UNIVERSITY OF CALGARY
SCHOOL OF ARCHITECTURE, PLANNING, AND LANDSCAPE

FALL 2019
EVDA 580/ARST 484 STUDIO 01 DESIGN THINKING

(Monday), Tuesday, (Wednesday), Friday, 14:00-18:00
Instructors: Mauricio Soto Rubio (coordinator) Catherine Hamel, Jessie Andjelic, Dan Hapton, Vlad Amiot.
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Room: PF - 2165 + studio 2130

CALENDAR DESCRIPTION
Foundation concepts in design and form making involving a sequence of progressive skill building, visual and spatial thinking and problem solving exercises.

ARCHITECTURAL HABIT_AT IN SITE ECOLOGIES

INTRODUCTION
Studio One Design Thinking engages multi-scalar design problems through an iterative design process. Design is understood as a process of consciously evolving responses to interconnected contexts, problems and opportunities. These are identified and engaged through a series of proposals that require a diverse set of processes, means of expression and systems of exploration, communication and representation.

OBJECTIVES
1. To acquire a basic knowledge of the design process based on the relationship between critical thinking and design thinking as a means of translating complex bodies of knowledge into innovative design solutions.
2. To discover and challenge disciplinary norms in architectural design thinking and develop methods for objectively questioning the relationships between form and behavior.
3. To acquire the knowledge to reveal intentions in architecture through the process of deconstruction and interpretation.
4. To acquire the understanding and skills to develop an analysis and interpretation of site and its related climatic, social, programmatic and other key contextual aspects as a precondition to intervention.
5. To develop individual and collaborative (interdisciplinary) skills in design process and representation.
6. To learn about and develop the ability to explore the inter-relationships between design, architecture and context.

TEACHING APPROACH
The course is studio based and as such, students will complete a series of projects that will be reviewed within the studio and serve as a basis for class discussion. As required by the specific projects, students may be working individually or in a group setting. Overall, students will be organized into 4 sections working on the same projects but through different pedagogical approaches. Projects are introduced by the entire teaching team, while design work in progress will be discussed through desk reviews. Each instructor will provide detailed project descriptions to guide their sections.

COURSE EXPECTATIONS AND MEANS OF EVALUATION
Students are expected to complete studio projects by the assigned date, pinned up and ready to start at the beginning of the scheduled class time. Students are expected to present their work to the group and to participate in class discussions. Evaluation of the studio projects forms 90% of the course grade, as outlined in the Content: Outline Course Descriptions, while a digital portfolio of the term work, handed in at the completion of the term, forms the final 10% of the student's mark. A "Fail" mark on the final studio project or a failure to submit the project portfolio will result in a "Fail" mark for the course. (A grade of C+ or lower indicates failure in a given assignment in accordance with the grading procedures of EVDS)

COURSE SCHEDULE *(Subject to Adjustment)*

Project 01	**PRECEDENT ANALYSIS AND INTERPRETATION.**
[Sept 06 – Sept 20**]**	**Explorations in Architectural Intentionality.**
	Review: Friday, Sept 20th. Accumulative Value 15%

Students will work in teams of two and analyze and deconstruct an architectural precedent. Through a rigorous drawing and modeling process, students will explore the intentions of the precedent, and develop an analytical and interpretive framework for architectural order, space, form, and the architecture's connection to site.

Project 02_a	**Observing Site: Mediating Contexts**
[Sept 20th – Oct 01]	**SITE**
	Proposed review: Friday, Oct 4th. Accumulative Value 10%

Student groups discuss the fundamental aspects of a given site and come to an understanding of an overall vision of this context. Graphic and modelling strategies are utilized to explore the site as a complex, layered entity. This comprehensive site documentation is the basis for future project work.

Project 02_b	**Border Transgressions: Program and form**
[Oct 02 – Oct 18]	**PROGRAM**
	Review: Friday, Oct 18th. Accumulative Value 25%

Individual students will situate a conceptual underpinnings of a program for alternate users within the contextual forces they have documented. The result will be a small scale intervention situated on the site.

Project 03	**HABIT_AT: ALTERNATIVE MODES OF HOUSING**
Oct 28 – Dec 11 TBC]	**Habitation and Design Intention**
	Interim Reviews on TBA
	Final Review Dec 11th TBC
	Accumulative Value 40%

Building on the understanding developed on site and program in Project 03, a house scale habitat will be developed. The process will be divided into a number of interim reviews. The final project will clearly and thoroughly be represented by (but not limited to): plans, sections, elevations, perspectives, models, site, context, program, assembly, …

Project 04	**STUDIO MONOGRAPH**
	Due on Dec 13. Accumulative Value 10%

Each students will submit a graphically considered and edited compilation of process work and their final projects produced during the terms work (due post final reviews – specific due date to be determined in response to final review date)

At the discretion of the instructor, assignments submitted after the deadline **may** be penalized with the loss of a grade (e.g.: A- to B+) for each day late.

READINGS

Readings will be provided with detailed project handouts - (readings specific to each studio section may be provided separately)

GRADING SCALE

"Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range."
"Assignment(s) will be evaluated by percentage grades, with their letter grade equivalents as shown."

Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	95-100	Outstanding - as evaluated by instructor
A	4.00	3.85-4.00	90-94.99	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	85-89.99	Very good performance
B+	3.30	3.15-3.49	80-84.99	Good performance
B	3.00	2.85-3.14	75-79.99	Satisfactory performance
B-	2.70	2.50-2.84	70-74.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	65-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
C	2.00	1.85-2.14	60-64.99	
C-	1.70	1.50-1.84	55-59.99	
D+	1.30	1.15-1.49	50-54.99	
D	1.00	0.50-1.14	45-49.99	
F	0.00	0-0.49	0-44.99	

NOTES:

A student who receives a "C+" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.

Special Budgetary Requirements

Special budgetary requirements are limited to the optional purchase of course readings and, in specific courses, mandatory supplementary fees to cover certain expenditures, such as field trips. Mandatory supplementary fees must be approved by the University prior to implementation. Instructors are required to list and describe approved optional and mandatory supplementary fees for courses. This can include possible costs incurred for special materials, equipment, services, or travel. The $150 supplemental fees for all studio courses is charged to cover workshop costs of use and maintenance of hand tools, assorted power tools, CNC routers, laser cutters, 3D printers, and robotics.

CACB STUDENT PERFORMANCE CRITERIA

The following CACB Student Performance Criteria will be covered in this course:
A1: Design Theories, Precedents, and Methods; A2: Design Skills; A3: Design Tools; A5: Site Context and Design; A8: Design Documentation; B1: Critical Thinking and Communication; B5: Ecological Systems

Students are expected to complete all course assignments on time. There will be no final exam. Students must obtain an overall passing grade to pass this course, however, if a student fails any phase of the course worth 30% or more they will fail the course. A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded may request to have the paper re-graded. The student shall discuss the work with the instructor within **fifteen days** of being notified of the mark or of the item's return to the class. More information can be found in the Graduate Calendar: http://www.ucalgary.ca/pubs/calendar/grad/current/gs-o.html

University of Calgary Policies and Supports

ACADEMIC ACCOMMODATION

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf.

ACADEMIC MISCONDUCT

Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Most commonly plagiarism exists when: (a) the work submitted or presented was done, in whole or in part, by an individual other than the one submitting or presenting the work, (b) parts of the work are taken from another source without reference to the original author, (c) the whole work (e.g., an essay) is copied from another source, and/or, (d) a student submits or presents work in one course which has also been submitted in another course (although it may be completely original with that student) without the knowledge of or prior agreement of the instructor involved. While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted. Plagiarism is an extremely serious academic offence. Any suspicion of plagiarism will be reported to the Dean, and dealt with as per the regulations in the University of Calgary Graduate Calendar.
For information on academic misconduct and its consequences, please see the University of Calgary Calendar at http://www.ucalgary.ca/pubs/calendar/current/k.html

COPYRIGHT LEGISLATION:

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf) and requirements of the copyright act (https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html) to ensure they are aware of the consequences of unauthorised sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

FREEDOM OF INFORMATION AND PROTECTION OF PRIVACY

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.

UNIVERSITY STUDENT APPEALS OFFICE: If a student has a concern about the course, academic matter, or a grade that they have been assigned, they must first communicate this concern with the instructor. If the concern cannot be resolved with the instructor, the student can proceed with an academic appeal, which normally begins with the Faculty. https://ucalgary.ca/student-appeals/

More student support and resources (e.g. safety and wellness) can be found here:
https://www.ucalgary.ca/registrar/registration/course-outlines

PROJECT ONE: Explorations in Architectural Intentionality

Project 1. (1.5 weeks) Precedent Analysis and Interpretation: Explorations in Architectural Intentionality. Students will work in teams of two and analyze and deconstruct an architectural precedent. Through a rigorous drawing and modeling process, students will explore the intentions of the precedent, and develop an analytical and interpretive framework for architectural order, space, form, and the architecture's connection to site.

prec·e·dent: Noun - an earlier event or action that is regarded as an example or guide to be considered in subsequent similar circumstances

Discussion:
This precedent analysis and interpretation will allow students to immerse themselves within architectural culture and identify key design considerations at the beginning of the term. As well, this study will establish the working language during studio reviews and desk crits for the entire term, while subsequent studio projects will reference this precedent study. The precedent projects created by the entire class will be "published" and each student will receive a compendium of the house precedents.

The analysis and interpretation of precedents in architecture has contributed, and continues to contribute, to the discourse and debate within the discipline of architecture. As a methodology towards understanding past architectural production and pointing to new design opportunities, precedent analysis offers a deep understanding of works of architecture towards defining the fundamental modes of thinking that are the basis of the design process and the manifestation of architectural form and intentionality.

Proposed House Precedents:

Kings Road House (Schindler) 1922
Lovell Health House (Neutra) 1927
Gehry Residence, Santa Monica (Frank Gehry) 1978
Eames House (Ray and Charles Eames) 1949
Linear House (Patkaus) 2012
The Graham House (Erickson) 1962
Falling Water (FLW) 1936
Douglas House (Richard Meier) 1971
House on Nova Scotia Coast 22 (Brian Mackay Lyons) 1997
Mobius House (UN Studio) 1993
House VI (Peter Eisenman) 1975
Alan Voo House (Neal Denari) 2007
House for the Poem of the Right Angle (Smiljan Radic) 2012
Moriyama House (Ryue Nishizawa) 2005

Villa Savoye, Le Corbusier (1928)
Farnsworth House, Mies (1945)
Villa Rotunda, Palladio (1570)
House III, Peter Eisenman (1971)
Poli House, Pezo von Ellrichshausen (2005)
Nine Square Grid House, Shigeru Ban (1997)
Stretto House (Steven Holl) 1989
Villa dall'Ava (OMA) 1991
Naked House (Shigeru Ban) 2000
Row House (Tadao Ando) 1975
R128 (Werner Sobek) 2000
Maison de Verre (Pierre Chareau + Bernard Bijovet) 1932
Magney House (Glenn Murcutt) 1984

Deliverables
Plans, sections, elevations and images at ad-hoc scales, all curated to fit the space of an A1 sheet of paper (594mm x 841mm) arranged vertically. We are planning a group open-floor review where students will present their findings to reviewers in an informal setting.

Project completed in teams of two students.

Review, Friday, September 20th

PROJECT 2A (1.5 weeks). **SITE AND CONTEXT** In this exercise, students will discuss the fundamental aspects of the given landscape and come to an understanding of an overall vision of the site. Drawing and drafting is then used in translating the diverse knowledge developed from a site analysis into a comprehensive two-dimensional representation of site. Graphic strategies are utilized to explore the landscape as a complex, layered entity. This comprehensive site documentation is the basis for a site specific intervention, and for future project work within this studio.

document:
physical or digital representation of information
+
analyze:
to break a complex thing/site/place/process apart in order to understand or interpret it, then reassemble to produce a higher level of understanding and new insights.

Discussion:
This project will allow students to develop a comprehensive understanding of the site, and to be able to identify issues, opportunities or challenges. Analysis on its own is not enough to provide direction for the future - creative intelligence must be applied to the analysis and interpretation.

Students will carry out exercises and investigations to allow them to understand the landscape processes and forms as well as the human processes and forms that are involved in the study site. An introductory lecture will review some precedents and practices for site analysis and illustrate some methods and graphic techniques for recording the information and finding ways to understand and express it.

Working in pairs, students are asked to document and analyze the site itself and its context. Analysis should be considered in terms of at least two scales: the context within the larger urban and natural landscape, and the scale of the study site itself. Specific areas within the site may warrant more detailed analysis.

There is no “checklist” of elements or attributes that must be documented, and no specific requirements for graphic documentation/analysis. Rather, students are asked to develop a comprehensive understanding of the site that considers the following topics:

- Environmental conditions and characteristics, understood as systems and patterns: topography, vegetation, wildlife, climate and microclimate, solar aspect.
- Spatial structure: land uses, site elements, patterns of activity, circulation, functional relationships
- Historic evolution: land uses, landscape patterns, circulation, structures
- Visual analysis: views in/out, legibility, visual character and quality
- Human use: behavior mapping, physical traces, perceptions, public/private land, intensity of use.

Students should refer to existing mapping and data (utilize the Library's Spatial and Numeric Data Services [formerly MADGIC], on-line sources, other library references), and then develop their own mapping and analysis by processing existing information and supplementing it with their own explorations. The best source of information is always the site itself, so students should be prepared to conduct additional site visits on their own.

Deliverables:
Two or Three A1 panels (594mm x 841mm)

Proposed Site at the corner of 11th Ave and 12th St SE in Inglewood, Calgary

Panels to include:
Synthesis of the information in terms of the above topics and/or other organization determined by the group to be important to understand and communicate. Groups are asked to synthesize the information, and not just reproduce it - i.e. make decisions about what to illustrate and include, interpret the data, summarize the information and include analysis, determine how to relate various analyses to each other, answer the question "so what?" about the documentation.

Utilization of a variety of graphic techniques (e.g. plan, section, diagram, interpretive drawings, etc.)
Evidence of understanding of a hierarchy of information through organization, size of graphic and type, level of detail
Graphic organization and layout - title block, i.e. information that identifies the information and orients the reader; graphic scales where necessary, appropriate type size, legibility of graphics.

It is expected that you will exercise the level of craft and care expected of a professional practitioner in the execution of the investigation, reporting and presenting of this assignment and all subsequent exercises you undertake in both this class and EVDS. Do not forget to include your names on the panels.

Potential Readings:
Ian McHarg (1969, reissued 1992) Design with Nature
Kevin Lynch (1960) The Image of the City and K Lynch and Gary Hack (1982, 3rd ed.) Site Planning (chapter 2)
Richard Forman (1995) Land Mosaics and R Forman and Michael Godron (1986) Landscape Ecology

Review: Friday, Oct 4th.

PROJECT 2B (2 weeks). PROGRAM AND FORM

Individual students will situate a conceptual underpinnings of a program for alternate users within the contextual forces they have documented. The result will be a small scale intervention situated on the site.

Discussion:
This project begins the discussion of transformation. Multiple elements have been reviewed in the precedent project and site analysis. Now we are synthesizing this understanding through the design of a third element, effectively informed by a chosen fragment of the precedent. How does one manipulate/transform this fragment into its own object? What do you do to the object and how does that, in turn, affect the object's meaning within the site?

This stage of the project will occur simultaneously at the site and in the studio. Through critical discourse, sketching, model making, and exploration the project aims to foster a deeper understanding of the built environment. The elements that are used and how they react in concert with their environment will form the genesis of the project. Within the transformation of these objects the students are asked to consider how these objects can be joined and house program within the whole design.

The program for the intervention is an Experiential Space, providing for a novel, and perhaps unexpected, experience of the site. The introduction of a program explores the formal language of spaces, adjacencies and connections within the functionality of prescribed uses. This portion of the design development should accommodate one to four people and include a provision for entry, gathering and/or solitude.

Deliverables:
Sketches and small scale models that reflect the evolution of your design thinking for the project.
Precisely documented drawings and images of the final design. Minimum: Site Plan, Plan and Section at the appropriate scale. Scale to be discussed with your individual instructor.
Model of project in larger context (site and adjacencies)
Model of project expressing its tectonic order and connection to site.

Readings:

Sarah Bonnemaison, Ronit Eisenbach, Installations by Architects: Experiments in Building and Design. Princeton Architectural Press, New York
Betsky, Aaron. Landscrapers, Building with the Land. Thames & Hudson, New York, 2002
Macy, Christine Free Lab. TUNS Press, Dalhousie University 2008

Project completed individually.

Review, Friday, October 18th

PROJECT 3 (6 weeks) SYNTHESIS. Alternative Modes of Housing: Students will design a house on the site analyzed in Project 2 that explores the synthesis of the design frameworks and site drivers explored in the previous 3 projects towards the design of a house. The project is divided into 4 related studies:

- Conceptual Definition/Form Generation
- Plan and Section Order
- Tectonic and Material Order
- Final Project Resolution

Discussion
The design of a house is a project of synthesis. In a fundamental manner, this design for a house will synthesize your research and understanding of the site, its physical and immaterial aspects, and the program for and research on your different clients. In other words, the past studio projects have defined key design touchstones that will be addressed through your design process for this studio project. More explicitly, the project will engage the following considerations:

- Site Interpretation
- Site Integration
- Architectural Intentions
- Architectural Parti
- Program Logic
- Organizing Principles
- Spatial Order
- Relationship of Inside to Outside
- Material Order

Stages – Suggested Interim Reviews

- **Conceptual Development/Form Generation (2 weeks)**
  Students will explore a series of generative processes in the context of understanding both sets of clients and the sites physical and immaterial structures. This process will focus on the production of formal strategies that assimilate biological and material processes into an iterative set of formal procedures.

  Suggested Readings
  D'Arcy Thompson, On Growth and Form
  Peter Eisenman, Diagram, The Original Scene of Writing
  Greg Lynn, Animate Form

- **Plan and Section Order (2 Weeks)**
  Plans and sections are not drawings that simply depict functional order. The architectural order of a project is revealed in its plans and sections. It is in these drawings that the spatial and structural order are most clearly explored and understood, as well as how each space relates to other spaces as well as the exterior landscape. Plans, sections, site plan, and site sections are all critical means to explore and communicate architectural intentions.

  Suggested Readings
  Enric Miralles, How to Lay out a Croissant

- **Tectonic and Material Order.**

During the design process of this project, each student will explore the material and tectonic logic of their project though the exploration/making of a tectonic model at the scale of 1:5. A critical aspect to this part of the project is the discovery of how the assembly or joining of materials is an intrinsic aspect of making architecture and expressing

design intentions. Tectonics in architecture reveals the inner order of a work of architecture, and offers this meaning as a material presence in the use of the architecture. The assembly and joining of materials reveal their essential meaning, both as materials and within an intellectual construct.

Final Review
All work –in ALL sections except (for the portfolio documentation) will be collected the evening of TUESDAY Dec. 10th.

You can assume you will be creating multiple sections, elevations, plans and diagrams of the project as well as models of various scales and precision.

Final Presentation Format:
One A0 (841mm x 1189mm) Summary Board, Printed and Mounted
A five (yes, five) minutes PDF/PowerPoint presentation

REQUIRED:

Drawings:

- Context Plan (1:1000)
- Site Plan (1:500)
- 2 x Site Sections (1:200)
- Plan(s) (1:50 or 1:100)
- 2 x Building Sections (1:50 or 1:100)
- All Elevations (1:50 or 1:100)
- Tectonic Wall Section (1:10)

Diagrams:

- Conceptual Model/Diagram/Photograph/Parti (basic concept distilled into single diagram)
- Site Diagrams (addressing relevant site analysis, integration, interpretation)
- Program Logic Diagram(s) (how spaces relate functionally and conceptually)
- Formal Strategies/Organizing Principles Diagram (how the building is given order: symmetry, balance, grid, geometry, hierarchy, layering, etc)
- Material Order/Tectonic Diagram(s) (how are materials used to develop the concept? Document your material palette & material experiments. Consider how this information can be graphically linked to your tectonic section)

Renderings:

- Minimum Three (3) Interior Renderings
- Minimum Three (3) Exterior Renderings

Models:

- House Model, with site (1:50 or 1:100)
- Tectonic/Material/Fabrication Model (1:20)
- Study models, as required
-

Text:
250 word summary description of the project.

Project completed individually.

Review, Friday, December 11th TBC