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Infra-Structuring Architecture
The Water Node
An Urban Water Treatment Facility

Abstract

No matter the reasons for the birth of a city, water sits at the very heart ensuring a healthy working population. Johannesburg is one of the only cities in the world that has no major water source of its own and as a result has its water pumped uphill from the Vaal Dam into the city. At the same time the city faces a crisis that is based on both the supply and demand for water. In South Africa, an already water stressed country, it is predicted that precipitation will reduce over the next century, reducing runoff and the supply of fresh water together with demand eventually over taking supply.

Through rethinking how the inner city of Johannesburg deals with the saving, purifying and redistribution of its available surface water, the idea of water infrastructure can become something more than a subconscious operation controlled from a far off location and pumped unsustainably back into the city, and more like a series of upgraded machines dispersed about the city within localized contexts, supplementing the existing vital operations on a very obvious and conscious level in order to protect its populations by better protecting it's most important resource of all. Located within the Maboneng Precinct and more specifically located over a channel of water that becomes the Braamfontein Spruit, this thesis aims at designing a building that will incorporate a water treatment facility together with research laboratories to purify grey water to a standard that is usable for most needs including drinking.

Water however does not exist by itself when placed within the context of any environment that has an established infrastructural system. It exists together with the many various machines and pipes hidden from our everyday lives; they are the subconscious networks of the city's mind, constantly working in the back(under)ground to maintain a reliable flow and quality while the populations go about their conscious, daily functions.

The aim is twofold; firstly to show how developing technologies can be experimented on a smaller neighbour-hood scale in order to encourage the development of new thinking and secondly, by developing a Water treatment facility and laboratory coupled with daily social functions as well as offices sited in an urban environment, I hope to show that infrastructural projects that are usually located on the outskirts of cities, away from every day activity, can enhance the civic quality of an urban space.

With every system becoming more reliant on technology, water needs to be seen not only as an entity that exists within the natural cycles of the planet, but one that also exists very much within the mechanized systems of the city's infrastructure, with its availability relying heavily on those systems that manage it as well as the daily social functions that hinge off of it.