University of Oregon – School of Architecture and Applied Arts – Department of Architecture
ARCH 484-584 ARCHITECTURAL DESIGN
Fall 2015, 6 credits, MWF 1:00-4:50pm
Prof. Nancy Y. Cheng, nywc@uoregon.edu
Office hours Mon 12:00-12:50pm and Friday 11:45am-12:45pm in 477C Lawrence Hall

Kármán Vortex Street Experiment

ENVISIONING THE FUTURE: the Evolo skyscraper competition

Pre-Requisites: This is a vertical design studio for architecture students who have completed core design studios and technology courses on building construction (ARCH 471/571), and environmental control systems (ARCH 491/591, ARCH 492/592) or equivalent training at other institutions. Familiarity with Rhinoceros, Grasshopper and other 3D software would be helpful, it is not required.

Designers can bring hope to dire circumstances by imagining alternative futures and envisioning bright possibilities. This studio's Evolo competition (http://www.evolo.us) challenges students to identify society's biggest challenges and create a compelling vision that addresses these challenges. The competition asks students "*to solve economic, social, and cultural problems of the contemporary city including the scarcity of natural resources and infrastructure and the exponential increase of inhabitants, pollution, economic division, and unplanned urban sprawl. The competition is an investigation on the public and private space and the role of the individual and the collective in the creation of a dynamic and adaptive vertical community… based on a dynamic equilibrium between man and nature – a new kind of responsive and adaptive design capable of intelligent growth through the self-regulation of its own systems.*"

Winning Evolo competition entries have combined key social and ecological strategies with innovative forms in evocative presentations. The skyscraper design will be approached first as a conceptual inquiry, then as a bottom-up modular system and then finally as a top-down site response.

CONCEPT: To develop a strong design concept, students answer, "What makes a great place?" They will research the context of past utopian manifestos, current alternative communities and future emerging technologies. They will analyze promising natural and architectural examples to understand the underlying relationships behind resilient, livable communities. From this understanding, they will shape a specific agenda about how environments for working, living and playing can form a thriving, responsive mega-community.

SYSTEM: As the Evolo 2016 jury comprises well-known computational designers who create thoughtful solutions with visual flair, students will focus on aesthetic creation initially independent of site. The studio will guide students in **physical sculpting** to generate form and provide instruction on **parametric design** to generate, refine and test variations. Students will experiment with creating 3D form from 2D sheet materials, to understand how to compose planar and curved surfaces with proportion and hierarchy. Artifacts will be examined with changing light to see how material properties such as color, translucency, reflectivity and stiffness can alter appearance. The forms created by these studies will be examined for habitability and sustainability at the scale of the room, building and neighborhood.

Physical form studies will be ramped up with Rhino Grasshopper (GH), a platform with many inexpensive applications and a supportive community. Students may combine a variety of tools for their design process; they are expected to develop basic familiarity with parametric design. Many resources are available online, developing fluency requires substantial time and effort. To create responsive systems, analytic building performance software for sun (Ladybug/Honeybee) and wind (FlowDesign) will be incorporated according to the students' interests and abilities.

SITE: After developing a building system to foster community, the students will apply the system to a specific location. To compare how buildings can responds to local climate and urban context, students can choose between a Portland, Oregon South Waterfront site and a high-density Shenzhen, China site documented for the 2015 Global Schindler Award.

SCHEDULE (Subject to Change)

WEEK | DATE	TOPICS | IN CLASS ACTIVITY	REVIEWS
1	**OVERVIEW** | Utopian Communities | Systems thinking | Digital-Physical process	
M 9/28	Introductory talk: what makes a great place? **Assign:** 1 DreamPlace	
W 9/30	**Assign:** 2 Façade Panels, in-class folding and visualization	
F 10/2	1-3pm Rhino GH basics in 283M LA, then work & crit time	
2	**FAMILIES OF FORM**	
M 10/5		1 **DreamPlace case study due**
	5:30pm Thomas Robinson lecture in 206 LA	
W 10/7	4pm talk by Julia Lau, project manager of Hong Kong ICC	**2 Façade panels due**
	Assign: 3 Performative Pod	
F 10/9	1-3pm Rhino GH sun angles in 283M LA, then work & crit time	
3	**RESPONDING TO THE ENVIRONMENT**	
M 10/12	work time with crits. *5:30pm William Leddy & Marsha Maytum lecture in 206 LA*	
W 10/14	**Assign: 4 Responsive Neighborhood**	**3 Performative Pod due**
F 10/16	1-3pm Rhino GH 3D geometry in 283M LA, then work & crit time	
4	**NEIGHBORHOOD DEVELOPMENT**	

M 10/19	work time with crits, . *5:30pm Luis Hoyos lecture in 206 LA*	
W 10/21	**1st MIDTERM REVIEW:**	**4 Responsive Neighborhood due**
	Assign: 5 Site Analysis and Response	
F 10/23	1-3pm Rhino GH analysis lessons in 283M LA, then work & crit time	

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5 **MEGA-CITIES**

M 10/26	sketch models due, work time with crits. *5:30pm Carrie Strickland and William Neburka lecture in 206 LA*	
W 10/28	work time with crits	
F 10/30	1-3pm Rhino GH lessons in 283M LA, then work & crit time	

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6 **MEGA-SYSTEMS**

M 11/2	PINUP	**5 Site Analysis and Response due**
	Assign 6 Structure and Circulation	
W 11/4	work time with crits	
F 11/6	work time with crits. *5:30pm Frank Escher & Ravi GuneWardena lecture in 206 LA*	

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7 **INTERNAL COHERENCE**

M 11/9	work time with crits. *5:30pm Brian Cavanaugh lecture in 206 LA*	
W 11/11	**2nd MIDTERM REVIEW**	**plan and section w structure and circulation due**
F 11/13	work time with crits	

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8 **REFINEMENT**

M 11/16	work time with crits	
W 11/18	work time with crits	**3D images, site analysis images due**
	Assign 7 Presentation	
F 11/20	work time with crits	

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9 **DESIGN COMMUNICATION**

M 11/23	work time with crits	**Draft presentation boards due**
W 11/25	Presentation Rehearsals	
F 11/27	HOLIDAY – No class	

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10 **FINAL REVIEW:** TIME AND LOCATION TBA

M 11/30	Presentation Rehearsals	Final Digital Submission date TBA

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11 **REFLECTION:** EXIT INTERVIEWS TBA

REQUIREMENTS AND EVALUATION

Students are expected to come to all classes prepared and on-time. To maximize learning, students will be asked to work in pairs or small groups for specific assignments and will have the option to develop their design project as a team. Fulfilling assignments in a complete and timely manner is critical to academic advancement, and critical for professional practice. Pinups and reviews serve as benchmarks to evaluate competency and readiness for the next phase. Digital hand-ins will be required, with the final hand-in following the Evolo 2016 competition guidelines of 2@ 24"x48" boards, saved as 150 dpi JPG files, which will be accompanied by reflective writing. The final projects must address these 2014 National Architectural Accreditation Board's student performance criteria: A.2. Design Thinking Skills, A.5. Investigative Skills, A.8. Ordering Systems, A.9. Historical Traditions and Global Culture, B. 2. Site Design, C. 1. Research.

STUDENT ENGAGEMENT INVENTORY (hours)

Activity	Undergrad	Grad
Course attendance	108	108
Assigned Readings	12	20
Design development	45	64
Writing assignments	4	16
Field trip	8	8
Independent Research	3	24
Total hours:	180	240

GRADUATE STUDENTS

Graduate students are expected to research and develop their work more thoroughly than undergraduates by spending more time and by using prior educational and professional experience. This will be reflected in stricter standards for grading graduate students as well as differences in specific requirements.

Graduate Research Report: Graduate students are required to give a verbal and visual presentation about a research topic relevant to their project. The topic should relate to the project through a conceptual metaphor, visual properties or technology. The report should describe design principles, illustrating cutting-edge possibilities with case studies.

REFERENCES

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SPECIAL NEEDS
Appropriate accommodations will be provided for students with documented disabilities. In the first week of class, students should alert the instructor of any requirements for an optimal learning situation.

STUDENT CONDUCT
All students are required to familiarize themselves with the UO Student Conduct Code (http://conduct.uoregon.edu) This code represents a compilation of important regulations, policies, and procedures pertaining to student life. It is intended to inform students of their rights and responsibilities during their association with this institution, and to provide general guidance for enforcing those regulations and policies essential to the educational and research missions of the University.
Students must follow academic honesty, copyright and fair use requirements. Be sure to cite all sources when you quote, paraphrase or insert an image (http://w2.eff.org/IP/eff_fair_use_faq.php)

DIVERSITY
It is the policy of the University of Oregon to support and value diversity. To do so requires that we:

- respect the dignity and essential worth of all individuals.
- promote a culture of respect throughout the University community.
- respect the privacy, property, and freedom of others.
- reject bigotry, discrimination, violence, or intimidation of any kind.
- practice personal and academic integrity and expect it from others.
- promote the diversity of opinions, ideas and backgrounds which is the lifeblood of the university.

UO employees, including faculty, staff, and GTFs, are mandatory reporters of child abuse and prohibited discrimination. This statement is to advise you that that your disclosure of information about child abuse or prohibited discrimination to a UO employee may trigger the UO employee's duty to report that information to the designated authorities. Please refer to the following links for detailed information about mandatory reporting:
https://hr.uoregon.edu/policies-leaves/general-information/mandatory-reporting-child-abuse-and-neglect/presidents-message
http://around.uoregon.edu/mandatoryreporting

CONFLICT RESOLUTION
Several options, both informal and formal, are available to resolve conflicts for students who believe they have been subjected to or have witnesses bias, unfairness, or other improper treatment. It is important to exhaust the administrative remedies available to you including discussing the conflict with the specific individual, contacting Glenda Utsey (gutsey@uoregon.edu), the Associate Department Head for student affairs, or Judith Sheine (jesheine@uoregon.edu), the Department Head. Outside the Department, you can contact:

- **UO Bias Response Team: 346-1139 or http://bias.uoregon.edu/whatbrt.htm**
- **Conflict Resolution Services 346 -0617 or** http://studentlife.uoregon.edu/SupportandEducation/ConflictResolutionServices/tabid/134/Default.aspx
- **Affirmative action and Equal Opportunity: 346-3123 or http://aaeo.uoregon.edu/**

INCLEMENT WEATHER
In the event the University operates on a curtailed schedule or closes, UO media relations will notify the Eugene-Springfield area radio and television stations as quickly as possible. In addition, a notice regarding the university's schedule will be posted on the UO main home page (in the "News" section) at http://www.uoregon.edu.
Additional information is available at http://hr.uoregon.edu/policy/weather.html.
If an individual class must be canceled due to inclement weather, illness, or other reason, a notice will be posted on Blackboard or via email. During periods of inclement weather, please check Blackboard and your email rather than contact department personnel. Due to unsafe travel conditions, departmental staff may be limited and unable to handle the volume of calls from you and others.