

Arch 166- 390/790
Assoc. Prof. Jim Wasley

**GREEN ARCHITECTURE SEMINAR:
Designing for Environmental Sustainability and Human Health**

**INTRODUCTION
Tuesday, Jan. 27**

VIDEO: Trade Secrets: A Bill Moyers Report
Defining green architecture

READING:

EBN

EBN Checklist: Environmentally Responsible Design and Construction. Vol. 1, no. 2. September/ October 1992. pp. 8-9.

Defining Green Architecture packet

Wells. Gentle Architecture: Checklist.

**INDOOR ENVIRONMENTAL QUALITY
Tuesday, Feb. 3**

VIDEO: Blue Vinyl (view before class. Typical)
Guest Lecture- Mark Meiling, Foresight Home Inspection.
Healthy Housing: Moisture Control and Radon Mitigation

READING

EBN

Radon and Other Soil Gasses: Dealing with the Hazards from Below. Vol. 7 no. 7. July/Aug. 98. Feature Article.
Mold in Buildings: What it is and How to Keep it Out. Vol. 10 no. 6. Feature Article
Moisture Control in Buildings: Putting Building Science into Green Buildings. Vol. 12 no. 7 July 2003. Feature Article.

Healthy Housing packet

Lstiburek, Joseph. EEBA Buildier's Guide: Cold Climates:
Introduction

Ch. 1: The House System

Appendix I: Rain and Drainage Planes

Appendix II: Air Flow Retarders

Appendix III: Insulations, Sheathings and Vapor Diffusion Retarders

Healthy Housing: Ventilation and Combustion Safety

READING

EBN

The IAQ Challenge: Protecting the Indoor Environment. Vol. 5 no. 3. May/June 1996. Feature Article.

"Ventilation" packet

Bower, "Chapter 26: Typical Central Ventilation Systems" Understanding Ventilation: How to Design, Select and Install Residential Ventilation Systems.

Lstiburek, Joseph. "Appendix V: Air Leakage Testing, Pressure Balancing and Combustion Safety" EEBA Builder's Guide: Cold Climates

Tuesday, February 10

VIDEO: Your House, Your Health

Special Announcement: FAL Lecture Friday, Feb. 13 by Pliny Fisk, CMPBS, Austin, TX.

Healthy Housing: Housing for the Chemically Sensitive

READING

Introduction to IAQ/MCS packet

Wasley, "Homes for People with Multiple Chemical Sensitivities" Encyclopedia of Life Support Systems. (Draft)

Lee, "Health and the Built Environment: Indoor Air Quality." VITAL SIGNS Resource Packet. See resources at:
www.arch.ced.berkeley.edu/vitalsigns.

Rousseau and Wasley. "Ch. 6: Site Selection, Planning and Architectural Design" Healthy By Design: Building and Remodeling Solutions for Creating Healthy Homes.

Tuesday, February 17

DUE: Term Project Ideas: 10 source Bibliographies for three different possible topics.

VIDEO: Treated Lumber Newsclips

Healthy Housing: Materials Selection

READING

EBN

Pressure-Treated Wood: How bad is it and what are the alternatives? vol. 2 no.1 January/ February 1993 Feature Article

Paint the Room Green. Vol. 8 no. 2. February 1999. Feature Article.

Formaldehyde-free Interior Grade MDF. Vol. 1 no. 1. July/August 1992. p.10

Healthy Housing: Pest Control

READING

EBN

Safer Pest Control: Management of wood-Destroying Insects. Vol. 9 no. 9. Feature Article

Sand Barrier Termite Control. Vol. 3 on. 2. March/April 1994. pp. 6-7.

Pesticide Elimination packet

Treating Termites Right. Home Energy July/ August 2000. pp. 24-30

SPCB- Using IPM to Combat Household Pests. www.spceb.state.tx.us/consumer.ipm/english.htm

IEQ in larger buildings

READING

EBN

Don't Downplay Human Health Priorities. Vol. 4, No. 6, November/ December 1995.

Unhealthy Offices Packet

Morey, Philip and Douglas Shattuck "Role of Ventilation in the Causation of Building-Associated Illnesses"
Occupational Medicine: State of the Art Reviews Vol. 4 no. 4, October - December 1989. Philadelphia:
Hanley and Belfus, Inc.

Levin, Hal. "Building Materials and IAQ" Occupational Medicine: State of the Art Reviews Vol. 4 no. 4, October -
December 1989. Philadelphia: Hanley and Belfus, Inc

Russell, James "The End of Dumb Walls" Architectural Record October 1993 pp 108-109. (ADD TO PACK)

ACTIVITY

Tuesday, February 24

DUE:

VIDEO: Pennsylvania's First Green Building

Healthy offices: issues of HVAC design.

READING

EBN

Access Floors: A Step Up for Commercial Buildings. Vol. 7 no. 1. January 1998. Feature Article.

Building Commissioning: The Key to Buildings that Work. Vol. 9 no. 2. Feature Article

Construction IAQ Management: Job Site Strategies for Ensuring a Healthy Building. Vol. 11 no. 5. Feature Article

Air Filtration in Buildings. Vol 12 no. 10. October 2003. Feature Article.

"IEQ in larger buildings" packet

Loftness, Vivian and Volker Hartkopf "The Effects of Building Design and Use on Air Quality" Occupational Medicine: State of the Art Reviews Vol. 4 no. 4, October- December 1989.

Healthy offices: issues of materials selection and design

READING

EBN

Carpeting, Indoor Air Quality and the Environment. Vol. 3. no. 6. Nov./ Dec. 1994. Feature Article.

"IAQ and Materials Specifications" packet

Bernheim and Black. "Green Architecture: Indoor Air Quality Design is Cost Effective" Workshop presentation, 1995 AIA Convention, May 5-8, 1995.

ACTIVITY

REDUCING ENVIRONMENTAL IMPACT

Tuesday, March 2

DUE:

VIDEO: Saviors of the Forest

Resource Conservation: the example of wood

READING

Natural Capitalism, Chapters 1-5

EBN

The Northwestern Timber Debate. Vol. 2, no.3. May/ June 1993. Feature Article.

Recycled Plastic Lumber. Vol. 2 no.4 July/ August 1993. Feature Article.

Tropical Timber: seeing the forest for the trees. Vol. 3 no.5 September/ October 1994. Feature Article.

Structural Engineered Wood: Is it Green? Vol. 8 no. 11. Feature Article.

Forest Certification Growing Fast. Vol. 12 no. 4. April, 2003. Feature Article.

Wood Issues packet (web search)

FSC Website search: Certified Suppliers in Wisconsin. www.fscus.org.

Resource Efficient Design

READING

Natural Capitalism.

EBN

Small is Beautiful: House Size, Resource Use and the Environment. Vol. 8. no. 1. Jan. 1999. Feature Article.

Drywall Stop Saves Wood. Vol. 3, no. 1. Jan./Feb. 1994. p.8

Resource Efficient Design packet

Fisher, Lee. "Economical Framing" *Fine Homebuilding* October/ November 1993. pp.46-49.

Savage, Craig. "Swedish Prefab Houses" *Fine Homebuilding* June/ July 1987. pp.50-54.

ACTIVITY

Assign Materials Selection Matrix materials (ERG handouts)

Light framing

Insulation

Cladding

Wall finishes

Resilient flooring

Architectural coatings

Glazing

Carpeting

Structural framing

Metal and plastic plumbing pipe

Fabric and paper wall cover

Tuesday, March 9

DUE:

VIDEO: Green Plans

Accounting for the Commons: byproducts and embodied energy

READING

Natural Capitalism, Chapters 6-10

EBN

Embodied Energy- Just What Is It and Why Do We Care? vol. 2 no.3 May/ June 1993. pp.8-9.

Steel or Wood Framing: Which Way Should We Go? Vol. 3 no.4 July/ August 1994. Feature Article.

Should We Phase Out PVC? vol. 3 no.1 January/ February, 1994. Feature Article.

Accounting for the Commons Packet

Hardin, Garrett. "The Tragedy of the Commons" Environmental Insight: Readings and Comments on Human and Non-Human Nature. Robert Chute (ed.) N.Y.: Harpers and Row. 1971.

WGBA Wisconsin built Directory of Energy Efficient and Sustainable Building Products and Services. Second Edition. Web based. www.wgba.org.

Life Cycle Assessment

READING

EBN

Insulation Materials: Environmental Comparisons. Vol. 4 no. 1. Jan./ Feb. 1995. Feature Article.

Materials Selection: Tools, Techniques and Resources for Choosing Green. Vol. 6, noi. 1. January 1997. Feature Article.

Building Materials: What Makes a Product Green? Vol 9 no. 1. Feature Article.

Life-Cycle Assessment for Buildings: Seeking the Holy Grail. Vol. 11. no. 3 Feature Article.

Industrial Ecosystems

READING

"Industrial Ecosystems" packet

Frosch, Robert and Nicholas Gallopoulos. "Strategies for Manufacturing" Scientific American. September, 1898. pp. 144-152.

Fisk, Pliny III. "Integration vs. Conservation: A Renewable Energy Building Block for the 21st Century." Integration Compendium.

ACTIVITY

Materials Selection Matrix

AIA Environmental Resource Guide (class handout)

BEES

Handbook of Sustainable Building

EBN Index lists at least 12 individual material references under 'Embodied Energy.'

Tuesday, March 16 CLASS CANCELLED (JW at ACSA Technology Conference)

Tuesday, March 23- SPRING BREAK

Tuesday, March 30

DUE:

VIDEO: Audubon House, The Making of the Energy Resource Center

Waste Reduction and Construction Site Recycling

READING

Natural Capitalism, Chapters 11-15

EBN

Dealing with Construction Waste: Innovative Solutions for a Tough Problem vol. 1 no.3 November/ December 1992. Feature Article.

What's New in Construction Waste Management? vol 4 no.6 November/ December 1995. Feature Article.

Deconstruction: Back to the Future for Buildings? Vol. 9 no.5 Feature Article.

Waste Reduction and Recycling Packet

EPA. "Building Savings: Strategies for Waste Reduction of Construction and Demolition Debris from Buildings." EPA-530-00-001 June 2000. www.epa.gov/osw.

Smart Growth Network. "Deconstruction: Building Disassembly and Material Salvage." www.smartgrowth.org/library/NAHBDecon.html

Designing for the Long View: Flexibility, Adaptability, Durability and Deconstruction

READING

EBN

Structure As Finish: The Pros and Cons of Leaving Off Layers. Vol. 9 no. 3. Feature Article.

Stewart Brand. *How Buildings Learn* (group. 12 chapters, Appendix. Everyone read Ch. 12: Built for Change)

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WasteSpec

Tuesday, April 6

DUE:

VIDEO:

Term Paper/ Project Progress Presentations

TOOLS FOR INTEGRATIVE DESIGN

Tuesday. April 13

DUE:

VIDEO: The Natural Step

Special Guest: Anthony Bernheim, SMWM San Francisco

Special Announcement: UW System Green Campus Symposium, April 14, 15. Madison, WI.

Green Specifications

READING

EBN

Getting from Design to Construction: Writing Specifications for Green Projects. Vol. 11 no. 7/8. Feature Article

The Gradual Greening of Masterspec. Vol. 8, no. 9. Sept. 1999. pp. 3-4.

Green Specifications Packet

HOK "SC Johnson Worldwide Professional Green Specification Requirements. December 1995."

Rating Systems

READING

EBN

EBN Checklist: Establishing Priorities for Green Building Vol. 4, no. 5. Sept./ Oct. 1995. Feature Article.

LEED: A Look at the Rating System that's Changing the Way America Builds. Vol. 9 no. 6. Feature Article

Spotlight on LEED Vol. 12 no. 12. December 2003. Feature Article.

Rating Systems Packet

WGBH (previously handed out)

LEED 2.1 (available at <http://www.usgbc.org/programs/index.htm>)

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Green Spec/ EcoMaster Specifications reconciliation

Tuesday, April 20

DUE:

VIDEO: Building Sustainability with the Natural Step: UT-Houston's Journey

The Environmentally Oriented Practice

READING

EBN

EBN Checklist: Building Green on a Budget. Vol. 8, no. 5. May 1999. Feature Article

Performance Based Compensation: Getting Paid for Good Design. vol. 4 no.2 March/ April 1995 Feature Article.

Newsbrief: An Innovative Employee-Satisfaction Based Compensation Package. Vol. 6, no. 2. Feb. 1997. p.3

Sustainability and Building Codes. Vol. 10 no.9. Feature Article.

The Environmentally Oriented Practice packet

Smith, Karen Haas "Sustaining the Environmentally Oriented Practice" Architectural Record, January 1995. pp. 24-27.

The Market's Buying Green. Architectural Record_

Green Ethics/ Aesthetics

READING

Green Ethics/ Aesthetics packet

Braham, "Eyes That Do Not See? The Practice of Sustainable Architecture"

Green Design Checklists (Todd, Van der Ryn, Berry...)

Bioregionalism Packet

"There's no place like home: bioregionalism and the politics of place" Utne Reader February/ March 1986. pp.22-23.

Kirkpatrick Sale "Dwellers in the Land: the bioregional vision" as reprinted in the Utne Reader February/ March 1986. pp.24-34.

Dodge, Jim. "What is a bioregion?" as reprinted in Utne Reader February/ March 1986. p.26.

"Bioregionalists at work across the continent" from Regeneration. Summer 1985 as reprinted in Utne Reader February/ March 1986. pp.32-33.

"Where are you at?" from Coevolution Quarterly Winter 1981 as reprinted in the Utne Reader February/ March 1986. p36.

Walter Truett Anderson. "The pitfalls of bioregionalism" for the Utne Reader February/ March 1986. pp.35-38.

ACTIVITY

Tuesday, April 27

TBA

Tuesday, May 4

TBA

Tuesday, May 11 (final review week- CLASS CANCELLED)

_____ **FINAL EXAM PERIOD**

Final Project Presentations