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**2010 Imperative!!!**

The 2010 Imperative will be web-cast live on **February 20, 2007 from 9am to 12:30p in Portland**. Nationally, this event is sponsored by the AIA, USGBC, NY Academy of Sciences, Rockefeller Brothers Fund, and ASHRAE. The 2010 Imperative is a challenge and strategy for transforming design education, participants will be asked to adopt, support, and implement its targets. The Teach-in will focus on professionals and schools of architecture, planning, engineering, landscape architecture, interior design, industrial design and other design disciplines, but is open to all.

- PSU –
- University of Oregon –

(US Bancorp Building and SRG will be hosting showings for Professionals)

[www.2010imperative.org](http://www.2010imperative.org)

The logo for "THE 2010 IMPERATIVE: GLOBAL EMERGENCY TEACH-IN" is positioned on the right side of the poster. It includes a small globe icon and lists sponsors: "Sponsored by: AIA, USGBC, NY Academy of Sciences, Rockefeller Brothers Fund, ASHRAE". Below the logo is a stylized tree graphic.

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**Agenda:**

- Introduction to Natural Talent Design Competition
- Overview of the Project Site
- Introduction to LEED for Homes
- Breakout Sessions
- Question and Answer Time!

A stylized tree graphic is located in the bottom right corner of the agenda section.

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## Integrated Design

- Highly collaborative, multi-disciplinary approach
- Collective knowledge, strength in depth
- Idea, develop, test, revise, idea, develop...
- Whole building design
- Need for collaborative leaders
- Start early
- Personal commitment to integration



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## Introduction to Natural Talent Design Competition



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## Natural Talent Design Competition!



Deadline for entries is May 4th



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Who is Eligible?

- All University students of any discipline
- Individuals with less than five years experience in building industry
- Teams must enter the closest regional competition
- Individuals or team up to 5
- Team encouraged to have an advisor



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Natural Talent Design Competition Challenge

Design a LEED-H Silver residence with a focus on innovative technology and integrated design strategies in four key areas:

- Education
- Natural Resource Use
- Regional Relevance
- Materials



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Education:

- Documenting the reasoning and intent of innovative technologies
- Create an educational homeowner's manual
- Create a case study
- Participate in green home tours



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Natural Resource Use:

- Site orientation for passive heating and cooling
- Renewable Energy such as solar
- Storm water runoff retention and treatment
- Natural ventilation.
- Specifying rapidly renewable resources



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Regional Relevance:

- Address regional/cultural conditions
- Cultural precedent
- Community connection
- Specifying locally manufactured and harvested materials



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Materials:

- Material lifecycle
- Durability
- Flexibility of spaces
- VOC content of paints, adhesives, sealants and carpet systems
- Particle board with no added urea-formaldehyde
- Recycled or reusable content
- FSC wood



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### Residential Units:

The design must incorporate:

- A two unit attached housing residence with a maximum footprint of about 900 to 1,200 square feet per unit
- 2 – 4 bedrooms of about 100 – 120 square feet
- No garage
- Must include adequate and easily accessible dedicated recycling and composting areas



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### Overview of the Project Site



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### Portland Location

**604 NE Webster, Portland OR 97221**



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Portland Location:

The site is located in the Alberta neighborhood in upper NE Portland

- Area is going through immense revitalization
- Consider history of the site
- Consider the artistic new flare
- Consider the multi-cultural Mix
- Consider the architectural style of the Craftsman style Bungalows



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Design Goals

- Conceptual Design and Program fulfillment: how the project's vision meets requirements
- Integration of green design strategies and applicability to LEED criteria
- Creativity in process, design and innovation
- Engagement of environmental, economic, and social aspects of program and site
- Overall energy reduction and its documentation



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Prizes

Cascadia Winner:

- 1st Place: \$1,000 and receive travel, lodging and registration to Greenbuild
- 2nd Place: \$500
- 3rd Place: \$250
- People's Choice: Honorable mention

National:

- 1st Place: \$5,000
- 2nd Place: \$2,000



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Introduction to LEED for Homes



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Brainstorming Breakout Sessions



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Overview of Resources



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## US Green Building Council

- [www.usgbc.org](http://www.usgbc.org)

On the USGBC website you can get:

- information on LEED rating systems
- case studies
- Link to EGB website and information



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## Earth Advantage

[www.earthadvantage.com](http://www.earthadvantage.com)

Specifically for homes, EarthAdvantage provides information on energy efficiency, reduction in resources use and improve indoor air quality

Check out their Special Features section for Green Building Guides



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## Energy STAR

Homes that earn the Energy Star must meet guidelines for energy efficiency set by the U.S. Environmental Protection Agency. Energy Star qualified homes are at least 15% more energy efficient than homes built to the 2006 International Energy Conservation Code (IECC).

- effective insulation
- high performance windows
- tight construction and ducts
- efficient heating and cooling equipment
- Energy Star qualified lighting and appliances



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BuildingGreen.com

 [www.buildinggreen.com](http://www.buildinggreen.com)

Each team member that is an EGB member also gets a one year subscription to BuildingGreen.com where you can get information on materials by CSI division, case studies and articles.



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Earthcraft House

Earthcraft House is a green building program that serves as a blueprint for healthy, comfortable homes, which reduce utility bills and protect the environment.



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Global Green Building Resource Center

A partnership between Global Green USA and the City of Santa Monica, the Green Building Resource is stocked with samples of the most popular environmentally-friendly building materials, and provides free design advice and information about green building strategies.



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## Cradle-to-Cradle

William McDonough & Michael Braungart

Cradle-to-grave products vs. cradle-to-cradle cycles

Maintaining materials in closed loops maximizes material value without damaging ecosystems

Products and services are designed based on patterns found in nature, utilizing waste and creating an abundance that is healthy and sustainable



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## Pharos

### How the lens works

#### Pharos Tools:

**Pharos Lens** is a new tool for signaling and documenting the environmental and social performance of products in the marketplace.

**Pharos Label** designed specifically to address the needs of the designer who needs easy access to key information to make quick but informed decisions.

**Pharos Wiki** will create a virtual commons where users can engage in co-creating and using the Pharos system to independently inform, educate and empower each other to make the most responsible building material choices.

the sliders  
product identifiers

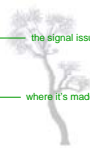


the logo

the lens

the signal issues

where it's made



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Thank You!

•SERA

•Earth Advantage!



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## Case Study: Kerby Street Homes

Four custom designed speculative "green" homes. These homes are sited on a narrow infill lot in North Portland and utilize a variety of advanced energy efficiency and renewable energy technologies (zonal hydronic heating systems, heat recovery ventilation and solar electric and solar water heating panels).



Located on NWC of N Kerby Ave. and N Humboldt St.  
Near intersection of N Albina Ave. and N Alberta St.

Designed by Aaron Blake and Christina Davis




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## Sustainable features

- Zonal Radiant Heat System
- Heat Recovery Ventilation System
- Rainwater Harvest System: captures and recycles 80%-90% of roof-discharged stormwater
- Pervious concrete driveway
- Pre-plumb for solar hot water heating
- Ecoroofs over porches
- Native Landscaping
- Low/no-VOC finishes and materials
- Sprayed-in foam insulation which is twice as air-tight as a fiberglass batt-insulated home
- Rainscreen design for siding allows for moisture to escape the building envelope
- Advanced framing of exterior stud walls




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## Case Study: Pleasant Hill Home



LEED® Facts	
Pleasant Hill Home Portland, ME	
LEED for Homes Certification: May 12, 2008	
<b>Silver</b>	<b>57</b>
Water Efficiency	16,475
Energy Efficiency	102
Indoor Environmental Quality	100
Materials & Resources	2,420
Location & Linkages	370
Energy & Atmosphere	16,420
Greenhouse Gas Emissions	12
Accreditation & Design	44
LEED Certified by GreenSource	




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### Case Study: Pleasant Hill Home

- 3KW active photovoltaic solar collection system
- a super-insulated envelope
- a radiant floor system with a high-efficiency boiler
- erosion controls
- native landscaping to reduce water demands
- Low-E, argon-filled windows were installed
- Compact fluorescent bulbs
- High efficiency appliances
- Advanced framing techniques
- Increased insulation value of R-27, more than twice the R-value of a typical home



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### Case Study: The "Farmhouse"

- Straw bale walls
- Icynene spray insulation
- Materials sourced locally
- Brownfield redevelopment
- Zeroscaping
- Maximum natural daylighting and ventilation
- Concrete with flyash
- Geothermal heat tied to radiant floor heating system
- Energy STAR low albedo roofing material
- Building reuse, home was originally a Spanish mission and is retaining much of the structure



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### Case Study: livinghomes

livinghomes.

LivingHomes creates LEED certified, prefab homes available for consumers nationwide. Ray Kappe, FAIA, designed the first model home which was installed in eight hours. It was certified LEED® Platinum by the United States Green Building Council and also certified an Energy Star® home.



Materials:

livinghomes makes their design "cradle-to-cradle" compatible by using constructed materials and processes that will make it easier to disassemble and reuse in the future.



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### Materials: livinghome

- Low-emitting finish materials
- Low-Volatile Organic Compound (VOC) paints and stains
- Forest Stewardship Certified (FSC) wood for the millwork, ceiling, siding, and framing
- 100% post-consumer recycled paper based countertops
- Recycled glass and porcelain tiles
- Green Fiber 100% recycled denim insulation



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### livinghome Sustainable features

The model home incorporates a unique blend of materials and innovative environmental systems, earning the Platinum designation.

- 80% more efficient than a conventional residence of similar size.
- 75% less construction waste
- A photovoltaic system will produce the home's energy
- Solar water heating
- Radiant floors
- A native landscape and rooftop garden
- Resource efficient Energy Star appliances
- LED lights that use a fraction of the power of conventional lights
- An integrated stormwater management which includes sub-surface irrigation
- A 3500-gallon cistern and grey water recycling system



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### Innovative Design Opportunities

- LivingHome's designs includes movable walls, modular millwork, and a structural system that allows for the easy addition and reconfiguration of space reducing waste during remodeling.
- For projects on land with existing homes, LivingHomes works with The Reuse People to deconstruct the structures and donate the materials to Habitat for Humanity.



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## Case Study: The Rose House



4343 NE Ainsworth  
Portland OR 97218



Sectional Analysis



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## Rose House Sustainable Features

- Over 80% construction waste diverted from landfill
- Erosion and sedimentation plan during construction
- Photovoltaic Panel provides 50% of estimated power usage
- Heating and cooling system uses less than half the energy of a normal house by using a solar heat-pump which also reduces carbon emissions
- Sustainable materials: Recycled content material including fly ash in the concrete, insulation, and tile were used. FSC and reclaimed lumber was used.
- High performance fiberglass windows
- Improved insulation including SIPS for roofing insulation
- Efficient thermal envelope will perform 50% better than code and cut energy use by 50% as well
- Natural Ventilation
- Extensive daylight through out the house
- The hot water heater is combined with an energy recovery ventilator in order to eliminate the need for a furnace
- House is located on a previously developed site with infrastructure in place



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## Integrated Design Opportunities

The Rose House is fully integrated design, all elements of the shell, glazing and highly efficient space and water heating system rely on each other to maximize their effectiveness.



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