



Perry Hall. Digital photograph of oil and acrylic paints. From Turbulence Drawing System, 2014.

ARCH 4050/5050 - Digital Ecological Systems - Ellinger

Background

“Humankind is both violently opposed both to Humanity and to Nature, which has always been a reified distortion of the symbiotic real”ⁱ

“I am not bound in an impervious whole and there are parts of me that also belong to other lifeforms, are common to them, or just are other lifeforms (gut bacteria for example),”ⁱⁱ

In the era of the Anthropocene there is the emergence of thought that suggests that humans should move beyond an understanding of humans as a singular being and rather part of a complex network of living systems. The philosopher Timothy Morton’s, quoted above, has helped to inspire this shift in thinking. Meanwhile, a small collection of academics in architecture have been promoting radical change in

design that legislates equal intent for all living systems, not just human ones.

To support these notions there needs to be ways of synthesizing how human and non-human living systems occupy space. What are their interconnections, how do they support one another and what do they need to cohabitate? In addition to the intellectual drive from a philosophical perspective there is a substantial amount of scientific evidence that the eradication of non-human living systems from cities and buildings has driven a decline in human health metrics from the lack of biodiversity in our urban-scapes to the eradication of micro-biodiversity in buildings

Premise

This course will explore specific relationships of biodiversity in buildings and spaces. Beginning with understanding how to collect data through sensors, building a sensor array, storing the data and culminating in how to interpret and visualize

the data so that it reveals those interrelations between all living systems.

Method

The focus of the semester will be to build interconnected sensor network to get a spatial model of the environment that supports human and non-human living systems. The spaces will be in and around our building. We will read texts that support the background information and help focus the research questions. Each student will build a sensor network to be deployed and as a group we will visualize and draw conclusions from that sensor array.

Some Raspberry Pi computers and sensor modules will be available, but it is anticipated that will be inventing new ways to sensor and equipment will be made/purchased along the way.

This is an experimental seminar and producing a dynamic picture of flows of information (pollutants, humidity, macrobiotics, etc.) in space using the sensor arrays should reveal new understandings

ⁱ Timothy Morton, *Humankind : Solidarity with Nonhuman People* (London ; New York: Verso, 2017). p 3.

ⁱⁱ Ibid. p 122. Parenthetical idea by author for emphasis.