instructor
Ihab Elzeyadi, Ph.D., FEIA
Associate Professor of Architecture
227 Lawrence Hall
ph. 346-3670
fax 346-3626
ihab@uoregon.edu

meetings:
M & W, 12:30-5:30 PM
F: Scheduled Field Trips & Presentations to Clients

crn:
484: TBD
584: TBD

readings:
Blackboard

credits:
6cr.

Interested students may sign-up for an optional 2cr. of directed research

format:
This innovative studio will integrate architectural research and design in a synergetic way. The studio will follow a rich design process rooted in research of active facades covering various phases of conceptual/schematic design on the building level to design development and systems integration on the facade/details level.

prerequisites:
Arch 4/584 eligible students

course objectives:
The studio offers students a unique opportunity of engaging in the design of a real project. The design process is enriched by research translation activities of active facade technologies by applying them to design development stages of the Oregon Sustainability Center (OSC). In the studio students will explore cutting edge facade prototypes in a skin-deep application to achieve accountable High Performance Living Buildings. The design development investigations will not only cover facade systems but spatial, and innovative work environments models for the integration of green technologies and organizational behavior in work settings of the future.

Oregon Sustainability Center: Skin Deep Net-Zero Living Building

Investigating active facade technologies & evidence-based design for the development of the Oregon Sustainability Center in Portland, OR

The Oregon Sustainability Center (OSC) is the collaborative vision of a unique public/private partnership between city and state government, higher education, non-profit organizations and the business community. The project’s mission is to create a world-class center of excellence in sustainability that celebrates and nurtures the values and strengths of Oregon’s leadership in climate change, land use planning, smart growth, green building, environmental stewardship, civic engagement and social justice.

The core of the project is a 220,000+ square foot (sf) urban, mixed-use high-rise located on the eastern edge of the Portland State University (PSU) campus, between SW 4th and 5th Avenues and between Harrison and Montgomery Streets. The Center is also the proposed anchor for Portland’s first Eco-District, a neighborhood development strategy that combines high performance buildings with city infrastructure, to reduce greenhouse gas emissions, energy use and water use. The Center will possibly be the first urban, high-rise in the world to achieve the Living Building Challenge™. Adhering to the prerequisites of the Cascadia Region Green Building Council’s Living Building Challenge™, the Center will be designed to produce 100% of its energy on-site, through self-sustaining energy generation and distribution systems; its design will also include integrated water reuse (for black, grey and stormwater management), net-zero energy consumption and reduced carbon footprint.

The Center’s design will showcase the building’s green building features and innovations and will function as a living laboratory—one that is monitored daily, continually evolves, and allows for revision as innovations in sustainable design and technology emerge.
Executive Summary

INTRODUCTION
The Oregon Sustainability Center (Center) is the collaborative vision of a unique public/private partnership between city and state government, higher education, non-profit organizations and the business community. The Center’s core project team includes: City of Portland, Bureau of Planning & Sustainability• Oregon Living Building Initiative, Oregon State Board of Higher Education and the Oregon University System, Portland Community College, Portland Development Commission, Portland + Oregon Sustainability Institute

The project’s mission is to create a world-class center of excellence in sustainability that celebrates and nurtures the values and strengths of Oregon’s leadership in climate change, land use planning, smart growth, green building, environmental stewardship, civic engagement and social justice. At the core of the project is a 220,000+ square foot (sf) urban, mixed-use high-rise located on the eastern edge of the Portland State University (PSU) campus, between SW 4th and 5th Avenues and between Harrison and Montgomery Streets. The Center is also the proposed anchor for Portland’s first Eco-District, a neighborhood development strategy that combines high performance buildings with city infrastructure, to reduce greenhouse gas emissions, energy use and water use.

Envisioned as the gateway to the region’s sustainability community, the Center integrates (under one roof) sustainability-driven businesses and non-profits, university-level education and research, energy policy and planning, workforce development, and public agencies. The Center will possibly be the first urban, high-rise in the world to achieve the Living Building Challenge™. Adhering to the prerequisites of the Cascadia Region Green Building Council’s Living Building Challenge™, the Center will be designed to produce 100% of its energy on-site, through self-sustaining energy generation and distribution systems; its design will also include integrated water reuse (for black, grey and stormwater management), net-zero energy consumption and reduced carbon footprint. The Center’s design will showcase the building’s green building features and innovations and will function as a living laboratory—one that is monitored daily, continually evolves, and allows for revision as innovations in sustainable design and technology emerge.

GOALS
Of central importance to the Center’s project team is its potential to bolster Portland’s and Oregon’s sustainable economy and job growth, thereby furthering the state’s greater economic development agenda. Aspects of the project that support this agenda include the Center’s potential to: Develop• employment and a knowledge base, through completion of the design and construction of the Center. Promote longer-term job creation, through ongoing monitoring, management, and maintenance of the Center and adjacent Eco-District.Develop the city’s and state’s • green workforce, using the Center’s innovative energy systems for hands-on training for higher education. Strengthen the region’s economic growth in the • export of green building services. Forge • research and innovation partnerships between universities, the private sector, non-profit and governmental partners.