

# Grit

## Urban Design and Architecture Studio

ARCH 4/584 Intermediate Design Studio

Winter 2019 Eugene, Oregon

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*How do we understand the urban processes of a site to design architecture that acknowledges our understanding urban ecology for inhabitants?*

Architectural experiences in growing mid-sized cities such as Eugene and Springfield, Oregon are shifting from those of bucolic to gritty urban experiences. Public space and urban transportation is quickly changing. The interface of architecture and that urban environment is also changing. Sensors are also becoming cheaper and more easily integrated into both user experience and architectural design methods. Urban life whether in cities such as Eugene, Portland or Barcelona are facing increase urban vibrancy but also increase changes of air pollution, sound pollution and gentrification.

This architecture studio will focus on the development of a real-world mixed-use urban design projects by confronting exciting urban location near noise train crossings, polluted roadways and increasingly expensive and exclusive neighborhoods. The grit of these locations is both human generated and naturally generated.

Objective: 1) teach data collection and visualization; 2) work through design options based on data; and 3) experience informed design-team collaboration with a real-world structural engineer via consults.

### Architectural Design Description

Students will develop a project based on the issues mentioned above for an urban design master plan and a +/- 25,000 square foot mid-rise building in Springfield, Oregon.

Island Park gateway location along the Willamette River and Mill Street, between B Street and Main Street.

### Highlights

The DeNorval “De” Unthank Faculty Excellence Award - \$5,000 used for:

- 1) a [drone](#) to locate existing data collection sensor platforms for air quality, light, sound, humidity and sensors,
- 2) [structural design consultations](#) from Portland structural engineer Michael Munzing who has particular experience in CLT, cross laminated timber on Carbon 12 and other projects.

Real-world project with developer CDC Silva Chambers, urban designer Phil Farrington and City of Springfield including bi-weekly interactions. Possible additional financial support for software training, sensor prototypes, printing and CNC model making.

Data-Visualization and urban design computation Grasshopper definitions, methods and Arduino sensor prototypes from UO Barcelona Urban Design Studio [2018](#) and [2017](#) as well the [Atmosphere + Design](#) course.

## Studio Outline

Multi-scale, simultaneous approach to design

Urban Analysis	1:100	Studio
Urban Design	1:10	Team
Urban Architecture (site design, façade, interior spaces)	1:1	Individual

## Studio Approach

Each student is important. In class course time will be spent with class discussion, case studies assignments, group work, pinups and desk crits. Desk crits will be more common at the end of the term. The studio will operate in the research driven studio approaches of BIG and AMO/OMA.

- Urban Systems Analysis Tools
- Use and development of existing tools from UO courses
- Digital and or analog use of tools, group work
- Infographics for strong visual communication of purpose and tool application

## Envelope as Material Affect

At various scales students will design the ability of the project to create spaces of human comfort by understanding thermodynamics and temporal qualities of urban problems such as light, sound and air pollution. The later will be informed by human scale data collection using GIS based visual tools developed in Rhino Grasshopper. Students will then focus on the scale of the envelope to control *material affect* as defined as the qualitative experience in the environment that is given a place understood by the senses through the specific properties of a material and its assembly.

## Field Trip

The studio will make one or more field trips to the site in Springfield, Oregon.

## Stakeholders and Preliminary Consultants List

Urban Design Phil Farrington, Property Owner Silva Chambers,

Courtney Griesel, City of Springfield agencies and other City of Eugene planning officials

Mike Munzing, Structural Engineer with specialization in CLT including Carbon12, Portland, Oregon.

Stephen Maher, Speranza Architecture + Urban Design, previously *Design Computation Digital Practice Leader*, *NBBJ Design, Columbus*

# Schedule

## TASKS, SCHEDULE, PRODUCTS

### I. Documentation and Analysis, Weeks 1-3

Week 1: M-W-F, January 6<sup>th</sup>, 8<sup>th</sup> and 10<sup>th</sup>

- Overview: Objectives, Design Question of Grit + Urban Design
- Conceptual understanding of atmosphere and urban design **[writing]**
- Presentation of Urban Design and Parametric Design , student projects and SA+UD
- Documentation of the site across scales: **city, district**, neighborhood (*Superilla*) and urban room **[plans, site model]** *studio group*
  
- Social Interaction and Urban Ecology Student Project Tools: GIS VIZ Tool - selection, study method, test use **[Discussion, Analog and digital parametric Models, Design Books]** *2 person teams*
- Urban Design Exercise, Barcelona and *Superilla* context for tools
- Grasshopper tutorial [Elk or Fundamentals]
  - \* Supplemental Rhino/Grasshopper tutorial [Fundamentals or Elk]
  
- Gather and Pinup
- Kickoff meeting and discussion with private developer **Philip Farrington, CDC**
- **Site visit** to Island Park
- On-site data collection

Week 2, M-W-F, January 13<sup>th</sup>, 15<sup>th</sup> and 17<sup>th</sup>

- Pin-Up (+ review site planning documentation)
- Define atmosphere and design idea (problem): what, who, why important
- Select GIS and Sensor Tool (sound, light, temp/humidity) **[ownership of tool]** *2 person teams*
- Statistical Research with comparison site **[Climate and Infographics]** *2 person teams*
- Research of structural types including steel, concrete and mass timber (CLT). **[text and diagrams]**
  
- **Site Visit:** On-site data collection **[Superilla data mapping]**
- baseline data collection at 260 Ferry Street, Eugene
- Off-Site data research, existing data **[diagrams]**
  - \* Supplemental Rhino/Grasshopper tutorial [GIS VIZ]
  
- Setup shared on-site database and maps for indicators **[Google Sheets]**
- Review City of Springfield Analysis
- Tool use, 'Analog Parametric' or 'Digital Parametric' approach **[Application using existing and new graphics from tools]** *see methods outline of indicators*
- *Desk crits*

# studio dinner

Week 3: W-F, January 22<sup>nd</sup> and 24<sup>th</sup>

\*\*No class Monday, Jan 20<sup>th</sup>,

- Group review (+ review Springfield Planning documentation)
- On-site data collection [**Superilla data mapping**] *site visit*
- Material Affect, conditions to performative scenarios
- [**Case study: Ned Kahn, Herzog de Mueron, James Corner, Paricio Clotet**]
- Tool application to multiple sites [**Application to existing and new graphics from tools**]
- Tool to Programming Analysis, Test Mass [**zoning line diagrams, bullet points**]
- Design information interface and urban intervention [**Situated technology / app**]
- *Desk crits*

II. Project Synthesis, System development, Weeks 4-6

Week 4: M-W-F, January 28<sup>th</sup>, 30<sup>th</sup> and February 1<sup>st</sup>

- **Part I Presentation and Review** with stakeholders (Developer / City of Springfield)

Overview Part II

- Selection by team of sites within the Clinton Street Station development [**drawing and models**] 3 *person teams*
- Selection of team role: urban design, envelope or urban architecture
- Documentation neighborhood master plan [**plans, CNC site model**] *studio group*
- Urban Analysis Tool application autonomously to urban design, building envelope and urban architecture, ex. urban interface, material affect and circulation, design 'unit' [**urban planning and urban design guidelines / tool suggestion**] *individual*
- Programming refinement [**bar and pie chart diagrams, 2D and 3D diagrams**]
- Grasshopper plugin use and or Arduino use (when applicable) *ind / group input*

\* supplemental GH plugin and Arduino workshop

Week 5: M-W-F, February 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup>

- Review objectives
- Pinup / desk crits
- Urban Analysis Tool Development, assess application during design process and or life of project and scale of application
- Scenario studies, conditions of the material affect over time (measured phenomenon at site) [**story board conditions as scenarios of material affect**]
- Urban Architecture, envelope and attachment ('phenol/geno' relationship) [**wall sections, wall axonometric, wall detail, unit/system positions over time**]

Week 6: February 11<sup>th</sup>, 13<sup>th</sup> and 15<sup>th</sup>

- Review Objectives
- Desk Crits
  
- **Part II Review**

III. Urban Architecture Development, Presentation, Weeks 7-9

Week 7: February 18<sup>th</sup>, 20<sup>th</sup> and 22<sup>nd</sup>

- Design Approach: Analysis tool to Design from the Bottom Up
- Envelope: Design Development [**1:1 drawings and models**]
- Urban Design: Design Development [**1/8" drawings and models**]
- Urban Architecture: Design Development [**parti diagrams, plan, section, perspectives, 3D model, 1/8" model**]
- Urban Analysis Tool Presentation, story board, video or interactive design [**various media**]
- Integrated model mockup, 1/16", Foam core or other [**model**] *test materials*
- 1:1 models mockup, 6" [**model**]
- Review zoning requirements by city and developer [ Meeting with Troy Doss]
  
- Place Branding Presentation, Scenarios and Attachment finalization [**Identity and Identity over time with participation, Diagrams and Drawings**]
- Pinup / Desk Crits

Week 8: February 25<sup>th</sup>, 27<sup>th</sup> and March 1<sup>st</sup>

- Design Development: from unit to system
- Analog to Digital Parametric Design Development
- Final Integrated Models, 1/8" [**model**] *source materials, test techniques*
- 1:1 models mockup, 6" [**model**] *source materials, test techniques*
  
- desk crits

Week 9: March 4<sup>th</sup>, 6<sup>th</sup> and 8<sup>th</sup>

- Pre Final Review
  
- desk crits (design development and design communication consultations)

Week 10: TBA

- **Final Presentation**

**[drawings and models via Powerpoint, blog post] tbd**

*\*some items to be submitted after final review*

- Studio Dinner

## Program, Use and Planning Guidelines

Employment	Hybrid	Housing (Mixed-Use 5 over 1)
- Industrial - Industrial Office - "Third Space" and Retail	- 70/30 Employment + Housing - 5+ unit apartment type	- Residential over ground floor commercial

Common programming guidelines (\*open to revision by Phil Farrington CDC and Robertson Sherwood Team and City of Springfield):

- See master plan for maximum building envelop (max build-out encouraged)
- 3 to 5 stories
- 75' maximum building height
- approximate 13' floor to floor at industrial use spaces
- No sub-grade parking
- 15-20% circulation efficiency
- provide lobbies, bathrooms, mechanical spaces and exterior spaces are required or determined by instructor
- 30' maximum tenant unit depth for day lighting preferred

## Critical Design Issues

- Context and Place Branding
- Organizational Systems
- Material Performance Research
- Documentation and Analysis
- Identification of External Conditions and Contextual Attachment using Media
- Synthesis and Abstraction of Systems
- Digital Parametric Design

## Instructional Methodology

The course is organized as one interactive studios in which students engage in independent project-based learning. Faculty will support student explorations by informing students of resources, suggesting approaches and methods, and raising questions for individual use in design work and for group discussion. Emphasis will be on a mutually supportive studio environment stressing collaboration and design development through recycling of ideas. Work must be developed and shared in the studio. Class meetings include a variety of communication and project-development formats including desk critiques, pin-ups, reviews, in-class discussions, team work sessions, lectures, and occasional field trips including visits to Springfield. Reviews will be organized so that students revolve through small groups over the course of the term. Design critiques will include feedback from peers as well as the instructors.

## Non-traditional Learning

Weblog participation and related sketchbook work for diagramming ideas is required. The weblog posts will provide two mechanisms for learning: 1) the collection and organization of work in a single shared learning space and 2) the use of comments between students for peer-to-peer learning and to enhance writing ability. The sketchbook is a place for notes, in-situ drawing, and drawing to test ideas. You should draw systems diagrams, examples will be provided. A diagramming method of thinking, visualizing in the mind (including differentiation) and then concisely draw the idea in 30-60s will be presented.

### **Course Folder**

A course folder: Arch 4\_584 SPERANZA is located in the AAAFILESERVER. Instructions for accessing the studio folder are available on the AAA website. <http://aaauoregon.edu/computing/course-folder>. The studio will use a weblog to communicate and post assignments.

### **Grading and Evaluation**

Pass / No Pass. To receive a grade of pass all students must complete all assignments and final project requirements by the scheduled due dates. Work must demonstrate satisfactory progress in the development of architectural design skills. Evaluations will be conducted in a required end-of-term exit interview with the studio instructor and documented in a completed evaluation form given to the student and placed in the student's file. The evaluation form can indicate a "marginal pass," an advising note that does not go in student's transcripts but is used to alert students to potential problems in their progress. Students receiving a marginal pass in studio are required to attend an advising meeting to determine whether they are ready to advance to the next studio level. A mark of "incomplete" will be given only in accordance with University regulations for necessary excused absences such as documented medical emergencies.

### **Attendance**

ARCH 4/584 students are expected to attend all studio meetings, be on time, and stay for the entire session unless communicated in advance. Send the instructor an email if you will be absent. Students who have missed 2 classes are required to meet with their instructor before returning to studio. Students are expected to work only on studio related activities during studio time.

### **Student Work and Portfolio**

At the end of the term students will add this project to their E-portfolio. All original drawings and models completed as part of the course requirements may be retained permanently by the Department. Students whose work is selected for the Department archives will have the opportunity to photograph or otherwise reproduce the work for their portfolios. Each student is required to contribute to the deliverable produced to be sent to the client group and provide for possible further development subsequent terms. This will be done via the weblog and possibly a book.

### **Accommodation for students with disabilities**

The University of Oregon is committed to providing inclusive learning environments. Please notify your instructor if any aspects of this course result in barriers to your participation. You may also contact UO Disability Services in 164 Oregon Hall, 346-1155 or [disabsrv@uoregon.edu](mailto:disabsrv@uoregon.edu). If you have a documented disability and require accommodations in studio, please meet your instructor to show your notification letter.

### **Academic integrity**

Students should be familiar with University policies related to academic integrity and consequences for dishonest conduct. All work submitted should be your own and all sources should be cited. Questions about how specific assignments should be handled with regard to collaborative work, citations, or any other issues can be raised in class. Principles of academic honesty and professional ethics also apply to any use of computers associated with the studio. This includes observing all software licensing requirements and respecting copyrights of intellectual property published on the Internet.

### **Project ownership, publication and publicity**

Work created for credit and/or using the facilities of the School of Architecture and Allied Arts belongs jointly to the school and the student. The AAA reserves the right to document and display all original work for the purpose of documenting student performance as mandated by the National Architecture Accrediting Board [NAAB]. Furthermore, the school reserves the non-exclusive right to use images or likenesses of the work for publicity and display in print and electronic media as well as to submit such work for competitively reviewed exhibitions or to various award programs. The School and its representatives [including faculty and staff] have the non-exclusive right to use such work as illustrations in scholarly and/or technical publications and presentations.

### Reading List:

[Atmosphere Informed: Design Awareness of Small-scale Differences of Atmosphere in Architecture and Urban Design](#), *EDRA Best Paper Award 2018*

[A human-scaled GIS measuring and visualizing social interaction in Barcelona's Superilles](#), *Journal of Urbanism* accepted publication, by Philip Speranza

["Parametric Methods and Place"](#), *Journal of Urban Design*, by Philip Speranza

[New Ecological Interaction](#), 18th International Conference on Advanced Urban Designing and Transportation 2016, by Philip Speranza ([ICAUDT Presentation](#))

["Social Interaction and Cohesion Tool: Integrating Socio-Computational Design in Urban Ecology for Barcelona's Superilles"](#), ACSA Conference 2016, by Philip Speranza

[Social Interaction Cohesion Tool\\_ACADIA 2015](#)

## II. Atmosphere + Design

[Give Me a Gun and I Will Make All Buildings Move](#) by Bruno Latour and Alben Yaneva

["Constructed Atmospheres Lecture"](#) by Philippe Rahm

["Envelope"](#) in *Pidgen Seven* reading by Alejandro Zaera-Polo which talks about Latour's idea of attachment and materiality.

[Not Unlike Life Itself](#) by James Corner

[A Thousand Years of Non-Linear History](#) De Landa

[click here](#) for the introduction to *The Nature of Economies* by Jane Jacobs.

[click here](#) for the chapter titled *Unpredictability* of the *The Nature of Economies* by Jane Jacobs.

[click here](#) for an excerpt discuss the notion of *import replacement* from Jane Jacobs book *The Economy of Cities*.

Place Branding Readings:

[The difference is in the detail](#) Vitiello Willcocks

[Place Branding\\_Editorial\\_Anholt](#)

[Detail\\_vitiello\\_willcocks\\_dt](#)