Becoming Xerophile

A bioclimatic experiment for the Sharjah Architecture Triennial 2020

Stereotypical Western representations commonly depict desert regions as dead or empty landscapes – impossible to contain, with little vegetation and water, suitable only for secret tests. In response, Becoming Xerophile (from Greek “dry-loving”) proposes that we appreciate plants that thrive in dry areas. Reimagining the role of desert plants, and challenging the idea of the desert as a bare landscape, Becoming Xerophile is a long-term live test, with a view towards developing a new model for non-irrigated urban gardens in Sharjah and other cities in arid environments.

Nine sand bowls have been carved on the site of a former school, using the soil and rubble from the school’s renovation. These structures with various microclimates enable the desert plants to have the optimal environment they require to flourish. The ‘watering without water’ model is based on ancient techniques of cultivation. The garden is planted with over 40 desert plant species that have been used for centuries by people living with the desert.

Through their materiality, shading, depth and positioning, the bowl structures optimise both air humidity and moisture drawn from the water table. The garden is equipped with a suite of sensors that measure the small microclimates generated by the structures. The sensors record rainfall, solar radiation, wind speed and direction, air temperature and relative humidity, soil moisture and leaf wetness.

Experiments like this may not lead to perfect outcomes, but they always provide valuable insights for future and more developed applications. With this region facing environmental challenges in which high temperatures and infrequent precipitation contribute to water scarcity, pilot projects that embed adaptive research into design such as Becoming Xerophile are urgent and extremely relevant.

Furthermore, the project raised some questions on the application and role of technology in this climatic region: How do we use technology to create green spaces in an extreme environment? Do engineers throw in more high-tech gadgets and equipment that will be obsolete in a few years’ time to force a solution, or do we step back, simplify, and try to work with nature?

And this is where this intervention is special, because it refers to tried-and-tested constructions applied in similar climatic environments, except Becoming Xerophile is located in an urban context. Technology, in this case the bioclimatic tools we use for masterplanning and envelope design, was only used to improve the geometry and enhance the microclimate of the bowl structures, and in the future the data collected by the various sensors on site will be used to recreate and scale up the concept.

Location:
Sharjah, United Arab Emirates

Architect:
Cooking Sections WEBSITE

Structural and bioclimatic design:
AKT II WEBSITE

Cooking Sections

akt II