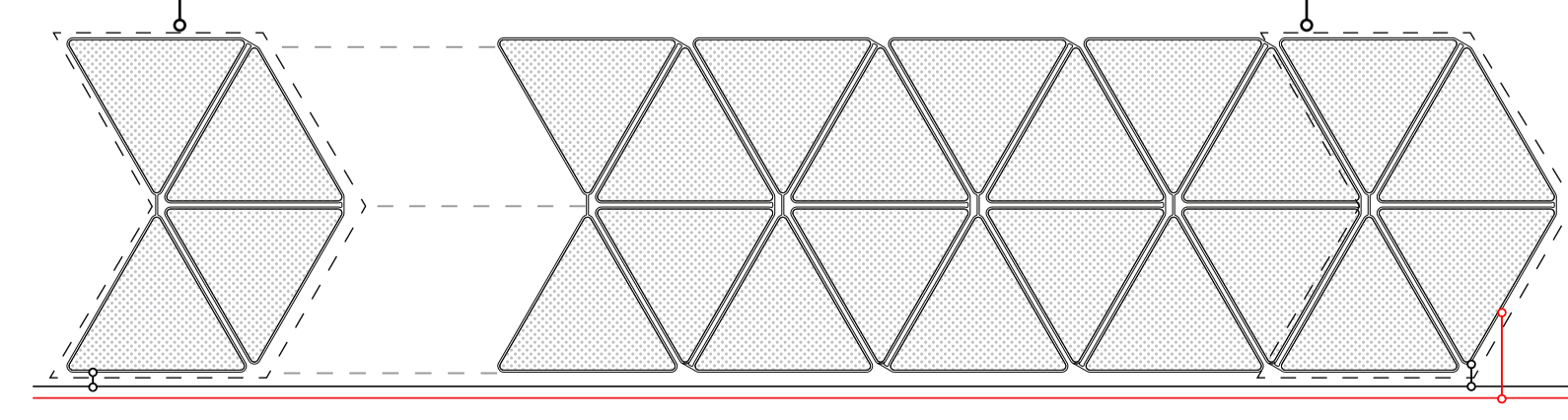
At the head of each sub-array is an interface module. This facilitates the connection back into the main cabling for that rib of the structure, with all sub-arrays on a single rib connected in parallel as a result.

Generation Module

Consists of 4x triangular shaped PV cell arrays connected in series, with connections between each PV panel made around the edge of the module in order to minimize visual disturbance. Similarly, the electrical connection points to connect to neighboring modules within a subarray are positioned near the edges.

Interface Module

Used for connecting each sub-array on a rib of the structure back into the system via the main spine. Identical to a generation module in terms of PV cells and arrangement, but also includes circuitry for measurement and management of the sub-array and an additional GND connection to function correctly. This circuitry includes 802.15.4 communication for remote management and detailed analysis of the generation, as well as high power RGB illumination for interactive ambient lighting throughout the night.



Solar Array electrical design