



USC University of Southern California

ARCH 557: SUSTAINABLE CONSERVATION OF OF THE HISTORIC BUILT ENVIRONMENT

Units: 2

Term—Day—Time: .. Fall 2020 – Fridays – 8:00 to 10:00 am

Location: Virtual Classroom (Harris 102)

Instructor: John D. Lesak, AIA, LEED AP, FAPT

Office: Virtual Meetings
(Off campus: 417 South Hill Street – Suite 211, Los Angeles 90013)

Office Hours: By Appointment

Contact Info: Phone: 323.945.5204 mobile / 213.221.1203 office
Email: jdlesak@gmail.com / lesak@usc.edu

Course Description

“Sustainable Development meets the needs of the present without compromising the ability of future generations to meet their own needs...”¹

Can heritage conservation...

- Inform a more circular economy?
- Reduce the environmental impact of the built environment?
- Promote environmental justice?

Are historic places evolving in response to changing ideas of how we care for the land and important places?

Where do historic places and heritage conservation fit in planning for climate adaptation and resilience?

This course explores the intersection between Heritage Conservation and Green Building, both of which contribute to sustainable development. Heritage Conservation offers an ethos of stewardship; definitions of ‘significance’ within the built environment; methods for extending

¹ Gro Harlem Brundtland / World Commission on Environment and Development, Our Common Future, Oxford University Press, 1987.

the service-life of buildings; strategies for appropriate maintenance and repair; and effective means for adaptively reusing buildings. Green Building promotes holistic design; rapid response to the urgency of climate change; and encouragement to consider new and evolving systems and technology. By exploring a variety of approaches to conserving built environments, students will be able to identify and differentiate between applicable methods for assessing sustainability; develop appropriate metrics; apply evaluation tools; and decide upon appropriate treatments to improve historic and existing building performance and enhance historic rehabilitation and adaptive reuse projects.

Learning Objectives: At the end of this course, students will be able to:

1. Recognize both the character-defining and inherently sustainable features of a historic building.
2. Identify options for repairing/rehabilitating/upgrading heritage buildings.
3. Estimate both short and long-term impacts of various repair/rehabilitation/upgrade options using basic strategies and readily available (online) evaluation tools.
4. Select repair/rehabilitation/upgrade options that minimize (balance) the impacts on the historic resource AND the natural environment

Prerequisite(s) / Co-Requisite(s) / Concurrent Enrollment: None

Recommended Preparation: Basic understanding of building systems and algebra (simple calculations) are a plus, but not required.

Course Notes: Copies of lecture slides and weekly reading (other than the primary text) will be posted on Blackboard. Lecture slides will be posted following class.

The course uses U.S. based standards, units, and sources of information, based on use and familiarity of the instructor. I try to include more global perspectives and information and input from international students is encouraged.

Communication: Communication and collaboration are essential for professionals working on heritage sites. Therefore, I want you to feel comfortable asking questions and giving me feedback on this course just as I, and your classmates, will be providing you with feedback on your assignments. If you have questions or comments, please email or call me (contact information above).

I try to respond to emails/voicemails within 48 hours Monday-Friday. Please understand that I direct a robust historic architecture practice, and balance numerous deadlines and responsibilities that may affect my ability to respond immediately. If a quicker response is required, use jdlesak@gmail.com / 323 945 5204.

Technological Proficiency and Hardware/Software Required: Coursework requires using a variety of free, downloadable software and online analytical tools. Experience has shown subtle differences in performance using depending on the browsers or operating systems used by the students. To date, these differences have not prohibited students from completing the work.

Primary Text: Jean Carroon, Sustainable Preservation | Greening Existing Buildings, Hoboken, NJ: John Wiley & Sons, 2010.

Suggested Text: Stewart Brand, How Buildings Learn: What Happens After They're Built. New York: Viking, 1994.

Grading Breakdown

% of Grade	Assignment
15%	2. Embodied Energy Calculations
10%	3. EcoCalculator Exercise
5%	4. Historic House – Character-Defining and Inherently Sustainable Features
15%	5. Historic House - Energy Modeling Exercise
5%	6. Historic House - Los Angeles County Solar Report Exercise
10%	7. GreenPoint for Existing Homes Checklist Exercise
25%	1. Impact Area Class Presentation & Report
<u>15%</u>	Class Participation
100%	TOTAL

Grading Scale (Example)

Course final grades will be determined using the following scale:

A	95-100
A-	90-94
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	59 and below

Assignment Submission: Digital copies of assignments will be emailed to the instructor (lesak@usc.edu) in .pdf format. Graded assignments will be returned to students via email.

Grading Timeline: Instructor will endeavor to return graded work with two weeks from submission deadline.

Late Work: Assignments carry a 5-point grade deduction (out of 100) per every 24 hours late. If you miss submitting work for an unavoidable emergency, notify the instructor by email and discuss the situation with the instructor during office hours.

Participation/Attendance: Much of the course content will be provided in course lectures. More importantly, students and professionals (and instructors) benefit from a free and open discussion and exchange of ideas. This exchange cannot occur without students attending class. The first two unexcused absences will each result in a 15-point deduction from the Class Participation grade (out of 100 points). Three unexcused absences will result in a zero Class Participation grade.

Zoom-etiquette: Interaction and collaboration is essential to professions involved with both heritage conservation and sustainable design. To model the expectations of a professional work environment in the field and promote a respectful virtual classroom, we agree to the following.

- Identify yourself by name and how you would like to be addressed in parenthesis, for example “John Lesak (John)”
- During presentations:
 - Mute your microphone.
 - If you have a question, either use the “Raise your hand” feature – or – write it in the “Chat” feature.
 - If the instructor asks you a question, unmute and respond.
- During discussion – or – if you are presenting:
 - Turn on your camera.
 - Only unmute if you are talking.
 - Try not to talk over one another.
 - Keep a positive tone.
- If you are having issues logging on, text me at 323 945 5204.
- Avoid using disruptive or distracting virtual backgrounds.

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. Items indicated as “Review” should be quickly scanned to become generally familiar with terms and concepts. Items indicated “Reference” are listed for information only.

Course Schedule

Week 1 August 28	Part 1: Looking at the Built Environment Through the Lens of Time Part 2: Historic Preservation Basics References: Brand, Chapter 1. Flow and Chapter 2. Shearing Layers, pages 2-23. Neil Howe and William Strauss, <i>"The Next 20 Years: How Customer and Workforce Attitudes Will Evolve."</i> Harvard Business Review, July-August 2007, pages 41-52. Richard Florida, <i>The Great Reset: How New Ways of Living and Working Drive Post-Crash Prosperity</i> , Harper Collins, 2010. Part 1: Past as Prologue, pages 3-48. <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings</i> , issued 2017. https://www.nps.gov/tps/standards.htm
Week 2 Sept. 6	Crisis - Climate Read: Carroon, Chapter 1.1 Climate Change and Buildings – The Imperative, pages 17-21 Union of Concerned Scientists, National Landmarks at Risk – Executive Summary, 2014. http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/National-Landmarks-at-Risk-Executive-Summary.pdf Review: World Commission on Environment and Development, Our Common Future, 1987. Part I, Chapter 1: A Threatened Future. http://www.un-documents.net/our-common-future.pdf National Aeronautics and Space Administration, Global Climate Change: Vital Signs of the Planet website. http://climate.nasa.gov/evidence/ ASSIGNMENT 1: Impact Area Class Presentation & Report

<p>Week 3 Sept. 11</p>	<p>Part 1: Crisis – Social/Racial/Environmental Justice</p> <p>Part 2: The Triple Bottom Line – Planet, People, & Profit</p> <p>Read: Carroon, Chapters 2.1 to 2.3, pages 43-52</p> <p>Review: US Green Building Council, Water Efficiency, Project Team Checklist for Social Impact. https://www.usgbc.org/sites/default/files/LEED%20Social%20Impact%20Checklist%20-%204%202%2018.pdf</p> <p>Watch: Cary, John How Architecture Can Create Dignity for All, Ted Talk. https://www.ted.com/talks/john_cary_how_architecture_can_create_dignity_for_all Akom, Antwi, Innovation out of poverty, TEDxSacramentoSalon https://www.youtube.com/watch?v=YvrLFgikLZQ</p>
<p>Week 4 Sept. 18</p>	<p>Energy, Greenhouse Gases, & the Built Environment</p> <p>Read: Carroon, Chapter 1: Buildings and Environmental Stewardship – Understanding the Issues, pages 3 – 42. Mike Jackson, “Embodied Energy and Historic Preservation: A Needed Reassessment”. <i>APT Bulletin</i>, Vol. 36, No. 4 (2005) pages 47-52. William I. Whiddon, “The Concept of Embodied Energy” in <i>New Energy from Old Buildings</i>, ed. The Nation Trust for Historic Preservation, 1980, pages 112 through 119. James Vaseff, “Using the Embodied Energy Argument in Local Planning Controversies” in <i>New Energy from Old Buildings</i>, ed. The Nation Trust for Historic Preservation, 1980, pages 120 through 127.</p> <p>ASSIGNMENT 2: Avoided Impacts Analysis</p>
<p>Week 5 Sept. 25</p>	<p>Built to Last? Service Life & Durability</p> <p>Read: Carroon, Chapter 7.4: Resource Optimization – Extending Service Life, pages 260 – 263. Pamela Jerome, “Sustainability: The Case for Long-Term Service Life and Built-In Redundancy”. <i>APT Bulletin</i>, Vol. 41, No. 1 (2010) pages 37-42. Brand, Chapter 8. The Romance of Maintenance, pages 110-131.</p>

<p>Week 6 October 2</p>	<p>Life Cycle Analysis</p> <p>Review: Preservation Green Lab The National Trust for Historic Preservation, “The Greenest Building: Quantifying the Environmental Value of Building Re-use”, 2011</p> <p>ASSIGNMENT 2 DUE</p> <p>ASSIGNMENT 3: EcoCalculator</p>
<p>Week 7 October 9</p>	<p>Part 1: Character-Defining Features</p> <p>Part 2: Inherent Sustainability</p> <p>Read: Brand, Chapter 7. Preservation: A Quiet, Populist, Conservative, Victorious Revolution, pages 88-109, and Chapter 9: Vernacular: How Buildings Learn From Each Other, pages 132 – 155.</p> <p>Baird M. Smith, “Making Buildings Work the Way They Were Intended” in <i>New Energy from Old Buildings</i>, ed. The Nation Trust for Historic Preservation, 1980, pages 63 through 86.</p> <p>Review: World Commission on Environment and Development, <i>Our Common Future</i>, 1987. Part I, Chapter 2: Towards Sustainable Development. http://www.un-documents.net/our-common-future.pdf</p> <p>Whole Building Design Guide – User Guide, Parts 1 through 4. http://www.wbdg.org/wbdg_ug.php</p> <p>ASSIGNMENT 4: - Historic House Character-Defining and Inherently Sustainable Features</p>
<p>Week 8 October 16</p>	<p>Locations & Linkages</p> <p>Read: John C. Keene, “The Links between Historic Preservation and Sustainability: An Urbanist’s Perspective” from <i>Managing Change: Sustainable Approaches to the Conservation of the Built Environment 4th Annual International Symposium organized by US/ICOMOS, the Graduate Program in Historic Preservation of the University of Pennsylvania and the Getty Conservation Institute Philadelphia</i>, ed. Jeanne Marie Teutonico and Frank Matero, 2001, pages 11-21.</p> <p>Review: Richard Florida, <i>The Great Reset: How New Ways of Living and Working Drive Post-Crash Prosperity</i>, Harper Collins, 2010. Part III: A New Way of Life, pages 105-187.</p> <p>US Green Building Council, LEED Credits for Location & Transportation (LT) https://www.usgbc.org/credits/new-construction/v4/location-%26-transportation</p> <p>ASSIGNMENT 3 DUE</p> <p>Student Impact Area Presentations (Assignment 1)</p>

<p>Week 9 October 23</p>	<p>Sustainable Sites + Water Efficiency</p> <p>Read: Carroon, Chapter 4: Water and Site, pages 127-166.</p> <p>Review: US Green Building Council, LEED Credits for Sustainable Sites (SS) https://www.usgbc.org/credits/new-construction/v4/sustainable-sites</p> <p>US Green Building Council LEED Credits for Water Efficiency (WE) https://www.usgbc.org/credits/new-construction/v4/water-efficiency</p> <p>Student Impact Area Presentations (Assignment 1)</p> <p>ASSIGNMENT 4 DUE</p> <p>ASSIGNMENT 5: Historic House - Energy Modeling Exercise</p>
<p>Week 10 October 30</p>	<p>Energy</p> <p>Read: Carroon, Chapter 5: Energy – Not the Only Issue but..., pages 167-216. John H. Cluver and Brad Randall, “Saving Energy in Historic Buildings: Balancing Efficiency and Value”. <i>APT Bulletin</i>, Vol. 41, No. 1 (2010) pages 5-12. English Heritage, <i>Energy Efficiency and Historic Buildings Application of Part L of the Building Regulations to Historic and Traditionally Constructed Buildings</i>, 2004, Chapters 3-5, pages 22-58. Bill McKibben, Global Warming’s Terrifying New Math. <i>Rolling Stone</i>, August 2, 2012.</p> <p>Review: US Green Building Council, LEED Credits for Energy & Atmosphere (EA) https://www.usgbc.org/credits/new-construction/v4/energy-%26-atmosphere</p> <p>Student Impact Area Presentations (Assignment 1)</p>
<p>Week 11 Nov. 6</p>	<p>Materials & Resources</p> <p>Read: Carroon, Chapter 7: Materials and Resources – Reduce, Repair, Reuse, Recycle, pages 251-288.</p> <p>Review: US Green Building Council, LEED Credits for Materials and Resources (MR) https://www.usgbc.org/credits/new-construction/v4/material-%26-resources</p> <p>Student Impact Area Presentations (Assignment 1)</p> <p>ASSIGNMENT 6: Historic House - Solarmap</p>

<p>Week 12 Nov. 13</p>	<p>Environmental Quality</p> <p>Part 1: Let’s Not Poison Ourselves / Part 2: The Indoor–Outdoor Relationship</p> <p>Read: Carroon, Chapter 6: Indoor Health – Light, Air, and Health, pages 217-250.</p> <p>Review: US Green Building Council, LEED Credits for Indoor Environmental Quality https://www.usgbc.org/credits/new-construction/v4/indoor-environmental-quality</p> <p>Student Impact Area Presentations (Assignment 1)</p> <p>ASSIGNMENTS 5 AND 6 DUE</p> <p>ASSIGNMENT 7: Historic House - Preliminary GreenPoint Checklist</p>
<p>Week 13 Nov. 20</p>	<p>Resilience! Mitigation vs. Adaptation</p> <p>Read: May Cassar, “Sustainable Heritage: Challenges and Strategies for the Twenty-First Century”. <i>APT Bulletin</i>, Vol. 40, No. 1 (2009) pages 3-11.</p> <p>Graham Fairclough, “Cultural Landscape, Sustainability, and Living with Change?” from <i>Managing Change: Sustainable Approaches to the Conservation of the Built Environment 4th Annual International Symposium</i> organized by US/ICOMOS, the Graduate Program in Historic Preservation of the University of Pennsylvania and the Getty Conservation Institute Philadelphia, ed. Jeanne Marie Teutonico and Frank Matero, 2001, pages 23-46.</p> <p>ASSIGNMENT 7 DUE</p>

Synchronous Session Recording Notice: Virtual classroom sessions will be recorded and available to students for review.

Sharing of Course Materials Outside of the Learning Environment

SCampus Section 11.12(B). Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (See Section C.1 Class Notes Policy).

Course Evaluation: Course evaluation occurs at the middle and end of the semester university-wide. These reviews help the instructor understand the students’ experience in the class, as

well as adjust content and teaching methodology keep the course relevant, informational, and fun.

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press “0” after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776

Syllabus

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.