



Naked Comfort, 2004 John A. Benson, Designer [hay cushion, 31"w x 29"d x 27"h, 50 lbs]

If the designers of this century's early machine age could forge new paradigms of comfort out of the mechanisms of industrial production, then one can only imagine the potential explosion of future creativity in response to the environment.

James Wines, *Green Architecture*

Ecology and architecture make strange, but star-crossed, bedfellows. The former is the study of how all things in the natural world are related to each other, while the latter is in its essentials the reaction of the human imagination to nature's inhospitality to dwelling.

Richard Ingersoll, *Antiecolology*

This course will examine the relationship between architecture and ecology - since 1970, the year of the first Earth Day. During the last thirty-plus years ecology has become an inescapable political issue and an awkward guest in architectural theory. Alarm over air and water pollution, global warming and insane quantities of waste have inspired a plethora of texts on "environmentalism" and a mandate for "sustainability" and "ecological architecture." But what do these terms mean, and where did they come from? How do architects apply them and how are they accounted for? Can an incisive cross-disciplinary investigation of these politically-charged terms lead to new ideas and strategies for architectural design?

Responding to the often isolationist tendencies of ecological thinking within our field, this course critically examines a series of architectural projects - many of which are LEED certified - in light of a series of ecology questions circulating today. Leading environmental theories will be presented, and selected topics and ideas will be explored in the context of an historical background on ecology. The course simultaneously embraces and critiques normative practices of sustainability and speculates on new forms of alternative green practice.

Weekly class synopses of readings will serve topical lectures and subsequent dialog. Course requirements include class participation [20%], midterm power-point presentation [30%], and a final paper: 6-8 pages for undergraduate students and 10-12 pages for graduate students [50%].

Texts include D. Pepper, *Modern Environmentalism* (Routledge, 1996); K. Daniels, *Ecological Building* (Birkhauser, 2000), T. Luke, *Ecocritique* (Minnesota Press, 1997); M. Zimmerman, *Radical Ecology+Postmodernity* (Berkeley Press, 1994); J. Wines, *Green Architecture* (Taschen, 2000); F. Capra, *The Web of Life* (Anchor Books, 1996).

COMPLETION REQUIREMENTS

Undergraduate students: class participation [20%], midterm power-point presentation [30%], final paper [50%] ~ 6-8 pages, single-spaced, based on readings, course discussions, research and the themes of the course.

Graduate students: class participation [20%], midterm power-point presentation and short paper [30%], final paper [50%] ~ 10-12 pages, single-spaced, based on readings, course discussions, research and the themes of the course. Emphasis is placed on critical analysis of the themes and debates of the readings.

Additionally, below are listed a few key requirements:

1. Attendance at all class meetings, and participation in discussions. More than three unjustified absences from class will result in a letter grade reduction
2. Assignments include explicit due dates and minimum requirements that must be met
3. All work must be *produced* by the individual student
4. Students are responsible for all readings

RECOMMENDED TEXTS

Course texts may be purchased from

Amazon.com:

James Wines, Green Architecture, Taschen Press, ISBN: 3-8228-6303-3

Barnes & Noble @ Georgia Tech:

2) Sim Van der Ryn and Stuart Cowan, Ecological Design, Island Press, ISBN: 1-55963-389-3

3) Timothy Luke, Ecocritique: Contesting the Politics of Nature, Economy and Culture, Minnesota Press, ISBN: 0-8166-2847-5

4) Mathis Wackernagel and William Rees, Our Ecological Footprint: Reducing Human Impact on the Earth, New Society Publishers, ISBN: 0-86571-312-X

5) William McDonough and Michael Braungart, Cradle to Cradle: Remaking the Way We Make Things, North Point Press, ISBN: 0-86547-587-3

ATTENDANCE

Since a significant aspect of the course is discussion of assigned readings, regular class attendance is essential for class participation. Class attendance will be recorded, and students are allowed up to three unexcused absences without penalty. More than three unexcused absences will result in a deduction in the semester grade.

ACADEMIC HONOR CODE

Students are expected to abide by the terms of the Georgia Tech Academic Honor Code. Work on assignments completed for this course should be solely the work of each student. Use in written assignments of ideas and material adapted in whole or part from published sources, including the internet, should be properly cited. Quotation marks should be utilized to indicate direct quotations and footnotes should be utilized to indicate the source of quotations and ideas utilized in the written assignments. The complete honor code may be reviewed at <http://www.honor.gatech.edu/honorcode2.htm>.

SPECIAL NEEDS

Any student who feels that he/she may need an accommodation for any sort of disability, please make an appointment to see your instructor during office hours. Alternatively, questions relating to students with disabilities may be referred to the Office of the Dean of Students (ADAPTS Office), 221 Smithgall Student Services Building, 404-894-2564, 404-894-1664 (TDD).

Course SCHEDULE

Week 1 Over VIEW

11 Jan T Course Introduction

13 Jan H Brief Green History

Reading Wines, James, *Nature's Revenge: A Brief Survey of 20th C. Green History*, pp. 16-34, Green Architecture, Taschen Press, 2000

Hawken, Paul, *The Death of Birth*, pp. 19-36, The Ecology of Commerce: A Declaration of Sustainability, Harper Press, 1994.

Week 2 Second NATURE

18 Jan T Brief Green Theory

Reading Ingersoll, Richard, *Second Nature: On the Social Bond of Ecology and Architecture*, Chapter 3, pp. 119-137, T. Dutton and LH Mann, eds., Reconstructing Architecture, Minnesota Press, 1996.

20 Jan H The Ecology Question

Reading Ingersoll, Richard, *Second Nature: On the Social Bond of Ecology and Architecture*, Chapter 3, pp. 137-157, T. Dutton and LH Mann, eds., Reconstructing Architecture, Minnesota Press, 1996.

Week 3 Design PRINCIPLES

25 Jan T Definitions

Reading Van der Ryn, Sim, *Sustainability and Design*, Part One, pp. 3-50, Ecological Design, Island Press, 1996.

McDonough, William, *The Hannover Principles*, pp.408-411, Theorizing a New Agenda for Architecture, 1992.

27 Jan H Ecological Footprint

Reading Banham, Reyner, *A Breath of Intelligence*, pp. 290-312, The Architecture of the Well-Tempered Environment, University of Chicago Press, 1984.

Wackernagel, Mathis, and Rees, William, *Footprints and Sustainability*, pp. 31-60, Our Ecological Footprint: Reducing Human Impact on the Earth, New Society Publishers, 1996.

Week 4 Sustainable DESIGN

1 Feb T Question of Design

Reading McDounough, William and Braungart, Michael, *A Question of Design*, pp. 17-44, Cradle to Cradle, North Point Press, 2002

3 Feb H Sustainability

Reading Orr, David, *Two Meanings of Sustainability*, pp. 23-40, Ecological Literacy, SUNY Press, 1996

Week 5 Social ECOLOGY

8 Feb T

- Reading Luke, Timothy, *Developing an Arcological Politics: Paolo Soleri on Ecology, Architecture, and Society*, pp. 153-176, Ecocritique: Contesting the Politics of Nature, Economy and Culture, Minnesota Press, 2000
- Bookchin, Murray, *Freedom and Necessity in Nature*, pp. 71-96, The Philosophy of Social Ecology, Black Rose Books, 1996.

10 Feb H Community and Ecology

- Reading Luke, Timothy, *Community and Ecology: Bookchin on the Politics of Ecocommunities and Ecotechnology*, pp. 177-194, Ecocritique: Contesting the Politics of Nature, Economy and Culture, Minnesota Press, 2000
- Outline Draft#1 / Research of Final Paper Due [1-2 pages]

Week 6 Urban ECOLOGY

15 Feb T Ecological City

- Reading Hough, Michael, *Urban Ecology: A Basis for Shaping Cities*, pp. 5-32, Cities and Natural Process, Routledge Press, 1995
- Platt, Rowntree, and Muick, *Design with City Nature: An Overview of Some Issues*, pp. 40-49, The Ecological City, Massachusetts Press, 1994

17 Feb H City Nature

- Reading Bennett, Michael, and David Teague, *The Nature of Cities*, pp. 3-32, The Nature of Cities: Ecocriticism and Urban Environments, University of Arizona Press, 1999.
- Richard Rogers, *The Culture of Cities*, pp. 1-25, Cities for a Small Planet, Westview Press, 1997

Week 7 Landscape FORM

22 Feb T Metaphor and Ideological Representations

- Reading Corner, James, *Ecology and Landscape as Agents of Ecology*, pp. 80-108, in Ecological Design and Planning, eds. G. Thompson and F. Steiner, Wiley Academy, 1997.

24 Feb H Integration Strategies

- Reading Berrizbeitia, Anita and Pollak, Linda, *Operations between Architecture and Landscape*, pp. 10-13, Inside Outside: Between Architecture and Landscape, Rockport Press, 1999
- Wines, James, *Integration of Architecture and Landscape*, pp. 69-77, Green Architecture, Taschen Press, 2000

Week 8 Tropical REGIONALISM

1 Mar T *Poetics of Relationships*

Reading Stagno, Bruce, *Tropicality*, pp. 65-92, in Tropical Architecture: Critical Regionalism in the Age of Globalization, eds. A. Tzonis, L. Lefaivre, B. Stagno, Wiley Academy, 2001

3 Mar H *Tropical Building*

Reading Stagno, Bruce, *Designing and Building in the Tropics*, pp. 173-190, in Tropical Architecture: Critical Regionalism in the Age of Globalization, eds. A. Tzonis, L. Lefaivre, B. Stagno, Wiley Academy, 2001.

Week 9 Student PRESENTATIONS

8 Mar T *Case Study* Group 1-3: *Case Study Presentation*

10 Mar H *Case Study* Group 4-6: *Case Study Presentation*

Week 10 Student PRESENTATIONS

GreenPrints Conference, Westin Peachtree Hotel [Mar 13-15]

15 Mar T *Case Study* Group 6-9: *Case Study Presentation*

17 Mar H *Case Study* Group 9-12: *Case Study Presentation*

Outline Draft#2 / Research of Final Paper Due [3-4 pages]

Week 11 Spring BREAK

22 Mar T *No Class*

24 Mar H *No Class*

Week 12 Smart SKINS

29 Mar T *Smart vs. Intelligent*

Readings Lang, Werner, *The Building Skin as Heat and Power Generator*, pp. 48-61, Building Skins: Concepts, Layers, Materials, Birkhauser Press, 2001

Melet, Ed, *Smart Buildings*, Chapter 3, pp. 82-96, in Sustainable Architecture, NAI Publishers, Rotterdam, 1999

31 Mar H *Interactive Facades*

Readings Lang, Werner, Is it all "just" a façade? The Functional, Energetic and Structural Aspects of the Building Skin, pp. 29-47, Building Skins: Concepts, Layers, Materials, Birkhauser Press, 2001

Week 13 Eco-GUIDES

5 Apr M Green Design

Readings

Kwok, Alison, and Grondzik, Walter, *Design Process and Strategies*, pp. 1-20, The Green Studio Handbook, Architectural Press, 2007

7 Apr H Systems Framework

Readings

Mendler, Sandra; Odell, William; and Lazarus, Mary Ann, *The New Design Process: Ten Key Steps*, pp. 17-29, The HOK Guidebook to Sustainable Design, Wiley Press, 2006

Barnett, Dianna Lopez, A Primer on Sustainable Building, Rocky Mountain Institute Green Development Services, 1995

Week 14 Big GREEN

12 Apr T High-Wide

Reading

Gissen, David, *Bigness vs. "Green-ness"*, pp. 43-47, Denatured, Thresholds No. 26, MIT Press, 2003

Serlin, David, *Rethinking the Corporate Biosphere*, pp. 144-153, Big and Green: Toward Sustainable Architecture in the 21st Century, ed. David Gissen, Princeton Architecture Press, 2002

14 Apr H High-Rise

Reading

Wines, James, *Vertiscapes: The Skyscraper as Garden*, pp. 78-87, Big and Green: Toward Sustainable Architecture in the 21st Century, ed. David Gissen, Princeton Architecture Press, 2002

Yeang, Ken, *The Skyscraper and Other Large Buildings*, pp. 17-30, The Green Skyscraper: The Basis for Designing Sustainable Intensive Buildings, Prestel Verlag Press, 1999

Week 15 Eco MEDIA

19 Apr T Digital Meets Ecological Art

Reading

Wilson, Stephen, *Information Arts: Intersection of Art, Science and Technology*, pp. 86-109, The MIT Press, 2002

21 Apr H Digital Meets Ecological Architecture

Reading

McMorrough, John, *re:Mediation and Toyo Ito's Architecture of Information*, pp. 101-110, Toyo Ito: Sendai Mediatheque, The MIT Press, 2002

Mitchell, William, *Dematerialization, Demobilization and Adaptation*, pp. 7-12, Dimensions of Sustainability, E&FN SPON Press, 1998

23 Apr S Earth DAY

Solar Trend 2005 International Conference and Expo, World Congress Center

Week 16 Review WEEK

26 Apr T Jury Week No Class

28 Apr H Jury Week No Class

Week 17 Finals WEEK

5 May H Final

Final Paper Due by 4:00pm:
via email attachment; hardcopy to Program Office