“Designing a civilization that can be sustained ecologically and one that sustains the best in human spirit will require us to confront the wellsprings of intention, which is to say human nature...

Ecological Design is as much about politics and power as it is about ecology”

David Orr, The Nature of Design

“It’s all a question of story. We are in trouble just now because we do not have a good story. We are in between stories. The old story, the account of how we fit into it, is no longer effective. Yet we have not learned the new story.”

Thomas Berry, The Dream of the Earth

“It is perhaps not too much to say that, in the first decade of the new millennium, humanity has entered into a condition that is in some sense more globally united and interconnected, more sensitized to the experiences and suffering of others, in certain respects more spiritually awakened, more conscious of alternative future possibilities and ideals, more capable of collective healing and compassion, and, aided by technological advances in communication media, more able to think, feel, and respond together in a spiritually evolved manner to the world’s swiftly changing realities than has ever before been possible.”

Richard Tarnas

Instructor
Douglas D. Pierce, AIA, LEED AP
Professor in Practice
University of Minnesota College of Architecture
E-mail: douglas.pierce@perkinswill.com; Office hours: by appointment
Phone: (612) 851-5065

Assisting Practitioners
Meredith Hayes Gordon, Perkins+Will, LEED AP
E-mail: meredith.hayesgordon@perkinswill.com; Office hours: by appointment
Phone: (612) 851-5133

Tony Layne, Perkins+Will, LEED AP
E-mail: tony.layne@perkinswill.com; Office hours: by appointment
Phone: (612) 851-5113

Introduction
COURSE DESCRIPTION
Class hours and location: 2:30-5:00 p.m. Tuesdays, Rapson room 125
Course credits: 3 credits

Sustainable Design springs from human and environmental ecology; going beyond the confines of conventional architectural practice. The common domain of architecture and design, as currently practiced, extends primarily to the manipulation of space, form, views, color, texture, materials, social interaction, and engineering coordination, coupled with fundamental fire and immediate physical safety. The design solution is managed within a first cost budget and the projects time horizon is primarily limited to design, construction and the statute of legal limitations.
Sustainable Design, through its intention to generate long-term solutions to human inhabitation of Earth, greatly expands the current role of architecture by embracing a much needed whole systems, ecologically based perspective that reconfigures both the fundamental scope of ‘Design’ and the role of architecture as a professional within the community. Taking the long-view is inherent in Sustainable (Ecological) Design and in order for it to succeed; its thinking must extend far into the fabric of civilization and the whole of life, crossing artificial boundaries defined by discipline, education, convention or convenience. By engaging a broad, deep, multi-dimensional matrix of connectivity, intention and purpose it leaves few, if any topics of human endeavor untouched in its dialogue.

This course investigates sustainability theory and the practice of sustainable design methods and design processes for architecture. We will study sustainable theory inside and outside the discipline and consider how it influences practice and informs design thinking. The class emphasizes the direct application of sustainable design theories, processes, principles, and strategies into everyday practice to elevate design thinking and to meaningfully address the pressing ecological, social, and economic challenges of our day. Discussions, brief lectures, readings, films, research, field studies, and case study investigations will enable students to understand the emerging theories and practice of sustainable design and how they directly inform architectural practice.

Course Objectives

The objectives of the course are to provide:

- Knowledge of sustainability theory and its connection to design practice
- An opportunity for students to actively participate in connecting a range of societal, environmental and economic issues to design solutions
- An opportunity for students to actively engage in developing sustainable design solutions.
- A framework, context, and tools for evaluating sustainable design theory and practice
- Lessons from exemplary precedents and fieldwork
- An opportunity for students to develop their own sustainable design theory and principles for practice

Course Work

PROJECTS, GRADING, AND EXPECTATIONS
Ecology is from the Greek oikos, meaning household, which is the study of the relationship of organisms to their environments. The Earth and its natural systems are sometimes referred to as the first household. Ecological literacy is the knowledge and understanding of the basic patterns, processes, and structures of natural systems. This semester, we will take stock of our own “household,” how we live as individuals on this Earth, and how we frame our own ecological or sustainable theory and practice of design. A series of Reading Reflections and in-class dialogues coupled with Team Projects will be used to help you define, reveal, and apply sustainable design in your daily life and design practice for the 21st century.
Facilitated Dialogues will be used for in-class exploration of writings by recognized sustainability theorists and philosophers. Connections between theory and practice will be developed and documented as “Sustainable Design Principles.” Teams will be asked to support in-class facilitation by opening the dialogue with their own reading reflections, acting as scribes and issuing notes.

Project One will consist of two parts. Part (A) will be a Case Study Assessment of a local organization and their facility. Part (B) will use the Case Study Assessment information as a foundation for developing Proposed Sustainability Advances the organization could make to their approach, their operations and their facility, offering teams the opportunity to make real time connections between sustainability theory, architectural practice, the built environment and real people.

Project Two, which occurs between Part (A) and Part (B) of Project One, will ask you to evaluate your own ecological footprint to reveal and enhance sustainability in your daily life and practice. Spacing Part (A) and Part (B) of Project One allows time for the class to explore Sustainability Theory before teams start the process of developing their proposed sustainability improvements.

Please see the related project assignments for detailed information. Grading is tentatively weighted accordingly:

<table>
<thead>
<tr>
<th>In-Class Focus (45% of total Grade)</th>
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<tbody>
<tr>
<td><strong>Class Participation</strong></td>
</tr>
<tr>
<td>Participation: attendance, individual reading reflections, class discussions, self-reported grades</td>
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<tr>
<td><strong>Facilitated Dialogues</strong></td>
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<table>
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<tr>
<th>Out-Of Class Focus (55% of total Grade)</th>
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<tbody>
<tr>
<td><strong>Projects:</strong></td>
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<tr>
<td>(Team) PROJECT ONE</td>
</tr>
<tr>
<td>Part (A): Case Study: Assessing for Sustainability</td>
</tr>
<tr>
<td>Part (B): Solutioning: Sustainability Improvements</td>
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<tr>
<td>(Team) PROJECT TWO: Eco-Footprints</td>
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Total: 100%
1000 Points

Extra Credit

Facilitated Dialogues - Class 10 and 11 Each Class 50 Points
One Extra Credit Facilitated Dialogue per Individual only
2 Individuals per Class Maximum

Additional Metrics and Documentation TBD
Class Outcomes  Anticipated outcomes for students in the course include knowledge and understanding of:

- Theoretical and historical perspective on ecological design thinking and trends within and outside the design profession
- Applied theory and sustainable design processes, principles, and strategies through fieldwork and case study assessments
- Comparative understanding of sustainable design tools and assessment methods
- Development of professional design theories, ethics, and values to inform research and practice

Grading  All projects are due at the beginning of class on the due date (or it will be considered late). Late projects will be lowered one grade for each calendar day that it is late (i.e. from an A to A- if it is late on the due date, from an A to a B+ if it is submitted the day following the due date, etc.). All projects and presentations must be completed to receive a passing grade.

The following criteria will be used for grading:

*Grading Criteria*

- Clarity and accuracy of design thinking, research, and/or case study assessment
- Completeness and thoroughness in response to project statement
- Craft and overall presentation and research quality

Grading Standards  *University of Minnesota Grading Standards:*

A  Achievement that is outstanding relative to the level necessary to meet course requirements
B  Achievement that is significantly above the level necessary to meet course requirements
C  Achievement that meets the course requirements in every respect
D  Achievement that is worthy of credit even though it fails to meet fully the course requirements
S  Achievement that is satisfactory, which is equivalent to a C- or better
F  (or N) Represents failure (or no credit) and signifies that the work was either: 1) completed but at a level of achievement that is not worthy of credit or 2) was not completed and there was no agreement between the instructor and the student that the student would be awarded an incomplete.
I  (Incomplete) Assigned at the discretion of the instructor when, due to extraordinary circumstance, e.g., hospitalization, a student is prevented from completing the work of the course on time. Requires a written agreement between instructor and student.

Academic Dishonesty  Academic dishonesty in any portion of the academic work for a course shall be grounds for awarding a grade of F or N for the entire course.
Credit/Workload Expectations

One credit is defined as equivalent to an average of three hours of learning effort per week (over a full semester) necessary for an average student to achieve an average grade in the course. For example, a student taking a three-credit course that meets for three hours a week should expect to spend an additional six hours a week on coursework outside the classroom (over a semester) to receive an average grade.

Attendance

Attendance is required. It is critical that you fully participate and attend all class periods. Please be mindful of potential course conflicts with other courses and studio deadlines. Class periods will begin promptly on Tuesdays at 2:30 p.m. in room 125, Rapson Hall. Class will recess at 5:00 p.m. Please make every effort to be on time. Punctuality is important in maintaining and building community and as a means of minimizing class disruptions.

Supporting Materials

READING & RESOURCES

The course readings are the foundation for in-class discussions providing information and insight on issues related to sustainable design theory and practice. Individual readings are assigned with the project statement for each of the sections of the course. Readings are on electronic reserve through the UMN Library system. A code will be provided for online access.
MODULE ONE (M1): PRACTICE
Integrative Design: First Steps in Designing like We’re Part of an Ecosystem

Week 1
Tues. Sept. 2  Leaning Into the Future
   Overview of the Class, Readings and Projects:
   Framing the Question and Grounding the Journey

Week 2
Tues. Sept. 9  Sustainability Stories: The Wilder Center: Social Equity+Environment+Economics
   Field Study: Meet at The Wilder Center (3:00 P.M.)
   Rr and Team Meetings Outside of Class

Week 3
Tues. Sept. 16 Sustainability Stories: Great River Energy: Economics+Environment+Social Equity
   Field Study: Meet at Great River Energy Headquarters (3:00 P.M.)
   Rr – T1 F

Week 5
Tues. Sept. 30  PRESENTATION – Project One, PART (A): Case Study- Accessing for Sustainability
   (Pin-up at 2:00 in court)

MODULE TWO (M2): THEORY
The Context of Life: Framing a Meaningful Future for All

Week 6
   A Look at Truth, Reality and Perception
   Rr – T2 F

Week 7
   A Whole Systems Perspective on the History of Human Civilization
   Rr – T3 F

Week 8
   A Whole Systems Look at the Present and the Recent Past
   Rr – T4 F

Week 9
   Mental Frames for Finding a Way Forward
   Rr - T5 F and PROJECT SUBMITTAL: Project Two: Eco-Footprints

MODULE THREE (M3): THEORY+PRACTICE
Next Generation: Synthesizing Purpose, Intent and Physical Expression

Week 10
Tues. Nov. 4  Next Generation: Environmental Design Frames
   Beyond LEED - Design Frames and Case Studies seeking to Define a Way Forward
   Rr - Extra Credit Facilitation

Week 11
Tues. Nov. 11 Next Generation: Social+Economic Frames
   A Composite Look at Social Justice, Prosperity and Environment
   Rr – Extra Credit Facilitation

Week 12
Tues. Nov. 18 Next Generation: Economic+Social Frames
   PRESENTATION - Project One – PART (B): Interim Reviews

Week 13
Tues. Nov. 25 Workshop: Defining the ARCH 8561 2008 Sustainable Design Principles
   Using Class Readings, Discussion and Assignments to Define Our Own Principles
   Rr

Week 14
Tues. Dec. 2  The Power of One: Becoming an Agent of Change
   Increasing Your Potential to Inspire Change – Mental Models, Tools and Techniques
   Rr

Week 15
Tues. Dec. 9  No class due to studio deadlines

CLOSURE
Week 16
TBD  Dec. TBD  PRESENTATION: Project One – PART (B): Advancing Sustainability

Legend: Rr = Individual Reading Reflection Due   T# F = Team # Facilitating with the Instructor