

# Project ZERO<sup>\*(or Less)</sup>

Dogan, O'Donnell | OPTION STUDIO Spring 2019

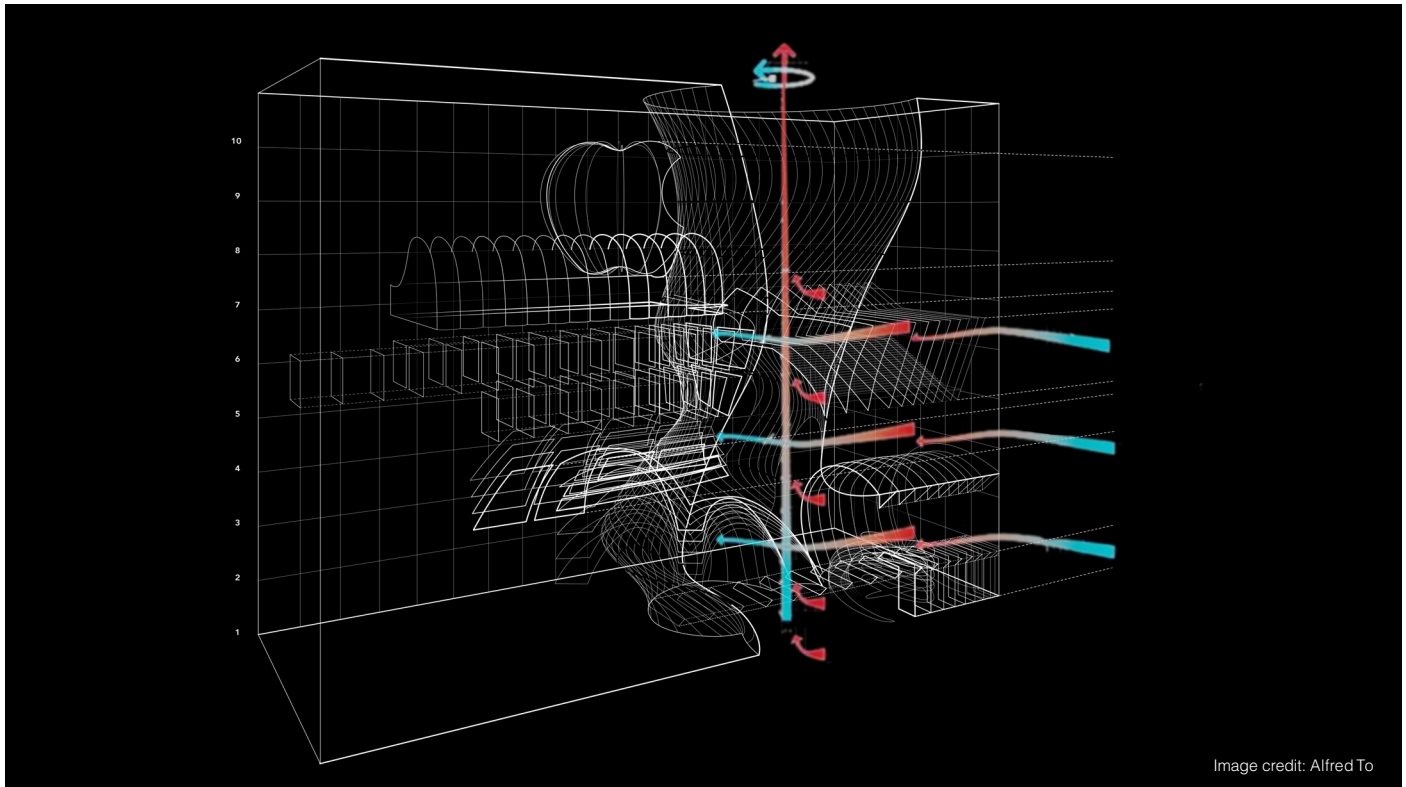


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“It is often neglected that the words animal and environment make an inseparable pair. Each term implies the other. No animal could exist without an environment surrounding it. Equally, although not so obvious, an environment implies an animal (or at least an organism) to be surrounded.”- James J. Gibson, *The Ecological Approach to Visual Perception*, (New Jersey: Lawrence Erlbaum Assoc. Inc. Publishers, 1986), 8.

40% of the energy consumed in the US annually is consumed by buildings. In the last 10 years, more concrete has been used in China than in the last 100 years in the US. Architecture cannot continue as we know it. But applying sustainable strategies to existing design practices is not an adequate response.

Project Zero will investigate the topic of sustainability not as a post-facto addition to an aesthetically motivated contemporary architecture, but as a return to the first principles of ecological thinking. By rethinking the normative approach to site responsiveness and to design itself, the studio aims to produce an architecture that not only behaves sustainably but that also communicates the fact that it does: to produce a new ecological architectural language.

The studio will design a prototypical building for the university of the future. Based on real programmatic, site, and sustainability constraints to make the Cornell Campus Carbon Neutral by 2030, we will work with invited experts from renowned practices, as well as officials from the offices of Campus Planning, Architectural Planning, and the Atkinson Center for a Sustainable Future. The studio will design an academic building for the Atkinson Center, an organization that has existed since 2010 as a collection of disparate faculty and students united through sustainability, but

until now, without their own building. In 2017, the Atkinson Center had a feasibility study carried out to examine the possibility of a new building to collect their various members under one roof: the studio will use this document as a basis for design, but will aim towards a more radical approach to concrete problems.

Through a series of design exercises zooming in from the urban scale to the scale of the room, the final project will be a competition to design a building for the Atkinson Center. Students will learn about emerging environmental modelling tools and their integration in a digital design processes. Students will be challenged to develop a new ecological architectural language through an informed design process. The ability to embed environmental modeling tools directly into the design process presents a paradigm shift towards integrated and intelligent design processes. Iterative and empirical testing of designs at various scales is an essential part of this studio's research methodology. Furthermore, the studio will involve numerous consultants and specialists. Dogan's background in sustainable design workflows and computational design tool making combined with O'Donnell's background in bioclimatic design and circular materials will combine to create a full spectrum of sustainable invention that will push beyond the inventions of normative sustainable architecture.