



School of Architecture  
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## ARCH 515: Sustainable Design

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Winter 2015 (3-0-6)

Prerequisite: ARCH 377 or permission of instructor.

Time: W, 11h35-13h25

Location: MDHAR 420

Instructor: Michael Jemtrud, Associate Professor (Office: MH 215C)

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### Calendar description:

*This course will address sustainable design theory and applications in the built environment with students from a variety of fields (architecture, urban planning, engineering, sociology, environmental studies, economics, international studies). Architecture will provide the focus for environmental, socio-cultural and economic issues. (McGill course calendar)*

### Course Description

Our comprehension of global warming (and the attendant ecological crisis) is as elusive as its fact is incontrovertible. The very terms of the discourse are often contradictory if not oxymoronic and fraught with philosophical, practical, historical, political, and cultural biases and implications: earth, *nature-culture*, ecology, environment, sustainable *development*, *green*, *climate change*, *ecosystem*, *affordable* housing, and so on. A non-cynical ecological understanding involves deeply intertwined philosophical, political, technological, and material issues that condition our decision-making processes in complex ways. For some time now, science and philosophy have recognized that our subjective position (along with the models, instruments, and technologies we use to understand phenomena) prefigures the problematization of thinking and making. Recent philosophical ideas as “correlationism” describe this anthropocentric view of objects, environment, the human and non-human realm. Timothy Morton refers to global warming (among other *objects* such as radiation and plutonium) as a “hyperobject” that is so massively distributed in space and time so as to elude our traditional *historical* understanding of *the world*. These are but a few perspectives that will be discussed in the course.

A unique project-based opportunity has been accepted as the primary focus of ARCH515: Sustainable Design for the 2015 Winter term. Although this departs from the seminar format of the course it includes readings and critical discussions throughout the course. We will be providing documents and design propositions for the “Centre Magnétique” for the community of Lac-Mégantic, QC. This opportunity comes to us through two Desautels School of Management Dobson Cup winners, Cécile Branco and Bernard D'Arche. (<http://www.mcgill.ca/desautels/channels/news/megantic-se-reinventer-apres-la-crise-238780>). Details on the project deliverables and our role in the project will be discussed in class.

### Course objectives and intended learning outcomes

The course is designed to present, develop, and at times disrupt contemporary understandings of specific aspects in sustainable design practices with the intent of redefining the interrelation of these notions in contemporary architectural/urban practice and discourse. The overall objective of the course is to gain understanding of *sustainable design* in order to develop a position to inform decision-making processes from design methodology to policy making. As such, the course is set up to engage and question issues of sustainability, environment, climate change, policy, standards, building practices, and the like. By the completion of this seminar, students should be able to:

- Collectively devise, research, and lead a seminar discussion on an assigned topic relevant to the course content inclusive of an annotated bibliography and critical analysis of texts;
- Paraphrase ideas and writing of scholars, scientists, architects, urbanists in writing synoptic essays of assigned theoretical texts;
- Enact critical thinking skills through discussion, writing, and presentations by acquiring a historical and theoretical foundation of issues addressed in the course;
- Discuss on a knowledgeable level the key issues facing sustainable design practices relative to course context and theoretical framework;
- Engage in cross-disciplinary discourse with colleagues.

The unique nature of project-based activity alongside the interdisciplinary nature of the course requires a continual negotiation of roles, responsibilities, tasks, and deliverables. Overall goals and individual assignments will be collectively determined.

### **Topics to be covered**

The course will engage a selection of relevant topics of current interest within sustainable design practices in architecture and urban design. All attempts will be made to capitalize on the interdisciplinary nature of the course composition and topics will be adjusted accordingly. Issues such as: ecophilosophy, technology, nature-culture, economics, building standards & policy, computation, simulation & modeling, data & information, passive & active systems, urban sustainability, and design practices will be discussed. See schedule and reading list for specific weekly topics.

### **Texts and Reading Lists**

Readings will be distributed according to seminar presentations. Materials will be distributed by pdf when possible. Students are responsible for obtaining assigned and supplementary texts. Additional readings may be assigned and a supplementary reading list will be distributed.

### **Teaching Methodology**

The course consists of one two-hour class period per week with additional voluntary meetings time scheduled throughout the term to discuss project deliverables and integration. The course instructor and groups of students (TBD) are responsible for leading weekly seminar discussions and project presentations. Class participation will consist of vigorous discussions of assigned texts and project assignments. Consistent failure to attend, be prepared or participate will be reflected in grade penalization. Individual participation is expected in each session and is graded accordingly.

- Project-based deliverables will be assigned throughout the term in discussion with the instructor. Due to the ad hoc nature of the Centre Magnétique opportunity, weekly progress will be determined and assignments adjusted accordingly. Individual assignments must contribute to the group work and will impact the Manifesto, Strategy, and Design group deliverables in different proportions so it is critical that individual tasks are accomplished in a timely and complete manner.
- A final 1500-word essay on each student's primary concern within the contemporary debate around ecology, sustainability, and resiliency stemming from his/her involvement in the overall course deliverables is due April 16, 2015. This is primarily a personal reflection on an issue covered in the course of concern to the student. A draft abstract proposal of the topic is due March 11, 2015 in class.

### **Expectations / Requirements of the Students**

- Attendance at course is compulsory.
- More than 2 absences from class (lecture or tutorial) results in 20% reduction of attendance percentage for each day in excess of two.
- No extensions will be given although schedule is subject to change relative to overall school schedule upon the discretion of the instructor.

Evaluation will be based on the following:

- Class participation/attendance 20%
- Individual assigned project task(s) 30%
- Primary group deliverables 30%
- Final 1500 word essay 20%

### **McGill policy statements**

Academic Integrity:

*“McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures” (see [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/) for more information). (approved by Senate on 29 January 2003)*

*« L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/)).*

Additional policy related statements:

*“In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded.” (approved by Senate on 21 January 2009 - see also the section in this document on Assignments and evaluation.)*

*« Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue). »*

*If you have a disability please contact the instructor to arrange a time to discuss your situation. It would be helpful if you contact the Office for Students with Disabilities at 514-398-6009 before you do this.*

*Additional policies governing academic issues which affect students can be found in the McGill Charter of Students' Rights.*

## SCHEDULE :

### Week 0

**Wednesday, 07 January 2015 @ 11h35-13h25**

WELCOME

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### Week 1:

**Wednesday, 14 January 2015 @ 11h35-13h25**

#### **EARLY WORKING SESSION**

INTRODUCTION TO SUSTAINABILITY, RESILIENCY

- Guy, S., Farmer, G. (2001) "Reinterpreting Sustainable Architecture: The Place of Technology," *Journal of Architectural Education*, 54:3, 140-148. New York: Routledge.
- Moe, K. (2007) "Compelling Yet Unreliable Theories of Sustainability," *Journal of Architectural Education*, 60:4, 24-30. New York: Routledge.
- Cole, R., Oliver, A., Robinson, J. (2013) "Regenerative design, socio-ecological systems and co-evolution," *Building Research & Information*, 41:2, 237-247. London: Routledge.
- White, L. (1974) "The historical roots of our ecological crisis," *Ecology and religion in history*. New York: Harper & Row.
- McConnell Foundation, "The Art of Resilience, The Resilience of Art."

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### Week 2:

**Wednesday, 21 January 2015 @ 11h35-13h25**

**Centre Magnétique: client presentation, discussion  
WORKING SESSION**

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### Week 3:

**Wednesday, 28 January 2015 @ 11h35-13h25**

**EARLY WORKING SESSION  
WORKING SESSION**

**Centre Magnétique Presentation (January 30th)**

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### Week 4:

**Wednesday, 04 February 2015 @ 11h35-13h25**

**NO WEDNESDAY CLASS**

**Site visit: Feb 6-7 (Lac-Mégantic, QC)**

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### Week 5:

**Wednesday, 11 February 2015 @ 11h35-13h25**

ECOLOGICAL THOUGHT, HYPEROBJECTS, EXPENDITURE

- Stoekl, A. (2007) "Excess and Depletion: Bataille's Surprisingly Ethical Mode of Expenditure" from S. Winnubst, ed., *Reading Bataille Now*. Bloomington: Indiana University Press.
- Morton, T., "Unsustaining"

**MANIFESTO PRESENTATION & DISCUSSION**

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### Week 6:

**Wednesday, 18 February 2015 @ 11h35-13h25**

ENERGY

- Hosein, A. et.al. (2013) "Sustainable energy performances of green buildings: A review of current theories, implementations and challenges." *Renewable and Sustainable Energy Reviews* 25. Pp 1-17.
- International Passive House Association (2014) "Active for more comfort: Passive House."
- Target Zero (2011) "Guidance on the Design and Construction of Sustainable, Low Carbon Office Buildings"
- BREEAM Communities, New Construction

**BRUNO LEE (GUEST): ENERGY STRATEGY**

**CITIES WE NEED, PHI CENTRE, FEB 19-20**

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Week 7:

**Wednesday, 25 February 2015 @ 11h35-13h25**

**PRESENTATIONS: M, S, D  
GUEST: IAN CHODIKOFF**

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**WEEK 8: READING WEEK MARCH 02-06**

Week 9:

**Wednesday, 11 March 2015 @ 11h35-13h25**

**EARLY WORKING SESSION**

**VALUE AND RESILIENCE**

- Manyena, S.B. (2006) "The concept of resilience revisited." *Disasters*, 30(4). Pp. 433-450.
- Porter, M.E., Kramer, M.R. (2011) "Creating Shared Value," *Harvard Business Review*.
- Leach, M. (2008) *Re-framing Resilience: a Symposium Report*. STEPS Centre.
- Hawkes, J. (2001) *The Fourth Pillar of Sustainability: Culture's essential role in public planning*. Melbourne: Common Ground.

**DRAFT ABSTRACT PROPOSAL DUE IN CLASS**

**FUTURE CITY CONFERENCE, MARCH 13**

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Week 10:

**Wednesday, 18 March 2015 @ 11h35-13h25**

**IMAGINING RESILIENCY SYMPOSIUM, MARCH 16-17**

**PEAK ENERGY AND EXPENDITURE**

- Stoekl, A. (2007) "Excess and Depletion: Bataille's Surprisingly Ethical Mode of Expenditure" from S. Winnubst, ed., *Reading Bataille Now*. Bloomington: Indiana University Press.
- Stoekl, A. (2007) *Bataille's Peak: Energy, Religion, and Postsustainability*. Minneapolis: University of Minnesota Press.
- Stoekl, A. (2012) "Unconventional Oil and the Gift of Undulating Peak." *Imaginations*, Issue 3-2.

**GUEST: ALLAN STOEKL (TBC)**

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Week 11:

**Wednesday, 25 March 2015 @ 11h35-12h25**

**IN-CLASS STRATEGY/MANIFESTO PRESENTATION & DISCUSSION**

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Week 12:

**Wednesday, 01 April 2015 @ 11h35-12h25**

**IN-CLASS DESIGN PRESENTATION & DISCUSSION**

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Week 13:

**Wednesday, 08 April 2015 @ 11h35-14h25**

**PRESENTATION & REVIEW (GUESTS)**

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**Thursday, 16 April 2015 by midnight**

**FINAL 1500-WORD ESSAY DUE  
PUBLIC PRESENTATION (TBD)**