

urban bacteria

light > growth > pulse; intensive proliferation > extensive limit.

Creation

The urban bacteria is a responsive structure that is not built; it grows following the path dictated by an algorithm that takes into account the geometry of the site as well as the available sunlight. It adapts to almost any given urban space, evolving into an organism fit for the conditions it encounters.

We created in processing (processing.org) an autonomous system that is emergent (it demonstrates an "internal will to reach coherence"). It was used to compute the structure of the bacteria and simulate its growth in a variety of conditions.

Pulse

It has a life of its own. It pulses along with the variations in sunlight: when there's a excess/high amount of sunlight available it increases its volume, regaining its initial form as a direct result of a decrease in available sunlight (caused by clouds, sunset). In its "expanded" form it offers more shadow to the pedestrian space below when it is most needed, increasing its quality and, therefore, inviting people to use it.

Daylight > nightlight; natural light > artificial light

During the day, the "urban bacteria" stores the excess energy resulted from sunlight and releases it during the night. The quality of an urban space is linked with the amount of light it receives during the night - this "living structure" proposes an ecological/economical way of transforming daylight into night light, sunlight into artificial light.

Materials

The membrane of the structure has a multiple role: absorb sunlight and create shadow during the day and release light during the night. We propose a multi-layered material consisting of two layers of polarizer sheets (in between which there's another layer of cellophane) superimposed over a photovoltaic lattice that transforms sunlight into energy. The double layer of polarizing material creates an intense visual effect (by speculating small shifts in geometry and sunlight angle) that can be used to enrich the surrounding urban space.

"Urban bacteria" is an autonomous shape living in concordance with the rhythm of the environment.