

# Building Green

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SAINT • XAVIER • UNIVERSITY  
Chicago • Orland Park

Sustainable University Symposium

August 14, 2008

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- A. Understand What You Want and Why
  - B. Discover and Celebrate “Respect”
  - C. Understand What the University Community Should Do and Educate
  - D. Environmental Stewardship



# SAINT • XAVIER • UNIVERSITY

Chicago • Orland Park



# Why “Green”?

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✦ University Master Plan – aggressive expansion

✦ Increase number of resident students to 1000 by 2008.



# New Residence Hall

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Decision to complete Schmitt Quad by adding another residence hall.

✦ A taller structure to give height to the campus architecture.



# Schedule

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## ✦ The Problem

- ✦ The new residence hall would need to be designed and built in a very tight timeline.

## ✦ The Solution

- ✦ The City of Chicago “Green Permitting Process” Guaranteed to move the permit process from 3-4 months to 6 weeks.

## ✦ Board of Trustees Decision

- ✦ Determined to build sustainable building, but should we use USGBC LEED Crediting Process?

# “Green” Education

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✦ This cooperative process required education of the:

- ◆ Architects
- ◆ General contractor
- ◆ Sub-contractors
- ◆ Saint Xavier Management Team



# Sustainable Education

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## ✦ Education concerning the Chicago Green Permit & USGBC LEED-NC Accreditation Process

### ✦ Key Firms came together:

- Aramark (Facility Service Partner)
- Environmental System Design (LEED Proponent)
- Chicago Green DCAP Coordinator
- Solomon, Cordwell, Buenz & Assoc.
- Henry Brothers
  - ◆ Construction Managers & G.C.
- Saint Xavier University Facilities

# Education Process

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- ✦ Based on an analysis of the new Chicago “Green” Building Code in Contrast with USGBC LEED criteria
  - ◆ Sustainability using LEED NC could:
    - Accomplish tight timeline yet save money in the long term
    - Facility centered around environmental stewardship yet, still maintain an eye appealing design blending with other structures in Schmitt Quad.

# Two USGBC LEED Accredited Professionals assisted in the decision process

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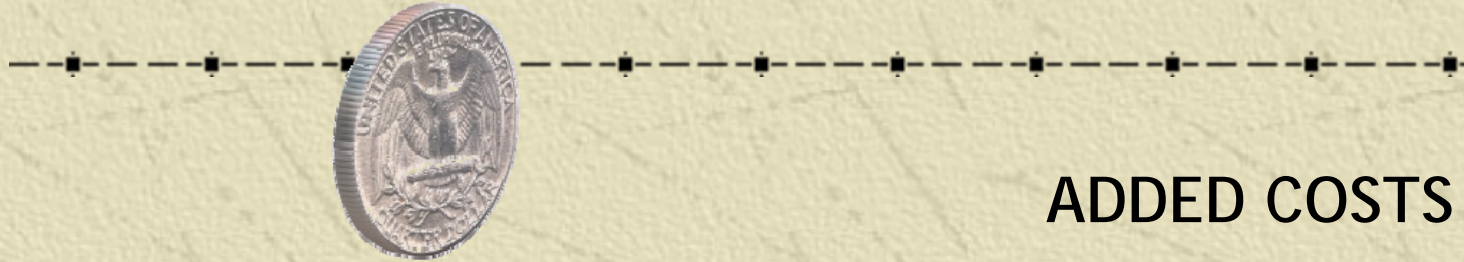
- ◆ One had been the project manager for one of the earliest LEED certified buildings in the country- a residence hall at Carnegie Mellon Univ. in Pittsburgh, PA
- ◆ They walked all of us through LEED NC accreditation using the certification matrix vs. “Point” costs.
- ◆ They compared the LEED NC process with the City of Chicago Green Building Program.

# Energy Study

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- ✦ A detailed energy study using DOE2 modeling software was conducted
  - ◆ Compared a 37,087 sq. ft. traditional building to our sustainable building.
  - ◆ Study showed an annual average energy savings of \$31,000 with a payback of HVAC upgrades in 8.25 years.
  - ◆ Sizeable decrease in building pollutants.

# At First Blush – Green Added Cost



## ADDED COSTS

**\$80,000**

Design Fees

**\$30,000**

Commissioning Expense

**\$225,000**

HVAC Construction

**TIME**

Design and Construction

# Going Green – Good Investment



## CAPTURED SAVINGS

**\$31,000**

Energy Savings

**\$90,4000**

Grant for Green

**Waived**

Chicago City Fees

**TIME**

Expedited Approvals

# Permitting/ Fees



✦ The City waived permit fees, construction plan review fees, and landscape fees for going “Green”

✦ Plans/ Designs

- ◆ Approved in six weeks,
- ◆ Construction began late November 2005,
- ◆ Ground Breaking occurred January 10, 2006, and
- ◆ Completed August 20, 2006 with Student move in.



# Building Snapshot

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- ✦ Rubloff Hall built in the Beverly/Mt. Greenwood Communities of Chicago.
- ✦ A USGBC LEED-NC 2.1
- ✦ Profited by using the Chicago Department of Construction and Permitting fast track Green Building Program.
- ✦ R28 Value building envelope with an average energy operating cost of \$2.038 per square foot vs. a traditional of \$3.061.
- ✦ Largest building in Illinois to use sidewall displacement ventilation.
- ✦ Recognized by the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) as a building of engineering excellence.
- ✦ Certified “Gold” on April 12, 2007 by USGBC.



# SXU Success From Careful Steps



- ✦ Introduction of Building Automation System
- ✦ Intensive Green Roof- “Green Grid”
- ✦ Application of Innovative HVAC Concepts incorporating sizeable Energy Savings.
- ✦ Annual emission reductions: 1905 lbs. less of nitrous oxide, 3401 lbs. less of sulfur dioxide, and 793,318 lbs. of carbon dioxide.
- ✦ Focus on Integration of sustainable features established on both campuses
- ✦ Emphasis on Training and Education

# Discover and Celebrate Respect



Artificial  
Turf  
Field

BioDiesel  
Mowers

Green  
Energy

Rubloff  
Hall  
LEED

Pours  
Paver  
Parking  
Lot

Storm  
Water for  
Irrigation

Native  
Plant  
Policy

Recycle  
Mania

Light  
Color  
Parking

Hybrid  
Parking

My-Bed  
"Green"  
Mattress

High  
Albino  
Roof

# More Than Financial Benefits

- ✦ Community Outreach
- ✦ Alumni Relations
- ✦ [greenbuilding.sxu.edu](http://greenbuilding.sxu.edu)
- ✦ Student Recruitment
- ✦ Education Programs
- ✦ Great Place to Live & Work
- ✦ “The right thing to do”

BY KELLY HLADEK

## GREEN business is GOOD business

New residence hall keeps up with growing demand for on-campus housing and the growing concern for the environment

Saint Xavier University's school colors may be scarlet and gray, but the new residence hall on campus has everyone thinking green.

The \$9 million, 37,000-square-foot Rabluff Hall, which opened this fall, is the first university residence hall in the greater metropolitan Chicago area—and one of only two currently under construction in Illinois—to be certified under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. In order to receive the prestigious “green building” designation for this project, the University—assisted by its design (Solomon Cordwell Buenes) and building (Henry Bros. Construction) teams—demonstrated through detailed planning and careful construction the incorporation of a number of sustainable strategies that protect the Earth's natural resources.

Located at the center of campus on the west side of the Schmitz Quad, Rabluff Hall has increased the awareness among students of environmental issues that they will have to address in their lifetimes and promotes a collective mindset that, in general, encourages making the preservation of our planet a greater priority. According to Paul Matthews, assistant vice president for facilities management at SXU colleges and universities all over the country are moving in greener directions with their construction and renovation projects, and he is delighted that SXU is helping to lead the way.

“Becoming more environmentally conscious with our building methods enhances the quality of life on campus for students and those of us who work here,” he said. “It's good business.”

The U.S. Green Building Council awards certification credits in six “green building” construction categories: sustainable sites; water efficiency; energy and atmosphere; materials and resources; indoor environmental quality; and innovation and design process. Rabluff Hall has earned enough credits in all six categories to reach the second (silver) certification level. The hall's environmentally friendly features include high-efficiency lighting, heating, ventilation, air conditioning and insulation systems. Even the roof does its part to conserve energy and preserve the environment. More than 10 percent of the roof is a “green roof,” which is covered with clay pots housing small plants that filter and purify rainwater before it seeps into the ground. The remaining white surface of the roof reflects—rather than holds—heat.

“The ‘brain’ of the building, so to speak, is the building computer system (BCS) that controls all major systems,” Matthews added. “For example, the HVAC system will automatically adjust for the amount of CO<sub>2</sub> [carbon dioxide] in the air for each space. The computer automatically adjusts features as needed, or we can adjust them ourselves electronically using any computer within the campus or remotely from home.”



# Rubloff Hall – Educational Programs



*Ken Kulick and Gerry Giovannelli (SXU Buildings and Grounds) give Dixmoor Rosa Parks students an insider's look into the environmentally friendly features of Rubloff Hall. Some 50 middle school students were guests of SXU this past spring through a generous grant from the Agatha O'Brien Fund of the Sisters of Mercy.*



# On Going Sustainable Initiatives

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## Community presentations

- ◆ Green Build 2007 tour, November 7-9
- ◆ Chicago USGBC December, 2007
- ◆ March 19, 2007 ASHRAE



## University Facilities Staff/ Students/ Faculty

- ◆ Living Lab
- ◆ LEED AP Certification
- ◆ Building Management System
- ◆ Lighting energy retrofits
- ◆ Green Roof – Green Grid
- ◆ Hybrid vehicle procurement
- ◆ Enhanced recycling at all residence halls
  - Recyclemania

- ◆ “MyBed” replacement program
- ◆ Landscape design
  - Use of rain gardens and porous pavers
- ◆ Solar Reflective Sidewalk Program
- ◆ Porous Paver Parking Lot
- ◆ Solar Reflective Roof Replacement
- ◆ 9 acre Wetland Restoration Project at Orland Park Campus
- ◆ Windpower Renewable Energy Credit Purchases
- ◆ [Greenbuilding@sxu.edu](mailto:Greenbuilding@sxu.edu) - website

# On Going Sustainable Initiatives Continued

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## ✦ “Green Memberships”

- ✦ Chicago Chapter USGBC,
- ✦ U.S. EPA Green Power Partner,
- ✦ Association for the Advancement of Sustainability in Higher Education (AASHE)
- ✦ University & College Presidents’ Climate Commitment and
- ✦ State of Illinois University Sustainable Compact.

# SXU Sustainability Policy

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- ✦ All future buildings will incorporate the USGBC LEED credit process,
- ✦ Registered with the USGBC three more university projects,
  - 83,000sq' Library, 40,000sq' Residence Hall, and a 10,000sq' Business Condominium in the Chicago Business "Loop"
- ✦ 1 of 8 Saint Xavier University Core Values,
  - RESPECT – "It's the right thing to do."
- ✦ AASHE Membership and Environmental Commitments
- ✦ Presentation on April 19, 2007 at the 2<sup>nd</sup> Sustainable Campuses Conference, University of Maryland ,
- ✦ Every Aspect of Saint Xavier campuses will be scrutinized to ensure sustainability,
- ✦ Expand use of renewable energy credits to 15% by the end of FY2008,
- ✦ Leader in environmental stewardship,
- ✦ Educate the university and surrounding community, and
- ✦ Celebrate sustainable initiatives and incorporate into curriculum.

# Rubloff Hall – LEED Certified Gold



# ARE THESE THINGS

## REALLY



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## MUTUALLY EXCLUSIVE

- Protect environment
- Social responsibility
- Long-term benefit
- Economic efficiency
- Need for space
- Academic program
- Recruitment
- Faculty retention
- Fund raising