

ARC3880 (27357) Section 3880

Course Name: **SUSTAINABLE ARCHITECTURE**

School of Architecture

College of Design, Construction, and Planning

University of Florida

Spring 2026

Credits: 3

Class meets: Check Canvas

Instructor: Dr. Vandana Baweja Email: vbaweja@ufl.edu

Office Hours: Check Canvas

GOALS:

- 1) The objective of this course to examine how environmentalism has informed architectural discourses, and how discourses on the built environment and urbanism have impacted environmentalism globally.
- 2) The course will introduce students to the various paradigms of environmentalism, such as: environmental apocalypticism, the limits of resources, environmental health and toxic discourse, environmental justice, sustainability, and urban environmentalism, and how these have impacted architecture and urbanism in the nineteenth and twentieth centuries.
- 3) We will look at Sustainable Architecture as a discursive construct and examine the competing logics of Green buildings.

We will look at environmentalism and sustainable architecture globally with special emphasis on different meanings of sustainable architecture in the global south and the global north. We will begin with the nineteenth century concerns about hygiene and health and its impact on architecture globally. We will examine how environmental health discourses including hygiene, Silent Spring, Sick Building Syndrome, and obesity, shaped architectural debates. We will consider how debates over equity in the third world have impacted how we think of social sustainability in the context of the built environment. We will not only look at architects, but environmental thinkers such as John Muir, Rachel Carson, Gandhi, Stewart Brand, and E. F. Schumacher.

We will look at the work of architects such as Laurie Baker, Bernard Rudofsky, and Hassan Fathy, impacted our thinking of the relationship between architecture and the environment. We will look at how counter cultural communes such Drop City in Colorado and Auroville in India transformed the geodesic dome from a mass produced object into a countercultural symbol. We will study the material and architectural transformations in fast growing economies like China and India, and how these developments have shaped the sustainability debate in the contemporary context.

This course is loosely divided into four chronological sections: the pre-history of environmentalism; Silent Spring and the counter culture of the 1960s; the 1970s OPEC energy crises; and the discourse of sustainability. The course is global in its scope. The stress is on themes in environmental thinking, rather than a strict chronological narrative. The course will introduce students to the pre-history of architectural and urban environmentalism prior to 1960 through the writings of Mahatma Gandhi, Lewis Mumford, Patrick Geddes, Doxiadis, Ian McHarg, Victor Olgyay, and Otto Koenigsberger. The second section will comprise readings on the whole earth catalogue, dome cookbooks, counter culture, Appropriate Technology, Laurie Baker, Hassan Fathy, and Buckminster Fuller. The third section will contain readings on the energy crises in the 1970s; the architectural response to the energy crises; solar architects of the 70s such as

Steve Baer, Alexander Pike, and the Vales; and the New Alchemists: John and Nancy Todd. The fourth section will contain readings on sustainability and Green Architecture right up to the present. We will look at the work of Bill Mc Donough, Ken Yeang, Richard Rogers, Rem Koolhaas, Monica Ponce de Leon, and several others.

TEXT BOOK: There is no textbook for this class.

ATTENDANCE POLICY, CLASS EXPECTATIONS, AND MAKE-UP POLICY

Attendance will be assessed via roll call. You must arrive within the first 5 minutes of the class to get your attendance. If you arrive within the first 20 minutes of class, after the roll call is concluded, you will be marked late. If you arrive later than 20 minutes after class begins, you will be marked absent.

Excused absences are consistent with university attendance policy in the undergraduate catalog

(<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>) and require appropriate documentation if applicable.

LATE WORK POLICY

If you need an extension on your work for an excused reason, consistent with the university attendance policy in the undergraduate catalog

(<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>), please contact your instructor and make arrangements for an extension.

No deadline extensions are granted for unexcused reasons, consistent with university attendance policy in the undergraduate catalog.

Each assignment deadline has a grace period of 24 hours, within which your work will be accepted with a late penalty of -1% of your grade for every hour that your work is late.

Once canvas closes for an assignment, no work will be accepted unless you have a valid reason for an extension listed here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

For UF ACADEMIC POLICIES & RESOURCES

Please visit this link <https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/>

MATERIALS AND SUPPLY FEES: None

METHODS BY WHICH STUDENTS WILL BE ASSESSED

1. **Projects (750 points):** There will be three research projects of 250 points each. You will present projects in the class. Each project has to be accompanied by a PowerPoint file submitted on canvas. You will elect the day you present your work on, however the PowerPoint must be submitted by

First project Due by Tuesday, February 17, 2026

Second Project Due by Tuesday, March 31, 2026

Third Project Due by Tuesday, April 28, 2026 (During Final Exam Period)

2. **Attendance (100 points):** Marked through canvas rollcall each class.
3. **Weekly Response to Required Readings (10*15=150 Points):** A one-page reflection as a written response with 5 key terms defined and 3 concepts that you learnt. Each response is 15 points. You need to submit this for any 10 weeks that have readings.
4. Your grade is not negotiable. Unless there is a mechanical or computational error, I will not increase your grade.
5. Due to university privacy policy grades cannot be discussed over email or phone. You will have to come see me in the office to discuss your grade in person.
6. Extra credit: There is no extra credit in this class.
7. **Your grade: (what you scored out of 750 from three projects+ what you scored out Weekly Response to Required Readings out 150+what you scored out of 100 from attendance)/10=your final grade**

■Week 1 **Tuesday, January 13, 2026: Introduction**

■Week 2 **Tuesday, January 20, 2026**

ENVIRONMENTAL DESIGN IN 19TH C

Required Reading

- . ■Chapter 2: Environmental Management 18–28
- Chapter 3: A Dark Satanic Century 29–44

In Banham, Reyner. *The Architecture of the Well-Tempered Environment*. London; Chicago: Architectural Press; University of Chicago 1973.

Additional readings for further research

MODERN ARCHITECTURE AND ENVIRONMENTAL DESIGN

- Chapter 4: The Kit of Parts Heat and Light 45–70

- Chapter 5: Environments of Large Buildings 71–92

In Banham, Reyner. *The Architecture of the Well-Tempered Environment*. London; Chicago: Architectural Press; University of Chicago 1973

Additional readings for further research

POST-WAR ENERGY CONSUMPTION

- Chapter Two: From the Solar Home to the All-Electric Home pp45–86

In Rome, Adam Ward. *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism*, Studies in Environment and History. Cambridge; New York: Cambridge University Press, 2001.

■Week 3 **Tuesday, January 27, 2026**

GANDHI'S ENVIRONMENTAL VISION

Required Reading

- "Mahatma Gandhi and the Environmental Movement." Pages153–168.

In Guha, Ramachandra, and J. Martinez-Alier. *Varieties of Environmentalism: Essays North and South*, Delhi; New York: Oxford University Press, 1998.

- Recommended that you watch this film on your own: GANDHI

■ Week 4

Tuesday, February 3, 2026
HEALTH AND THE BUILT ENVIRONMENT

OBESITY AND THE BUILT ENVIRONMENT

Required Reading

- Reid, Tom Schmid, Richard Killingsworth, Amy Zlot, and Stephen Raudenbush. "Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity." In *Urban Ecology*, 567–582. Springer US, 2008.

THE TOXIC ENVIRONMENT

Additional readings for further research

- Hynes, H. 1985. "Ellen Swallow, Lois Gibbs and Rachel Carson: Catalysts of the American environmental movement". *Women's Studies International Forum*. 8, no. 4: 291–298

SICK BUILDING SYNDROME

Additional readings for further research

- Murphy, Michelle. *Sick building syndrome and the problem of uncertainty: environmental politics, technoscience, and women workers*. Durham [N.C.]: Duke University Press, 2006.

■ Week 5

Tuesday, February 10, 2026
BUCKY FULLER: DYMAXION HOUSE AND GEODESIC DOME

Required Reading

- Massey, Jonathan. "Buckminster Fuller's Cybernetic Pastoral: The United States Pavilion at Expo 67!" *The Journal of Architecture* 11, no. 4 (2006): 463–483.

Additional readings for further research

- Mrkonjic, Katarina. "Environmental Aspects of Use of Aluminium for Prefabricated Lightweight Houses: Dymaxion House Case Study" *Journal of Green Building* 2, no. 4 (Fall 2007): 130–136.
- Anker, Peder. "Buckminster Fuller as Captain of Spaceship Earth." *Minerva* 45, no. 4 (December 2007): 417–434.
- Nicholas Grimshaw and Partners. *The Architecture of Eden*. London: Eden Project Books in association with Grimshaw, 2003.

COUNTERCULTURE COMMUNES: DROP CITY AND AUROVILLE

Required Reading

- "Chapter 6: Revolutionaries or Drop Outs." 151–184
In Scott, Felicity. *Architecture or Techno Utopia*, Cambridge: MIT Press, 2007.

Additional readings for further research

- Sadler, Simon. "Drop City Revisited." *Journal of Architectural Education* Vol. 59, no. 3 (February 2006): 5–16.
- Kapoor, Rakesh. "Auroville: A Spiritual-Social Experiment in Human Unity and Evolution." *Futures* 39 (2007): 632–643.
- Kundoo, Anupama. "Auroville: An Architectural Laboratory." *Architectural Design* 77, no. 6 (November/December 2007): 50–55.

- Sorkin, Michael. "Utopia Now: India Is Magnet for Planned Communities, from the Spiritualistic to the Capitalistic." *Urban Land* 61, no. 11–12 (2002): 108–113.

First project Due by Tuesday, February 17, 2026

- Week 6 **Tuesday, February 17, 2026**
WHOLE EARTH CATALOGUE
Required Reading
 - Kirk, Andrew, "Appropriating Technology: The Whole Earth Catalog and Counterculture Environmentalism." *Environmental History* 6, no. 3 (Jul 2001): 374–394.**Additional readings for further research**
 - Sadler, Simon, "An Architecture of the Whole." *Journal of Architectural Education* 61, no. 4, (May 2008): 108–129.
 - Browse through the Portola, Institute. Whole Earth Catalog: Menlo Park, Calif., Portola Institute, 1968.
SMALL IS BEAUTIFUL
Additional readings for further research
 - 1.1. The problem of Production 12–20
 2. 5. Technology with a Human Face 138–153
 - 3.1 Development 154–160
 - 3.2 Social and Economic Problems Calling for Intermediate Technology 161–179
 - 3.3 Two Million Villages 180–193
 - 3.4 The Problem of Unemployment in India 194–208

- Schumacher, E. F. *Small Is Beautiful: Economics as if People Mattered*. New York Harper Perennial, 1989.

- Week 7 **Tuesday, February 24, 2026**
HASSAN FATHY, EGYPT AND LAURIE BAKER, INDIA
Required Reading
 - Handbooks by Laurie Baker. Available on <http://lauriebaker.net/work/work/booklets-and-writing-by-laurie-baker.html>**Additional readings for further research**
 - Section 1 p1–66
 - In Bhatia, Gautam. *Laurie Baker: Life, Works, and Writings*. New Delhi: Viking/Hudco, 1981.
 - Taragan, Hana "Architecture in Fact and Fiction: The Case of the New Gourna Village in Upper Egypt." *Muqarnas* 16 (1999): 169–178.

APPROPRIATE TECHNOLOGY

- Additional readings for further research**
 - Chapter 1: What is Appropriate Technology; Chapter 5: Technologies in context; Chapter 6: Man/machine context In Rybczynski, Witold.
 - In *Paper Heroes: A Review of Appropriate Technology*. Garden City, N.Y.: Anchor Press/Doubleday, 1980

- Week 8 **Tuesday, March 3, 2026**

TROPICAL ARCHITECTURE AND BIOCLIMATIC ARCHITECTURE IN THE UNITED STATES

Required Reading

■Chapter 1

Fry, Maxwell. *Tropical architecture in the dry and humid zones*. 2nd ed. Malabar Fla.: R.E. Krieger Pub. Co., 1982.

Additional readings for further research

■Introduction pp 1–13; Bio-climatic Approach pp 14–23; Environment and Building Forms pp 84–93; In Olgay, Victor. *Design with Climate: Bioclimatic Approach to Architectural Regionalism*. Princeton, N.J.: Princeton University Press, 1963.

Hindu Holiday Holi March 4, 2026

■ Week 9

Tuesday, March 10, 2026

THE BRUNDTLAND REPORT

Required Reading

From One Earth to One World, pp 1–26

Towards Sustainable Development, pp 43–66

■In World Commission on Environment and Development. *Our Common Future*. Oxford; New York: Oxford University Press, 1987.

Additional readings for further research

A threatened Future, pp 27–42

Energy: Choices for the Environment, pp 168–205

The Urban Challenge, pp 235–260

■In World Commission on Environment and Development. *Our Common Future*. Oxford; New York: Oxford University Press, 1987.

THE RIO SUMMIT

Additional readings for further research

Chapter 1: Understanding Agenda, pp 21 1–23

Chapter 3: The efficient use of Earth's natural resources, pp 30–56

Chapter 5: The Management of Human Settlements, pp 170–197

■ In United Nations Conference on Environment and Development In *Agenda 21: The Earth Summit Strategy to Save Our Planet*, edited by Daniel Sitarz,. Boulder, Colorado: EarthPress, 1993.

■ Week 10

Tuesday, March 17, 2026

SPRING BREAK

■ Week 11

Tuesday, March 24, 2026

THE AUTONOMOUS HOUSE

Required Reading

Chapter One: Definitions and Introduction to the Problem.

■Vale, Brenda, and Robert James Dennis Vale. *The New Autonomous House: Design and Planning for Sustainability*. New York, N.Y.: Thames & Hudson, 2000.

Additional readings for further research

- Skurka, Norma, and Jon Naar. *Design for a Limited Planet: Living with Natural Energy*. New York: McGraw-Hill, 1976

Second Project Due by Tuesday, March 31, 2026

- Week 12 **Tuesday, March 31, 2026**
CRADLE TO CRADLE
Required Reading
Chapter One: A Question of Design pp17–44
Chapter Two: Why Being Less Bad is no Good, pp45–67
■ McDonough, William, and Michael Braungart. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press, 2002.
Pesach (Passover)
Begins April 1, 2026, at sundown; ends at nightfall on April 9, 2026.
Easter April 5, 2026
Tuesday, April 7, 2026
ECOLOGICAL ARCHITECTURE
Required Reading
■ Chapter 2: The Origins of Ecological Design
Chapter 3: The Design Revolution: Notes for Practitioners
Orr, David. *Design on the Edge: The Making of a High-Performance Building*, MIT Press, 2006.
- Week 13 **Additional readings for further research**
■ Anker, Peder. "The Closed World of Ecological Architecture." *The Journal of Architecture* 10, no. 5 (2005): 527–552.
- Week 14 **Additional readings for further research**
BIOSHELTERS
■ "Chapter six: From Shelter to Bioshelter to Gaia" In
Todd, Nancy. *A safe and sustainable world: the promise of ecological design*. Washington D.C.: Island Press, 2005.
- Week 14 **Additional readings for further research**
■ McHarg, Ian L. *Design with Nature*. Garden City, N.Y.: Published for the American Museum of Natural History by the Natural History Press, 1969.

Tuesday, April 14, 2026
ENVIRONMENTAL ASSESSMENT METHODS
Required Reading

- Del Percio, Stephen T. "Skyscraper, Green Design, & the LEED Green Building Rating System: The Creation of Uniform Sustainable Standards for the 21st Century or the Perpetuation of an Architectural Fiction," *28 Environ: Envtl, L. & Pol'y J.* 117 (2004–2005) pp117–154.
- Retzlaff, Rebecca. 2009. "Green Buildings and Building Assessment Systems". *Journal of Planning Literature*. 24, no. 1: 3–21.

Additional readings for further research
VERNACULAR ARCHITECTURE MEETS HI-TECH ARUP: DRUK WHITE LOTUS SCHOOL RENZO PIANO: TJIBAOU CULTURAL CENTER

- Blaser, Werner. *Renzo Piano: Centre Kanak = Kulturzentrum Der Kanak = Cultural Center of the Kanak People*. Basel: Birkhäuser, 2001.
- Findley, Lisa. "Architectural Intervention and the Post-Colonial Era: The Tjibaou Cultural Center in New Caledonia by the Renzo Piano Building Workshop." In *The Green Braid: Towards an Architecture of Ecology, Economy, and Equity*., edited by Kim Tanzer and Rafael Longoria. London: Routledge, 2007.
- Hart, Sara. "Double Indemnity: Renzo Piano's Double-Shelled Structures Recall Ancient Forms and Ensure Cultural Continuity." *Architecture* 87, no. 10 (October 1998): 152–56.
- Ford, Alan. "Druk White Lotus School." In *Designing the Sustainable School*. Mulgrave, Vic: Images Pub, 2007.

Additional readings for further research

BIOMIMICRY

- Benyus, Janine. *Biomimicry: innovation inspired by nature*. 1st ed. New York: Morrow, 1997.

■Week 15 Tuesday, April 21, 2026
No class due to architecture studio reviews

Classes End April 22

Reading Days (no classes) April 23–24

Final Exams April 25–May 1

Third Project Due by Tuesday, April 28, 2026 (During Final Exam Period)