WHERE WE WERE
Ohio State University

Ohio Union

The new Ohio Union is a truly innovative and groundbreaking example of a student union. One of the largest student unions in the nation, its wide-ranging accommodations include a food court in addition to a number of stand-alone food/beverage venues; concert hall and various performance spaces; a truly massive ballroom; numerous conference and meeting rooms; and a large and extremely well appointed suite of student organization offices.

Architect:
Moody + Nolan, Inc.

Location:
Columbus, Ohio

School Type:
Urban

Enrollment:
38,479 Undergraduate; 13,341 Postgraduates

Size:
321,000 square feet

Construction Cost:
$180,000,000

Funding Source:
76% Student Fees, 15% Institutional, 9% Private Donation

Timeline:
Design Begin: 2004; Design Completion: 2007
Year Competition: 2010

Certifications/Awards:
LEED™ Silver
The new, vibrant and engaging Baker University Student Center was sited to bridge the lower and upper parts of campus. The facility was designed to be compatible with the predominately Georgian architecture on campus. Throughout the center are offices for student organizations, meeting and conference rooms, a ballroom, food service, and a 250-seat theater/auditorium. Also included is an adjacent, two-level, 350-space parking garage designed to match the student center.

**Architect:**
Moody + Nolan, Inc

**Location:**
Athens, Ohio

**School Type:**
Small Town

**Enrollment:**
22,647-Undergraduate; 3,261-Postgraduates

**Size:**
180,000 square feet

**Construction Cost:**
$45,000,000

**Funding Source:**
66% Student Fees, 33% Institutional/State

**Timeline:**
Design Begun: 2002; Design Completion: 2004
Year Completion: 2006
University of Akron
Student Union

The Gardner Student Union contains a food court; large assembly rooms; conference/meeting rooms; recreational space for bowling, billiards and game room; retail space for bookstore, bank and post office; computer labs; lounge area; student organization office space; and administrative office space. During Phase I of the project, a new wing was constructed at the west end of the existing student center. In the second phase, the existing center was demolished and a new wing built on that site.

Architect:
WTW Architects

Location:
Akron, Ohio

School Type:
Urban

Enrollment:
24,601 Undergraduate; 4,650 Postgraduates

Size:
198,000 square feet

Construction Cost:
$41,100,000

Funding Source:
100% Student Fees

Timeline:
Construction Began: 2001
Phase I Completion: 2002
Year Completion: 2004

Relevance to Erb Memorial Union
- Dining options
- Administrative offices
- Meeting spaces
- Social hub
- Recreational spaces
- Student organization spaces
- Ballroom facilities
- Computer lab
- Copy center
- Retail center
Cleveland State University
CSU Student Center

The new, 138,000 sf student center at Cleveland State University (CSU) will enhance its campus image and create an open connection with the city while offering a wide range of services to students and faculty. Fronting on the main thoroughfare to downtown Cleveland, the center will become the campus’ public gateway and begin the second phase of CSU’s master plan to integrate the campus with the bustling avenue.

**Architect:**
Gwathmey Siegel

**Location:**
Cleveland, Ohio

**School Type:**
Urban

**Enrollment:**
10,431-Undergraduate; 6,869-Postgraduates

**Size:**
138,000 square feet

**Construction Cost:**
$55,000,000

**Funding Source:**
100% Student Fees

**Timeline:**
Design Began: 2006; Design Completion: 2008
Year Completion: 2010
CAMPUS PATTERNS
OPPORTUNITIES & CONSTRAINTS

13TH AVENUE AXIS
- Encourage bike & pedestrian
- Discourage cars except service vehicles
- Establish & enhance north-south connections to 10th Avenue
- Connect with other designated axes

UNIVERSITY STREET AXIS
- Protect the right-of-way (intersection at 13th & University)
- Establish pedestrian not vehicles
- Enhance crossing at library axis
- Add outdoor furnishings to add enjoyment of the area

JOHNSON LANE AXIS
- Preserve & strengthen the axis
- Serve bicycles & service access
- Formal tree plantings

KNIGHT LIBRARY ACCESS
- Note that axis

AMPITHEATER GREEN
- Preserve use for variety of entertainment & social venues
- Preserve historical use as student free speech forum
- Preserve pedestrian connection between the heart of campus & the promenade
- Emphasize & accent pathways

STRAUB HALL GREEN
- Preserve & strengthen the green
- Planting to buffer open space from EMU parking
- Planting to preserve shading of Straub Hall
- Enhance connection to knight library axis

ONYX STREET AXIS
- Preserve & enhance axis
- Emphasize pedestrian not vehicles
- Emphasize & enhance pedestrian traffic
- Enhance connection to east-west path
- Enhance connections to Straub Hall green & knight library axis
- Preserve significant trees

PROMENADE
- Preserve & strengthen as major pedestrian pathway
- Define & enhance connections between 13th & 15th avenues
- Connect with new open space at EMU
- Preserve, enhance, and add recreational spaces
- Use trees to enhance openness at intersections & building entries

EMERALD AXIS
- Preserve & enhance north-south

15TH AVENUE AXIS
- Preserve & enhance the axis
- Shift emphasis toward pedestrian usage as east campus develops
- Use trees to soften the axis
- Establish & enhance north-south connections to 13th Avenue

OPEN SPACE AND ENTRIES - PROPOSED
OPTION 1

- Proposes removal of the curb along the parking lot north of Straub. The cars would be removed from the parking area, parking lot striping removed, and dedicated to pedestrian traffic.
- Improvements north of Mills consolidate the entrance to the bookstore and new EMU entrance.
OPTION 2

- Proposes the curb remains along the parking lot north of Straub. Vehicle parking would remain, could be dedicated to EMU functions only.
- Access to Mills/Bookstore remains unchanged.
OPTION A

- Minimal impacts to existing landscape/walks at NW corner of Millis.
- The overlook/terrace at the 451' level in front of the book store could be an alternate.
- Approx. 5600 square feet of DOG improvements

SITWORK UNIVERSITY AND 13TH - OPTION A
OPTION B

- On grade walk connects entrance to campus heart.
- Drop off is expanded on 13th Ave.
- Main entrance is defined by more of a court.
- Wait for shoring Mills becomes highly focal element.
- Approx. 6500 square feet of DOS improvements

SITWORK UNIVERSITY AND 13TH - OPTION B
**OPTION C**

- On grade walk connects to campus heart and is combined with the walk to the book store entrance.
- Wall for shoring Mills is partially screened by landscape. The corner at the new EMU entrance is the only point where it is 11’ tall.
- Trees/benches in the entrance court
- Approx. 6,250 square feet of DOS improvements

**SITEWORK UNIVERSITY AND 13TH - OPTION C**
SITE PLANS
PLANS

CIRCULATION DIAGRAMS & FIGURE GROUND
HEARTH FACING SOUTH
HEARTH FROM FIRST FLOOR
DAYLIGHTING
## EMU NORTH FACADE DAYLIGHT OPTIMIZATION

**FEB. 23 2012**

### BASE CASES

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Contrast Ratio</th>
<th>Average Illuminance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylighting Focused</td>
<td>1.2:1</td>
<td>45 fc</td>
</tr>
<tr>
<td>View Outward Focused</td>
<td>1.1:1</td>
<td>50 fc</td>
</tr>
<tr>
<td>View Inward Focused</td>
<td>17.2:1</td>
<td>60 fc</td>
</tr>
</tbody>
</table>

### VARIATIONS

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Contrast Ratio</th>
<th>Average Illuminance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daylighting Focused</td>
<td>1.9:1</td>
<td>45 fc</td>
</tr>
<tr>
<td>View Outward Focused</td>
<td>2.9:1</td>
<td>52 fc</td>
</tr>
<tr>
<td>View Inward Focused</td>
<td>17.2:1</td>
<td>43 fc</td>
</tr>
<tr>
<td>Daylighting Focused</td>
<td>2.0:1</td>
<td>47 fc</td>
</tr>
<tr>
<td>View Outward Focused</td>
<td>1.5:1</td>
<td>54 fc</td>
</tr>
<tr>
<td>View Inward Focused</td>
<td>16:1</td>
<td>47 fc</td>
</tr>
<tr>
<td>Daylighting Focused</td>
<td>7.7:1</td>
<td>53 fc</td>
</tr>
<tr>
<td>View Outward Focused</td>
<td>13:1</td>
<td>47 fc</td>
</tr>
<tr>
<td>View Inward Focused</td>
<td>8.6:1</td>
<td>47 fc</td>
</tr>
<tr>
<td>Daylighting Focused</td>
<td>10.4:1</td>
<td>53 fc</td>
</tr>
<tr>
<td>View Outward Focused</td>
<td>14:1</td>
<td>54 fc</td>
</tr>
<tr>
<td>View Inward Focused</td>
<td>10.3:1</td>
<td>50 fc</td>
</tr>
</tbody>
</table>
EMU NORTH FACADE DAYLIGHT OPTIMIZATION
FEB. 23 2012

BASE CASES

DAYLIGHTING FOCUSED

VARIATIONS

VIEW OUTWARD FOCUSED

VIEW INWARD FOCUSED

NORTH FAÇADE
DAYLIGHT ANALYSIS
EMU NORTH FACADE DAYLIGHT OPTIMIZATION  FEB. 23 2012

NORTH ELEVATION

FLOOR PLAN WITH ILLUMINANCE (fc)

CONTRAST RATIO

1.9:1

9.2:1

AVERAGE ILLUMINANCE

45 fc

CONTRAST RATIO

2.0:1

7.7:1

AVERAGE ILLUMINANCE

47 fc

CONTRAST RATIO

1.2:1

8.6:1

AVERAGE ILLUMINANCE

47 fc

NORTH FAÇADE
DAYLIGHT ANALYSIS
NORTH FACADE DAYLIGHT ANALYSIS

CONTRAST RATIO
2.0:1

CONTRAST RATIO
14.8:1

CONTRAST RATIO
18.5:1

AVERAGE ILLUMINANCE
25 fc

CONTRAST RATIO
1.9:1

CONTRAST RATIO
8.2:1

CONTRAST RATIO
12.9:1

AVERAGE ILLUMINANCE
29 fc
ELEVATIONAL ANALYSIS
NORTH FACADE
OPTION 1 – NORTH ELEVATION

28% GLAZING
OPTION 1 – NORTH ELEVATION

28% GLAZING
OPTION 1 – NORTH ELEVATION

28% GLAZING
28% GLAZING

OPTION 1 – NORTH ELEVATION
28% GLAZING

OPTION 2 – NORTH ELEVATION
OPTION 2 – NORTH ELEVATION

28% GLAZING
OPTION 1 - NORTH ELEVATION
OPTION 2 - NORTH ELEVATION
SOUTH FACADE
OPTION 1 - SOUTH ELEVATION

OPTION 1 – EAST ELEVATION
NORTH BAR DAYLIGHT

78% GLAZING
L3: 63%
L2: 69%
L1: 75%
OVERALL: 69%

OPTION 1 - PERSPECTIVE
NORTH BAR DAYLIGHT

63% GLAZING*
L3: 60%
L2: 67%
L1: 75%
OVERALL: 68%

OPTION 2 - PERSPECTIVE
NORTH BAR DAYLIGHT

38% GLAZING
L3: 54%
L2: 63%
L1: 73%
OVERALL: 64%
NORTH BAR DAYLIGHT

48% GLAZING
L3: 58%
L2: 64%
L1: 76%
OVERALL: 67%
### SOUTH FAÇADE

**Continuous Daylight Autonomy @ 30 fc**  
8 am to 6 pm (* interpolate results)

<table>
<thead>
<tr>
<th>Option</th>
<th>78% Glazing</th>
<th>63% Glazing*</th>
<th>38% Glazing</th>
<th>48% Glazing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L3: 63%</td>
<td>L3: 60%</td>
<td>L3: 54%</td>
<td>L3: 58%</td>
</tr>
<tr>
<td></td>
<td>L2: 69%</td>
<td>L2: 67%</td>
<td>L2: 63%</td>
<td>L2: 64%</td>
</tr>
<tr>
<td></td>
<td>L1: 75%</td>
<td>L1: 75%</td>
<td>L1: 73%</td>
<td>L1: 76%</td>
</tr>
<tr>
<td>OVERALL</td>
<td>69%</td>
<td>68%</td>
<td>67%</td>
<td>67%</td>
</tr>
</tbody>
</table>

**NORTH BAR DAYLIGHT**

- **78% Glazing**
  - L3: 63%
  - L2: 69%
  - L1: 75%
  - OVERALL: 69%

- **63% Glazing***
  - L3: 60%
  - L2: 67%
  - L1: 75%
  - OVERALL: 68%

- **38% Glazing**
  - L3: 54%
  - L2: 63%
  - L1: 73%
  - OVERALL: 64%

- **48% Glazing**
  - L3: 58%
  - L2: 64%
  - L1: 76%
  - OVERALL: 67%
SOUTH FAÇADE

DAYLIGHT ANALYSIS

FULL LENGTH SKYLIGHT

L3: 67%
L2: 68%
L1: 80%
OVERALL: 72%

PARTIAL SKYLIGHT

L3: 65%
L2: 65%
L1: 79%
OVERALL: 71%

NO SKYLIGHT

L3: 62%
L2: 65%
L1: 79%
OVERALL: 70%

cDA @ 30 fc
8 am to 6 pm
SOUTH FAÇADE
DAYLIGHT ANALYSIS
THANK YOU!