Lloyd Lindley, FASLA, Hajo Neis, Karen Munro, Peter Gunn, Gabriel Brown, Mark Raggett, DKS, Newlands & Company, ED Hovee & Company

**FINAL DRAFT**

**COURSE OBJECTIVE**

This course, is best described in the words of Paul Spreiregen, FAIA, in his book "Urban Design, The Architecture of Towns and Cities," is an invitation to those who aspire "to be a true designer of tomorrow's environment, who must effectively combine a deep appreciation of nature in all its aspects; a sophisticated use of today's complex and fast-expanding computerized technology, and a creative talent rooted in the history of cities and design."

Spreiregen challenges design professionals and students of cities to recognize the past achievements of city builders, and "respect nature or suffer the consequences." As present and future practitioners, it is incumbent upon us to contribute to saving "a city and the metropolis from itself during the fateful decades of explosive urbanism which lie ahead." Paul D. Spreiregen, FAIA, 1965

Spreiregen’s words are as relevant today, if not more so, as they were 50 years ago as we debate higher urban densities within the Portland’s Central City and consider further expansion of the regions Metropolitan Growth Boundary. We are experiencing the consequences of past builders, some good, some detrimental to the “life and beauty of the earth.”

Urban design is a multidimensional discipline, that in the words of Mathew Carmona of University College of London’s Center for Advanced Spatial Analysis, is a “discipline that draws its legitimizing theories from diverse intellectual roots: sociology, anthropology, psychology, political science, economics, ecological, physical and health sciences, urban geography, and the arts; as well as from the ‘professional’ theories and practices of: architecture, landscape sic. architecture, planning, law, property, engineering and management. Indeed, wherever it can.”

Simplistically, urban design is a vast realm sandwiched between planning (policy) and the architecture of buildings (physical construction) that creates city form. It is the foundation for making urban architecture. It is as much about public space, as it is about the urban form: scale, mass, height, density, and uses, that defines public space: streets, paths, parks and plazas. Methods used in urban design range from pragmatic to intuitive, employing inclusive and exclusive processes with “different attitudes toward
urban form, attitudes often characterized by the terms *functionalist*, *towscape*, *structuralist*, *neo-rationalist,*" *(Attoe 1989) and *deconstructivist*.

The objective of this course is to introduce and explore the many facets of urban design and walk away with an urban design handbook of terms, processes and methods for designing cities and the urban architecture that defines them. This step-by-step course will provide a hybrid model comprised of pragmatic, contextual and palimpsest methods that demonstrate a number of interconnected approaches to developing an urban design plan and strategy. Lectures and course assignments will demonstrate analytic and design methods including:

- Visual Sequence Analysis *(Sketches, Adobe, Rhino, Sketchup)*
- Funnel and Sieve Methods for Data Mapping Analytics *(ArcGIS)*
- Policy Planning Simulation *(ArcGIS)*
- Transportation Impact Analysis, Modeling and Simulation *(ArcGIS, VSIM)*
- Animation and Spatial Analysis *(Digital 3D and Animations Programs)*
- Catalytic Development Economics *(ArcGIS, Rhino Suite/Xcel)*
- Opportunities and Constraints Analysis *(ArcGIS, Rhino/Grasshopper)*
- An Experiment of a Simulated Process of Urban Growth *(Rhino Suite/KeyShot)*
- Preferred Alternative Selection and Phasing *(Rhino Suite/KeyShot)*
- Propositions for Public/Private Interventions *(Rhino/Grasshopper/Adobe)*
- Urban Design and Catalytic Development Strategy *(ArcGIS/ Rhino Suite/Xcel)*

Digital Urban Design Methods course work will enable students to gain a holistic understanding of the processes used in city design and strategic development. It is a pilot course that is an experiment in using established urban design methods and practices while exploring possibilities in the virtual design environment. Digital models, simulation and analytic approaches will combine to discover workflows and practices that will lead to a well informed and deeply understood "urban architecture."

Students will produce, in the context of the White Stag building, an urban design strategy and illustrative plan for the Old Town/Chinatown/Skidmore District, while creating a Digital Urban Design Handbook for future reference.

**COURSE DESCRIPTION**

**OLD TOWN/CHINATOWN/SKIDMORE HISTORIC DISTRICT**

During the last century, the tools of urban design practice evolved from large hand drawn studies and plans with physical models to digital suites of integrated programs that help us analyze and communicate the vastly complex ideas, concepts, influences and consequences of city design and urban development. Yet, many of the methods traditionally used in the design of cities have remained applicable. From the modernist movement to sustainable cities of the late 1900’s, urban design made expansive advancements in research, technology and integrated design in response to future
environmental challenges brought on by population growth, depletion of water resources and global warming.

Digital Urban Design Methods course will us one of Portland's best urban laboratories to explore integrated digital approaches and methods for:

- Data gathering
- Evaluating physical and policy context
- Ideation
- Urban design development
- Modeling
- Simulation
- Alternatives analysis
- Market and economics and
- Strategic propositions

From site reconnaissance to preparing a catalytic development strategy, students will investigate the balance between land use and transportation, zoning, and influences of historic and cultural context using ArcGIS data and tools. Experts from the university and professional community will conduct active work sessions to demonstrate methods for analyzing context, assessing opportunities and constraints, and identifying propositions and interventions. Experts will also demonstrate the "workflow" between ArcGIS and the Rhino/Grasshopper suite to enable the exploration of spatial composition, development modeling, simulation and analysis. An alternatives generation phase utilizes parameters from transportation, land use, urban form and economic analysis to define rules for using game theory to study and identify public and private development options.

The final product will include a preferred alternative, projections for growth, and an urban design and catalytic development strategy. Students will work in teams on assignments that will walk through each of the urban design methods and digital tools used for design and decision making.

The idea of the course is to digitally progress, class by class, through an urban design process from research techniques, contextual analysis, to developing and evaluating a specific urban design and catalyst development project. The course will feature ArcGIS, and Rhino/Grasshopper applications to explore digital urban design methods for preparing an urban design plan and strategy. Students will also be exposed to transportation and economic digital modeling and simulation methods used in the urban design process. These methods, routines and techniques will be useful to studio work and professional practice.
BACKGROUND COURSE REQUIREMENTS

A basic understanding of Arc-GIS, Rhino/Grasshopper are strongly suggested. These programs will be utilized in the exploration of Digital Urban Design Methods; however, this course is not a tutorial or technical software instructional course. As part of the course, voluntary labs are scheduled for software application help, and the Learning Commons team and services, as well as, Portland Student Peer Tutoring will also help with software applications on an individual basis.

COURSE STRUCTURE

The class will be divided into teams that will collaborate to conduct research, compile data, apply digital tools and demonstrate methods for each assignment. Teams compete for ranking of plans and strategies; however there are no winners or losers, and ties are possible. Ranking will be based on urban design and development criteria/measures, presentations, and how well each team’s strategy and plan performance compares to their peer groups. Group dynamics, for example, might utilize team members strengths for assignments while collaborating with each other to improve urban design knowledge and contribute to ideation. Everyone must participate.

While this is a non-scientific experiment, uniformity, of workflow and outputs, is important for decision making and comparison between each team. Therefore, in addition to team work, students will also working in pairs to perform overall course tasks. Responsibilities for workflow includes color, symbol and texture, Rhino stop action animation, software interface, output forms, uniform mapping format, scale, and content, base 3D model and alternative integration, and discussion leaders. Pairs are responsible for producing universal palettes, data sheets, and instructions for each workflow task.

The course will count for fulfilling 'Urban Architecture Specialization' credits. Class will convene every Thursday, from 9:00 AM to 11:50 AM in room 555. Voluntary Labs will be held Tuesdays from 11:00 AM to noon (see specific dates below).

COURSE SCHEDULE BY WEEK

Week 1: 04/02/2015: Room 555
Digital Visual Sequence Analysis District & Land Use and Zoning
Lloyd Lindley

It's more the way Buster Keaton used to make films. Somebody said to Keaton: "Is it true that your work is an expressive representation of the dichotomy between the capitalist ethic and the working classes?" He said, "What I do is: we do a scene, and then we do another scene." And that's what I do. I get obsessed with images. What I want to do is come at you from several different places at once, because that's how it is.
Portland’s land use and transportation policy environment is a community generated, interconnected assemblage of standards, guidelines, aspirations and actions. This publicly generated policy environment provides the historic, cultural, and policy context for the City's form and image. While standards and actions are prescriptive, design guidelines and aspirational vision statements provide flexibility for innovation and creativity. For this course, we will accept City of Portland documents that provide the policy environment for the Old Town/Chinatown/Skidmore Historic District and surrounds.

Within the urban context of the study area, transportation, land use and zoning, and local plan and policy documents, as mentioned above, together, provide a community based and fundamental framework for urban design. Traditionally, site analysis, through analogue overlay drafting methods provided a 2D view of the opportunities, constraints and influences of developing within cities. Today, with digital 2D and 3D tools, it is possible to test alternatives toward a greater understanding of the forces that shape the places where people live and work, enabling a broad cross section of participants to visualize and comprehend interventions and redevelopment strategies and their affects on livability.

Before engaging in technical analysis, it is important to get a sense of the "place." This initial class, will enable students to explore intuitive "first hit" reactions to the District's context, building types, continuity of uses, origins and destinations, issues and quality of urban space and experience using simple 2D and 3D, Sketch & Scan, digital analytical methods. This is a subjective critique, similar to a "windshield survey" of the study area. We will revisit your assumptions and observations as we progress through the course.

INTRODUCTION AND ORIENTATION

Agenda: Room 555
- Introductions
- Syllabus Overview
- Team Formation and Responsibilities
- Provide District Subarea for Each Team
- Lecture
- Site Tour

METHODS

- Digital and Analogue Site Reconnaissance and Documentation
- Storyboarding and Storyline

SITE TOUR

A walking tour combined with analogue and digital diagramming and analysis techniques of a designated subarea of Old Town/Chinatown/Skidmore Historic District
will enable students to utilize the immediate geography around White Stag as an urban laboratory. Students will explore "storyboarding," telling a graphic story (along a story line) of intuitive observations along a route. The story about the place, its people and urban conditions, as well as, the affects of land use and transportation issues, opportunities and constraints is the purpose of this exploration. Diagramming, using Photoshop, Illustrator, Rhino and or Sketchup will enable investigation into, and practice of a digital, contextual and sequence, analysis method.

VISUAL SEQUENCE ANALYSIS

Based on Gordon Cullen’s "Serial Vision" method, each team will select and produce a visual sequence, between a selected origin and destination, to analyze one selected route, to and from significant places, using Sketchup, Rhino, Photoshop and Illustrator. This initial class is created to help understand public perception, spatial relationships and the sequence of experiences that people have as they move through the district.

This work will contribute to:

- Understanding the study area.
- Determining background data needs
- Visual Analysis, what are "first hit" opportunities and constraints
- Understanding local Policy Plans
  - Standards
  - Guidelines

Reading: On-line Resources:

Central City Fundamental Design Guidelines, pages viii - 11. Familiarize yourself with Parts II and III, Part III will reference mapping that will be used in our process. Also read pages 150 - 158.

Central City 2035: West Quadrant Plan, Old Town/Chinatown Community Planning Forum, March 8, 2013, read the entire document.
https://www.portlandoregon.gov/bps/article/440009

West Quadrant Plan, Central City 2035, Recommended Draft 2014, City of Portland, Bureau of Planning and Sustainability. pages 1-6 and 109-122
West_Quad_Plan_Council-all-sm.pdf


Lloyd Lindley, Civic Spaces and Encapsulation Sketches. Read the entire document.
http://issuu.com/dyoll/docs/illustration_descriptions
Publications:


Optional Reading:
TriMet Design Guidelines

Assignment 1: Visual Sequence Analysis

1. Based on the district walk-about and reading each team will identify a route from a selected origin to a destination as determined from the walking tour. You may change, improve upon or modify your first impression, or sequence, based on the readings.

2. Provide a hand-drawn sketch plan for reference points

3. Using the sketch plan, prepare a context diagram showing significant places (historic, cultural, communal, stopping, meeting, relaxing, eating, active). Also identify a potential "center" or important place within your sequence and note, hierarchy of streets (service, pedestrian, festival, barrier, arterial, local traffic, bike, shopping, dining, and entertainment). Use diagrammatic symbols to identify elements and features.

4. Identify on the sketch map view points that illustrate a sequence that a resident or visitor might experience as they move along your route from origin to destination.

5. Each team member will prepare at least 3 sequence thumbnail sketches that illustrate the primary visual elements or cues (possession, enclosure, focal point, precincts, etc.) that reinforce the experience of moving through and interacting with the spaces formed by buildings, streets and open space.

6. Scan your sketches and compose an 11x17 page that includes a map, context diagram, the route, view points (numerical), and captions that explain the importance of each view, including the origin and destination.
7. Each team member will list at least 3 observations including issues, challenges, constraints, and opportunities on the sheet, 12 total notations. Use Cullen, Whyte and the above vocabulary.

8. Programs: In-Design – Photoshop, Illustrator (Sketchup or Rhino may be used to assist with perspective within your sequence, but scanned “hand drawings” are required for this assignment).

9. Place a pdf of your work in the course folder under your name. All team and individual work must be placed in the course folder to receive a grade.

Week 2: Voluntary Lab: 04/07/2015 Computer Lab, 3rd Floor, Rm. 374

Tuesday, 04/07/2015 from 11:00 AM to noon, 3rd floor, room 374, will provide an opportunity to install Arc-GIS on your personal computer. If you have a Mac, you will need to run "Boot Camp" to install Windows on your computer. Karen Munro and Peter Gunn from the Portland Library & Learning Commons will assist with start-up and access in preparation for the Week 2: ArcGIS introduction class. If you can not make this voluntary lab time please contact Karen Munro or Peter Gunn in the Learning Commons for an appointment.

Week 2: 04/09/2015: Room 555
ArcGIS – Karen Munro & Peter Gunn: 10:30 – 11:50
Computer Lab, 3rd Floor, Rm. 374

Teams will give a brief progress report and present visual sequence analysis diagrams and observations.

This class will provide an introduction to using ArcGIS resources and methods for an urban design Sieve Analysis. Land use and zoning resources (data) in Portland’s metropolitan region are deep and specific. The "Metro Model" for transportation analysis and mapping of Geoinformation provides nearly all of the existing and much of the projected data for developing analytical models, analysis and form based planning within the Portland Metropolitan Region (Metro is the local tri-county regional government).

This class will provide an overview of ArcGIS and the available tools, data and resources for urban design modeling, simulation, analysis and outputs. It will also demonstrate the interconnections between ArcGIS data and mapping and Rhino/Grasshopper for modeling, simulations and attributed data outputs.

Agenda
- Group pin up and workshop: 9:00 – 9:20, Room 555
- Reading Discussion
• Lecture: Karen Munro, 10:30 – 11:50, Room 374

METHODOLOGY

Geoinformation Collection and Synthesis Through Digital Overlays

Analytics: Room 555
Present Visual Sequence Analysis: In-Design Suite, Rhino and/or Sketchup – pin-up 11x17 sheets of sequences for discussion. Each Group member must be a part of the presentation of the group analysis.

ArcGIS Work Session: 10:30 - 11:50, Room 374

Digital Mapping, Overlays and Output: ArcGIS, Karen Munro & Peter Gunn

• Zoning: FAR, Height
• Land Use: Parks, Retail, Office, Res., Social Services, Attractors
• Transportation: Street Designations, Direction of Flow
• Historic District and Building Inventory
• Uses by Building
• Vacant Lands
• Development Potential: Property Value vs Improvement Value

Assignment 2: Using ArcGIS, each team is to produce three maps: two 2D data maps and one overlay map that combines the two data maps. Each team will also produce one 3D composite diagram of their data maps. Team numbers and size may vary depending on class size. Teams and maps are as follows:

1. Team One: FAR Map, Building Heights Map and an overlay that produces an Allowed Development Density/Potential. Output density and potential development square footage, by use, by block.

2. Team Two: Parks and Open Space Map, Land Use Map, and an overlay composite that produces a Land Use and Parks/Open Space composite map. Output park and open space area by location.

3. Team Three: Transportation: Street Designations Map, Transit Stops and Stations Map and an overlay composite that produces primary and secondary district access routes by mode.

5. Team Five: Vacant Lands Map, and Property Improvements Value to Land Value Ratio Map, and an overlay composite of developable properties.

6. Each team to provide 5 opportunities and 5 constraints for their assigned subarea.

Prepare maps, 3D diagrams, and opportunities and constraints at 11x17 horizontal format and place in the Course Folder under Assignment 2.

Reading:

Portland Zoning Code
Refer to sections: 100, 400, 500, 900. Each of these sections have pertinent zoning and land use standards that apply to our study area. Use the Tables for data.

Central City 2035, Concept Plan, Public Review Draft
https://www.portlandoregon.gov/bps/article/407475
Review entire document, but focus on the Old Town/Chinatown Neighborhood

Elements of Vitality, Results of the Downtown Plan
https://www.portlandoregon.gov/transportation/article/87292
Read the entire document

PFS Studio, West Don Lands/Canary District, Toronto, ON. CAN
http://pfsstudio.com/tag/west-don-lands/

Portland Oregon - Festival streets (for your entertainment)
http://www.streetfilms.org/portland-or-festival-streets/


Lloyd Lindley, “West Burnside and Couch City Council Presentation, April 11, 2007
http://issuu.com/dyoll/docs/city_council_4.11.07_final_4.13
Read entire document.

Week 3: Voluntary Lab: 04/14/2015

Tuesday, 04/14/2015 from 11:00 AM to noon, 3rd floor, room 374, will be available for class use. Karen Munro from the Learning Commons will be available to assist with questions regarding ArcGIS.
Portland Central City 2035

Mark Raggett is a senior planning manager and urban designer with the Portland Bureau of Planning and Sustainability (COP, BPS) and is a leader in the Central City 2035 process that is updating the 1988 Portland Central City Plan. Land use and zoning are under examination, are being modeled and will be modified through an extensive public involvement and planning process that will set the course for Portland’s Central City over the next 20 years. ArcGIS is providing the primary data sets and analytic tools for understanding the implications of physical development within Portland’s complex established political, historic, cultural, and policy context.

Mr. Raggett will provide an in depth explanation of the planning process, including alternatives development, 3D modeling and the translation of ArcGIS models to digital diagrams and illustrations of future conditions.

Rhino/Grasshopper

Gabriel Brown is a U of O Doctoral Student, and will present Rhino/Grasshopper 3D modeling and outputs why they are part of digital urban design methods and how they interface with ArcGIS data. Her Rhino model will provide the base 3D model for exploring and testing urban design propositions, development modeling, growth simulation and analytics. Gabriel's Grasshopper digital framework will provide for class generated inputs to experiment with factors that affect development type, capacity and performance. Development cost criteria will be provided to enable student analysis of costs associated with public and private development proposals.

Agenda

• Pin-Up of Assignment 2: Pin up Data, Composite and 3D mapping: 9:00 – 9:45
• Lecture: Mark Raggett, Central City 2035: 9:45 - 10:45
• Lecture: Gabriel Brown, Rhino/Grasshopper: 10:45 – 11:50, Room 374

METHODOLOGY

Geoinformation Collection and Synthesis Through 3D Modeling

Analytics:

Pin up 11X17 sheets for discussion of mapping including individual and composite overlay maps.
Opportunities and Constraints: Work-session to identify connections, uses, origins and destinations, and public open space and access sequences.

Reading:

Wayne Attoe and Donn Logan, American Urban Architecture, Chapter 2 Urban Design Practice, Euro-American Style, pages 19-43


Lloyd Lindley, United States Post Office, Urban Design and Infrastructure, 8/7/2010 http://issuu.com/dyoll/docs/usps_infrastructure_cover_urban_design_04_06_10_s


Assignment 3:

1. Prepare one Opportunities and Constraints diagram in 2D and 3D showing potential linkages, street improvements, development sites, public open space, obstacles, barriers, and capacity.

2. Based on opportunities and constraints, prepare two 3D models of height, density, historic buildings and districts that includes developable properties (ArcGIS sieve maps and composites). The model should include uses, origins and destinations, primary and secondary connections, development sites and development capacity.

3. Using Grasshopper, take a first attempt at creating an output of propositional improvements per use and square footage (new streets, parks, plazas, other open space, building types and mix of uses within, transit, public art, etc.). This may be on multiple pages if necessary.

4. Reevaluate your visual sequence based on opportunities and constraints, and origins and destinations. Annotate your previous drawing and resubmit it to the course folder.

5. Prepare pages at 11x17 horizontal PDF format, and place it in the Course Folder under Assignment 3:
Week 4: Voluntary Lab:

Tuesday, 04/21/2015 Room 374 is available from 11:00 to 11:50 for ArcGIS and Rhino/Grasshopper work. However, if you are stuck, please contact the Learning Commons and schedule a time for assistance with ArcGIS, or contact Gabriel Brown for Rhino/Grasshopper help.

Week 4: 04/23/2015: Room 555
Linear City: Transportation Simulation - Randy Johnson, DKS

V-SIM, Transportation Modeling, Simulation and Animation. Transportation is a basic framework element of city and district plans that influence livability, access and economics, urban design, site selection and Building design. Transportation simulation incorporates underlying land use regulations, zoning, and development density and traffic growth projections for a “design year” through the Metro Transportation Model (EMME2 or most current). Burnside/Couch in Old Town/Chinatown/Skidmore Historic District, among other models, demonstrates traffic behavior for alternative land configurations, and with and without streetcar.

The lecture will include video of real time, 2D and 3D digital simulated traffic movement demonstrating interactions between pedestrians, bikes, transit, and automobiles and trucks. Simulations will tell the story and demonstrate affects of existing traffic and transportation interventions corridor-wide and at catalyst development locations. This model will simulate traffic operations, consequences of modifications and growth over time in conjunction with projected development.

Agenda: Room 555
• Review and Distribute Criteria: 9:00 – 10:00
• Lecture: Randy Johnson: 10:00 – 11:00
• Pin-Up of Assignment 3, First Ideation: 11:10 – 11:50

METHODOLOGY

Geoinformation Transportation Impact Simulation: Digital 2D and 3D Animation

Pin up: Opportunities and Constraints mapping, 3D modeling, revised visual sequence, and output sheet(s).

Reading: TBD

Christopher Alexander, "The City is Not a Tree." http://www.rudi.net/pages/8755


John J. Fruin, Ph.D, Pedestrian Planning and Design, Chapter 4, pages 71 - 78

Assignment 4:

1. Refine opportunities and constraints diagram and visual sequence in 2D and 3D that illustrates primary and secondary routes internal to the district (Attractors, Major Employers, Shopping Streets etc.) and to and from the district.

2. Show transit and transit stops, bikes, pedestrians, trucks and cars, and time/distance isochrones for bikes and pedestrians.

3. Identify public improvements for visual sequence route (street, plazas, parks, small places, and private development propositions.

4. Prepare all products at 11x17 horizontal format and place it in the Course Folder under Assignments.

Week 5: Voluntary Lab

No lab scheduled for this week. However, if you are stuck, please contact the Learning Commons or Gabriel Brown for assistance.

Week 5: 04/30/2015: Room 555
Video Simulation - The Dynamic City:
Donald Newlands, Newlands & Company
Guests will include: Mark Raggett and Kevin ? COP/BPS

Beginning in the mid 1980's, Donald Newlands was a pioneer in computer and visual simulation techniques for environmental impact and alternatives analysis, transportation systems simulation and urban architectural development scenarios. Mr. Newlands developed much of his early software and modeling techniques, but more recently is using state of the art 3D and digital animation programs to provide high definition (V-RAY and 3D Studio Max) images that combine other programs such as ArcGIS, V-SIM, Revit, Sketchup, AutoCad 3D and Autodesk. Donald produced the first 3D image of Portland's Central City that became popular with architecture and urban design firms across the nation as a visual and analytical tool.

This session will visit a number of digital modeling techniques and methods using a variety of software that will provide the basis for further exploration of animation imaging and analysis.
Agenda: Room 555

- Review and Distribute Criteria: 9:00 – 10:00
- Lecture: Donald Newlands: 10:00 – 11:00
- Pin-Up of Assignment 3 Second Ideation: 11:10 – 11:50

METHODOLOGY

Digital Urban Design and Architecture Opportunities and Constraints Modeling Through 3D Animation

Analytics: Pin up all digital mapping from all assignments to date, including the Visual Sequence Analysis, opportunities and constraints for a work session to confirm or deny aspects of our discoveries.

Diagram the "big Ideas," "Big Moves" (perhaps dashed circles) and be prepared to brainstorm concepts for your subarea.

Reading:


Gloria Ohland and Shelley Poticha, editors, “Street Smart,” Chapter 3 and Chapter 6

Lloyd Lindley, Burnside and Couch Transportation and Urban Design Plan, Phase II, Catalyst Development Study. Pages 1-11, 13-39, 47-52
http://issuu.com/dyoll/docs/dos_final_draft_cover_toc_report_crop

Eric Hovee, E.D. Hovee & Company, Streetcar Economics

Assignment 5:

1. Explore stop action animation techniques within the Rhino/Grasshopper suite and prepare a short animation of your visual sequence.

2. Refine the 3D Model of your study subarea and experiment with infill on developable and re-developable sites. Enhance the previous alternatives or produce two new development alternatives.

3. Identify buildings for reuse or renovation.


5. Prepare a 3-5 minute presentation of your findings using Power Point (or other) 2 stop action clips that illustrate to alternative development scenarios including public improvements.
6. Prepare, on the spreadsheet, draft data outputs for development, redevelopment and reuse propositions using the supplied Rhino/Grasshopper model, analytics and provided market and cost data.

7. Place all work in the course folder under week 5.

Week 6: Voluntary Lab:

Tuesday, 05/05/2015 from 11:00 AM to noon, 3rd floor, room 374, is reserved.

Week 6: 05/07/2015
Urban Design and Development Economics
Eric Hovee, ED Hovee & Company

After working in economic development for the cities of Portland and Vancouver, Eric Hovee started a consulting practice in 1984. His firm conducts market / feasibility studies and economic impact analysis for private, public and non-profit clients. While focused in the Pacific Northwest, he has also worked nationally - especially with Main Street and streetcar related development.

This session will begin with an overview of GIS applications to development planning and feasibility analysis. Case study examples will be provided for development oriented transit, linkage to market and financial pro forma analysis, and brownfield redevelopment.

Primary Topics:

Urban Development Economics
Catalytic Development vs In-fill vs Renovation/Reuse
Development Capacity
Development Potential
Work-session: Identify development sites

Agenda: Room 555
- 3-5 Minute Presentations: 9:00 – 10:00
- Lecture: Eric Hovee: 10:00 – 11:00
- Team Reports and Schedule: 11:15 – 11:50

METHODOLOGY

Geoinformation Collection and Synthesis of Demographics, Markets and Economics

Reading: TBA
Assignment 6:

1. This assignment will enable students to evaluate the economic development potential of propositions and proposed intervention concepts. On the provided 3D volumetric model and based on analytics, show height, mass, orientation of each development site and each public improvement. Provide two alternatives (build on previous alternatives).

2. Refine spread sheets to include, revised uses, square footage per use and total gross square footage, number of potential employees, residents, shoppers, parking requirements using .75 spaces per 1000 square feet (Recommend on-site, remote or shared parking. This can be an assumption using your best judgment).

3. Based on vacant or underdeveloped properties in the district/study area, insert area and value numbers to create a Value of Proposed Development model. Illustrate development potential in 3D using Rhino/Grasshopper. Using provided data inputs, insert numbers to analyze cost of public and private development alternatives and return on investment. Prepare 3 alternative scenarios.

4. Based on revisions to the Visual Sequence, prepare a preliminary urban design concept for proposed public improvements, "big ideas/big moves," that connect origins and destinations, and create places (shopping streets, residential streets/neighborhoods, entertainment streets, and plazas, parks, open space and public art). Use the provided color pallet, textures and symbols, criteria and guidelines.

5. Prepare deliverables at 11x17 horizontal format and place it in the Course Folder under Assignment 6.

Week 7: Voluntary Lab:

Tuesday, 05/12/2015 from 11:00 AM to noon, 3rd floor, room 374, is reserved.

Week 7: 05/14/2015
  Growth Simulation – Hajo Neis TBC

The Urban Game: Simulation of Growth of Neighborhoods and Districts
Students will explore the creation of urban design rules and see the application through the ArcGIS/Rhino/Grasshopper workflow and animation. Details will be provide prior to the urban game session.

**Agenda: Room 555**

- Rules of the Game: 9:00 – 9:40
- Round One: 9:40 – 10:20
- Round Two: 10:30 – 11:15
- Measures Ranking and Preferred Alternatives: 11:15 - 11:50

**METHODOLOGY**

Predictions for growth in Old Town/Chinatown/Skidmore Historic District are a result from the Growth Simulation method.  
Applied Gaming Theory for Comparing Development Scenarios

Note: The below description may be revised and refined prior to implementation.

**Alternatives Development, Gaming Theory:**

Game Rules: Development Parameters: Parks, Building Massing, Community Good, etc.

Digital Model

First Play: select alternatives, analyze your two alternatives through the growth simulation to select the first and second rank for each subarea.

Second Play: rerun the four alternative to determine a district-wide preferred alternative.

Rank each selected alternative against the provided measures.

**Reading:** TBA

**Assignment 7:**

1. Based on preferred alternative selection, analyze the preferred alternatives comparing the measures against the performance of each alternative.

2. From the growth simulation (the game), identify a potential catalyst development site and development sites potentially catalyzed by the proposal and draft a potential sequence of public and private development projects. This should be the alternatives model that each group has been refining throughout the course.
3. Illustrate the synergistic relationship between catalyst and catalyzed development.

4. From the combined preferred alternative, propose 2 strategic scenarios for testing.

5. Refine the visual sequence plan (public improvements) adding trees, furnishings, paving patterns and color.

6. Complete color and textures for the district-wide plan. The sequences, catalyst and catalyzed sites, as well as the Big Ideas/Big Moves should stand out in color and texture (trees, paving patterns, people, buses, streetcars, LRT trains).

7. Place all work in the course folder under Assignment 7.

Week 8: 05/21/2015
Digital Catalyst Development Simulation

In urban regeneration, revitalization or specific interventions, catalyst development provides the seed to initiate change. Catalytic development combines public and private investment strategies to incent new development and re-development of underdeveloped properties. Digital Catalyst Development Simulation will explore processes within Rhino/Grasshopper that enable comparison and analysis of various scenarios and alternatives. The class will consider context, market forces, alternative development programs, and site development influences on surrounding or district-wide change.

Methodology

A set of parameters will be provided based on district market conditions, construction cost, local rental rates, urban quality quotient, housing and jobs mix, social services and entertainment goals. Students will input data into a Grasshopper routine to observe the outcome of strategic scenarios. The outcomes will be tested against provided measures in a multiscreen format with an interactive and mutable model that students will modify to examine results from different strategies. Outcome:

- Preferred Alternative Selection: Catalyst Development Site, In-fill and Reuse
- Set Priorities/Parameters
- Animate Phased Development – "The Strategy"
- List Actions, Policies and Responsibilities
- Provide Statistical Output
- Score outputs against rules and measures

Agenda: Room 555
- Rules of the Game: 9:00 – 9:40
- Round One: 9:40 – 10:20
• Round Two: 10:30 – 11:15
• Alternative Measures and Preferred Alternatives: 11:15 - 11:50

Reading: TBA

Assignment 8:

1. Prepare a 3D illustrative Urban Design Catalytic Development Plan 2 posters 22x34 mounted on card board that illustrates recommended public and private improvements as identified from the Growth Simulation session and preferred strategy, including open space networks, catalytic development (s), redevelopment and reuse opportunities and any major attractors (special streets or pedestrian ways, and shopping, residential and entertainment streets precincts).

2. Designate phases and sequence of improvements with a spread sheet showing gross development potential by site and overall district, and potential retail, office, entertainment and housing quantities for each site and phase.

3. Complete the illustrative urban design plan and 3D crops of at least 5 views of public improvements with identified development sites from the Visual Sequence process to be included on the poster.

4. Output preferred urban design and development strategy 3D model to create a physical 3D model using C&C Router. Size and scale to be determined.

5. Output a 2D illustrative plan of the Catalytic Development strategy to be included in posters.

6. Assignment: Prepare a digital and animated Power Point presentation of your work using the 11x17 pages developed during the course, including digital drawings, plans, diagrams, 3D models, stop action animation and spread sheets.

7. Using the provided measures rank your preferred development strategy as to how well your strategy meets the objectives and parameters of the course work.

8. Augment the presentation with observations and recommendations for future course work.

9. Place all work in the course folder under week 8.

Week 9: 05/28

Catalytic Development Strategy Review

This review will feature the work of each student team using Power Point (or other) presentations and posters of the urban design process and methods utilized to create
final strategic recommendations for the Old Town/Chinatown - Skidmore/Old Town study area.

Each team will have 30 minutes to present their Urban Design Plan and Strategy.

Agenda: Room 555

Actual teams and times will be determined during Week 8.

- Introductions: 9:00 – 9:15
- Team One: 9:20 – 10:00
- Break: 10:00 - 10:10
- Team Two: 10:10 – 10:50
- Team Three: 11:00 - 11:40
- Alternative Measures and Preferred Alternatives: 11:15 - 11:50

Assignment 9: Final Deliverables

1. Place all work in the course folder under week 9.

2. Assemble all assignments into a Digital Urban Design Handbook and place under assignments in the course folder.

CONTRIBUTING LECTURERS

Gabriel Brown
Doctoral Student, University of Oregon
Gabriel is currently a Doctoral Student at the University of Oregon where she is investigating the social meaning and effect of the configuration of the boundary interface (the ground-floor facade) between urban communities and private development. She also specializes in utilizing digital methods for understanding urban design and development proposals. A Texas native, she earned her Bachelor of Environmental Design from Texas A&M University focusing on traditional building materials & sustainable construction and minoring in Art & Architectural History. She then attended the University of Oregon in Portland where she studied mixed-use development, sustainable urbanism, and planning policy, receiving her Master of Architecture degree in 2009. Her work includes redevelopment concepts for Old Town/Chinatown, mixed-use infill, as well as the papers EcoPattern Districts, based on the City of Portland's EcoDistrict proposal, and Pressure Patterns, an analysis of development incentives in Old Town/Chinatown. Her professional work includes sustainable urban home renovations in New York City and Austin, TX for D+Form Studios.
DKS Associates
Randy Johnson
As a microsimulation expert, Mr. Johnson brings ten years of international experience in traffic engineering and transportation planning to DKS. He specializes in microscopic simulation of all modes and travel demand modeling.

Randy is a certified instructor for Vissim, Visum and Vistro software. As a PTV Vision trainer, Randy has provided instruction on all levels of PTV Vision for transportation engineers and planners throughout the United States, Canada and Qatar. His expertise includes dynamic traffic assignment, capacity assessment, roundabout analysis, multi-modal modeling, and traffic impact studies. Additionally Randy served the role as training manager for PTV Group’s North American operations. Under this role Randy developed the training curriculum for PTV Vistro and assisted the Vistro software development team with concept development and quality control testing.

Randy has worked for local agencies and departments of transportation on projects throughout the West. Recently, he developed a multi-resolution modeling approach for the Hillsboro Downtown Transportation and Accessibility Study using Visum to calibrate demand, run intersection capacity analyses, and perform a high-level alternatives analysis. He further refined the alternatives using Vissim to analyze detailed traffic operations, queuing and driver route selection.

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Eric Hovee
After working in economic development for the cities of Portland and Vancouver, Eric Hovee started a consulting practice in 1984. His firm conducts market / feasibility studies and economic impact analysis for private, public and non-profit clients. While focused in the Pacific Northwest, he has also worked nationally - especially with Main Street and streetcar related development.

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Karen Munro is Head of the UO Portland Library & Learning Commons. She has an MLIS from the University of British Columbia, and an MFA from the University of Iowa.

University of Oregon, Learning Commons
Peter Gunn
Peter Gunn has been the Technology Services Coordinator for the UO Portland Library & Learning Commons since June 2008. He manages instructional technology support for classes throughout the White Stag Block. He has twenty-five years of experience in technology support, and holds a Bachelors of Arts in Physics from Carleton College and a Master of Arts in Teaching from Cornell University. Proven fact: if the endpapers of book have a map on them, Peter will check out the book.

Bibliography

Central City Fundamental Design Guidelines, pages viii - 11. Familiarize yourself with Parts II and III, Part III will reference mapping that will be used in our process. Also read pages 150 - 158. file:///C:/Users/Owner/Downloads/central_city_plan_fundamental_dg_2001.pdf


Portland Zoning Code
Refer to sections: 100, 400, 500, 900. Each of these sections have pertinent zoning and land use standards that apply to our study area. Use the Tables for data.

Central City 2035, Concept Plan, Public Review Draft
https://www.portlandoregon.gov/bps/article/407475
Review entire document, but focus on the Old Town/Chinatown Neighborhood

Elements of Vitality, Results of the Downtown Plan
https://www.portlandoregon.gov/transportation/article/87292
Read the entire document

PFS Studio, West Don Lands/Canary District, Toronto, ON. CAN
http://pfsstudio.com/tag/west-don-lands/
Portland Oregon - Festival streets (for your entertainment)
http://www.streetfilms.org/portland-or-festival-streets/


Lloyd Lindley, “West Burnside and Couch City Council Presentation, April 11, 2007
http://issuu.com/dyoll/docs/city_council_4.11.07_final_4.13
Read entire document.


Wayne Attoe and Donn Logan, American Urban Architecture, Chapter 2 Urban Design Practice, Euro-American Style, pages 19-43

http://issuu.com/dyoll/docs/final_fourth_draft_combine_01142015

Lloyd Lindley, United States Post Office, Urban Design and Infrastructure, 8/7/2010
http://issuu.com/dyoll/docs/usps_infrastructure_cover_urban_design_04_06_10_s


Christopher Alexander, "The City is Not a Tree." http://www.rudi.net/pages/8755


John J. Fruin, Ph.D, Pedestrian Planning and Design, Chapter 4, pages 71 - 78


Gloria Ohland and Shelley Poticha, editors, “Street Smart,” Chapter 3 and Chapter 6

Lloyd Lindley, Burnside and Couch Transportation and Urban Design Plan, Phase II, Catalyst Development Study. Pages 1-11, 13-39, 47-52
Eric Hovee, E.D. Hovee & Company, Streetcar Economics


Digital Methods, Workflow and Software Interface Concept: Lloyd D. Lindley, FASLA, Hajo Neis, Karen Munro, Peter Gunn, Gabriel Brown, Mark Raggett, Randy Johnson DKS, Newlands & Company, ED Hovee & Company

University of Oregon, Portland, Digital Urban Design Methods, Spring 2015

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