Agenda

- Introductions
- Status update – CPC approval and SD report
- Overview of Design Development process
- Schedule update
- South elevation developments
- Entry and up and over developments
- Lighting Lab Study / Design Update
  - Atrium
  - Stair
  - Openings
Design Status

•

Site Development
Proposed Site Design
Including trees to be removed
Design Status

- Plan Development
Design Status

•

Building Development
Proposed Building Design

cut-away view at Up-and-Over connection
Proposed Building Design

cut-away view at Up-and-Over connection
Proposed Building Design

cut-away view at Up-and-Over connection
Proposed Building Design
View from North – Franklin Blvd
Proposed Building Design
View from North – Franklin Blvd
Proposed Building Design
View from Science Green
### Schematic Design Budget Options Log

**Project:** U of O - Lewis Integrative Science Bldg.  
**Architect:** HDR / THA  
**Date:** 7-Oct-09

#### Budget Options Summary

<table>
<thead>
<tr>
<th>#</th>
<th>Summary System</th>
<th>DD Estimate</th>
<th>Accepted Changes</th>
<th>Revised Total</th>
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<tr>
<td>02</td>
<td>Demolition</td>
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<td>Vert. Transportation</td>
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<td>($346,000)</td>
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<tr>
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<td>General</td>
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<td>($1,412,212)</td>
<td>($1,412,212)</td>
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**Sub Total:** $39,334,174  
($3,392,305)  
$35,941,869

| General Conditions | $2,339,212 | $0 | $2,339,212 |
| PL/PD Insurance | $0 | $0 | $0 |
| Performance Bond 0.75% | $384,627 | ($37,278) | $347,349 |
| Builder's Risk 0.38% | $194,878 | ($18,888) | $175,990 |
| Contractors Contingency 2.5% | $1,282,091 | ($86,212) | $1,195,879 |
| Fee 2.17% | $944,709 | ($76,703) | $868,006 |

**Subtotal:** $44,479,691  
($3,611,386)  
$40,868,305

| Design & Estimating Contingency 10.0% | $5,337,563 | ($1,250,732) | $4,086,831 |
| Escalation 3.0% | $1,334,391 | ($108,342) | $1,226,049 |
| Preconstruction | $132,000 | $0 | $132,000 |

**Budget Total:** $51,283,645  
($4,970,460)  
$46,313,185
Schedule

• Campus Planning Approval – October 21
• Schematic Design Complete
• Design Schedule
  • DD Oct 09 – Feb 10
  • CD March 10 – Sept 10
  • Permitting & Bidding
  • Phased Bid Packages
• Construction Start Target
  • Late summer 2010
Design Status

Design Update
Design Update: South Elevation
South Elevation
Exterior Elevations: Context
South Elevation Studies
South Elevation Studies
South Elevation Studies
South Elevation Studies
Design Update: Up & Over
Design Update:
Atrium Lighting Lab Study
Lighting Lab Study: Questions Posed

• What is the optimal **skylight placement and size** to “daylight” the atrium?
  - Impact on vertical distribution of daylight
  - Impact on 4th flr offices, conf room, public spaces

• Which **stair configuration** optimizes daylight vertically in the atrium?
  - Four configurations tested.

• How does light **animate the atrium** at different times of the year?
Assumptions

**Skylight**
- VT Horizontal Glazing: 70%
- Horizontal Maintenance correction: 70%
- Framing Correction: 85%

**East Window**
- VT Vertical Glazing: 50%
- Vertical Maintenance correction: 90%

**Material Reflectance**
- Painted walls atrium north (white): 80%
- Wood wall atrium south: 30%
Artificial Sky: Simulates a high overcast sky
Artificial Sky:
Sensor locations and extent of model
Heliodon: Simulates direct sunlight by time of day and season
Stair Options Tested:
Variations in position and configuration

Stacked Stair (SD Stair)
Scissor Stair
Straight then Switchback Stair
Switchback Stair
Artificial Sky: Daylight sensor locations

2 FLR

3 FLR

4 FLR
How do we optimize daylight distribution vertically in the atrium? (DF 2-6 qualifies a space as “Day lit”)

Daylight factors per floor

<table>
<thead>
<tr>
<th></th>
<th>4th floor</th>
<th>3rd floor</th>
<th>2nd floor</th>
</tr>
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<tr>
<td>2C</td>
<td>11.15</td>
<td>11.48</td>
<td>1.58</td>
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<tr>
<td></td>
<td>11.48</td>
<td>3.70</td>
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<td>4.53</td>
<td>1.47</td>
<td>1.38</td>
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<td></td>
<td></td>
<td>0.52</td>
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Large skylight aperture: North
How do we optimize daylight distribution vertically in the atrium? (DF 2-6 qualifies a space as “Day lit”)

Daylight factors per floor

<table>
<thead>
<tr>
<th>2A</th>
<th>4th floor</th>
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<tbody>
<tr>
<td>6.11</td>
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<tr>
<td>6.05</td>
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</tr>
<tr>
<td>2.92</td>
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</table>

<table>
<thead>
<tr>
<th>3rd floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.85</td>
</tr>
<tr>
<td>4.39</td>
</tr>
<tr>
<td>1.89</td>
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</table>

<table>
<thead>
<tr>
<th>2nd floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.97</td>
</tr>
<tr>
<td>2.41</td>
</tr>
<tr>
<td>1.33</td>
</tr>
</tbody>
</table>

Large skylight aperture: South
How do we optimize daylight distribution to the 4th level offices and conference rooms?

<table>
<thead>
<tr>
<th>Sensor #</th>
<th>2A</th>
<th>2B</th>
<th>2C</th>
<th>2D</th>
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<tbody>
<tr>
<td>13</td>
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<td>2.33</td>
<td>0.57</td>
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<tr>
<td>14</td>
<td>n/a</td>
<td>0.41</td>
<td>0.33</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Daylight factors: 4th floor conf. room

Daylight factors: 4th floor TYP office

Skylight South

Skylight North
How do we optimize daylight distribution to the 4th level offices and conference rooms?

<table>
<thead>
<tr>
<th>Sensor #</th>
<th>2A</th>
<th>2B</th>
<th>2C</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>3.72</td>
<td>2.33</td>
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<td>14</td>
<td>0.41</td>
<td>0.33</td>
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<td>16</td>
<td>0.30</td>
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<td>0.14</td>
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Daylight factors: 4th floor conf. room

Daylight factors: 4th floor TYP office

Skylight South

Skylight North
What is the optimal skylight size to daylight the 4th level?

Skylight Aperture: **North**

- Long
- Short

Skylight Aperture: **South**

- Long
- Short
What is the optimal skylight size to daylight the 4th level?

Large skylight aperture: South

Small skylight aperture: North
Which stair configuration optimizes daylight vertically in the atrium?

- Scissor Stair
- Stacked Stair
- Straight then Switchback Stair
- Switchback Stair
Which stair configuration optimizes daylight vertically in the atrium?
Stair Options Tested:
Variations in position and configuration

Stacked Stair (SD Stair)

Scissor Stair

Straight then Switchback Stair

Switchback Stair
Straight then Switchback Stair
Heliodon: Simulates direct sunlight by time of day and season
Heliodon: Straight / Switchback Stair, June 21

9 am

11 am

1 pm

3 pm
Heliodon: Straight / Switchback Stair, Sep 21
Heliodon:
Reflector test
Sept 21st
Heliodon: Reflector test
Sept 21st

9 am
11 am
1 pm
3 pm
Heliodon:
Reflector test
Sept 21st

9 am
11 am
1 pm
3 pm
Design Update: Atrium Openings
Atrium opening studies
END
Exterior Elevations: **Building Organization**

Two Flexible Primary Spaces

Atrium Starting at the Second Floor
North Elevation
Artificial Sky: skylight position and stair configuration
Artificial Sky: skylight size and stair configuration