

Environmental Impact & Technology Summary

The project would produce renewable energy and portable water as a connected system. The entire energy used for generating clean water would be provided from solar panels of the Infinite Water, and the entire irrigation and gardening water used will be from the desalination plant and the rainwater-harvesting unit. Because of the curvature nature of the project, rainwater unit would be efficient to be installed and those could be directly used for gardening. The shortage will be filled up with water from desalination plant.

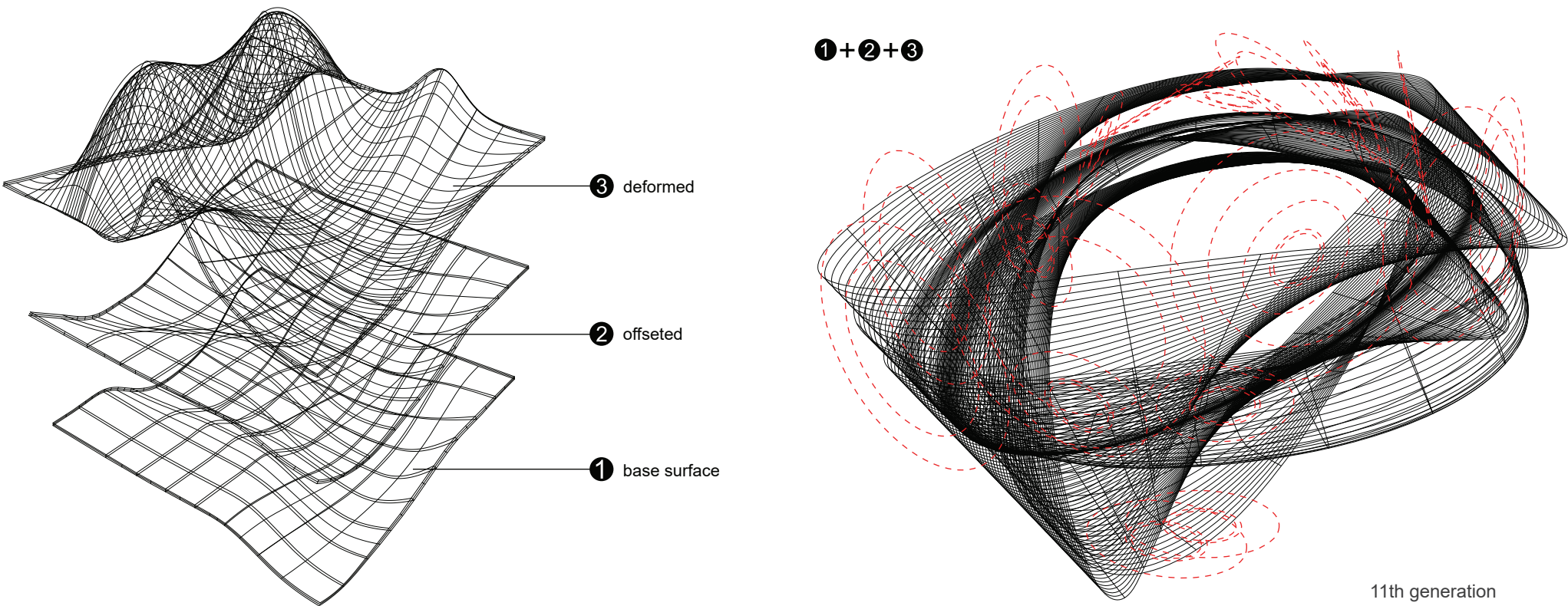
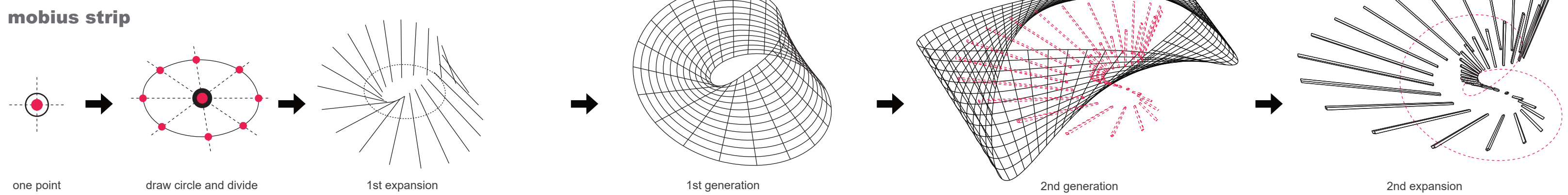
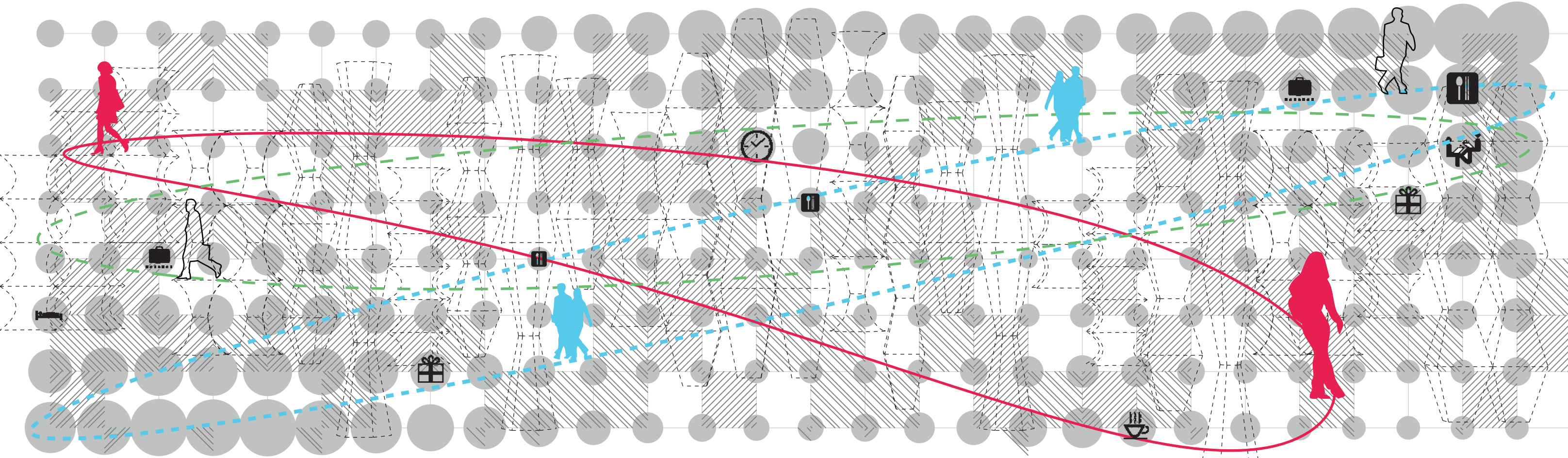
The project will be not only energy independent, but also able to provide clean, renewable energy to the community. The Infinite Water project materials will be composed of Building-Integrated Photovoltaic (BIPV) solar panels, which have advantage due to usability as a replace of building materials as building envelop. It would be cost-efficient as well in terms of building material cost and labor for construction of conventional buildings. The BIPV of the Infinite Water will have DC system size of 11819.2kW with average inverter efficiency, which would generate 18,824MWh per Year.

The desalination plant will have 13MGD capacity with Sea Water Reverse Osmosis system which has the most efficient system to be used with solar powered energy. With the California regional seawater characteristics, it would take up to 9.8kWh/kGal energy consumption, which is generously covered by the solar energy system component.

The desalination would also include the energy recovery unit, the Energy recovery pump. The reciprocating piston pump would help drive the membrane feed flow from the opposite side. It is the simplest energy recovery device and appropriate for smaller systems with capability of 3kMhm3 or less energy consumption.

The downsides of typical desalination plant, the impact of marine ecosystem and that of brine of outlet, will be solved by subsurface pumping system and the use of effluent of treatment plant of Santa Monica City to dilute the brine, respectively.

WATER + ENERGY + COMMUNITY + GREEN = ONE INFINITE LOOP



develop design tool that generates multiple options rather than develop single design

