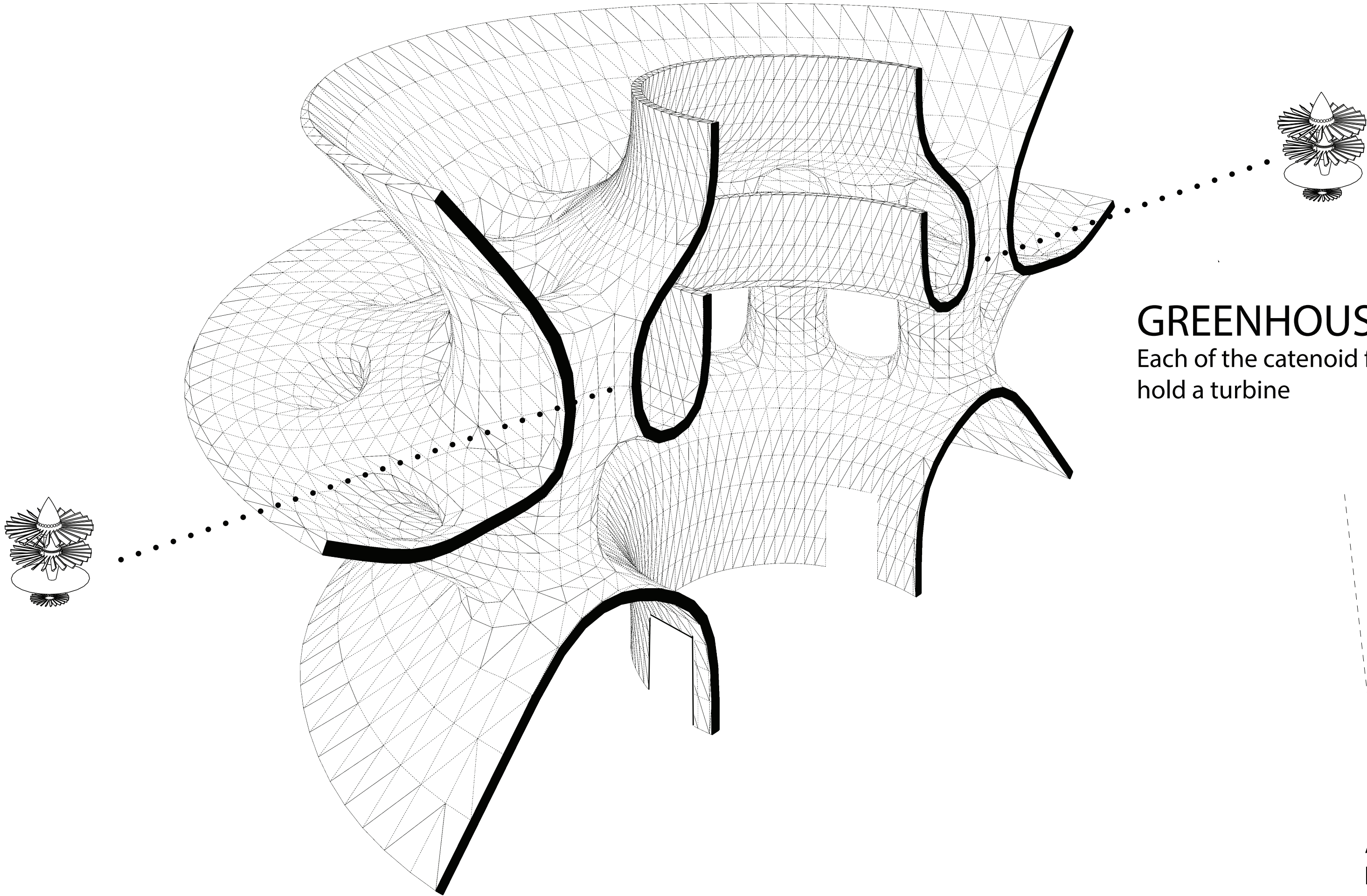


MASDAR CITY GARDENS

MECHANICAL OPERATIONS



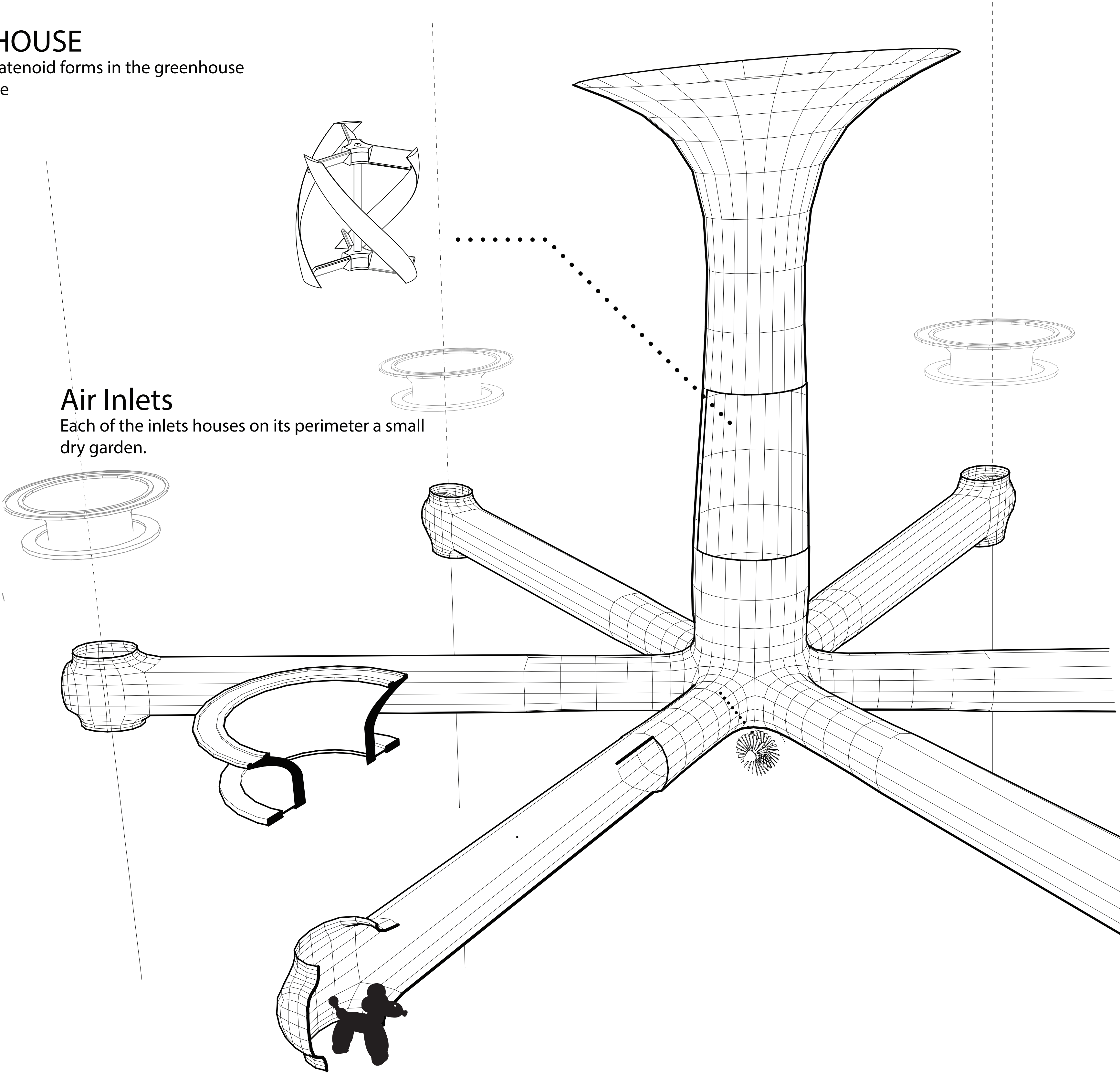
GREENHOUSE
Each of the catenoid forms in the greenhouse hold a turbine

ENERGY GENERATION
The renewable energy used in this proposal is wind (as Masdar already has a highly optimised solar farm). The core aim of this proposal is that the stack effect could be used, so that even in times of low wind, there will be a constant movement of air. To allow this, the design makes use of towers to amplify the differences in air pressure.

For this proposal, a commercially ready turbine will serve for the energy-generating part of the structure. This would be powered by the steady air flow rate of 1m/s at a minimum, though having wind would increase the energy output dramatically. Turbines are available from 500W to 10KW but as we are relying on the constant stack effect instead of wind, we opt for the lower power turbines.

▲ **Higher Temperature**
The rim is constructed with darker black to absorb more radiant, creating a greater temperature difference

▲ **Highest Wind Speed**
The tower is narrowest where the turbines are to throttle the airflow and increase the velocity at that plane.



Air Inlets
Each of the inlets houses on its perimeter a small dry garden.

