

South-facing windows oriented to 45 degrees to maximize solar exposure in the frozen desert winter, and reduce direct gains in the summer

In-home organic food production with greenhouse in the south of the building, this receives the most sunlight which means the greenhouse is able to produce food to supply the communal kitchen of the Hemp House and provide nutritious organic food for all the Fly Ranch innovators

Trombe wall takes advantage of temperature swings between day/night to control thermal comfort by using the stored thermal energy in the warm greenhouse.

Hemp House dug 2m below grade for passive geothermal potential of selected site location

Recycled tires diverted from landfill reused as retaining wall for earth berm and prevent burning carbon

Hempcrete is a great thermal insulator, can be constructed by volunteer labor, and grown locally in the site implementing permaculture strategies for water-soil regeneration

Rainwater and filtered drinking water storage in cisterns underground of amphitheater

Oculus oriented to capture the prevailing NW wind funneling across the Hemp House roof for passive cooling using principles of the Venturi effect

Fountain located under oculus to capture wind and sun for evaporative cooling

Tenacolla cooling tubes with central core of aluminum fins for passive air cooling

Bio-mimic design responsive to changing solar radiation from winter to summer seasons to optimize solar radiation on the roof for PV panels, while maximizing shading in the community space below

Flexible transparent solar cells use hybrid electrode technology PSCs with graphene armor, reaching 26.7% efficiency

Microclimates at columns with radiant cooling/heating panels and covered by deployable aerogel graphene textile

Solar Shroom collects solar energy and transforms day/night from shader to shelter

Water Shroom provides safe drinking water by the power of the sun

ENERGY

WATER

SHELTER

FOOD

REGENERATION

Annual Capacity: 443,804,400 kwh 72.79 kwh/m2

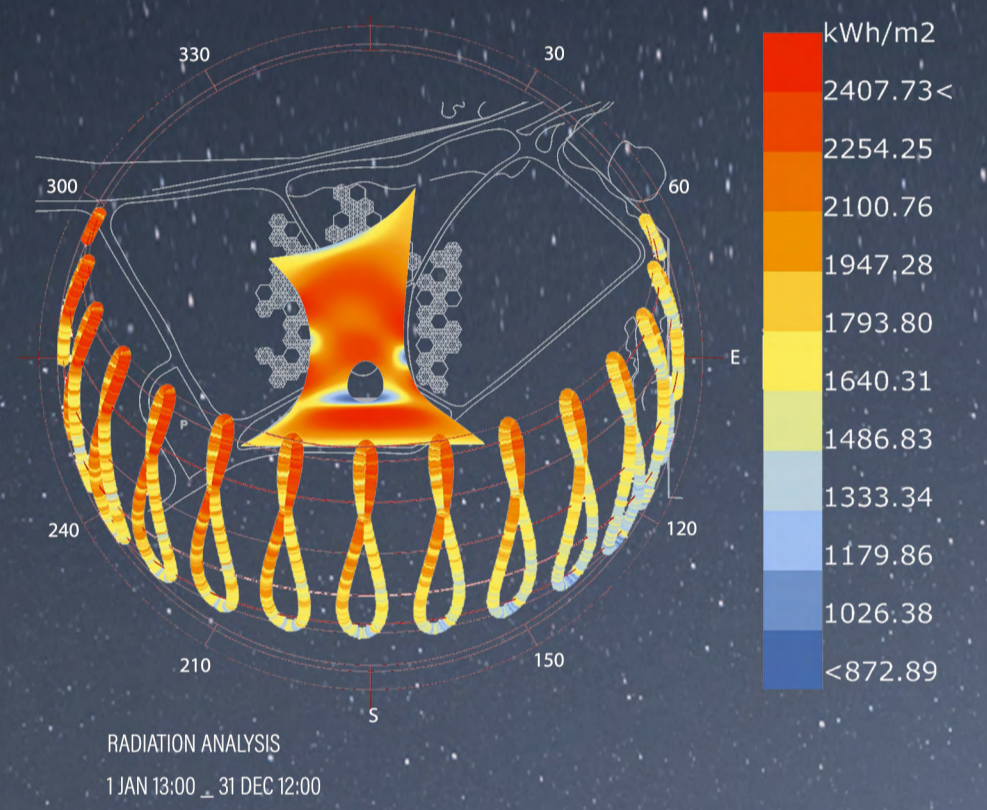
Total Rainwater collected from canopy : 1,750,000 L / year

Surface area of canopy: 8543.42 m2

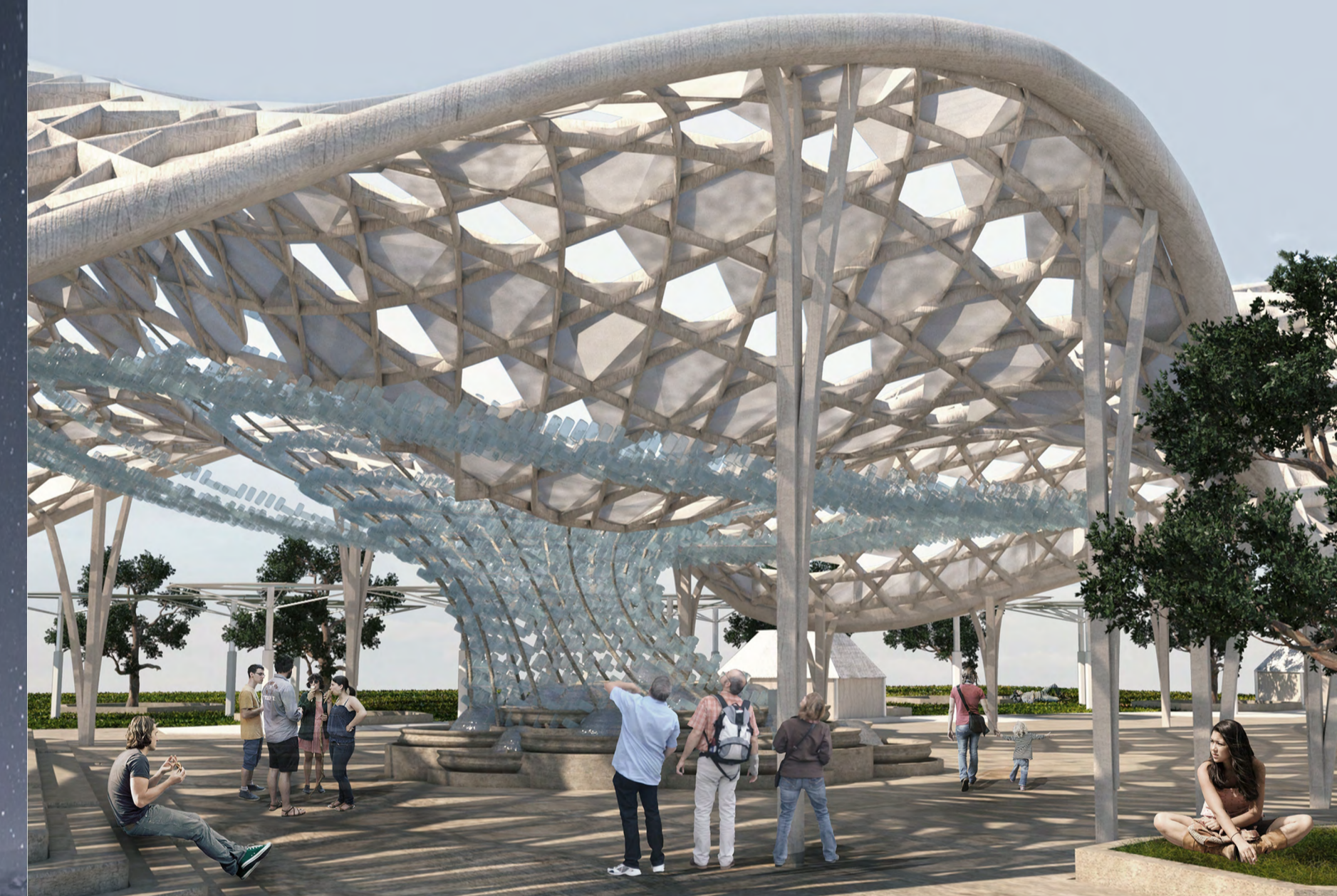
384 kg/year

winter noon sun path

Summer noon sun path



Meet me at the Fountain



Healing Center

