

Project Name UO Erb Memorial Union Renovation and Expansion
Project Number 110451
Purpose Sustainability Technical Advisory Group Meeting
Location Bean East Conference Room

Attendees	Name	Organization
	Sustainability TAG:	
	Gregg Lobisser	UO, User Group Chair
	Dan Geiger	UO, Outdoor & Bike Program
	Dana Winitzky	UO, EMU Staff
	Wendy Polhemus	UO, EMU Staff
	Observers:	
	G.Z. Brown	UO, Professor of Architecture
	Jo Niehaus	UO, EMU Board
	Project Staff:	
	Martina Bill	UO, CPRE
	Fred Tepfer	UO, CPRE
	Jeff Madsen	UO, Capital Construction
	Darin Dehle	UO, Capital Construction
	Consultant Team:	
	Larry Gilbert	Cameron McCarthy
	Aaron Olsen	Cameron McCarthy
	Brian Johnston	Glumac
	Rob Schnare	Glumac
	David Martin	AC Martin
	Bob Murrin	AC Martin
	Tammy Jow	AC Martin
	Christopher King	AC Martin
	Lisa Petterson	SERA
	Natasha Koiv	SERA
	Eric Philps	SERA
	Walker Templeton	SERA
	Nathan Burton	SERA
	Caity McLean	SERA

Discussion Items

1.0 PROGRAM UPDATE

- 1.01 UPDATED BLOCK AND STACK DIAGRAMS
- Tammy provided the group with an update of the most current Block and Stack diagrams
 - Programming considered hours of operation to divide into zones which will indicate specific mechanical systems needed to support these varied needs

- In addition, the plan was zoned according to spaces that requiring natural daylight. Most program requires daylight which is achieved by this plan.

2.0 PROPOSED MECHANICAL SYSTEMS, CONTROLS, AND REQUIRED UPGRADES

2.01 OCCUPANCY COMFORT

- Occupancy comfort is affected by many factors: air velocity, direct sun/ shading, radiant temperature of surrounding surfaces, air movement
- Insulation between North block and Atrium will effect condition of space within. (Currently, the wall between the north block and the Atrium is not considered an exterior wall in the pricing set.)
- Need to define comfort level temperature target inside first before setting systems.
- G.Z. Brown suggested looking at balance point temperature to determine if space needed mechanical systems at all

Three possible options for spaces:

- Unconditioned space: Add heat only if temperature is under 50 degrees. (This is not desired as the space will be used for longer duration studying, not only a walkway.)
- Semi-Conditioned space: walkways, grand stairs, 65 – 80 degrees. Currently proposed for the Atrium
- Fully Conditioned space: 68 to 74 degrees was discussed as expanded temperature range for spaces that are regularly occupied with a radiant system.

Discussed expectations of each space (per UO): study nodes, lounge space, technical support, degrees

- It was noted that the Conference Center is important to drive revenue, with peak use in summer
- Other spaces, such as academic areas, are primarily used the other nine months of the year

2.02 PROPOSED MECHANICAL SYSTEMS, NEW BUILDING

Rob described the proposed mechanical systems for the building as follows:

- Atrium; proposed using In-Slab Radiant System (heating) in floor of Atrium space. Space will receive displacement air from surrounding spaces
- Desired temperature range was discussed (65-78)
- Rob explained that in a radiant system the acceptable temperature range was greater due to radiant component
- Displacement exhaust system in Atrium → Strategy is to condition occupied zone (not whole Atrium) by dumping air from adjacent spaces to assist in temperature modification
- Insulation around perimeter was discussed. Insulation is not currently proposed and will need to be studied to determine if it is cost effective
- Mass on North Bar is beneficial for cooling. Intent is to pull air through North Bar and exit through Atrium, night flushing strategies still under exploration.
- Concern expressed that Atrium lacks sufficient outlets on South side
- Mass on North Bar is beneficial for cooling. Intent is to pull air through North Bar and exit through

Student Unions / North Bar

- Rob described the differences between a chilled beam, chilled sail and radiant panel in terms of potential for system to respond to changes in load and amount of thermal load that can be mitigated by the system.
- Chilled sails are currently proposed in the offices. Discussed leaving mass exposed in space with no ceiling. Some concern was expressed about flexibility for future changes.
- Insulation around perimeter was discussed. Insulation is not currently proposed and will need to be studied to determine if it is cost effective.

Conference Rooms

- Conference Rooms may be chilled beams instead of chilled sails due to load..

Concert Hall

- Separately zoned and conditioned for comfort
- Concern was expressed for wider temperature band. Potential for large range of temperatures due to seating configuration, with balcony seating much higher than other seating
- Separate system from main building due to differences in hours of use and type of use

2.03 CONTROLS

Discussed two possibilities for controls:

Automated (DDC)

- Pros - flexibility of scheduling, trending capability, effectiveness, easier to manage with less staff
- Cons - significantly costlier options

Manual

- Pros - learning opportunity it would provide for students
- Cons - required training and longevity of commitment, difficult for students and staff schedules

Discussed the need for commissioning and retro-commissioning to ensure building works as designed.

Lillis has DDC and had cooling issues when it was first opened. Recent commissioning process has helped system to work more effectively.

Feedback:

- Requested info of use based on time of day and hours occupied
- Make sure mechanical systems can be zoned to accommodate shut down of areas
- Identify areas in Atrium for longer term occupancy to localize radiant slab
- Reducing flexibility for future upgrades is a major concern and should be highly prioritized
- Target comfort, not temperature. Floor heating; best tactic to achieve this

- Automated systems are desired over manually operated systems to allow temperatures to be adjusted more automatically and to manage building more effectively. This doesn't have to be separate from a system that allows for user adjustment. (Could still do class that tunes building)
- White Stag was discussed as an example of a UO building that chose to pay students to maintain mechanical systems over spending more on an automated system
- How to zone Concert Hall lobby without partition separating from differently ventilated Atrium?
- *Question: What is the expected energy savings between hydronic based system and air based systems?* Modeling is not yet performed for EMU however, typically see savings in the neighborhood of 30 -35%
- Impact of design impact of chilled sails vs. panels vs. chilled beams needs to be explored

2.04 REQUIRED UPGRADES, EXISTING BUILDING

- The existing mechanical systems are largely past the useful lifespan of the equipment. Reference the Building HVAC Condition Report, dated January 2007 by Dana Winitzky and David Flock
- The use of radiant systems will be explored in repurposed or renovated areas of the existing building.

3.0 STATE ENERGY EFFICIENT DESIGN (SEED) PROCESS

3.01 SEED PROCESS, GOALS FOR SCHEMATIC DESIGN

ECM meeting occurred to determine list of further analysis proposed.

- Discussed analysis in the context of three areas: Existing, Student Union Wing (Bar), Concert Hall
- Optimizing Insulation strategy: proposed analysis to determine R-38 roof vs R-30
- Tune high performance glazing on South side, proposed analysis to determine where this applies
- Technology; potential for grant for lighting technology discussed
 - Currently Super T8's are most efficient technology. Needs to be studied in future.
 - LED is currently being considered for exterior fixtures.
 - Also consider for uplighting in Atrium in areas where fixtures may be difficult to reach
- Quantify External Shading desired
- Will study three types of heat recovery: Kitchen equipment, Craft Center and Tunnel

Feedback:

- Likelihood of edible landscape on roof?
- Two types of green roof exist: Extensive (thin), Intensive (thicker, required for soil depth required for most edible plants).
- Cost of keeping North Wing flexible for future floor addition?
- Intensive is likely to be too heavy for systems within roof

4.0 DAYLIGHTING ANALYSIS

Objective: Achieve daylighting of Atrium and offices with minimal contrast

- Windows serve as functional elements to respond to specific needs
- Location, size and shape effect illumination

Study One:

Looked at contribution of option clerestory options:

- Conclusion: Clerestory alone is not providing adequate daylight in Atrium space

Study Two:

Looked at two different North window options and three different Conference room conditions

- Study is in progress. North side; in general, Option One had too much contrast; increasing the number of classrooms had an adverse effect on the North Bar daylighting, particularly on Level One.

Additional studies looking at how to optimize daylighting while accounting for views and activity of the North Elevation will be performed.

End Time: 10:45am

Recorded by: Caity McLean

Date of Report: 02/22/12