LEED® Lab™

A Hands-On Experience for Future Sustainability Professionals

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What is LEED?

- Stands for Leadership in Energy and Environmental Design
- First developed by the United States Green Building Council (USGBC) in 2000
- Voluntary rating system and set of guidelines for green buildings
LEED ADDRESSES THE COMPLETE LIFECYCLE OF BUILDINGS

<table>
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<tr>
<th>Building Lifecycle</th>
<th>Design</th>
<th>Construction</th>
<th>Operations</th>
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<tbody>
<tr>
<td>HOMES</td>
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<td>Neighborhood Development (In Pilot)</td>
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<td>Commercial Interiors</td>
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<td>Core &amp; Shell</td>
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<td>New Construction</td>
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<td>Schools, Healthcare, Retail</td>
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<tr>
<td>Existing Buildings Operations &amp; Maintenance</td>
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What is a LEED Lab?

- “Multidisciplinary immersion course that utilizes the built environment to educate and prepare students to become green building leaders and sustainability-focused citizens”
- Students facilitate the LEED for Building Operations and Maintenance (LEED O+M) process on a chosen campus building
- At course close, students are prepared to sit for a LEED professional credential exam
What: Multidisciplinary immersion course focused on LEED for Existing Buildings: Operations + Maintenance

Why: 70% of college students and 50% of workers are looking for jobs with social impact

How: Equipping students with career-ready skills, green building knowledge and expertise needed to be effective communicators, project managers, and critical thinkers
LEED Lab Dynamic

- Green Building Education
- Project Management
- LEED Credentials
Who is Doing LEED Lab?
Why Green Building Education?

- 85% of LEED professionals believe that their professional credential gives them a competitive edge in the market and 71% of hiring decision-makers see increased competitiveness.

- 61% of prospective college students said having information about a school’s commitment to the environment would influence their decision to apply or attend.
Why a Formal LEED® Lab™?

- First-hand LEED project support from GBCI
  - Green Building Certification Institute, responsible for reviewing LEED projects
- Student discounts on accreditation exams and materials
- Support and publicity from USGBC

*Note: course must have a registered LEED O+M project ($900 registration fee)
Strengths for Post-Grad Employment

- Students walk away with self-guided, hands-on project management experience working with a notable 3rd party certification program
- Professional communication, time management, problem solving and team-building
- Opportunity to acquire professional credentials that support a rigorous educational experience
- Long-lasting relationship with the university campus, leaving a sustainable impact
Beginning LEED Efforts With Academics
LEED & the CSU

The CSU shall design and build all new buildings and major renovations to meet or exceed the minimum requirements equivalent to LEED “Silver.” Each campus shall strive to achieve a higher standard equivalent to LEED “Gold” or “Platinum” within project budget constraints. Each campus may pursue external certification through the LEED process.

CSU Sustainability Policy (RJEP/CPBG 05-14-01), May 20, 2104
LEED at CSUF

2 LEED New Construction
v2.2 Certifications

LEED Certified GSF at CSUF

<table>
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<tr>
<th>Year</th>
<th>GSF (GSF)</th>
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<td>2012</td>
<td>500,000</td>
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<tr>
<td>2014</td>
<td>500,000</td>
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CSU Campus as a Living Lab

- Development or redesign of a course that ties elements of sustainability into opportunities for learning using the campus physical plant. Funds of up to $12,000 will be awarded to support the preparation of the proposed course.

- The creation of an interdisciplinary Learning Community, focused on campus sustainability. The learning community may be comprised of faculty, staff, students, and community college partners. Funds of up to $12,000 will be awarded to support the activities of the proposed Learning Communities.
First Steps

- Identified Opportunity to support an existing course with low enrollment
  - 492 level projects course
In this course students work in interdisciplinary teams on sustainability projects, either on campus or in the community. Students will apply their disciplinary knowledge to help solve real world, sustainability problems. This approach is most effective when done in interdisciplinary teams (as it is often done in companies, communities, and consulting firms). There is no required textbook and no exams.
Course Structure

- Single semester course, Spring 2015
  - Both undergraduate and graduate
  - Diversity of majors including Environmental Studies, Chemistry, and Engineering
- Green building education, feasibility, and accreditation exam prep
Building Choice

McCarthy Hall

- 1963
- 310,108 square feet
- First permanent building on campus
- Central plant in basement
- Mixed-use: Offices, classrooms, labs
Spring Quarter

- Green Building Education
- Green Associate Practice Exams
- Feasibility
  - Evaluate feasibility of selected credits for project building
    - Current State
    - Actions Required
Expanding on Existing LEED Efforts with Academics

University of California, Santa Barbara
LEED at UCSB

- Bren Hall – constructed in 2002
- Pioneered UCSB then UC green building policy of LEED Silver for construction projects
- UCSB policy update to LEED Gold in 2012
LEED at UCSB

10 LEED New Construction/Major Renovations
11 LEED Existing Buildings
35 LEED Homes
56 certifications

Previous efforts utilizing students to complete some LEED documentation
First Steps

- Approval for inclusion as course in Environmental Studies Department
  - Solution: ‘student group study course’
    - Skipped needing funding & hiring formal instructor

- Locate funding for LEED fees and upgrades
  - Solution: Student Affairs Division
    - Division has own funds, wants all of their buildings certified

- Chose LEED O+M version 4
Building Choice

Student Resource Building

- High visibility and student use
- Previously LEED certified at Silver level
- Operated by Student Affairs Division
Course Structure

- Year-long course (3 quarters, 9 months)
- Students commit to full year
  - Variety of class levels, mostly Environmental Studies majors
- Green building education, certification effort, and accreditation exam prep
- Students to do all the work of certification process
  - Planning, hold meetings, meet stakeholders, conduct audits, collect data, complete documentation
Fall Quarter

- Feasibility study
- Planning for performance period
- Learning LEED
Winter Quarter

- Audits, assessments, and documentation prep
Spring Quarter

- Final documentation and submittal
- Project/class publicity
- More intensive exam prep
Suggestions for a Successful LEED Lab
Successes

- Student year-long commitment
- VERY positive response
  - Strong interest in continued offering of course
- High student interest led to LEED accreditation exam fund
- One Existing Buildings LEED certification
  - Looking at final review, tracking 76 points
Challenges

- Hard to fit everything in a school year
  - Year ended before students completed final step
- Student commitment
- Balancing student workload
  - Hard to get students experience with every credit category
- Instructor time commitment
- **Timing**
- Lack of supporting infrastructure
  - Building EUI
  - Building Water Meters
  - Master Site Certification
Lessons Learned

- Start some things early (timing!)
- Start with green building education first
- Right instructor experience is key
- Building choice is important
- Course is not one-size-fits-all
- Get creative with course organization and funding
Every LEED Lab starts with an inspired student body, a willing academic department and motivated leadership.

Select a superstar building and solidify funding prior to generating course material. This is key for a successful LEED Lab.

Course material, length, and LEED Lab goals are determined by the institution, the selected building, the department, and the instructors.
Next Steps

- Course updates
- Infrastructure development
- Practice exams
- Internships
THANK YOU!

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