Case Studies in Sustainable Design

Week 2
Steve Abercrombie
Summer 2009
How we design buildings

- Feasibility
- Program
- Concept
- Design

Owner

Architect / Designer

Civil

Engineer

Landscape
From Building

Image Courtesy of Airport Sleeper
To Neighborhood

Image Courtesy of Rich Lem
Development

Images courtesy of the Goddard Space Center - NASA
Overlap
27% of U.S. Energy consumption is from transportation.


Photo courtesy M. Eriksson
28% of U.S. Energy consumption is from industry.

48% of U.S. Energy consumption is from buildings.


Photo courtesy Rich Lem
STEVE'S LENS...
Up the Ante...

• Increase the Scale
• Create Community
• Think Systems
• Expand beyond Human Ecology
• Make it Beautiful
• Real Analytics

Image courtesy of the Image Science & Analysis Laboratory, NASA Johnson Space Center.
Create Community
Systems Thinking
Expand Beyond Human Ecology

Image courtesy of rachel_thecat
Make it beautiful
Real Analytics

Source: Federal Ministry of Transport Building and Urban Affairs
MARKET DEVELOPMENT

Also known as Details... Details... Details
PERCEPTION
REALITY
The value of U.S. construction starts significantly declined by almost half from 2000 to 2003.

Source: USGBC
LEED Rating Systems

- Homes
- Neighborhood Development (in pilot)
- Commercial Interiors
- Core & Shell
- New Construction
- Schools, Healthcare, Retail
- Existing Buildings Operations & Maintenance

Source: USGBC
Levels of LEED

Source: USGBC
LEED for Neighborhood Development

• Encourage healthy living
• Reduce urban sprawl
• Protect threatened species
Buildings - Single Family Residential

Image Courtesy of architekt2
Buildings - Commercial
Infrastructure
Green Single Family (LEED - Homes)

Green Commercial (LEED – NC / CS LEED - CI)

Green Multi Family (LEED - Homes / LEED - NC)

Green Infrastructure

Planning, Design and Location
Smart Location & Linkages
Neighborhood Pattern & Design
## Green Construction & Technology

### (Green Infrastructure & Buildings)

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<th>No.</th>
<th>Description</th>
<th>Points</th>
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<td>Prereq.</td>
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