METHODS WITH ECOLOGICAL SYSTEMS: BODIES OF WATER IN ENTIRELY UNNATURAL CONDITIONS

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This experiment/research is presented in an open form, inviting the reader to follow along. Our goal is to not only investigate one particular phenomenon, but to further this practice by encouraging replication and experimentation.

In Vilnius city center, near the Neris river, one can find a historically and architecturally compelling building, known as the Vilnius Palace Of Concerts and Sports (Lithuanian: Koncertų ir sporto rūmai). Originally built in the 1960s, in its active years the building was a popular venue for sports competitions, concerts, and other cultural events. The building was abandoned in the 2000s, and is still decrepit.

The brutalist architectural style of the building utilized an interesting element—decorative water mirrors in the form of a concrete trench. One can assume that it used to be regularly maintained and taken care of. However, once the building fell into disrepair, so did the body of water.

While this occurrence wouldn't be that interesting in itself, there are rumors of fish and other animals living in this particular place. Quite a few times we have heard hearsay of these creatures, most of them followed by various jokes of their possible radioactivity or toxicity. Not to mention the



The surroundings of the body of water.

strange plant life that could possibly exist in such conditions. Water in such an environment exists in a paradoxical state—it is dictated by human factors such as architecture. However, the body of water starts defying the human narrative of what the object containing it was originally designed for, creating new landscapes and non-human infrastructure.

CONSIDERING THE EFFECTS

The primary aim of this practice and research is to consider the effect that these anthropogenic conditions have on such bodies of water. We, humans, impose certain conditions by making certain architectural decisions, which possibly have an impact on the hydrological ecosystems, forcing different species to adapt to these enforced conditions and circumstances.

THE METHOD OF RESEARCH

Ecospheres are a simple practice of sampling various water-based ecosystems, sealing them in a container and letting the system develop itself in a more contained and observable setting. In this particular case the practice of ecosphere creation allows for a more personal connection between the practitioner and the subject, since it creates a possibility of daily real-time observation and documentation. In simpler terms, you can always see how the ecosphere is doing and how it develops.

A combination of the two previous statements—in a preferably recycled pickle jar, we collect a sample consisting of:

— Water from the chosen system
— Flooring i.e. rocks, soil, algae
— Surface debris, if present

Mark the location, date, and time of the sampling. Once ready, seal the jar. After relocating it, make sure it gets an appropriate amount of indirect sunlight. Avoid opening the jar.

After doing this, there are a few key questions we should try to answer:

— How does the body of water look, feel, smell? What are its surroundings and context?
— How did these bodies of water come about? Was it deliberate or accidental?
— What are the key differences visible after cultivating the ecospheres? Are they moving in completely different trajectories, or are they more or less the same?

Answering these questions should help us become more conscious and aware of the conditions that surround these ecosystems.

Disclaimer: Do remember that ecospheres and the original sampling point are not identical. Observation and investigation of the original body is also very important.

METHODS IN PRACTICE

Now let's step into the practical. On a bright, sunny day we trespassed into the territory of the Vilnius Palace of Concerts and Sports. The body of water was about 30 sq. m. in size, split up into various rectangular forms. Its walls and floor were made of concrete, meaning the only soil-like medium was algae or invasive trash. The water itself was overwhelmingly green, following the global cycle of algal blooms, giving off a distinct swamp-like smell. We could immediately see fish or other unknown aquatic animals; they were darting about actively, seemingly hunting insects or other food. We started collecting the sample, which consisted of around 4.4 L of water, various debris and rocks, a larger stick, and a large amount of the aforementioned algae, which behaved like a substitute for the soil, as we saw the "fish" burying into it. The jar was then sealed and transported to the research laboratory: our bedroom, where it is now placed in indirect sunlight, with frequent observation.



Sampling process.

OBSERVATION

It took around 8-10 hours for the various debris and algae to settle back down into a similar composition as we found it. Around 24 hours after transportation we started to notice small movements and forms of life. Various tiny worms and unknown insect-like animals quickly started appearing. The ecosystem revealed itself rather quickly, which was very interesting to us. This particular one was immediately alive and seemed to be thriving. *Maybe these are the byproducts of the original conditions this system appeared in, maybe these confines allow for greater adaptation and faster genetic progression?*



The ecosphere immediately after sampling and a week later.

As more time has passed, we keep seeing new aquatic creatures that remain unidentified, although we can speculate. There are definitely some representatives of the aquatic worm species, and we can spot some aquatic insects as well. The water continues to settle down and clear, as most of the aforementioned green color has dissipated, although a slight tint remains.

CONCLUSIONS

As more than a week has passed, we can finally make some conclusions and comparisons. As it's not the first ecosphere we have experimented with, we can immediately say that the speed with which this particular ecosystem readjusted to new conditions was very impressive. Not only that—each day we can see some visible changes to the flora as well, with new shapes forming from the soil-like algae at the bottom. Without being overconfident, we would like to speculate that this particular hydro-ecological system has adapted itself to its anthropogenic surroundings, creating solutions for the problems that it faces, such as the lack of soil, as not only the naturally occurring algae substitute it, but it also seemingly incorporates foreign objects into its underwater landscape. And discoveries like this are why we feel this type of practice is important: it's not only easy to recreate and quite interesting, but it can bring us closer to the micro scale of the ecological—knowing more of not only the global situation, but delving deeper into the small-scale, local systems that are each unique in their own aspect.

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