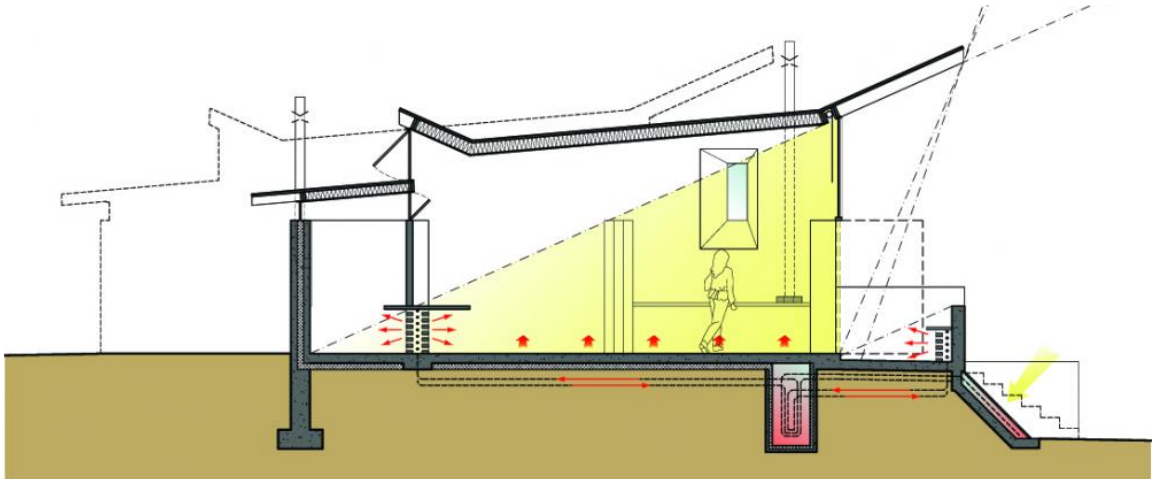
ARC 327G/386M: REGENERATIVE ARCHITECTURE

Fall 2018

Instructor: Michael Garrison



OBJECTIVE

The intent of this course is to learn to integrate sustainable building and planning principles into the form making process of architectural design. This course is intended to be one of a series of design enrichment seminars that explore in depth the principles of qualitative and quantitative design.

CONTENT

The course content will: survey the principles of environmentally sensitive design and planning, review case studies of "green building" applications and explore various concepts for integrating sustainable planning and building principles into the form making process of architectural design. The process includes: an analysis of bioclimatic comfort and building metabolism; design with climate; integration of passive heating and cooling systems; water conservation planning; waste systems; and the basis for specifying sustainable building materials. The focus of the course investigation for the fall semester of 2018 will be to develop the design and the sustainable architecture principles for the U.S. Department of Energy's sponsored student design competition; "Race to Zero".

FORMAT

The course will have six components, including: 1) regularly scheduled lectures; 2) a weekly student progress report and class discussion; 4) An interim class report and discussion; and a 5) final report. Note the five components complement each other. The lectures and research investigations

are offered to provide the basic "information" of the course. The class discussions should explore the implications of the topics considered in the lectures and readings. Finally, the interim a class report assignment is meant to encourage student synthesis of the course material and the final class report is to challenge the student to pursue further research and implementation of sustainable strategies in design and planning.

EVALUATION

There will be ten student progress reports and class presentations of proposed ideas and ideals of Race to Zero topic areas. The progress reports should include a brief written text and include both: GOOD quality graphic examples of your research topic, and thoroughly documented case studies of your research topic. The progress reports must be presented in a 5-minute power point presentation to the entire class. The interim report and final report are a group project report that address the requirements set for in the U.S. Department of Energy Race to Zero student design competition. The length of the reports is limited to 40 pages.

The progress reports and presentations will be worth: 60 points. The interim report and presentation will be worth 15 points. And the final report and presentation will be worth 25 points.

Consideration of up to 5 additional points for participation in the class discussions and for attendance will be considered. All progress reports should be posted no later than midnight on the day before that they are due for presentation. Progress reports, interim and final report sections more than one class period late will be lowered one letter grade for each class that the paper continues to be late. Class attendance in this course is mandatory and absences from the class unrelated to course work will generally have an adverse effect on the student's final grade in the course.

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information contact the Office of the Dean of Students at 471-6259. If you have any questions about the class, you may make an appointment with the instructor at 512 632-1972 or via e-mail mgarrison@utexas and a conference will be scheduled.

READINGS ON RESERVE IN BATTLE HALL READING ROOM

Juhani Pallasmaa, The Eyes of the Skin: Architecture and the Senses, 3rd Edition, John Wiley & Sons, United Kingdom, 2012.

Stephen Kellert, Judith Heerwagen and Martin Mador, Biophilic Design, The Theory, Science and Practice of Bringing Building to Life, 1st Edition, John Wiley & Sons, Hoboken NJ, 2008.

Kiel Moe, Thermally Active Surfaces in Architecture, Princeton Architectural Press, New York NY, 2010

Kiel Moe, Convergence: An Architectural Agenda for Energy, Routledge Press, New York NY, 2013

Kiel Moe, Integrated Design in Contemporary Architecture, Princeton Architectural Press, New York NY 2008

Paul Hawken, Natural Capitalism: Creating The Next Industrial Revolution, Little Brown and Company, Boston, 1999.

David W. Orr, Earth In Mind: Environment, and the Human Prospect, Island Press, Washington, D.C., 1994.

William McDonough and Michael Braungart , Cradle to Cradle: Remaking the Way We Make Things, North Point Press, 2002.

Alison Kwok, The Green Studio Handbook, Architectural Press, Elsevier, UK, 2011.

Paul Hawken , The Ecology of Commerce: A Declaration of Sustainability, Harper Collins Publishers, New York, 1993.

Edward Allen, How Buildings Work: The Natural Order of Architecture, New York: John Wiley & Sons, 1996.

John Tillman Lyle, Regenerative Design for Sustainable Development, New York: John Wiley & Sons, 1994.

Klaus Daniels, The Technology of Ecological Building; Basic Principles and Measures, Examples, and Ideas, Basel, Switzerland: Birkhauser, 1995.

Ken Yeang, Designing With Nature: The Ecological Basis for Architectural Design, New York: McGraw Hill, 1995.

Sim Van de Ryn & Stuart Cowan, Ecological Design, Washington, D.C.: Island Press, 1996.

Andrea Compagno, Intelligent Glass Facades, Boston: Birkhauser, 1997

Lance Hosey, The Shape of Green Aesthetics, Ecology and Design, Island Press, 2012.

Jim Wasley and David Rousseau, Healthy by Design, Harley & Marks, 1997.