



USC University of Southern California

ARCH 557: SUSTAINABLE CONSERVATION OF OF THE HISTORIC BUILT ENVIRONMENT

Units: 2

Term—Day—Time: .. Fall 2022 – Fridays – 8:00 to 10:00 am

Location: Harris Hall, Room 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”²?
- Reduce the environmental impact of the built environment?
- Promote environmental justice?

Are historic places/professional practice 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

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

² <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>

stewardship; definitions of 'significance' within the built environment; methods for extending 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 heritage sites.
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, balancing 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 (mobile).

Syllabus

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
10%	2. EcoCalculator Exercise
15%	3. Historic House – Character-Defining and Inherently Sustainable Features
15%	4. Historic House - Energy Modeling Exercise
10%	5. Historic House - Los Angeles County Solar Report Exercise
25%	1. Impact Area Class Presentation & Report
10%	Pop Quiz
15%	Class Participation
100%	TOTAL

Grading Scale (Example)

Course final grades will be determined using the following scale:

A	94-100
A-	90-93
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.

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 26	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. 2	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. 9</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: Richard Rothstein, <i>The Color of Law</i>, New York: Liveright Publishing Co., 2017. Chapters 3 through 5, pages 39-93.</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. 16</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>Week 5 Sept. 23</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>ASSIGNMENT 2: EcoCalculator</p>

<p>Week 6 Sept. 30</p>	<p>Life Cycle Analysis</p> <p>Review:</p> <p>Preservation Green Lab The National Trust for Historic Preservation, “The Greenest Building: Quantifying the Environmental Value of Building Re-use”, 2011</p>
<p>Week 7 October 7</p>	<p>Part 1: Character-Defining Features</p> <p>Part 2: Inherent Sustainability</p> <p>Read:</p> <p>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:</p> <p>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 2 DUE</p> <p>ASSIGNMENT 3: - Historic House Character-Defining and Inherently Sustainable Features</p>
<p>Week 8 October 14</p>	<p>Fall Recess</p>
<p>Week 9 October 21</p>	<p>Locations & Linkages</p> <p>Read:</p> <p>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:</p> <p>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>Student Impact Area Presentations (Assignment 1)</p>

<p>Week 10 October 28</p>	<p>Sustainable Sites + Water Efficiency</p> <p>Read: Carroon, Chapter 4: Water and Site, pages 127-166.</p> <p>Student Impact Area Presentations (Assignment 1)</p> <p>ASSIGNMENT 3 DUE</p> <p>ASSIGNMENT 4: Historic House - Energy Modeling Exercise</p>
<p>Week 11 Nov. 4</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>Student Impact Area Presentations (Assignment 1)</p>
<p>Week 12 Nov. 11</p>	<p>Non-Instructional Day (Veteran’s Day)</p>
<p>Week 13 Nov. 18</p>	<p>Materials & Resources</p> <p>Read: Carroon, Chapter 7: Materials and Resources – Reduce, Repair, Reuse, Recycle, pages 251-288.</p> <p>Student Impact Area Presentations (Assignment 1)</p> <p>ASSIGNMENT 4 DUE</p> <p>ASSIGNMENT 5: Historic House - Solarmap</p>
<p>Week 14 Nov. 25</p>	<p>Thanksgiving Recess</p>

Week 15	Environmental Quality
Dec. 2	Part 1: Let’s Not Poison Ourselves / Part 2: The Indoor–Outdoor Relationship Read: Carroon, Chapter 6: Indoor Health – Light, Air, and Health, pages 217-250. Student Impact Area Presentations (Assignment 1) ASSIGNMENT 5 DUE

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

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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

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.

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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.