



Recovery of Water

Çağla Aktuğ

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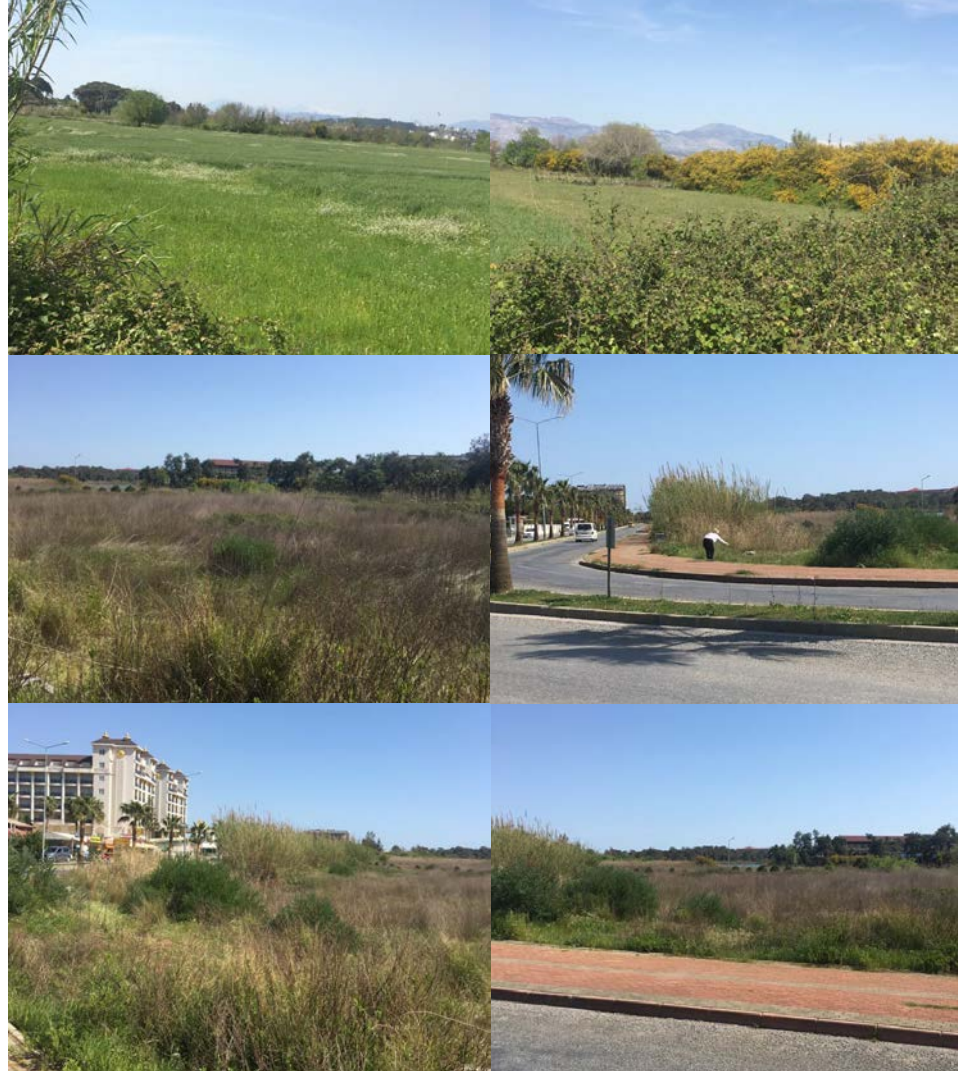
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The Site



Titreyengöl, Side, Antalya

Because of the years I got to spend around the area, I have seen how the constructed environment came to its condition today. There are mainly hotel complexes which create boundaries for their properties and does not have any relation with the environment its built in. These hotel complexes are also polluting the area around by pouring their waste to the river.





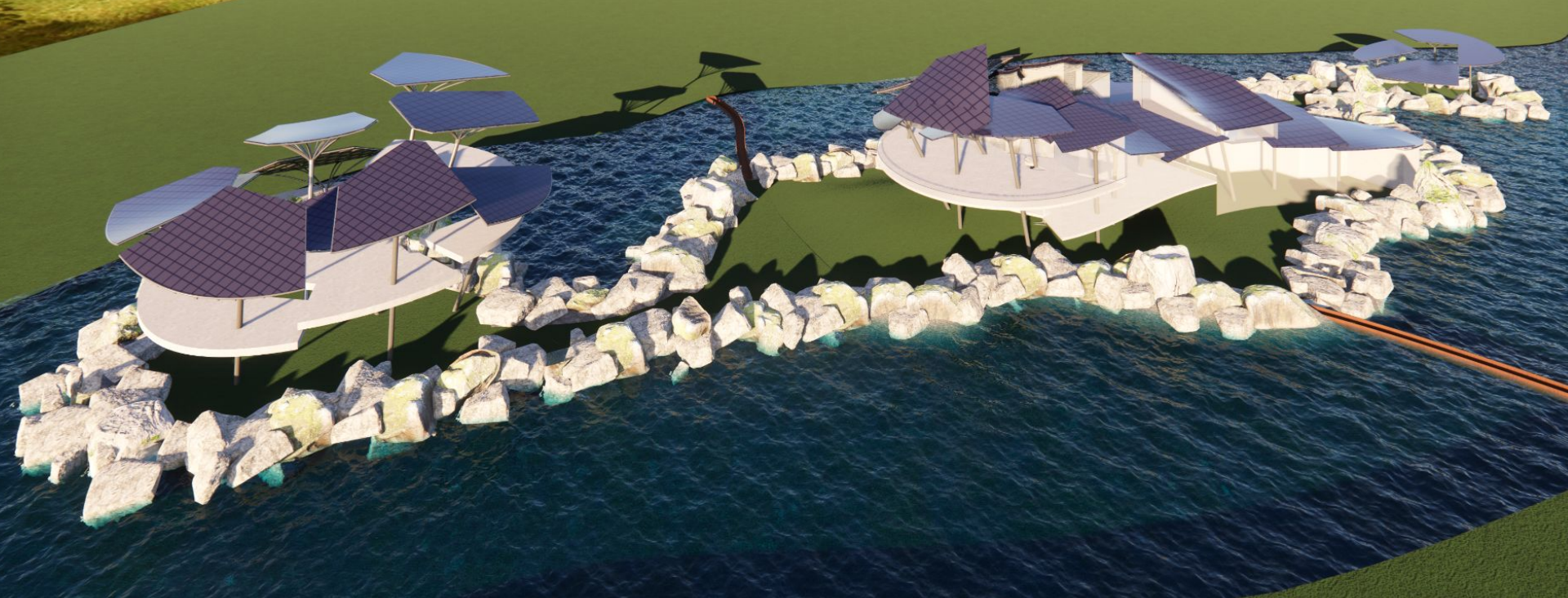
Another main aspect is that the area sits in between Manavgat river and Titreyengöl lake which is linked to the river with a really thin stream. Manavgat river is a 93 km river which comes from Konya and connects to Mediterranean sea.

Purpose



Master Plan

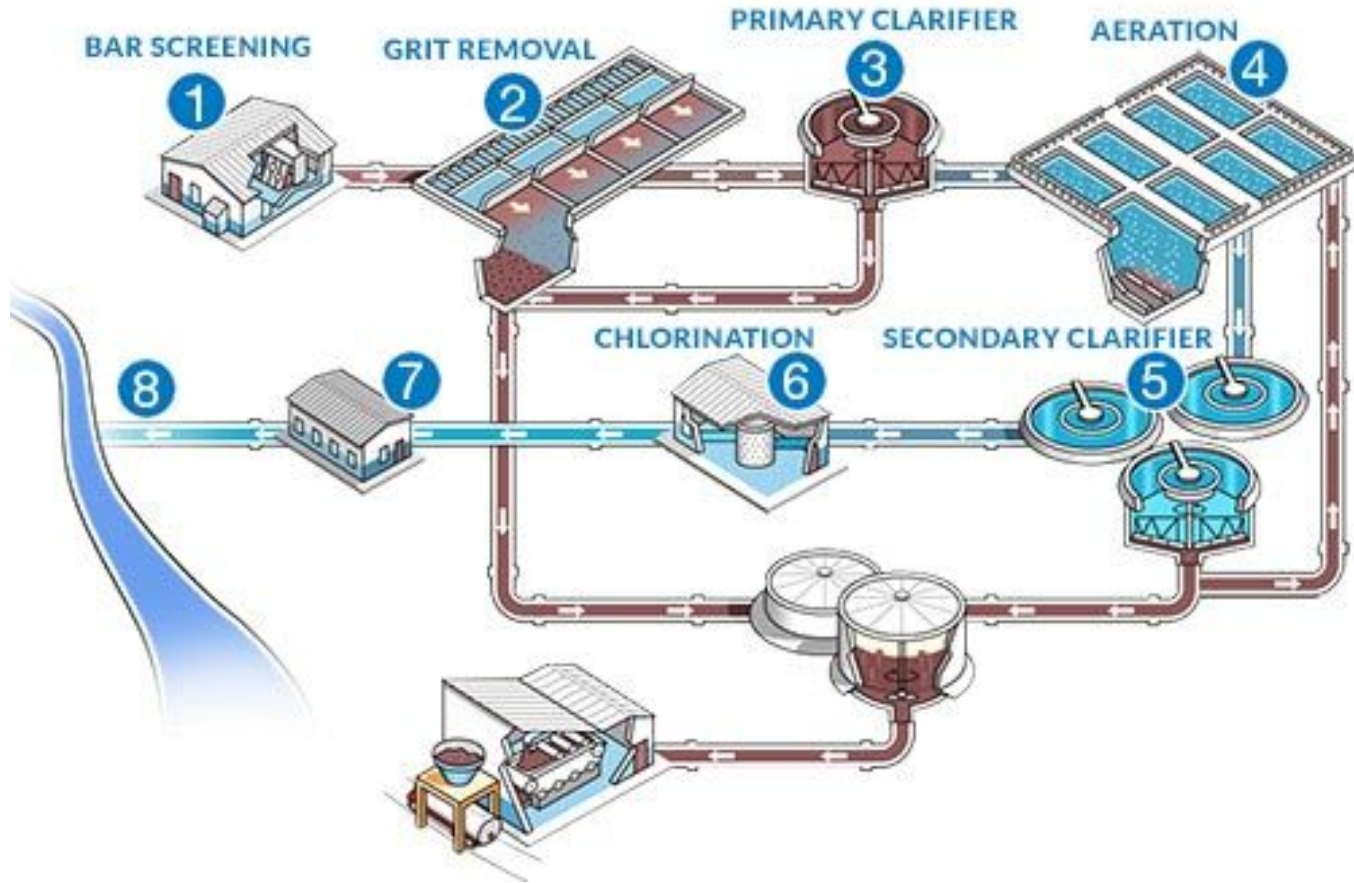




Main purpose of the building is to propose a complex which is environment friendly. It proposes a water treatment center which can be used in other buildings along the river. This will not only help with the constant pollution of the river but also clears the water that's gonna fall into rest of the ocean.

How

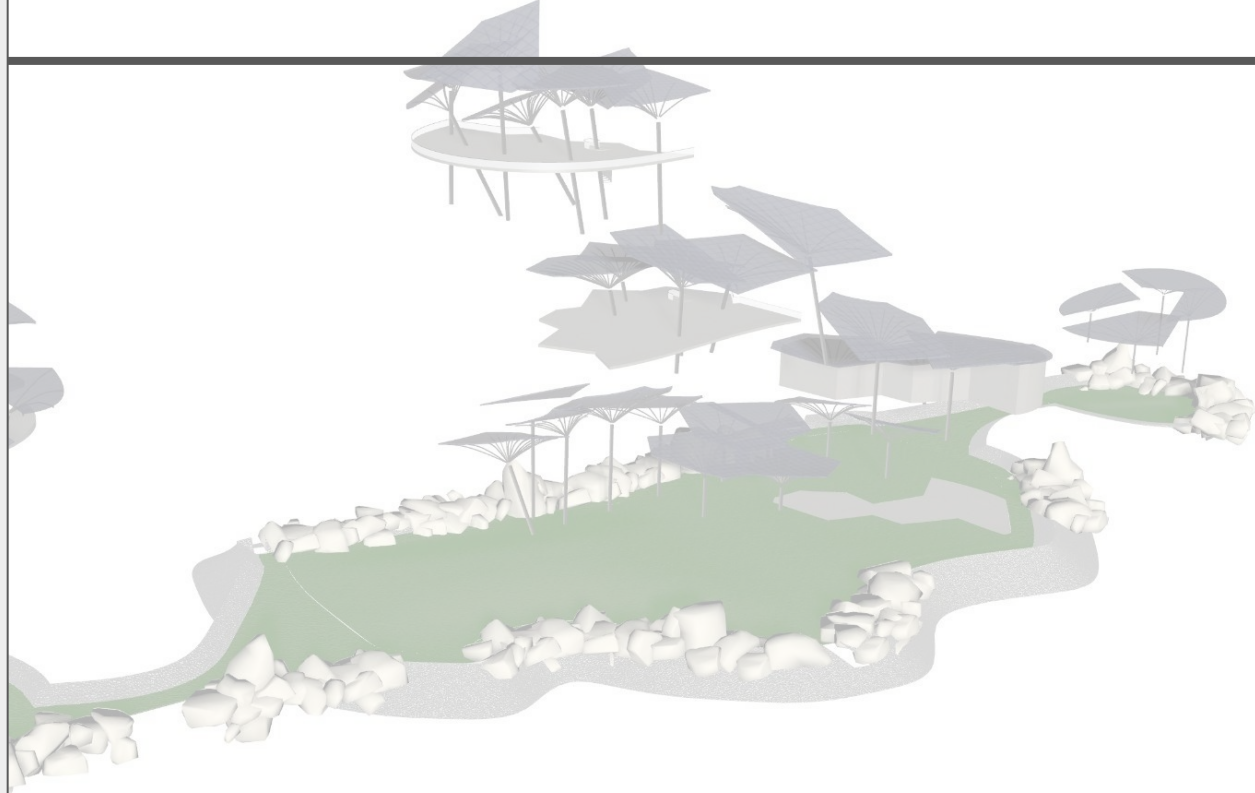
Stages of Water Treatment



Stages of Water Treatment

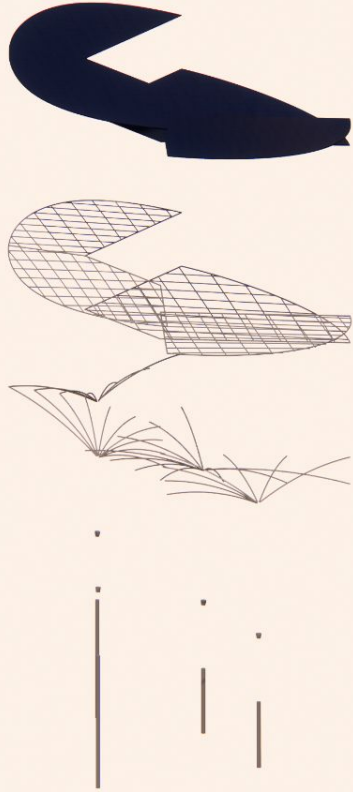
1. **Bar Screening** - Machines and other elements of the process might get damaged because of large-scaled particles inside the water. So first step is to filter them.
2. **Screening** - Passing the water through a filter to get rid of grit.
3. **Primary Clarifier** - First separation of wastewater and organic solids.
4. **Aeration** - NH_3 and NO_3 contact and oxygen for bacteria to develop is encouraged. This is obtained by pumping air into the storage tanks.
5. **Second Clarifier** - Wastewater is ran through another clarifier to set remaining organic elements.
6. **Chlorination** - To be able to kill bacteria left in the chambers chlorine is added
7. **Water Analysis** - Testing for: dissolved O_2 , ammonia, phosphates, nitrates, chlorine and pH levels.
8. **Effluent Disposal** - After making sure levels are satisfactory for permit, the water is drained back to the environment.

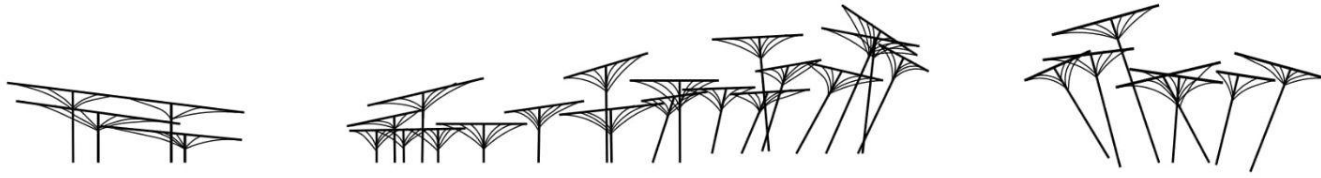
The Design



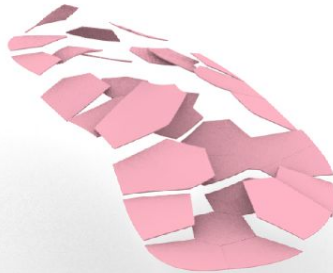
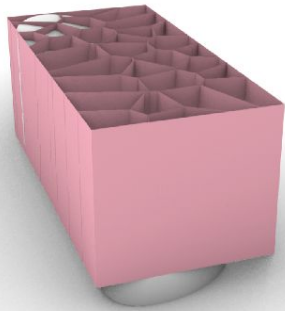
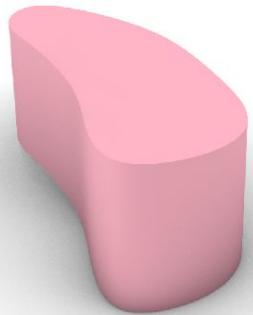
The Structure

The structure mainly carries the photovoltaic panels on top of them. They are elements which support the purpose of this complex. The mesh structure and columns are made from steel where the PV panels sit over the mesh. The end where columns meet the tree of steel pipes, there are light sources which light up and reflect under panels.

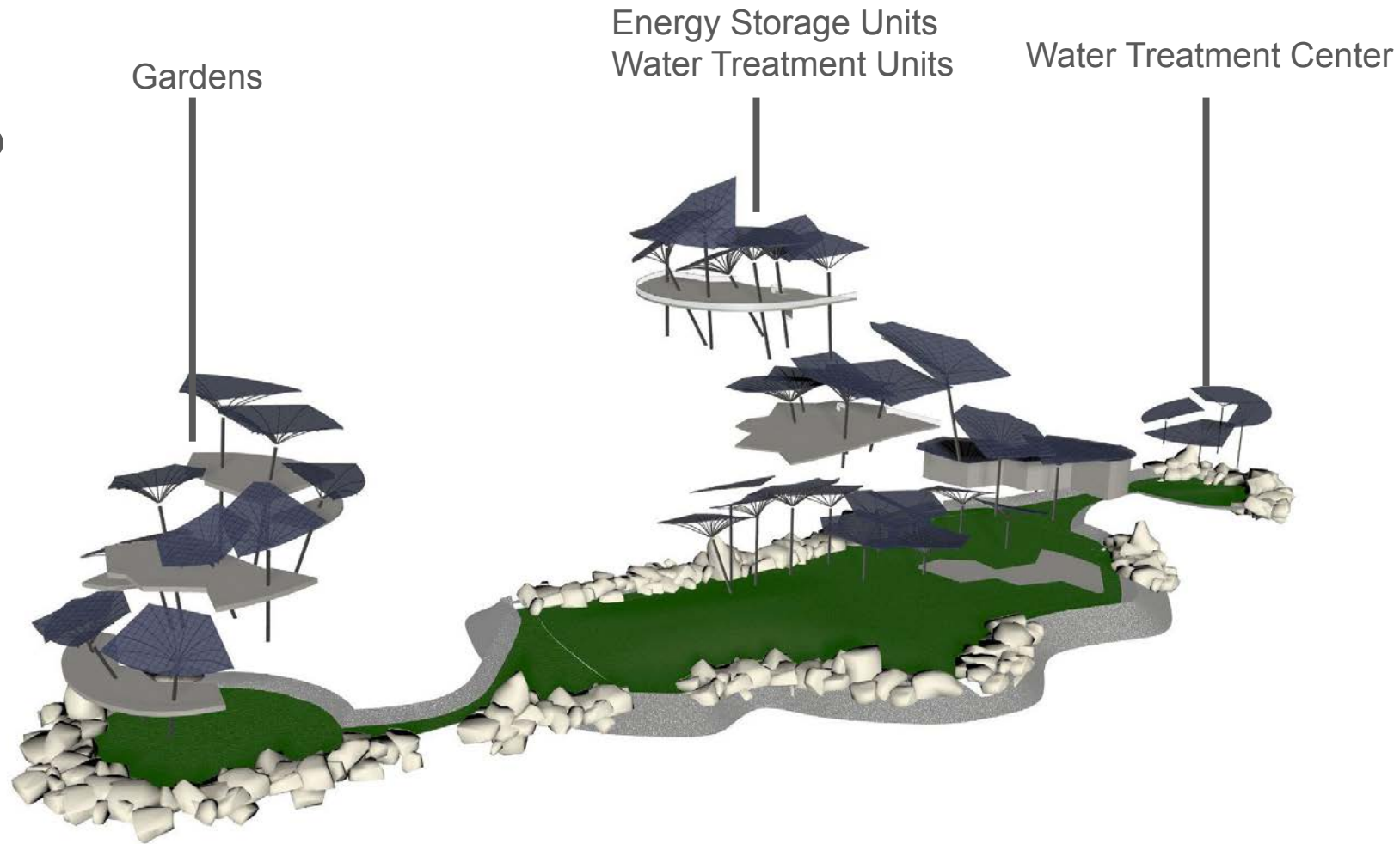


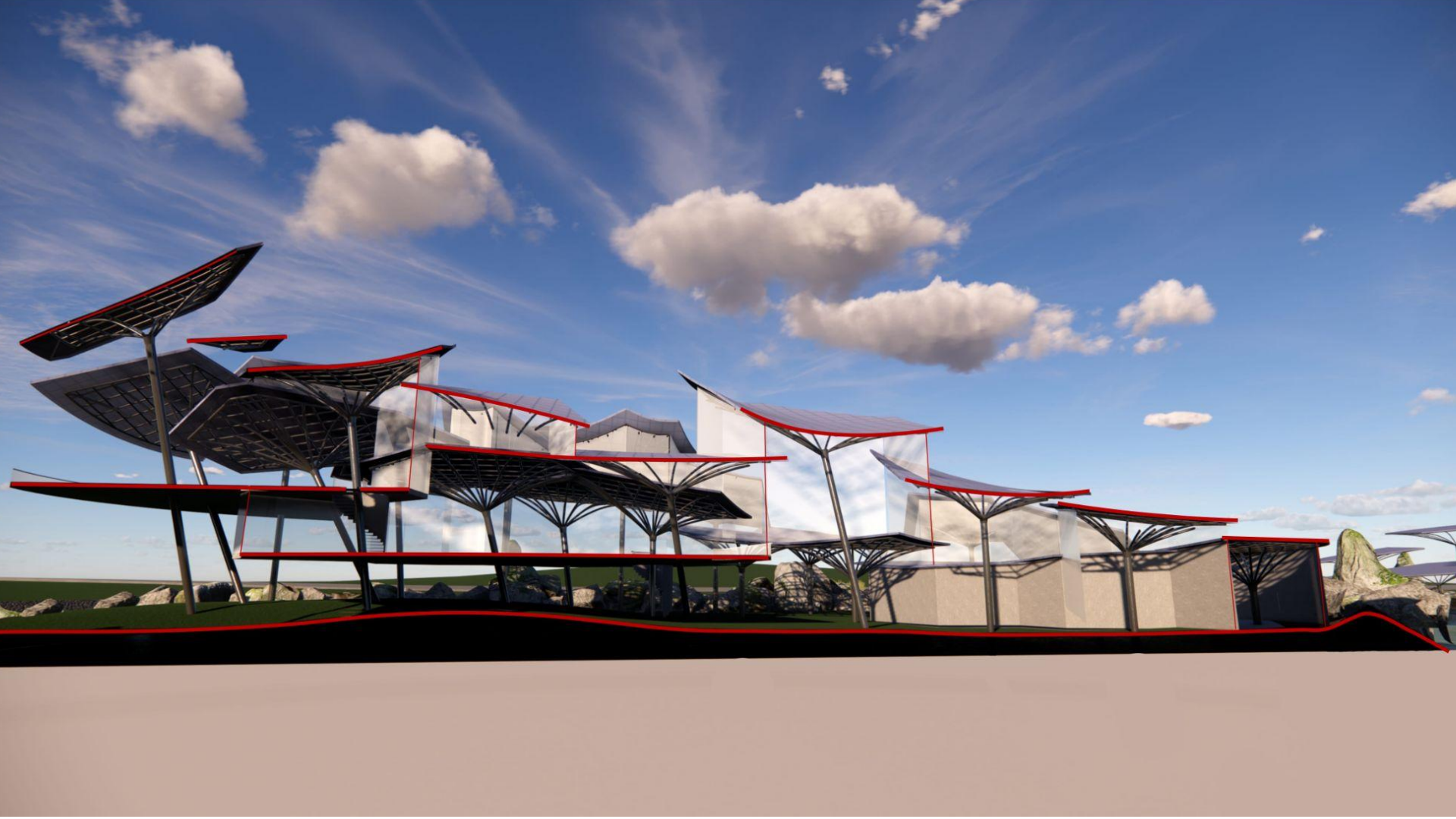


The panels and columns are firstly generated in a perpendicular manner which creates a pattern for the buildings. Afterwards taking the direction into consideration, the part where building faces south, columns and patterns got a more angled and broad way of placement. This helps with breaking the repetition of columns which is restricting to create more voluminous spaces.



Function Diagram

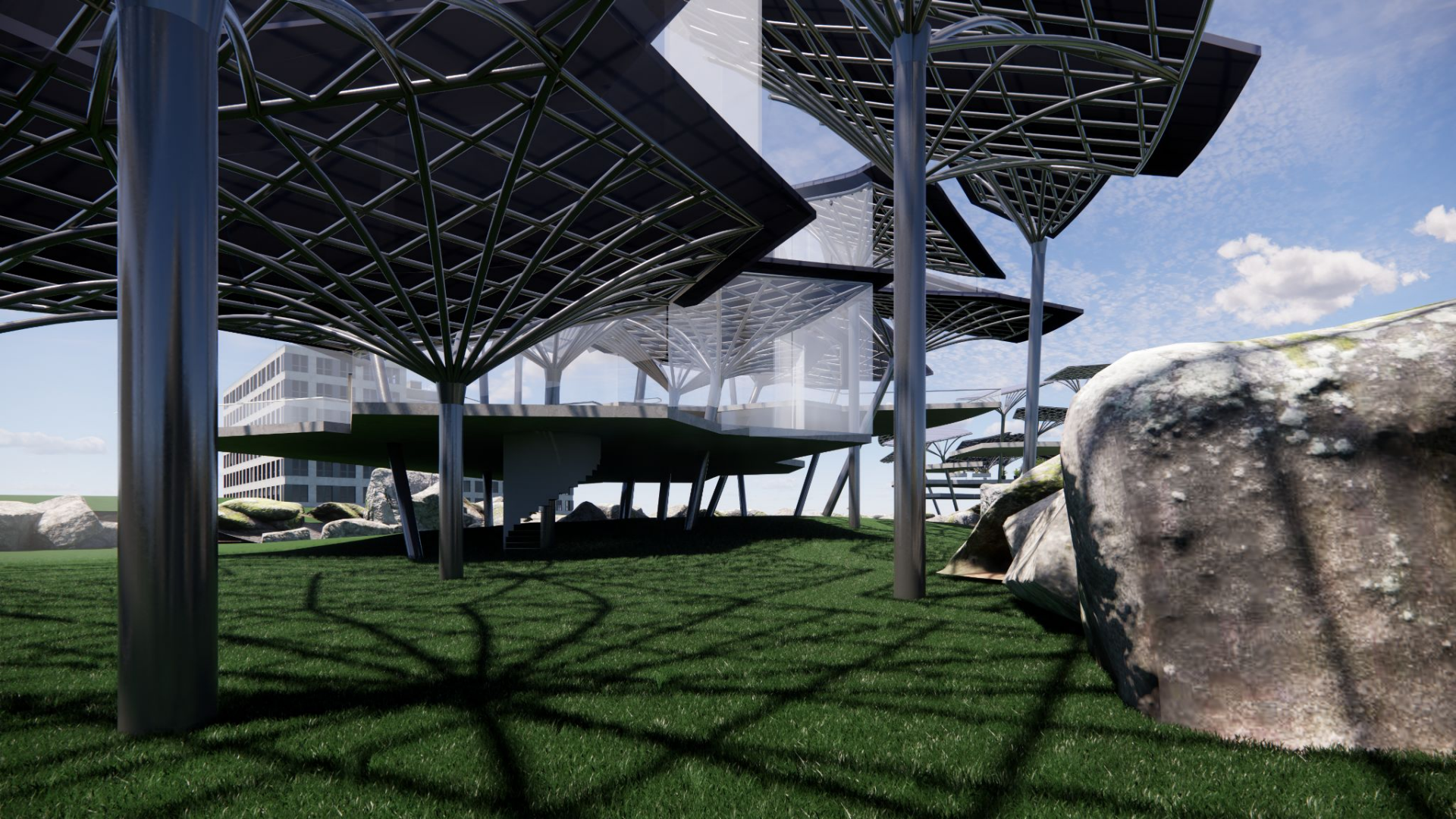


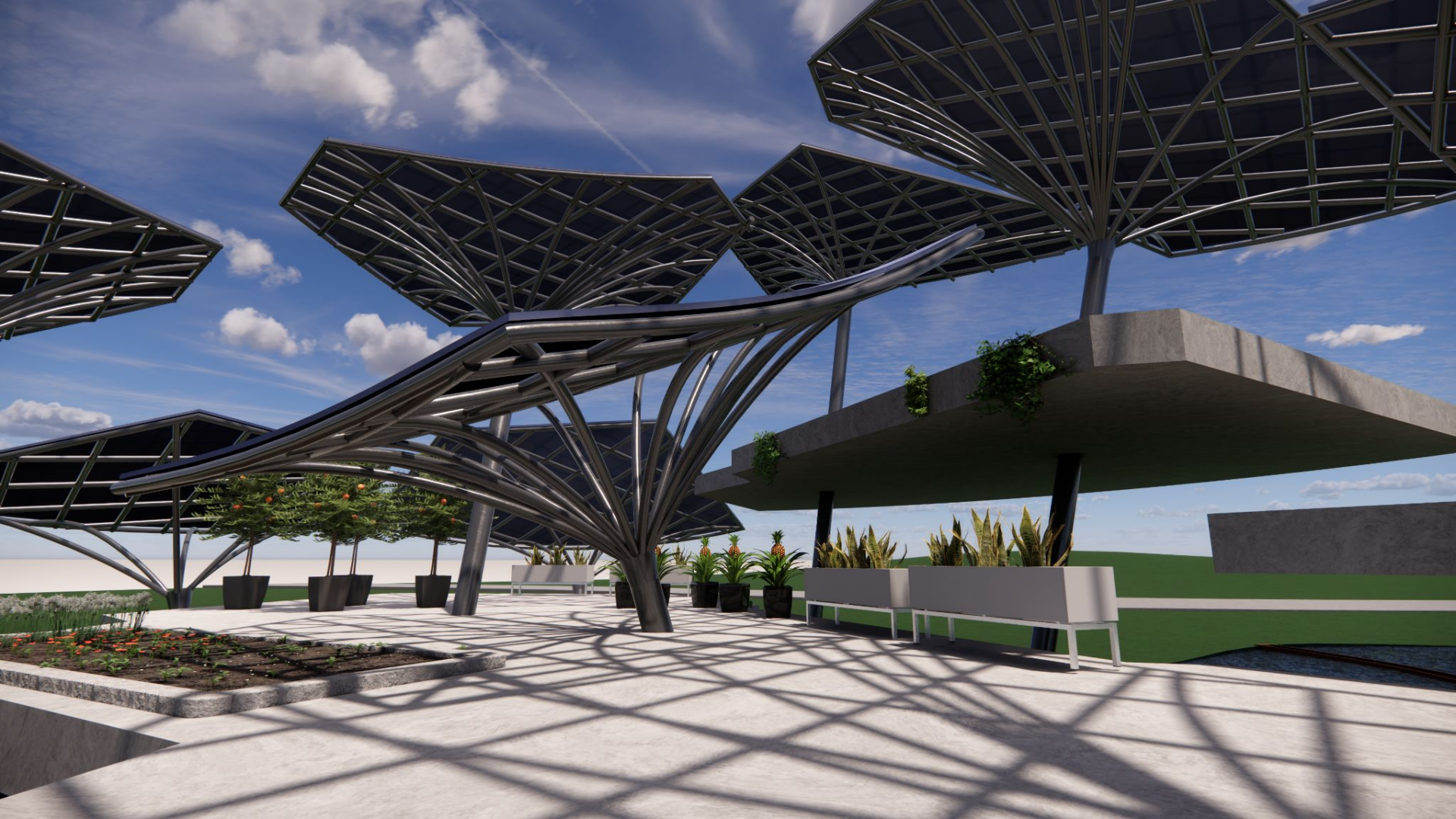




Renders











Thank You

