

# SUNGLASS \_01

## CITY PORTAL

Large, polished cuts in the skin of desert glass create contrasting archways for visitors to enter the cool inner portions of SunGlass. Views of the city are framed by the tall conical forms of SunGlass from a distance, and by the large archways when approaching SunGlass either by (pod) car, public transportation or foot.



SunGlass is grown from the desert, forged by concentrating the sun's power to the melting point of sand. SunGlass' forms are 3d printed using 10 foot (3 m) diameter Fresnel lenses mounted to a motorized gantry. Sand from the adjacent Arabian desert is fused at ~3,000 degrees Fahrenheit (1,650 degrees Celsius) to create 24 inch (60 cm) thick structural walls composed of concentric rings.

SunGlass' generators are powered by the same 10 foot Fresnel lenses that built them. Mounted via sun-tracking gimbal rings to the top of the generator cones, 7kW of the sun's heat is concentrated on a tempered glass cylinder of seawater, causing the seawater to rapidly boil into steam energy.

- 01 THE SUN IS THE ENGINE TO BOTH BUILD AND OPERATE SUNGLASS
- 02 FRESNEL LENS CONCENTRATES THE SUN'S HEAT TO MELT SAND INTO GLASS
- 03 SUNGLASS TRANSFORMS COMMON SAND INTO BEAUTIFUL BUILDING MATERIAL
- 04 MOTORIZED GANTRY MOVES FRESNEL LENS TO 3D PRINT MELTED SAND WITH SUN'S CONCENTRATED HEAT
- 05 SEA WATER FROM THE PERSIAN GULF TO BE CONVERTED TO STEAM TO GENERATE ENERGY WITH TURBINE
- 06 COLD SEA WATER RUNS THROUGH ENLOSURE TO PROVIDE RADIANT COOLING FOR THERMAL COMFORT
- 07 STEAM TURBINE WITH TEMPERED GLASS RESERVOIR
- 08 3D PRINTED SUNGLASS FLOOR
- 09 FRESNEL LENS USED ON SITE FOR ENERGY GENERATION