Green Dome

We propose to build a dome that will provide a new semi-outdoor space that could simultaneously enjoyed by many people. The roof itself would be constructed out of tree branches and leaves.

We envision that the material could be collected from the surrounding parks and streets during their regular park maintenance. We would then use these branches and leaves and build a dome-shaped roof structure that would provide shade from the sun in summer. At the same time the roof would allow the wind to pass through.

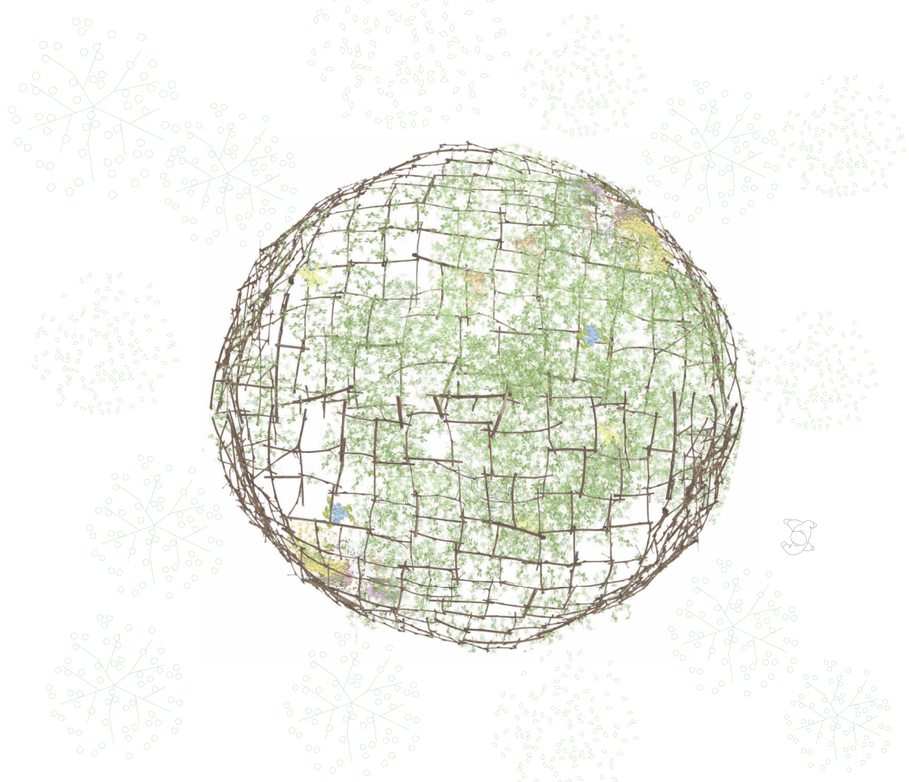
In addition, plants entwined on the roof also act as structural reinforcements and grow into safer places.

We can make various shapes (from a simple dome to a more complicated wavy structure) using the same structural mechanism.

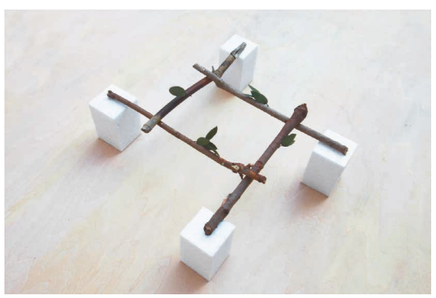
We would like to decide on the final size and shape of the building after considering all the different conditions and discussing them with the engineers and the organizers.

A layout plan of the garden

Shape and size change depending on the site



Structure



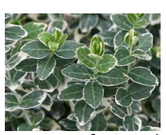
We use rod-shaped material and stack them up to support each other. Since bending load would be propagated little with this structure, the joints can be simple. Overall structure will be dome-shaped, and this shape is effective for making a large space. Further structural analysis will allow us to design various shapes suitable for diverse requirements.

Plants list

Ivy plant

Rose

Jasmine



Euonymus fortunei

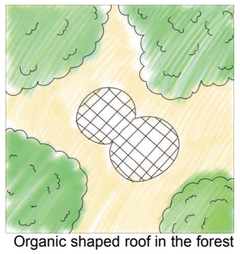
Clematis integrifolia

Lonicera

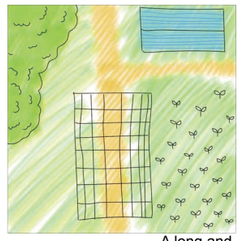
Shape suitable for the site

The shape and size of the dome is determined according to the site and surrounding environment.
For example, a small dome is built in a small vacant lot, and an irregularly shaped dome that matches the surrounding trees is created in the park.
Because it is a simple structural form, you can create various forms of domes using the same technique.
The final shape is determined after considering site conditions.

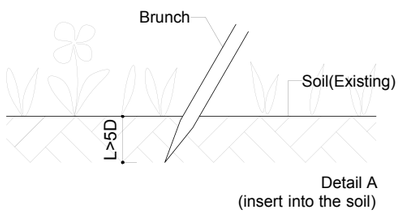
Resting place in a vacant lot



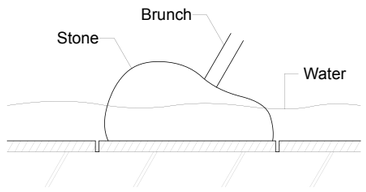
Organic shaped roof in the forest



A long and narrow roof over the road



Detail A
(insert into the soil)



Detail B
(put on the stone in the water)

Variation of the structure with time

If we would, for example, plant morning glory flowers, one could observe how the plants grow as part of the structure and eventually morning glory would flower every morning. We might also add other plants by grafting. We could also add bird feeders which would attract local birds.
We hope to collaborate with a structure engineer as well as other engineers and scientists, such as a climate engineer, a plant scientist and a social scientist etc. We would explore together how to chose plants and how to process them as a material; where to collect them.
By involving the more ideas, the dome will become increasingly more complex although the initial structure and construction method are very simple. This is also how Nature creates diverse space, too.