Arch 484-584 CHENG – MWF 1pm-5pm in PORTLAND

# Shaping Light

Can evocative changing daylight help people appreciate natural cycles? We will study how architectural surfaces, materials and apertures can be activated by changing light. Designing simple sculpted panels will allow us to experiment freely with materials and methods, examining optical phenomenon such as translucence, reflection, color, diffraction and refraction. Next, ideas from the panels will be translated into sculpted ceilings, reflective lightshelves or filtering skins to understand their roles and interaction in shaping a room's luminous environment.

Students will use these experiments in designing a new Civic Drive light rail station and plaza for Gresham, Oregon, part of the Sustainable City Year. The focus: using minimal means to create a sense of place that can be understood at the speed of the train, bike and pedestrian. Metro, Tri-Met and the City of Gresham want their commuter stop to be a safe, comfortable, cost-effective gathering space. It should demonstrate ecological sustainability with elements such as wind turbines and stormwater retention landscaping. Students will create their own schematic designs, then develop urban furnishing elements for their own scheme or the conceptual design by Henneberg Eddy Architects, Lango Hansen and URS. Through design and placement of elements including a fountain, art pieces, seating, pedestrian canopies and bicycle shelters, designers can manipulate light, wind and water for maximum effect.

## OBJECTIVES

- develop form-finding methods that engage material and light
- re-conceptualize forms as components of beautiful and functional environments
- develop and share reflective design thinking with online systems

## PROCESS

A series of structured assignments will lead students through studying forms, space and light both physically and digitally. After cutting, carving and assembling physical prototypes, we can study and capture ephemeral material qualities and visual phenomenon with camera and video. With digital simulation, we can readily transform and scale the components, freely combine them into spatial environments. Then we can use energy software to predict the effect of these components on heating and lighting spaces.

This studio challenges the designer to define personal expression and creative process. To track and share this exploration, each student will maintain a blog. Students will customize a learning plan, define personal design criteria, record efforts and reflect on progress. They share the work with peers and external critics in an online learning community.

Pre-requisites: Students should know a modeling software and be motivated to learn digital techniques. No previous knowledge of blogging software is needed.

- What is beautiful? How can you manipulate tools and materials to produce beautiful results?

- How can we scale up material experiments to create evocatively detailed environments?

- How can we make the design process both delightful and reflective?

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