A Healthy, High-Performance Laboratory for Students

Dan Chaney
University Project Manager

Sarah Lamere, AIA, LEED AP BD+C
Project Architect
Learning Objectives

• To be successful, student-centered spaces must be healthy and sustainable.
• Faculty and researcher input can be a catalyst for innovative energy-saving solutions.
• Buildings should reflect the synergies between LEED, WELL and other sustainable design benchmarks.
• Biophilic design can enhance the health and energy level of building occupants.
Project Background
Ogden College Hall

• 104 Hoods
• 4 Stories
• 82,900 SF
• $32.5 Million (construction)
• $392/SF
Programming
Focus on Students

- Sustainability
- Bottle refilling
- Recycled products
Focus on Faculty

- Shared research spaces
- Flexibility / future focused
- Interaction between majors
- No wasted space
LEED + WELL
LEED Gold

Site assessment late October/Early November

Targeting WELL Gold

One of the first WELL Certified laboratory buildings in the world
# LEED 2009 for New Construction and Major Renovations

## 5 Key Areas

### LEED 2009 for New Construction and Major Renovations

**Project Checklist**

### Sustainable Sites

<table>
<thead>
<tr>
<th>Credit</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>6.1</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

**Summary:** 26 possible points

### Materials and Resources, Continued

<table>
<thead>
<tr>
<th>Credit</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

**Summary:** 14 possible points

### Water Efficiency

<table>
<thead>
<tr>
<th>Credit</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

**Summary:** 10 possible points

### Energy and Atmosphere

<table>
<thead>
<tr>
<th>Credit</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

**Summary:** 35 possible points

### Innovation and Design Process

<table>
<thead>
<tr>
<th>Credit</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

**Summary:** 6 possible points

### Regional Priority Credits

<table>
<thead>
<tr>
<th>Credit</th>
<th>Possible Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**Summary:** 4 possible points

### Total

**Possible Points:** 110

Certified 40 to 49 points  Silver 50 to 59 points  Gold 60 to 79 points  Platinum 80 to 110
WELL

• air
• water
• nourishment
• light
• movement
• thermal comfort
• sound
• mind
• community
4 Synergies in Ogden College Hall

**noun, plural**

**syn·er·g·ies**

the interaction of elements that when combined produce a total effect that is greater than the sum of the individual elements, contributions, etc.; synergism.
4 Synergies in Ogden College Hall

- Energy & Safety
- Water & Well-being
- Air Quality & Health
- Natural Light & Energy
Energy & Safety

5' 10"

5' 4"
Air Quality & Health

• Material Selection
• Building Flush Out
• Testing
Water & Well-being

- Low volume fixtures
- Cooling tower drain tank
- Legionella plan policy (stagnant water)
- Bottle refilling stations
- Testing for contaminants
- Handwashing
Natural Light & Energy

- Large Windows
- Fume hoods with glass backs
- Large windows vs. air volume
Creating Wonder
One Year Later...
Energy

MONTHLY ENERGY CONSUMPTION (KBTU/SF)

- Actual
- Designed

1-YEAR RESULTS

Typical Lab Building
370 kBTU/sf

Our Goal
191 kBTU/sf

Our Actual
159 kBTU/SF
Modern instructional and research infrastructure are also important mechanisms for **attracting a potential new faculty member** and helping to secure their decision to accept a position at WKU. Research space in Ogden College Hall purposely has **clean sight lines** and provides a **bright, open feel** for faculty. I am delighted with my personal lab space.
A comfortable place to learn and a splendid place to work.

Intentionally interesting and creatively comfortable.

Excellent for education, superb for study, and welcoming to work in.

Faculty-friendly, but student centered.
QUESTIONS?

Dan Chaney
University Project Manager

Sarah Lamere, AIA, LEED AP BD+C
Project Architect