

University of Southern California - School of Architecture

Faculty: Kyle Konis, Ph.D

Location: HAR 102

Office Hour WAH 312A: by appointment kkonis@usc.edu

Prerequisite: None

Course Management Web Site: Blackboard <https://blackboard.usc.edu>

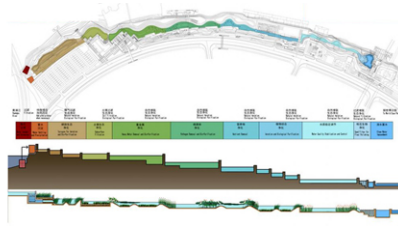
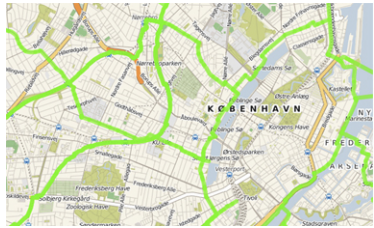
Fall 2012 ARCH 519

Thurs. 9:00 - 10:50 AM

ARCH 519: Sustainability in the Environment

Infrastructures, Urban Landscapes, and Buildings

Elective, interdisciplinary course (3 units)



Methodologies and exercises on contextual design and environmentally sound technologies (ESTs), applications for the sustainability of urban infrastructures, operative landscapes, and building integration in the urban system.

Introduction and Purposes

The 21st century is marked by a necessary reengagement of Architecture, Building Science, Urban Design and Landscape Architecture with the environment. Buildings, infrastructures, and the landscapes in which they are situated are inextricably linked. Energy, materials, water and land are all consumed in the development and operation of cities and infrastructure, while the urban environment itself affects our living conditions, social wellbeing and health. This course will focus on the urban environment: infrastructures, landscapes and buildings, and their many interdependencies within the context of natural and human ecologies.

In pursuit of a renewed focus on inter-departmental collaborative teaching and application, the seminar is an inter-disciplinary forum for dealing with contemporary issues facing urban environments such as; increasing density, land use, energy and resource scarcity, CO₂ emissions reduction, ecosystem restoration, climate adaptation / resiliency, food deserts, environmental quality (indoor and outdoor), public health / environmental justice, mobility, and the economic viability of sustainability alternatives.

Working with established and emerging environmental management frameworks, this course aims to explore and apply practical (and measurable) approaches to address urban sustainability challenges at the street, neighborhood, district, and municipal scale with a focus on regions within the greater Los Angeles area as laboratories for investigation. The course generates an overall picture of L.A.'s metabolism to map and analyze resource flows and to examine the city's ecological footprint. It evaluates where and how resources are used and where action might be taken to transform existing infrastructures, landscapes and buildings to meet sustainability performance goals established by the city of Los Angeles, the State of CA, and ARCH 519 teams.

The course is designed with an emphasis on self-directed collaborative research and direct interaction with the urban environment and city institutions. The forum provides participants with hands-on sustainability science research and analysis experience. Learning will be supported by interactive lectures, guest speakers, workshops, web-based resources and site visits.

Seminar Structure

The forum is a weekly topic based discussion of “Issues and Considerations” and “Solutions”. Teaching will be supported by lectures, seminar handouts, web-based resources, site visits, and group presentation / discussion. The lectures provide the conceptual framework for the course and will be supplemented with assigned readings, exercises, and field-based research and evaluation. Students are required to complete all the assigned readings on time, prior to the class meeting where they are listed. Students may be asked to prepare a half-page response to each week’s readings, which will be collected at the beginning of class.

Course Website

Updated information on the seminar is available on the course management web site (blackboard).

Required Books

1. Beatley, Timothy. Green Urbanism, Learning from European Cities. Island Press, 2000.

Recommended Books

1. Meadows, Donella H. Thinking in Systems. Chelsea Green, 2008.

Field Trips

Throughout the semester we will attempt to visit several sites to conduct field research. I will do my best to announce and schedule these fieldtrips to fit your schedule during the week and provide you as much time as possible to make the necessary arrangements.

Assignments and Grading

The total grade for this course will be based on class participation, class assignments, a mid-term presentation, field trips (TBD) with a written summary report, and the final project report.

10%	Class Participation
30%	Class Assignments and Weekly Reading Responses
10%	Midterm Presentation
20%	Final Project Presentation
15%	Final Project Report Draft
15%	Final Project Report (complete)

Final Project

The purpose of the final project is to provide students with an opportunity to apply course knowledge to real world problems facing the sustainability of the greater Los Angeles area. The assignment will emphasize collaboration, effective problem formulation, practical application of course material/techniques, and effective communication of project outcomes. For the final project, students will work in small groups (3 to 4). Each group will define a unique district-scale boundary within the greater Los Angeles area and work to produce a 2050 Sustainable Urban Development Action Plan (SUDAP). The objective of each SUDAP is to effectively transform existing infrastructure and building stock to meet a set of measurable sustainability performance indicators established by the group. Work will involve assessment of current energy and mass flows, identification of future requirements (e.g. growth, urban climate, demographic change),

establishment of performance targets, case study evaluation, application of environmentally responsive technologies, and identification of potential barriers (e.g. economic, social, behavioral), and leverage points for effective action (e.g. economic incentives, policy tools, citizen engagement, demonstration projects, deep-energy retrofits, etc.). Groups will work collaboratively to coordinate and link district-scale actions to reinforce broad objectives at the municipal scale (e.g. urban heat island mitigation, bicycle and pedestrian networks, ecological corridors, pollution management). Each group will be responsible for producing and presenting an action plan and a report concisely documenting research and analysis supporting project outcomes. Additional information about the nature and scope of the project will be provided over the course.

Week 1 (August 30)

Definitions, Concepts, and Course Overview

Key topics: The important role of cities in global sustainability (e.g. C40 Cities), defining urban sustainability, ecological urbanism and a brief history of approaches. Review of the course scope, course outline, and seminar approach, learning objectives, CA research agenda, final group project.

Required reading (to be completed prior to class)

1. UNEP, 2007. Livable Cities: The benefits of urban environmental planning. (Read full doc, identify key problems and risks facing cities)
http://www.unep.org/urban_environment/PDFs/LiveableCities.pdf
2. California Vulnerability and Adaptation Study (CA Institute for Energy & Envir., CIEE)
<http://uc-ciee.org/climate-change/california-vulnerability-and-adaptation-study>
3. Center for Resource Efficient Communities (CREC): Building Energy Efficient Communities: A Research Agenda for California. (88 pages).
<http://crec.berkeley.edu/research.html>

Reference (review and make note of these references)

1. UN Conference on Environment and Development, 1992. (Earth Summit, Agenda 21, origins of the UNEP)
<http://www.un.org/en/globalissues/environment/>
2. UN Agenda 21, 1992. (Emphasis on Environmentally Sound Technologies)
http://www.un.org/esa/dsd/agenda21/res_agenda21_00.shtml
3. The Brundtland Report, 1987. Report of the World Commission on Environment and Development: Our Common Future. (Emphasis on the section defining sustainable development)
<http://www.un-documents.net/wced-ocf.htm>
4. McDonough and Partners, 1992. The Hanover Principles. (Read full document, emphasis on principles)
www.mcdonough.com/principles.pdf

Week 2 (September 6)

Problems, Measures, Benchmarks

Key topics: Framing of environmental sustainability problems, approaches to measurement and benchmarking, (energy, CO₂ footprint, ecological footprint, IPAT, resource flows), models for examining urban metabolism, C40 Cities.

Required reading

1. Arup, 2011. Climate Action in Megacities: C40 Cities Baseline and Opportunities (Review the central urban sustainability challenges identified for cities). (114 pages).
2. Best Foot Forward, Ltd., 2002. City Limits: A resource flow and ecological footprint analysis of Greater London. (72 pages).
3. Carbon disclosure project, 2012. Measurement for Management: CDP Cities 2012 Global Report. (93 pages).
(Review emissions inventories, risks, management actions, C40 initiative areas)
<https://www.cdproject.net/en-US/Pages/HomePage.aspx>

Reference

1. Swiss Federal Institute of Technology, 1998. 2000-Watt Society (Review 2000-watt concept and explore pilot regions)
<http://www.novatlantia.ch/en/2000-watt-society.html>
2. Saul Griffith, 2011. Climate change recalculated (Watch all videos : ~1.5 hours)
http://fora.tv/2009/01/16/Saul_Griffith_Climate_Change_Recalculated
3. Architecture 2030 website
<http://www.architecture2030.org/>

Case Studies

1. Copenhagen, Denmark. A carbon neutral capitol?
2. Helsinki, Finland
3. Los Angeles

Week 3 (September 13)
Frameworks for Action

Topics: Urban Environmental Management Systems (EMSs), urban and neighborhood-scale sustainable development frameworks, performance targets, CA and LA initiatives / long term plans.

Sustainable development is a context-driven concept; different societies tend to define it based on their own values, needs and expectations.

Required reading

1. Portland Sustainability Institute (PoSI): Ecodistrict Assessment Methods (Download from course website) (79 pages).
2. Environmental Building News, 2009. Thinking Beyond Buildings: LEED for Neighborhood Development. (6 pages).
3. City of Los Angeles, GREEN LA Initiative
<http://mayor.lacity.org/Issues/Environment/index.htm>

Reference

1. International Standards Organization (ISO) 14001
(Available from USC library, 3-hour reserve: TD883 .E585 2004a)
2. Kyoto Protocol
<http://www.usmayors.org/climateprotection/agreement.htm>
3. LEED for Neighborhood Development
<http://www.usgbc.org/DisplayPage.aspx?CMSPageID=148>
4. Seattle Architecture 2030 district
<http://www.2030district.org/seattle/about>
5. Architecture 2030 Challenge for Planning
http://architecture2030.org/2030_challenge/2030_challenge_planning
6. DGNB
http://www.dgnb.de/dgnb-system/en/system/dgnb-sustainability_concept/

Case Studies

1. DGBN Database of Certified Projects
2. UC Merced Campus (Triple-Zero)
<http://ppdc.ucmerced.edu/sustainability-and-environment/triple-net-zero-commitment>

Week 4 (September 20)
Land Use and Urban Form

Topics: Regional planning, sprawl, edge cities, transit/pedestrian-oriented development, smart growth, adaptive reuse, creative housing, urban growth boundaries, planning livable environments, (inter)national case-studies, PARK-ing day.

Required reading

1. Green Urbanism, Chapters 2 and 3, (80 pages).
2. EPA, 2001. A Technical Review of the Interactions between Land Use, Transportation, and Environmental Quality. (102 pages).
<http://www.epa.gov/dced/built.htm>
3. Environmental Building News, 2007. Driving to Green Buildings: The Transportation Energy Intensity of Buildings. (9 pages).
<http://www.buildinggreen.com/auth/article.cfm/2007/8/30/Driving-to-Green-Buildings-The-Transportation-Energy-Intensity-of-Buildings/>

Reference

1. Duaney, Andres et al., 2009, The Smart Growth Manual.
2. Meadows, Donella, 2004. Limits to Growth, 30-year Update.
3. Garreau, Joel, 1992. Edge City: Life on the New Frontier.
4. LEED for Neighborhood Development
5. Compass Blueprint (SoCal)
<http://www.compassblueprint.org/>

Case Studies

1. Freiburg, Germany, the Vauban district
(A 5,000 resident district on the site of a former French military barracks)
<http://www.vauban.de/info/abstract4.html>
2. Portland Oregon (transit oriented development, EcoDistricts)
<http://sage-reference.com.libproxy.usc.edu/view/greencities/n133.xml?result=43&q=&print>
3. Step Up on Fifth (Brooks + Scarpa, 2010, Santa Monica, CA) + EXPO Line
<http://www.archdaily.com/89789/step-up-on-fifth-brooks-scarpa/>
4. LA Dept. of City Planning. Urban Design Principles (draft)
<http://urbandesignla.com/udprinciples.htm>

Week 5 (September 27)
Urban Mobility

Topics: Alternative forms of transit, planning transit and development in tandem, bicycle / pedestrian networks, transit energy intensity.

Required reading

1. Green Urbanism, Chapters 4,5,6 (88 pages).
2. Arup, 2010. SlimCities Knowledge Cards: Urban Mobility (60 pages).
<http://www.driversofchange.com/slimcity/>
3. Environmental Building News, 2007. Driving to Green Buildings: The Transportation Energy Intensity of Buildings. (11 pages).
<http://www.buildinggreen.com/auth/article.cfm/2007/8/30/Driving-to-Green-Buildings-The-Transportation-Energy-Intensity-of-Buildings/?&printable=yes>

Reference

1. International Council for Local Environmental Initiatives (ICLEI): Ecomobility (Review available documents, e.g. “Megacities on the Move”, “Car free development”)
<http://www.ecomobility.org/>
2. Housing and transit (H+T) affordability index
<http://htaindex.cnt.org/>

Case Studies

1. The CityFix : Worldwide Cycle Superhighways: Copenhagen, London, New York
<http://thecityfix.com/blog/worldwide-cycle-superhighways-copenhagen-london-new-york/>
<http://www.cyclecopenhagen.dk/cc/master.php>
2. Bogota TransMilenio Bus Rapid Transit (BRT)
<http://en.wikipedia.org/wiki/TransMilenio>
3. City Mayors : Mexico City, Plan Verde
<http://www.citymayors.com/environment/mexico-green-plan.html>
4. Portland, OR TriMet (and Streetcars)
<http://trimet.org/index.htm>
<http://www.portlandstreetcar.org/>
5. Los Angeles TOD case study (see related links, e.g. MITOD.org)
<http://latod.reconnectingamerica.org/welcome>

Week 6 (October 4)

The Urban Landscape and Extreme Climate

Keywords: City-scale climate adaptation planning, bio-climatic design, urban heat island, surface material properties, cool roofs, cool pavements, cool cars, outdoor comfort, urban cooling strategies, link between buildings and urban climate.

Required reading

1. Chicago Climate Action Plan (5 pages).
<http://www.chicagoclimateaction.org/pages/adaptation/11.php>
2. Krayenhoff, E. Scott, and Iain D. Stewart. "Heat Island Effect." (1 page).
<http://sage-ereference.com.libproxy.usc.edu/view/greencities/n82.xml?result=84&q=>
3. Barron, J., July 16, 2012. Air-Conditioning's 110th Anniversary. NY Times.
4. Chen, D. June 20, 2012. New York Prepares for Another Day of High-90s Heat. NY Times. (AC as primary means for cooling, concurrent power outages).
5. Editorial, July 10, 2012. The Heat Wave and Global Warming. NY Times.

References

1. UCLA Energy Design Tools: Climate Consultant
<http://www.energy-design-tools.aud.ucla.edu/>
2. Stone, Brian, 2012. The City and the Coming Climate: Climate Change in the Places We Live.
3. Environmental Building News. Design for Adaptation. (9 Pages).
4. Lawrence Berkeley National Laboratory, Urban Heat Island Group
<http://heatland.lbl.gov/>
5. CREC, 2010. Hedonic Valuation of Resource Efficiency Variables, a Review of the Literature. (56 pages).

Case Studies

1. Chicago, NY, LA, Phoenix

Week 7 (October 11)
Sustainable Buildings

Topics: Energy efficiency standards / targets, deep energy retrofits, net-zero, indoor environmental quality, passive strategies and link to urban scale factors (air quality, noise, climate, solar exposure), green building rating systems

Required reading

1. Arup, 2011. SlimCity Knowledge Cards, Sustainable buildings (60 pages).
<http://www.driversofchange.com/slimcity/>
2. NREL Research Support Facility. The Road to Net Zero (52 pages).
http://www.nrel.gov/sustainable_nrel/rsf.html
3. Environmental Building News, 2011. The Problem with Net-Zero Buildings (and the Case for Net-Zero Neighborhoods) (6 pages).

Reference

1. Rocky Mountain Institute (RMI)
<http://www.rmi.org/Buildings>
2. NREL, 2007. Assessment of the Technical Potential for Achieving Net Zero-Energy Buildings in the Commercial Sector
www.nrel.gov/docs/fy08osti/41957.pdf
3. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE) Standard 189.1 : Standard for the Design of High-Performance Green Buildings (Peer-review draft available on course website)
4. U.S. Green Building Council, Leadership in Energy and Environmental Design (LEED) rating system
<http://www.usgbc.org/DisplayPage.aspx?CategoryID=19>
5. Cascadia Green Building Council, Living Building Challenge : Standard
<https://ilbi.org/lbc/standard>
6. California Energy Efficiency Standards (Title 24)
<http://www.energy.ca.gov/title24/>
7. New Buildings Institute, 2012. Getting to Zero 2012 Status Update: A First Look at the Costs and Features of Zero Energy Commercial Buildings.

Week 8 (October 18)
Smart Energy and Water

Topics: Review and case-study application of Environmentally Sound Technologies (ESTs), energy and water linkages, best practices for net-zero water, best practices for water management, energy storage (UC Merced).

Required

1. Arup, 2011. SlimCity Knowledge Cards, Smart Energy (60 pages).
<http://www.driversofchange.com/slimcity/>
2. Cascadia Green Building Council, 2011. Towards Net Zero Water: Best Management Practices for Decentralized Sourcing and Treatment (134 pages).
<http://cascadiagbc.org/resources/TowardNetZeroWater.pdf>

Reference

1. United Nations Environment Programme. In: “Environmentally Sound Technologies for Sustainable Development –EST ACTION PLAN”, pg. 57-100, 2003.
2. Green Technology: An A-to-Z Guide
(Available online from USC library)
<http://sage-ereference.com.libproxy.usc.edu/view/greentechnology/SAGE.xml>
3. Cascadia GBC, 2011. Clean Water, Healthy Sound. A Life Cycle Analysis of Alternative Wastewater Treatment Strategies in the Puget Sound Area (145 pages).
<http://cascadiagbc.org/resources/cleanwaterhealthysound.pdf>
4. Cohen, R., B. Nelson, and G. Wolff . 2004. “Energy down the drain: the hidden costs of California’s water supply.” San Francisco: Natural Resources Defense Council.
<http://www.nrdc.org/water/conservation/edrain/contents.asp>
5. Pacific Institute, 2010. Overview of Greywater Reuse: The Potential of Greywater Systems to Aid Sustainable Water Management.
www.pacinst.org/reports/greywater_overview/greywater_overview.pdf

Case Studies

1. UC Merced Campus (Triple-Zero)
<http://ppdc.ucmerced.edu/sustainability-and-environment/triple-net-zero-commitment>
2. My Power Berkeley (smart energy)
<http://mypower.berkeley.edu/>

Week 9 (October 25)

Ecological Infrastructure

Topics: Ecosystem services, landscape as living system, urban food supply/security, green corridors, greenways, ecological restoration, brownfields, de-sealing, recreation and public health, urban wilderness, wetlands

Required

1. Green Urbanism, Ch. 7. Urban ecology and strategies for greening the urban environment (26 pages).
2. Wolch et al., 2010. Childhood obesity and proximity to urban parks and recreational resources: A longitudinal cohort study. Health Place.
<http://www.ncbi.nlm.nih.gov/pubmed/21075670>
3. Environmental Building News, 2009. Growing Food Locally: Integrating Agriculture Into the Built Environment. (10 pages).
<http://www.buildinggreen.com/auth/article.cfm/2009/1/29/Growing-Food-Locally-Integrating-Agriculture-Into-the-Built-Environment/>

References

1. Gottlieb, 2007. Reinventing Los Angeles, Chapter 4, Re-envisioning the Los Angeles River.
2. Millennium Ecosystem Assessment, 2010. Ecosystems and Human Well-being: Wetlands and Water Synthesis. World Resources Institute, Washington, DC.
<http://www.maweb.org/en/Synthesis.aspx>
3. Fossil fuels and industrial farming
<http://www.sustainabletable.org/issues/energy/>
4. World Health Organization (WHO). Ecosystems and Human Health
www.who.int/entity/globalchange/ecosystems/ecosys.pdf

Case Studies

1. Shanghai Houtan Park
(Landscape as living system)
<http://architypereview.com/20-landscape-architecture-/projects/598-shanghai-houtan-park-landscape-as-a-living-sy/description>
2. South Bronx Greenway (Majora Carter Group)
www.majoracartergroup.com/wp-content/uploads/.../greenway.pdf
3. The High Line
(Adaptive reuse of rail infrastructure for recreation and pedestrian transit)
<http://www.thehighline.org/galleries/images>

Week 10 (November 1)
The Renewable City

Topics: Renewable energy systems, solar resource analysis (e.g. Berlin's solar atlas), solar access and building / urban configuration, building integrated solar (passive thermal heating, photovoltaic systems, daylighting systems, solar thermal collectors), solar envelope, solar shading analysis, building solar exposure and energy use

Required reading

1. Green Urbanism, Ch. 9. Renewable Energy Cities: Living on a Solar Income (26 pages).
2. Environmental Building News, 2009. The Folly of Building-integrated Wind.
<http://www.buildinggreen.com/auth/article.cfm/2009/4/29/The-Folly-of-Building-Integrated-Wind/>
3. Compagnon, R. 2004. "Solar and daylight availability in the urban fabric." Energy and Buildings 36: 321-328.
4. CA Council on Science and Tech., 2011. California's Energy Future, the View to 2050. (Technologies for reducing (GHG) emissions in CA to 80% below 1990 levels by 2050)
<http://ccst.us/publications/2011/2011energy.php>

References

1. National Renewable Energy Laboratory (NREL) PV Watts tool
(Determines the energy production and cost savings of grid-connected photovoltaic (PV) energy systems)
<http://www.nrel.gov/rredc/pvwatts/>
2. David MacKay, Sustainable energy without the hot air (Section on application of solar)
http://www.inference.phy.cam.ac.uk/withouthotair/c6/page_38.shtml
3. European Charter for Solar Energy in Architecture and Urban Planning
<http://www.nuclear-free.com/english/charter.htm>
4. American Solar Energy Society
<http://ases.org/>
5. Knowles (20003, 1974). Solar envelope construct.
<http://www-bcf.usc.edu/~rknowles/>

Case Studies

1. Masdar City
<http://www.masdar.ae/en/home/index.aspx>
2. SMUD, Premier Gardens Zero Energy Solar Homes (Sacramento, CA)
3. Examples from Germany (Karlsruhe)

Week 11 (November 8)
Urban Longevity

Topics: Embodied energy, life cycle assessment, adaptive reuse, flexibility / resilience, future-proofing, urban infill, design for disassembly, life-cycles of building systems (layers of shear), carbon payback period, data sources for existing building stock (CBECS).

Required reading

1. National Trust for Historic Preservation, 2010. The Greenest Building: Quantifying the Environmental Value of Building Reuse. (94 pages).
2. Environmental Building News, 2003. Future-Proofing Your Building: Designing for Flexibility and Adaptive Reuse. (6 pages).
3. NBI. Deep Energy Savings in Existing Buildings: Summit Summary, 2012 (17 pp.), and Summary Recommendations of the Getting to Fifty Summit (12 p.), 2007
4. RMI, 2011. Deep energy retrofit of commercial buildings: a key pathway toward low-carbon cities. (6 pages).

Reference

1. Jones and Williamson, 2008. Retrofitting Suburbia: Urban Design Solutions for Redesigning Suburbs.
2. Environmental Building News, 2012. Retrofits (Usually) Greener Than New Construction, Study Says.
3. Stewart Brand, 1995. How Buildings Learn: What Happens After They're Built.
4. Kofoworola, Oyeshola Femi. "Embodied Energy." Green Cities. (Available from course website)
5. Darlin, D. June, 2011. Silicon Valley Culture, but in San Francisco? NY Times.

Case Studies

1. Cross-laminated timber (multi-story) buildings
2. Brewery Blocks (Portland, OR), adaptive reuse
3. Ghirardelli Square (San Francisco, CA)
4. Empire State Building Retrofit
5. NBI database
<http://newbuildings.org/advanced-design/getting-50-beyond>

Week 12 (November 15)

Costing Green, Making the Business Case for Sustainability Actions

Topics: Natural capital, total life cycle cost analysis, time-value of money, comparing technology and retrofit options based on simple (and discounted) payback period, average cost effectiveness, levelized annual cost, evaluating the economic benefits of green buildings, case studies of incentive systems for retrofits and renewables.

Required

1. Lovins, A. Tunneling Through the Cost Barrier.
2. Eichholtz, Kok and Quigley, 2010. Doing Well by Doing Good? Green Office Buildings.
3. Davis Langdon, 2007. The cost of green revisited.

Reference

1. Alta Energy, 2012. Making the business case for commercial solar
2. New Buildings Institute, 2012. Getting to Zero 2012 Status Update: A First Look at the Costs and Features of Zero Energy Commercial Buildings.
3. Nils Kok
<http://www.nilskok.com/>
4. Rubin, E. 2001. Introduction to Engineering and the Environment. Chapter 13. Economics and the Environment.

Week 13 (November 22)
University holiday, no class

Week 14 (November 29)
Class presentations

Week 15 (December 6)
LAST DAY OF CLASSES, STUDIOS HAVE THEIR TURN IN DATES !!!
Field trip / T.B.A.

Week 16 (December 13)
Final project due: Thursday, December 13, 11 a.m.-1 p.m.¹

¹ http://www.usc.edu/academics/classes/term_20123/finals.html

Online References

1. Architecture 2030 website
<http://www.architecture2030.org/>
2. CA Energy Commission AB 758 Program
(Energy Efficiency Program for Existing Residential and Nonresidential Buildings)
<http://www.energy.ca.gov/ab758/>
3. Carbon disclosure project, 2012. Measurement for Management: CDP Cities 2012 Global Report
<https://www.cdproject.net/en-US/Pages/HomePage.aspx>
4. California Institute for Energy and Environment (CIEE)
<http://uc-ciee.org/>
5. Center for Resource Efficient Communities (CREC)
<http://crec.berkeley.edu/index.html>
6. Center for Neighborhood Technology
<http://www.cnt.org/>
7. Compass Blueprint (SoCal)
<http://www.compassblueprint.org/>
8. City of Chicago Climate Change Projections and Potential Impacts
http://www.chicagoclimateaction.org/pages/research_reports/8.php
9. City Mayors (Environment)
<http://citymayors.com/environment/>
10. David MacKay, Sustainable energy without the hot air
<http://www.withouthotair.com/>
11. Green Cities: An A-to-Z Guide
(Available online from USC library)
<http://sage-ereference.com.libproxy.usc.edu/view/greencities/SAGE.xml>
12. Green Technology: An A-to-Z Guide
(Available online from USC library)
<http://sage-ereference.com.libproxy.usc.edu/view/greentechnology/SAGE.xml>
13. International Council for Local Environmental Initiatives (ICLEI)
<http://www.iclei.org/index.php?id=about>
14. Lawrence Berkeley National Laboratory, Urban Heat Island Group
<http://heatisland.lbl.gov/>
15. Lawrence Berkeley National Laboratory, Buildings and Urban Systems
<http://buildings.lbl.gov/groups>

16. Lawrence Berkeley National Laboratory, Envir. Energy Technology
<http://eetd.lbl.gov/>
17. Loisos Ubbelohde
<http://www.coolshadow.com/research/index.html>
18. Millennium Ecosystem Assessment (Synthesis documents)
<http://www.maweb.org/en/Synthesis.aspx>
19. Mixed Income Transit Oriented Development (MITOD)
<http://www.mitod.org/home.php>
20. New Buildings Institute (NBI) Document resource library, and Getting to 50
<http://newbuildings.org/>
<http://www.newbuildings.org/advanced-design/getting-50-beyond>
21. Portland Sustainability Institute (PoSI)
<http://www.pdxinstitute.org/>
22. Rocky Mountain Institute (RMI) Knowledge Center
<http://www.rmi.org/Knowledge-Center/Library>
23. UC Merced Campus (Triple-Zero)
<http://ppdc.ucmerced.edu/sustainability-and-environment/triple-net-zero-commitment>
24. World Resources Institute, Washington, DC.
<http://www.wri.org/>

References for the City of LA

1. Environment LA
http://www.environmentla.org/ead_sustainability.htm
2. LA Solar map
<http://solarmap.lacounty.gov/>
3. City of LA Green Initiative
<http://mayor.lacity.org/Issues/Environment/index.htm>
4. LA Dept. of City Planning. Urban Design Principles
<http://urbandesignla.com/udprinciples.htm>
5. Los Angeles Transit Oriented Development case study
<http://latod.reconnectingamerica.org/welcome>
6. SCAG (+ Southern California Clean Cities Coalition)
<http://www.scag.ca.gov/cleancities/>

Books

1. Gottlieb, 2007. Reinventing Los Angeles.
2. Stone, Brian, 2012. The City and the Coming Climate: Climate Change in the Places We Live.
3. Mohsen Mostafavi with Gareth Doherty, 2009. Ecological Urbanism.
4. Lehmann, Steffen, 2010. The Principles of Green Urbanism.
5. Duane, Andres et al., 2009, The Smart Growth Manual.
6. Meadows, Donella, 2004. Limits to Growth, 30-year Update
7. Garreau, Joel, 1992. Edge City: Life on the New Frontier.
8. Rubin, E. 2001. Introduction to Engineering and the Environment.

Tools

1. Housing and transit (H+T) affordability index
<http://htaindex.cnt.org/>
2. U.S. Census. On the map
<http://lehd.did.census.gov/led/>
3. SCAlots, land opportunity tracking system
<http://164.67.52.33/scalotsdev/Master.cfm?CFID=201214&CFTOKEN=26767497>
4. Compass Blueprint Organization
<http://www.compassblueprint.org/>

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 my TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30AM-5PM, Monday through Friday. The phone number for DSP is (213) 740-0776.

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/>

Attendance and Late Work

Attending classes is a basic responsibility of every USC student who is enrolled in courses at the School of Architecture. Although any student should be evaluated primarily on their demonstrated knowledge through project development, papers, quizzes, and exams, the School believes important skills such as verbal presentation, design discussion and articulation of critical issues within each course are equal additional measures of demonstrated knowledge, particularly for our professional degree programs.

More than two unexcused absences may result in a failing grade. More than two instances of unexcused tardiness will be counted as an absence. Work turned in late will not be accepted.

Any student not in class within the first 10 minutes is considered tardy, and any student absent (in any form including sleep, technological distraction, or by leaving mid class for a long bathroom/water break) for more than 1/3 of the class time can be considered fully absent. If arriving late, a student must be respectful of a class in session and do everything possible to minimize the disruption caused by a late arrival. It is always the student's responsibility to seek means (if possible) to make up work missed due to absences, not the instructor's, although such recourse is not always an option due to the nature of the material covered.