ARCH 557: SUSTAINABLE CONSERVATION of the Historic Built Environment

Semester: Fall 2013
Day & Time: Fridays 8:00 – 10:00 am
Location: Harris 102
Units: 2
Instructor: John D. Lesak, AIA, LEED AP, FAPT
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“Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs…”

This course explores the intersection between the Heritage Conservation and Green Building movements; both of which contribute to sustainable development. Heritage Conservation contributes the ethos of stewardship; defining significance within the built environment; methods for extending the service-life of buildings; the value of maintenance and repair; and effective means for adaptively re-using buildings. Green Building promotes holistic design; response to the urgency of climate change; and encourages us to look at new systems and technology. By exploring the a variety of approaches to conserving the built and natural environments, students will be able to identify and differentiate between methods for assessing sustainability; develop appropriate metrics; apply evaluation tools; and decide upon appropriate treatments to improve upon historic rehabilitation and adaptive reuse projects.

PRIMARY TEXT:


SUGGESTED TEXT:


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COURSE REQUIREMENTS

READING:

Required weekly reading assignments are listed in the lecture schedule in this Syllabus. These readings should be completed before the lecture under which they are listed.

GRADING:

- 10% Embodied Energy Calculations
- 10% EcoCalculator Exercise
- 10% Energy Modeling Exercise
- 5% Los Angeles County Solar Report Exercise
- 10% GreenPoint for Existing Homes Checklist Exercise
- 25% Impact Area Class Presentation & Report
- 20% Final Exam
- 10% Class Participation

ATTENDANCE:

Medical or family emergencies and religious holidays are the only acceptable excuses for make-up exams, acceptance of late assignments and the granting of incomplete grades. More than one unexcused absences will result in a failing grade for the class.

CLASS SCHEDULE AND READING

AUG. 29 WEEK 1: LOOKING AT THE BUILT ENVIRONMENT THROUGH THE LENS OF TIME

REFERENCES:


SEPT. 5 WEEK 2: THE CRISIS

READ:


Carroon, Chapter 1.1 Climate Change and Buildings – The Imperative, pages 17-21

REVIEW:
National Aeronautics and Space Administration, Global Climate Change: Vital Signs of the Planet: Key Indicators, Evidence, Causes, Effects. http://climate.nasa.gov/key-indicators/

ASSIGNMENT: Impact Area Class Presentation & Report

SEPT. 12 WEEK 3 – PART 1: STEWARDSHIP

PART 2: TRADITIONAL, VERNACULAR, AND REGIONAL APPROACHES TO MANAGING THE ENVIRONMENT

READ:

VIEW:

SEPT. 19 WEEK 4: FRAMEWORKS FOR ASSESSMENT

READ:

REVIEW:
2013 California Green Building Standards Code.

SEPT. 26 WEEK 5: TYPES OF ENERGY: EMBODIED AND OPERATING

READ:

**ASSIGNMENT:** Avoided Impacts Analysis

**OCT. 3**  
**WEEK 6: BUILT TO LAST? SERVICE LIFE AND DURABILITY**  
**READ:**  
**REVIEW:**  
ASTM E632-82 Standard Practice for Developing Accelerated Test to Aid Prediction of the Service Life of Building Components and Materials (retired)  

**OCT. 10**  
**WEEK 7: LIFE CYCLE ANALYSIS**  
**READ:**  
**REVIEW:**  
**ASSIGNMENT:** EcoCalculator

**OCT. 17**  
**WEEK 8: LOCATION & LINKAGES**  
**STUDENT IMPACT AREA PRESENTATIONS**  
**READ:**  
**REVIEW:**  


**OCT. 24** WEEK 9: WATER EFFICIENCY

**STUDENT IMPACT AREA PRESENTATIONS**

**READ:**

Carroon, Chapter 4: Water and Site, pages 127-166.

**REVIEW:**


**OCT. 31** WEEK 10: ENERGY – PART 1

**STUDENT IMPACT AREA PRESENTATIONS**

**READ:**

Carroon, Chapter 5: Energy – Not the Only Issue but…, pages 167-216.


**REVIEW:**


**ASSIGNMENT:** Energy Modeling Exercise

**NOV. 7** WEEK 11: ENERGY – PART 2

**STUDENT IMPACT AREA PRESENTATIONS**

**READ:**


**VIEW:**


**ASSIGNMENT:** Los Angeles County Solar Potential Report

**NOV. 14** WEEK 12: MATERIALS & RESOURCES

**STUDENT IMPACT AREA PRESENTATIONS**
**Read:**
Carroon, Chapter 7: Materials and Resources – Reduce, Repair, Reuse, Recycle, pages 251-288.

**Review:**

**Nov. 21**  
**Week 13: Environmental Quality/Toxins**

**Student Impact Area Presentations**

**Read:**

**Review:**

**Assignment:** Preliminary GreenPoint Checklist

**Nov. 28**  
**Week 14: No Class – Thanksgiving Recess**

**Read:**

Carroon, Chapter 9: Houses, pages 329-362.

**Review:**

**Dec. 5**  
**Week 15: Resilience!**

**Read:**


Los Angeles Regional Collaborative for Climate Action and Sustainability. “Mid-Century Warming in the Los Angeles Region”, 2012

**Final Exam – Wednesday, December 10**
UNIVERSITY POLICIES

STATEMENT ON ACADEMIC INTEGRITY:
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/.

STATEMENT FOR STUDENTS WITH DISABILITIES:
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

RELIGIOUS HOLIDAYS
The university recognizes the diversity of our community and the potential for conflicts involving academic activities and personal religious observation. The university provides a guide to such observances for reference and suggests that any concerns about lack of attendance or inability to participate fully in the course activity be fully aired at the start of the term. As a general principle students should be excused from class for these events if properly documented and if provisions can be made to accommodate the absence and make up the lost work. Constraints on participation that conflict with adequate participation in the course and cannot be resolved to the satisfaction of the faculty and the student need to be identified prior to the drop add date for registration. After the drop/add date the University and the School of Architecture shall be the sole arbiter of what constitutes appropriate attendance and participation in a given course.
SELECTED BIBLIOGRAPHY

SUGGESTED READING


HISTORIC PRESERVATION & SUSTAINABILITY WEB LINKS


California Office of Historic Preservation – Sustainability Page: http://ohp.parks.ca.gov/?page_id=24592

Traditional Building Sustainability Roundtable: http://www.traditional-building.com/Previous-Issues-09/FebruaryRoundtable09.html

GREEN BUILDING WEB LINKS
Green Globes: http://www.greenglobes.com/
Build it Green / Green Point: http://www.builditgreen.org/guidelines
Energy Star: http://www.energystar.gov/
Athena Institute EcoCalculator http://calculatelca.com/software/ecocalculator/