

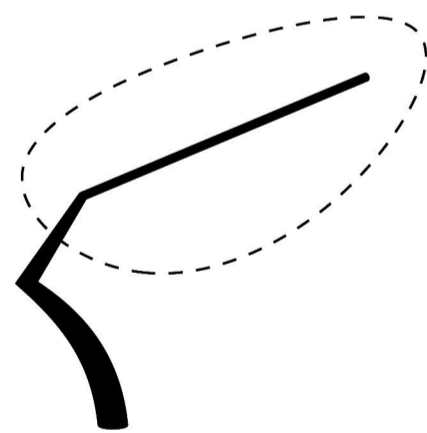
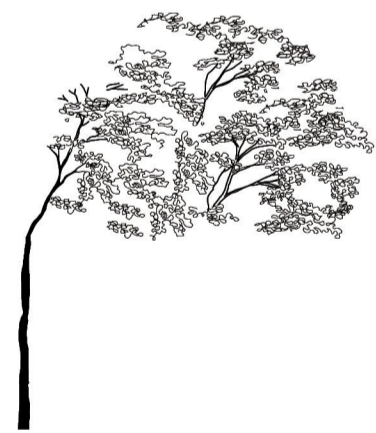
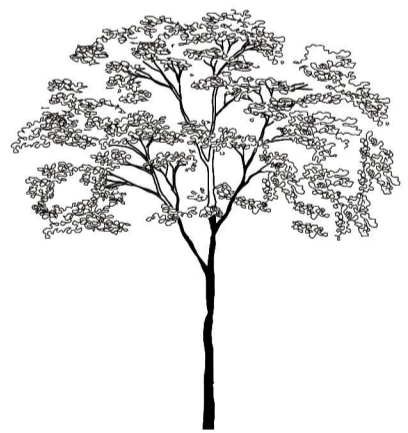
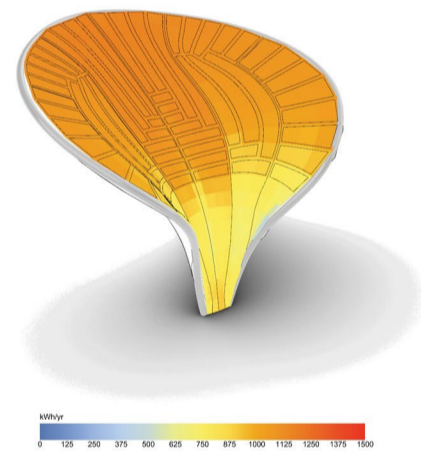


The electric car parking in the west of the U-Hall as the arrival point of BUGA 23 and sharing electric car station in the future

MORPHOLOGY

The singular module with a double curve form is developed from a series of morphology studies of the existing tree shades in the context of the facade of the U-Hall, the significant existence on the site indicating the history and program of the site. The shape is analyzed, simulated, and optimized to collect solar power and rainwater the most efficiently.

What is more, the soft solar panels are utilized to gain more sun power absorbing surface area and combine the form and function more closely and casually.



1. Typology Origin

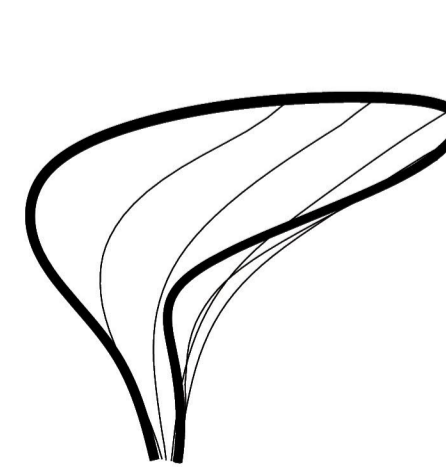
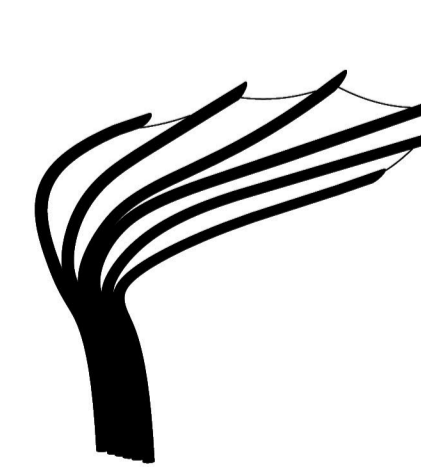
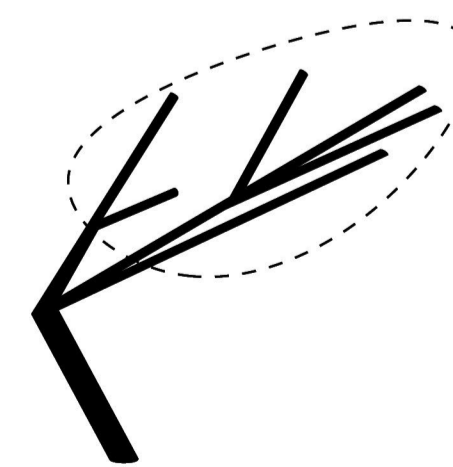
The existing tree growing absorbing solar and water is where the design starts

2. Architecturalization

Erase one size would provide the form an orientation and potential to connect with a facade

3. Simplification

To enable mass production, the trunk and leaves are simplified to structure and canopy



4. Subdivision

Sub-structures are developed using the base of the main structure to hold the canopy

5. Abstraction

Developing the sub-structure abstract and duplicable makes the installation more practical

6. Optimization

An outer perimeter structure with minor subdivisions inside simplifies the design language

RAIN COLLECTION

The singular leaf form with optimized double curved form can not only create a large area of coverage but also collect the rain water blocked by the canopy to the centralized underground water tank to recycle them for the park and the communities around it.

24,778 liters of water per year

lights integrated with structure between membranes

SOLAR POWER COLLECTION

The optimized double curve creates a more efficient and larger area of solar panel foundation. Even though the soft linear solar panel would drop the percentage of power transformation from around 20% to 13%, the perfect fitting to the curve itself gains more area of solar panel and makes the total amount of solar power transformation more than the traditional flat panel option. What's more, the double curve would obtain more perpendicular and high-angle sunlight compared to the flat one.

5076 kWh of electricity per year

DECENTRALIZED URBAN INFRASTRUCTURE

The proposal is going to serve as street lighting as the fundamental functionality. The power will come from the solar power generated itself. Besides the basic program, the joint modules of the design proposal can be varied into very different and flexible programs like urban seating, public dining & working table, scooter, and electric car charger, etc. [see diagrams on pg 1.]

on-site battery for powering integrated lights

