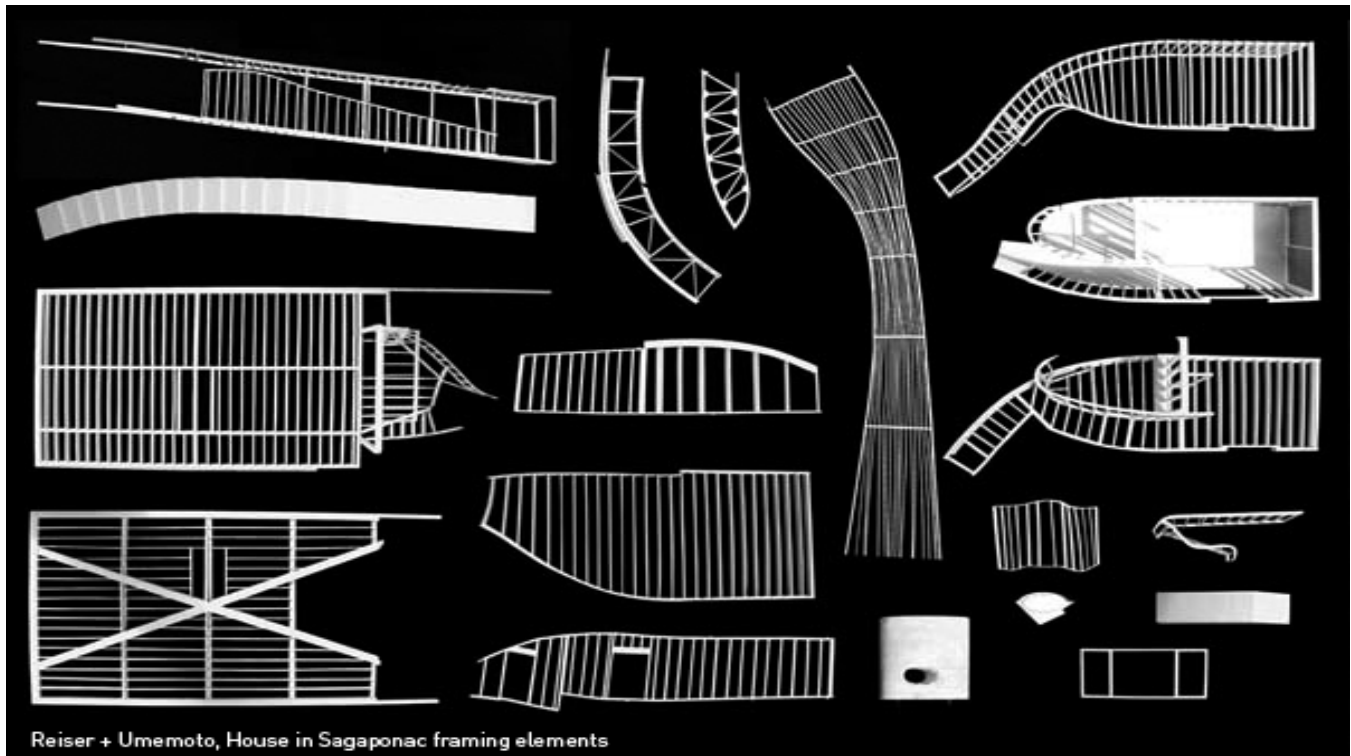


## ARC 404-LUD/589: Elective Seminar, Spring 2011, 3 Credits

### ASPECTS OF ARCHITECTURAL FORM: Architecture and the Darwinian Arena

Visiting Assistant Professor Ryan R. Ludwig

Class Hours: Wednesday 8:20am – 11am, Hayes 108



This seminar course adopts its title from the 1951 symposium “Aspects of Form” delivered in conjunction with an exhibition on the work of D’arcy Thompson held at the Institute of Contemporary Arts in London. Eleven essays were presented at the symposium providing a survey on the development of *spatial form* observed in both nature and art. Their collective intention was to move beyond a mechanism-vitalism debate and towards a more reciprocal understanding of how individual parts may be organized to give meaningful form to the whole whether in crystalline formations of certain minerals, regulatory structures of organisms or the aesthetic organization of a work of art. Although the intention of the symposium was to present what was “known about spatial form and structure” in nature and art at the time, as well as “to indicate what was not known,” a notable omission from the discussion was an entry concerning the development of form related to nature and architecture. The imprint of nature on architectural form is of course an old tale reflected in a variety of examples ranging from the structural logic of gothic cathedrals, to the theories of Viollet-le-Duc, the style of Art Nouveau, and the works of Gaudi, Louis Sullivan, Frei Otto and Buckminster Fuller to name only a few. More recently with the current proliferation of advanced parametric and algorithmic modeling techniques the desire to incorporate notions of natural phenomena into the architectural project has patently multiplied and may be found in many contemporary practices such as O.C.E.A.N., EMERGENT/Tom Wiscombe, Greg Lynn, MOS, Aranda/Lasch, R&Sie(n), Reiser + Umemoto as well as countless others. However, the potentially meaningful inclusion of natural form in architecture has in most cases been realized through two means: 1. As a metaphor, representation, style or image, and 2. Through a positivist approach to building performance dependent upon simulation and ultimately optimization, with the last often substantiating the necessity of the first.

The intention of the seminar is to move beyond metaphor or performance optimization and instead focus our investigation on potential isomorphic relationships between the generation of form in nature and the development of form in architecture, reflecting on both as products in and of a specific historical, technological, social and environmental context. As described by Rem Koolhaas in an essay concerning his 1989 proposal for the ZKM in Karlsruhe, the building has become the reflection of a “Darwinian arena,” of competition and mutual influence amongst its parts. The seminar will conduct its investigation by working across two parallel trajectories: 1. Reviewing basic concepts of the development of form in nature (ie. evolutionary concepts such as *adaptation, natural selection, variation, speciation, specialization, typological vs. population thinking, gene-environment interaction, emergent systems of self organization, evolvability*) and 2. Examining related architectural works, both historic and contemporary (ie. *buildings, practices, movements, theories*). In addition to weekly reading assignments students will conduct independent research related to a chosen architectural project or practice in order to speculate on a hypothetical twelfth essay of the “Aspects of Form” symposium. The final paper will serve as a means for students to present a critical position on the contemporary incorporation of nature and architecture, as well as a means for the synthesizing of issues addressed throughout the seminar with their selected research project.