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Bio-architecture feedback loop

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Architectural Design

Earth has spent millions of years fine tuning its eco- systems. Over the eons they have evolved into vast and complex systems of counter-balanced forces. Instabilities or changes in one input produced unexpected counter-effects in another. Plants, organisms, and landscapes operating interdependently for millions of years, relatively uninterrupted until the arrival of humans.

Biomimicry is the imitation of the models, systems, and elements of nature for the purpose of solving complex human problems. There is an incredible opportunity for architecture to use biomimicry as a model for design in which a resulting architecture can become an operating part of its environment. While this project will consider the efficiency and beauty of nature, those elements will not be the focus. This thesis will aim to create a more cohesive relationship between architecture and its environment by treating the human-made structures as if they were a participating member of its habitat and part of the natural feedback loop.

The proposed architecture will be a series of research stations located in Lake Eyre, which is dry most of the time with periods of flooding every couple years. There will be multiple nests situated throughout Lake Eyre that will each act as a stationary main framework and at most contain ten people at a time. The main station will have modules that will be able to leave the main structure in order to prod, probe, gather, observe and explore the surrounding environment. Each pod has a different adaptation for completing various tasks based on selected animal allies. Some carry researchers and some are autonomous. Pods will be able to communicate with one another as well as re-embed themselves back into other nests.