BA605/NRE605/Arch507
Green Construction & Design
Winter 2010

MICHIGAN ROSS SCHOOL OF BUSINESS | NATURAL RESOURCES AND ENVIRONMENT UNIVERSITY OF MICHIGAN | TAUBMAN COLLEGE A. ALFRED TAUBMAN COLLEGE OF ARCHITECTURE + URBAN PLANNING THE UNIVERSITY OF MICHIGAN

Syllabus

Class Meets:
Lecture: Tuesday, Ross R0240, 8-10 am
Discussion: Thursday, Ross R0240, 9-10 am
Winter term (3 credits)
January 12 – April 15
24 sessions

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"We shape our buildings; thereafter they shape us."
Sir Winston Churchill

Course Overview

The built environment is a major source of society's environmental impact, and is a major opportunity to find solutions. Recent attention to "green construction" emerges in many domains including energy systems, water use, construction processes, architectural design, site planning and brownfield development, just to name a few. At present, environmental issues can be considered in seemingly unlimited areas of the design and construction process. Yet, advances are slow. General perceptions assert that green construction costs too much money; that the technologies are not available for meaningful change, and opportunities are rare. This seminar addresses these concerns.

This is a survey course. Its goal is to explore this question from many perspectives. We will cover motivations for undertaking green construction projects, technical aspects of their design, obstacles to getting them done, and future directions of the field. The course is intended to increase awareness of green construction issues, so that students will know the range of existing knowledge and issues. Every student that takes this course may one day be involved in the design of a new home or office building. In that position rests the opportunity to shape living and working spaces that reduce their burden on the environment, both for the users' benefit, and the benefit of generations to come.

Class Format

The course will meet twenty four times during the winter term. Tuesday sessions will cover material for the course. The Thursday session will be a discussion regarding the week's issues. We will use a variety of teaching methods, including lecture, discussion, video, guest speakers and field trips. We will cover both residential and commercial construction. You will be expected to come prepared to participate – to ask questions. You should not come and merely play the role of spectator.

Assignments

Class Participation (20%). Class participation is a very important part of the learning process (as well as an important part of your grade). It is critical not only for your personal learning, but also for the learning of your fellow classmates. Much of the value of the class comes from prepared, thoughtful, and informed dialogue between you and your classmates. You are expected to read all the materials and you should apply the material in those readings to your class discussion. Excellent comments possess one or more of the following attributes: (1) they offer an original and relevant

perspective on the issue, (2) they move the analysis forward by building on previous contributions or by revealing fresh insights, (3) they transcend the "I feel" syndrome by including evidence that is based on more than personal experience — in other words, your thinking should reflect and integrate examples from other contexts.

Team Projects (3) Students will formed into groups of multi-disciplinary teams (SNRE, Ross, Urban Planning, Architecture, Engineering and others) to work on three projects:

1. LEED Certification Exercise (10%). In **Session #20**, student teams will score the Dana Building for its LEED certification. Supporting materials and a self-guided tour will form the basis for this exercise as students allot points for the attributes and innovations in the building. The results of the student assessment will be compared to the actual certification point score of the building.

2. Sector Analysis (35%). Students will be formed into groups to research green construction and design in a particular construction context and report their results to the class. What are the particular obstacles and opportunities to integrating green construction techniques into the following sectors? Be sure to consider technical, social, political and economic issues:

1. Hotels (economy)
2. Hotels (luxury)
3. Hotels (resorts)
4. Hospitals
5. Retail (big box)
6. Retail (malls)
7. Retail (small scale downtown retail)
8. Office
9. Government
10. K-12 Schools
11. Universities
12. Affordable Housing
13. Single Family Residential
14. Multi-Family Residential
15. Transportation Stations (Airport Terminals, Train Stations)
16. Housing for the Poor in Developing Countries

Write this paper as if it were a brief to either your boss or your client who may be considering a new project in this sector. Analysis results will be turned in on **Session # 9** in the form of (1) a 5 page, double spaced report and (2) a 5 slide PowerPoint presentation that you will show in a 9 minute presentation to the class in one of the subsequent sessions. The following document may be helpful in getting you started:

- _____ (2006) *Green Buildings and the Bottom Line* (Oak Brook, IL: Building Design + Construction). Go to: http://www.bdcnetwork.com/article/CA6390371.html You will need to register to obtain the document. There is no charge.

3. Green Development Project (35%). Students will be formed into groups to design their own green home. You will choose a region of the country and design a sustainable home that is appropriate for that region. Take into account specific elements of the environment in which it will be placed – solar radiation, wind potential, humidity, temperature ranges and any other issues you think pertinent to optimize your dream home. You may choose your preferred region, but we will try to make sure there is a diversity of regions covered. Your project will be evaluated on LEED for Home credits (http://www.usgbc.org/DisplayPage.aspx?CMSPageID=147), aesthetics and level of innovation. Your final report will consider all relevant dimensions of green construction and design: the technical, economic, social and political aspects of your

recommendations. A reasonable outline might include: (a) an overview of the project, (b) specific design considerations for your chosen region, (c) the green elements you intend to incorporate and the LEED scoring you anticipate achieving, (d) the economic costs and benefits of your design (both costs of your green elements and any local, state and federal tax benefits), (e) the obstacles and uncertainties to achieving the desired results, and (f) conclusions. Here are some web sites that may be helpful in analyzing your region's opportunities:

- http://www.pvwatts.org/
- http://www.nahbrc.org/greenguidelines/
- http://nationalatlas.gov/articles/people/a_energy.html#three
- http://www1.eere.energy.gov/solar/initiatives.html
- http://rredc.nrel.gov/wind/pubs/atlas/chp1.html
- http://www.nrel.gov/docs/gen/fy04/34871.pdf
- http://www1.eere.energy.gov/geothermal/pdfs/40665.pdf
- http://www.dsireusa.org/
- http://www.dsireusa.org/library/includes/type.cfm?Type=Net&Back=regtab&CurrentPageID=7&EE=0&RE=1&Search=TableType
- http://www.sharpusa.com/solar
- http://www.geoexchange.org/
- http://www.eere.energy.gov/windandhydro/windpoweringamerica/astate_template.asp?stateab=mi
- http://www.fha.com/lending_limits.cfm
- http://www.energystar.gov/index.cfm?fuseaction=new_homes_partners.showHomesResults&partner_type_id=LEN&s_code=ALL
- http://www.energystar.gov/index.cfm?fuseaction=qhmi.showHomesMarketIndex

Your project will be turned in on **Session # 23** in the form of (1) a 10 page, double spaced report (with appendices extra) and (2) an 8 slide PowerPoint presentation that you will show in a 12 minute presentation to the class in **Sessions #23 or 24**

Field Trip. In **session #16** (March 18) there will be a field trip to the IHM Motherhouse in Monroe Michigan. Students should be prepared for a full day trip.

Course Material

There are five sources of materials for this course:

1. There are two ***Textbooks***:
   - Kibert, C. (2008) ***Sustainable Construction: Green Building Design and Delivery,*** 2nd edition (Hoboken, NJ: John Wiley & Sons). (*note:* There is also a 2005 1st edition version of this book. The two editions are very similar, so if you can get the 2005 for a cheaper price, I recommend you buy it.)
   - McDonough, W. and M. Braungart (2002) ***Cradle to Cradle: Remaking the Way We Make Things*** (New York: Farrar, Straus and Giroux).
2. ***Wed Based Readings*** must read electronically or downloaded. These readings are listed this way, both to save paper and to assist you in finding relevant web pages on the topic. Many of these readings will be unrealistically long. Feel free to skim as needed.
3. ***Web Based Book:*** *Building Green for the Future: Case Studies of Sustainable Development in Michigan* (Urban Catalyst Associates, 2005). You may download it at [http://theacuffs.com/urbancatalystassociates/]. Go to "publications and presentations" and click on link.
4. ***Web Based Magazine:*** Read ***Environmental Building News.*** It is free to University students. If you are on-campus, go to: http://www.buildinggreen.com/articles/index.cfm. If you are off-campus, go to: http://www.bus.umich.edu/KresgeLibrary/Collections/A-ZListing/ scroll to

buildinggreen.com, click on it, and enter your UMich WebLogin. All previous issues are there.

5. ***Supplemental Materials*** such as a glossary and background materials are posted on cTools in a folder called "additional materials."

This reading should be supplemented by steady reading of contemporary green construction issues as published in mainstream media such as *The New York Times*, *Wall Street Journal*, and *Business Week* as well as the construction and green building press. Examples of the former might be *Fine Homebuilding*, *Architecture, Architectural Record, Residential Architect, Engineering News Record,* and *Metropolis*. Examples of the latter might include *Green Builder, Environmental Design + Construction, Environmental Building News, EcoStructure, Urban Land, Sustainable Industries Journa, Journal of Green Building* and *Natural Home Magazine*. Many of these are available in printed form at the Arts, Architecture, & Engineering Library on North Campus.

Some online journals and sources of information include:

Bob's Solar Project	http://www-personal.umich.edu/~bgoodsel/solar/blog.htm
Canadian Architect	http://www.cdnarchitect.com
Center for Sustainable Systems	http://www.umich.edu/~nppcpub/resources/compendia/architecture.html
Encompass - Alberta's Environmental Magazine	http://www.encompass.org
Encyclopedia of Alternative Energy and Sustainable Living	http://www.daviddarling.info/encyclopedia/AEmain.html
Energy Science News - US Dept. of Energy	http://www.energy.gov/sciencetech/energysciences.htm
Energy Source Builder Newsletter	http://www.oikos.com/esb/index.html
Energy User News	http://www.energyusernews.com/
ENEWS - Energy Electronic Library	http://www.unicamp.br/nipe/enews/
Environmental Building and Design	http://www.yourhomeplanet.com/
Environmental Design & Construction Magazine	http://www.edcmag.com
Environmental Energy Technologies Division News	http://eetd.lbl.gov/eetd-news-what.html
Financial Times Energy	http://www.ftenergy.com
Green Building Pages	http://www.greenbuildingpages.com/main.html
Green@work Magazine	http://www.greenatworkmag.com
Home Energy Magazine	http://www.homeenergy.org/
Inter Americas Adobe Builder Magazine	http://www.adobebuilder.com
Natural Home Magazine	http://www.naturalhomemagazine.com
Online journal of ecological design.	http://www.ecotecture.com
SOLAR TODAY magazine	http://www.solartoday.org
The bimonthly newsletter from the Alliance to Save Energy.	http://ase.org/section/_audience/e_fficiency
The Canadian Architect and Builder Online	http://digital.library.mcgill.ca/cab/
The Last Straw	http://www.strawhomes.com/
Urban Land Institute	http://www.uli.org
USGBC Green Building Links	http://www.usgbc.org/DisplayPage.aspx?CMSPageID=76&

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Course Schedule

Session #1 ***Introduction*** **Tuesday, January 12**

TEXT:
- Kibert, Chapters 1 (skim Chapters 2 and 5)
- McDonough and Braungart, Introduction and Chapter 1

WEB-BASED READINGS:
- Center for Sustainable Systems (2005) *Fact Sheet: Commercial Buildings*, (Ann Arbor, U of M). Go to: http://css.snre.umich.edu/publications/factsheets and click on *commercial buildings*.
- Center for Sustainable Systems (2005) *Fact Sheet: Residential Buildings*, (Ann Arbor, U of M). Go to: http://css.snre.umich.edu/publications/factsheets and click on *residential buildings.*
- Wilson, A. (2001) "Buildings and the Environment: The Numbers," *Environmental Building News*, May. (see "Course Materials" #4, earlier in course packet for instructions to download).

DUE: Calculate your CO_2 footprint at http://www.climatecrisis.net/calculate-your-impact.php and your ecological footprint at: http://www.myfootprint.org/
Come to class with your relative impact on the environment.

Session #2 ***Discussion Session 1*** **Thursday, January 14**

CASE: *Living Homes*, 2008, Erb Institute Case 08-01.

QUESTIONS: Would you invest in Steve Glenn's new company? Would you buy one of his products (assuming you had the capital)? Is there a proper fit between his target market and the product he has to offer? Glenn says he has a six-month window to perfect his business plan. What do you think are his critical challenges in the three legs of his business model? What are the immediate threats and opportunities to his business model? Where should he position the company for long term growth? Is the Living Home model a credible solution to the problems created by the built environment?

I. Why Build Green?

Session #3 ***Making The Case for Green Construction*** **Tuesday, January 19**

TEXT:
- Kibert, Chapter 13 and 4.
- McDonough and Braungart, Chapter 2

WEB-BASED READINGS:
- _____ (2005) *Making the Business Case for High Performance Green Buildings*, (USGBC). Go to: https://www.usgbc.org/Docs/Member_Resource_Docs/makingthebusinesscase.pdf
- Building Green (2005) *Making the Case for Green Building*, vol. 14, no. 4: 1, 10-15. Go to https://www.buildinggreen.com/auth/article.cfm?fileName=140401a.xml
- Kats, G. (2003) *The Costs and Financial Benefits of Green Buildings*, (Sacramento: California Sustainable Building Task Force). Go to: http://www.usgbc.org/Docs/News/News477.pdf.
- Matthiessen, L.F., & Morris, P. (2007). *The Cost of Green Revisited*, Davis Langdon. Go to: http://www.davislangdon.com/USA/Research/ResearchFinder/2007-The-Cost-of-Green-Revisited/
- Heschong Mahone Group (1999) *Daylighting in Schools: An Investigation into the Relationship Between Daylighting and Human Performance*, (Fair Oaks, CA: Heschong Mahone Group). Go to: http://www.h-m-g.com/projects/daylighting/projects-PIER.htm

- Heschong Mahone Group (1999) *Daylighting and Retail Sales: An Investigation into the Relationship Between Daylighting and Human Performance*, (Fair Oaks, CA: Heschong Mahone Group). Go to: http://www.h-m-g.com/projects/daylighting/projects-PIER.htm
- Boyce, P. C. Hunter and O. Howlett (2003) *The Benefits of Daylighting Through Windows,* (USDOE). Go to: http://www.lrc.rpi.edu/programs/daylighting/rp_research.asp
- Wilson, A. (1999) "Daylighting: Energy and Productivity Benefits," *Environmental Building News*, September.
- Victoria and Kador Group (2008) *Employee Productivity in a Sustainable Building*, go to: http://www.sustainability.vic.gov.au/resources/documents/500_Collins_Productivity_Study.PDF

GUEST: The Owner's Point of View (9-10 am)

- ***Paul Murray***, Director of Environmental Affairs and Safety, Herman Miller, Inc.

CASE: Herman Miller Marketplace

- US Department of Energy Buildings Database, Herman Miller Marketplace. Go to: http://www.eere.energy.gov/buildings/database/overview.cfm?ProjectID=189

Session #4 ***Discussion Session 2*** **Thursday, January 21**

CASE: Genzyme Center, Cambridge, Massachusetts

- Go to: http://leedcasestudies.usgbc.org/overview.cfm?ProjectID=274 and http://www.cement.org/buildings/buildings_green_genzyme.asp

Session #5 ***Marketing Green Construction*** **Tuesday, January 26**

TEXT:

- McDonough and Braungart, Chapter 3

WEB BASED READINGS:

- Turner Construction (2005) *Survey of Green Building Plus Green Building in K-12 and Higher Education* (New York: Turner Green Buildings). Go to: http://www.turnerconstruction.com/greensurvey05.pdf
- *Associated Press* (2005) "Businesses Realize Building Green can Benefit Bottom Line," *Columbia Daily Tribune*, January 16. Go to: http://archive.columbiatribune.com/2005/jan/20050116news022.asp
- _____ (2005) "Architect Unveils World's First 'Sustainable Condo'" *Greenbiz*, April 5. Go to: http://www.greenbiz.com/news/news_third.cfm?NewsID=26625

Session #6 ***Discussion Session 3*** **Thursday, January 28**

Building Systems – Structure
Design E^2

II. How to Build Green?

Session #7 — ***Certification Schemes*** — **Tuesday, February 2**

TEXT:

- Kibert, Chapter 3 and Appendix A
- McDonough and Braungart, Chapter 4

WEB BASED READINGS:

- USGBC: Go to: http://www.usgbc.org/DisplayPage.aspx?CategoryID=19
- Schendler, A. and R. Udall (2005) *LEED is Broken… Let's Fix It* (Aspen Colorado: Community Office for Resource Efficiency and the Aspen Ski Company). Go to: http://www.aspensnowmass.com/environment/images/LEEDisBroken.pdf
- _____ (2004) *Homeowners Guide: Energy Star Homes* (Washington DC: US EPA). Go to: http://www.energystar.gov/index.cfm?c=new_homes.hm_index
- Green Globes. Go to: http://www.thegbi.org/green-globes/
- Minergie: Go to: http://www.minergie.com/
- BREEAM: Go to: http://www.breeam.org/
- Green Star: Go to: http://www.gbcaus.org/
- CASBEE: Go to: http://www.ibec.or.jp/CASBEE/english/index.htm

GUEST: The Certifier's Point of View

- ***Paul Goldsmith***, AIA, Chairperson, USGBC Detroit Regional Chapter, Assistant Director of Operations, HarleyEllis.

Session #8 — ***Discussion Session 4*** — **Thursday, February 4**

Building Systems – Envelope
Design E^2

Session #9 — ***Energy and Atmosphere*** — **Tuesday, February 9**

TEXT:

- Kibert, Chapter 7
- McDonough and Braungart, Chapter 5

WEB BASED READINGS:

- Wilson, A. (1995) "Establishing Priorities with Green Building," *Environmental Building News*, September/October
- _____ (2004) *Lighting* (Washington DC: US Department of Energy, Energy Efficiency and Renewable Energy Building Technologies Program). Go to: http://www1.eere.energy.gov/consumer/tips/lighting.html

DUE: Sector Analysis Papers
PRESENT: Sector Analysis #1

Session #10 — ***Discussion Session 5*** — **Thursday, February 11**

Building Systems – HVAC
Design E^2

Session #11 ***Materials and Indoor Air Quality*** **Tuesday, February 16**

TEXT:

- Kibert, Chapters 9 and 10
- McDonough and Braungart, Chapter 6.

WEB BASED READINGS:

- Wilson, A. (2000) "Building Materials: What Makes a Product Green?" *Environmental Building News*, January
- Curtis, K. and R. Chase (2006) *Building Green without going in the Red*: *A Household Guide to Healthy, Affordable Building Materials* (Albany, NY: Citizen's Environmental Coalition). Go to: http://www.cectoxic.org/pdf/BuildingGreen.pdf
- American Lung Association Health House: http://www.healthhouse.org/
- Trusty, W. (2003) Understanding the Green Building Toolkit: Picking the Right Tool for the Job, (Ontario, Canada: Athena Institute). Go to: http://www.athenasmi.ca/publications/publications.html
- BEES 3.0, free software download for picking environmentally-preferable building products. Go to: http://www.bfrl.nist.gov/oae/software/bees.html

PRESENT: Sector Analysis #2

Session #12 ***Discussion Session 6*** **Thursday, February 18**

Green Materials and Finishes

– No classes February 22 - March 5 –

Session #13 ***The Building Hydrologic System/Innovation & Design*** **Tuesday, March 9**

TEXT:

- Kibert, Chapter 8

GUEST: The Developer's Point of View

- ***John Zann***, PE, Project Manager and ***Dax Ponce de Leon***, LEED AP, Development Manager of Tierra on Ashley (200 S. Ashley), PMA Consultants, Ann Arbor.

PRESENT: Sector Analysis #3

Session #14 ***Discussion Session 7*** **Thursday, March 11**

CASE: The California Academy of Sciences, San Francisco, California

- The New Sustainable California Academy of Sciences, Award Entry, Holcim Awards for Sustainable Construction. Packet materials and go to: http://www.holcimfoundation.org/awards/nam/silver_nam.html

Session #15 ***Landscaping and Site Design/Regional Priority*** **Tuesday, March 16**

TEXT:

- Kibert, Chapter 6

WEB BASED READINGS:

- Wilson, A. (1994) "Storm-water Management: Environmentally Sound Approaches," *Environmental Building News*, September/October.

- Wilson, A. (2001) "Development and Nature: Enhancing Ecosystems Where We Build," *Environmental Building News*, February.
- _____ (2004) *Heat Island Effect: What Can be Done?* (Washington DC: US EPA). Go to: http://www.epa.gov/heatisland/index.htm
- Cambridge Systematics (2005) *Cool Pavement Study* (Washington DC: Heat Island Reduction Initiative, US EPA). Go to: http://www.epa.gov/heatisland/resources/pdf/CoolPavementReport_Former%20Guide_complete.pdf

GUEST: The Engineer's Point of View (9-10 am)

- ***Scott R. Ceasar***, PE, Sr. Vice President, Cosentini Associates (Engineer on New Ross Building).

PRESENT: Sector Analysis #4

Session #16 | ***Discussion Session 8*** | **Thursday, March 18**

FIELD TRIP: IHM Motherhouse, Monroe, Michigan

READINGS: Go to http://theacuffs.com/urbancatalystassociates/, go to "publications and presentations" and click on the case study for the "IHM Motherhouse" – this will describe the site of our field trip. We will car pool and be gone from about 8 am till about 2 pm.

Session #17 | ***The Construction Process*** | **Tuesday, March 23**

TEXT:

- Kibert, Chapters 11 and 12

WEB BASED READINGS:

- American Institute of Architects (2006) *Writing the Green RFP*. Go to: http://www.aia.org/practicing/groups/kc/AIAS074658
- Matthiessen, L. and P. Morris (2004) Costing Green: A Comprehensive Cost Database and Budgeting Methodology (Boston, MA: Davis Langdon). Go to: http://www.davislangdon.com/upload/images/publications/USA/2004%20Costing%20Green%20Comprehensive%20Cost%20Database.pdf

GUEST: The Contractor's Point of View (9-10 am)

- ***Lynley M. Weston***, LEED AP, Asst. Estimating Engineer, Turner Construction Company.

PRESENT: Sector Analysis #5

Session #18 | ***Discussion Session 9*** | **Thursday, March 25**

The Design Process

Session #19 ***Institutional Supports and Restraints*** **Tuesday, March 30**

WEB BASED READINGS:

- USGBC (2003) *Building Momentum: National Trends and Prospects for High-Performance Green Buildings* (Washington DC: USGBC). Go to: http://www.usgbc.org/Docs/Resources/043003_hpgb_whitepaper.pdf
- _____ (2005) *The Energy Policy Act of 2005. What the Energy Bill Means to You*, (Washington DC: US Department of Energy). Go to: http://www.energy.gov/taxbreaks.htm
- _____ (2005) *Energy Efficient Mortgage Home Owner Guide*, (Washington DC: US Department of Housing and Urban Development). Go to: http://www.hud.gov/offices/hsg/sfh/eem/eemhog96.cfm
- _____ (2004) "Chicago mayor Announces All New Public Buildings to be LEED Certified," *Greenbiz*, June 24. Go to: http://www.greenbiz.com/news/2004/06/23/chicago-mayor-announces-all-new-public-buildings-be-leed-certified
- Whitaker, B. (2006) "Architects are a Lagging Indicator for Sustainable Design," *New York Times*, May 17. Go to: Lexus-Nexus in Kresge Library http://www.bus.umich.edu/KresgeLibrary/
- Hawthorne, C. (2007) "Green clashes with design in S.F. tower," *Los Angeles Times*, March 21. http://articles.latimes.com/2007/mar/21/entertainment/et-sanfran21
- Muñoz, S. S. (2007). "Going green to save some green." *The Wall Street Journal Online*. September 12. D1.

PRESENT: Sector Analysis #6

Session #20 ***Discussion Session 10*** **Thursday, April 1**

ASSIGNMENT: LEED Certification Exercise of the Dana Building

NOTE: This session will meet in **1028 Dana**

III. Where is Green Development Going?

Session #21 ***Broadening the Scope*** **Tuesday, April 6**

TEXT:

- Kibert, Chapter 14

WEB BASED READINGS:

- Wilson, A. (2006) "Passive Survivability: A New Design Criterion for Buildings" *Environmental Building News*, May.
- Wilson, A. (2006) "Biophilia in Practice" *Environmental Building News*, July, 1, 12.
- _____ (2004) "First US National Effort for Healthy, Eco-Friendly Affordable Housing," *Greenbiz*, September 30. Go to: http://www.greenbiz.com/news/news_third.cfm?NewsID=27239

GUEST: The Architect's Point of View (9-10 am)

- ***Rebecca Henn,*** Principal, Celento Henn Architects + Designers; Assistant Professor, The Pennsylvania State University; Doctoral Fellow, The Erb Institute for Global Sustainable Enterprise.

CASE: Benny Farm, Montreal, Canada

- Greening the Infrastructure at Benny Farm, Pilot Project, Award Entry, Holcim Awards for Sustainable Construction. Go to: http://www.holcimfoundation.org/awards/global/CA_detail.html

- Stastna, K. (2007) "Harsh reality of a green plan" *The Gazette*, September 4. go to: http://www.canada.com/montrealgazette/news/story.html?id=6e84a31f-5e3d-4f1f-8600-93f15ca5666e&k=41063

PRESENT: Sector Analysis #7

Session #22	***Discussion Session 11***	**Thursday, April 8**
You may use this time to work on your final projects		

IV. Wrap-Up

Session #23	***Final Project Presentations***	**Tuesday, April 13**
DUE:	Green Construction and Design Project	
PRESENT:	Green Construction and Design Projects	

	Discussion Session 12	
Session #24	***Final Project Presentations***	**Thursday, April 15**
PRESENT:	Green Construction and Design Projects	

Style Guide for References

Please use endnotes for all references in your papers. The form of entries should fit the following format.

Book entries follow this form: Authors' or Editors' Last Names, Initials. Year. *Title of book*. (Italic, lowercase except for the first letter of the first word and the first word after a long dash or colon). City Where Published, with abbreviation for state or province (North America) or full name of country, only if needed to identify a small city: Name of Publisher. Examples:

> Granovetter, M.S. 1965. *Getting a job: A study of contracts and careers*. Chicago: University of Chicago Press.
>
> Kahn, R. L., & Boulding, E. (Eds.). 1964. *Power and conflict in organizations*. Glencoe, IL: Free Press.
>
> R. Harbridge (Ed.) *Employment contracts: New Zealand experiences*. Wellington, New Zealand: Victoria University Press.
>
> National Center for Education Statistics. 1992. *Digest of education statistics*. Washington DC: National Center for Education Statistics.

Periodical entries follow this form: Authors' Last Names, Initials. Year. Title of article or paper (in lowercase letters except for the first letter of the first word and the first word after a long dash or colon). *Name of Periodical,* volume number (issue number, *if needed*—see below): page numbers. Examples:

> Shrivastava, P. 1995. The role of corporations in achieving ecological sustainability. *Academy of Management Review*, 20: 936-960.
>
> Nonaka, I. 1991. The knowledge-creating company. *Harvard Business Review*, 69(6): 96-104.

Include an issue number *only* if every issue of the referenced periodical begins with a page numbered 1. (Look at more than one issue to check.)

If an article has no author, the periodical or producing body is referenced:

> *BusinessWeek.* 1998. The best B-schools. October 19: 86-94

Chapters in books (including annuals) follow this form: Authors' Last Names, Initials. Year. Title of chapter (in lowercase letters except for the first letter of the first word and first word after a colon). In Editors' Initials and Last Names (Eds.), *Title of book:* page numbers. City Where Published, State or Country (only if necessary to identify the city): Name of Publisher. Examples:

> Levitt, B., & March, J.G. 1988. Organizational learning. In W.R. Scott & J.F. Short (Ed.), *Annual review of sociology*, vol. 14: 319-340. Palo Alto, CA: Annual Reviews.
>
> Dutton, J., Bartunek, J., & Gersick, C. 1996. Growing a personal, professional collaboration. In P. Frost & S. Taylor (Eds.), *Rhythms of academic life*: 239-248. Newbury Park, CA: Sage.

For *unpublished* papers, dissertations, and papers presented at meetings:

> Duncan, R. G. 1971. *Multiple decision-making structures in adapting to environmental uncertainty*. Working paper no. 54–71, Northwestern University Graduate School of Management, Evanston, IL.
>
> Smith, M. H. 1980. *A multidimensional approach to individual differences in empathy.* Unpublished doctoral dissertation, University of Texas, Austin.
>
> Wall, J. P. 1983. *Work and nonwork correlates of the career plateau*. Paper presented at the annual meeting of the Academy of Management, Dallas.

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