EMU
erb memorial union

Meeting Number **01**
Meeting Type **Sustainability TAG**
Meeting Date **29 November 2011**

Project Name	UO Erb Memorial Union Renovation and Expansion
Project Number	110451
Purpose	Sustainability TAG
Location	EMU Century A

Attendees	**Name**	**Organization**
	Project Staff:	
	Martina Bill	UO, CPRE
	Fred Tepfer	UO, CPRE
	Darin Dehle	UO, Capitol Construction
	Sustainability TAG:	
	Gregg Lobisser	UO, User Group Chair
	Christine Theodoropoulos	UO, AAA
	Dan Geiger	UO, Outdoor & Bike Program
	Dana Winitzky	UO, EMU Staff
	Wendy Polhemus	UO, EMU Staff
	Louisa de Heer	UO, Student
	Casey Gifford	UO, Student
	Contractor:	
	Matt Pearson	Lease Crutcher Lewis
	Consultant Team:	
	Aaron Olsen	Landscape, Cameron McCarthy
	Brian Johnston	Glumac
	Mitch Dec	Glumac
	David Martin	AC Martin
	Bob Murrin	AC Martin
	Lisa Petterson	SERA
	Natasha Koiv	SERA
	Caity McLean	SERA

Discussion Items

1.0 INTRODUCTIONS

The purpose of the sustainability TAG is to provide input on the strategies – the real world nuts and bolts ideas - the team will incorporate into the building in order to achieve the project's goals. The goals for the project are divided into six subject areas roughly following the petals of the Living Building Challenge: Energy / Health were combined into one strategy, Water, Materials, Campus Systems (instead of site), and Beauty. The group will focus on energy and water first as they are two goals that are also part of the Oregon Model.

2.0 REVIEW CONCEPT DESIGN AND SUSTAINABILITY

Lisa provided the group with an overview of the project development to date including the sustainability vision, goals and objectives developed in previous user group meetings. See attached presentation.

3.0 ENERGY / HEALTH

3.01 INCORPORATE HEAT RECOVERY

- At Steam Tunnel, Craft Center, and Food Service.
- EMU has two steam tunnels which they'd harness for waste heat, Craft Center (glass / pottery radiating heat during setting process) and Food Service. These are good sources for waste heat. However a comprehensive study needs to be done that looks at the potential for other projects "downstream" in the tunnel and could they achieve greater benefit from waste heat harvest. Example: Student Recreation Center could use waste heat to heat large swimming pool water heating load.
    - Craft Center: great potential to collect and reuse waste heat. The center closes in August, convenient as this is the hottest month of year when there wouldn't need to be provide a supplementary source of heating the loss of energy from a shut down probably doesn't need to be accounted for. System requires air source and exhaust to be collocated.
    - Food Service: primary sources of waste heat are refrigerators and ovens, Other kitchen equipment is also a potential source for waste heat to be captured and reclaimed.
- Control strategies are very important – as the best way to save energy is to not use it when the building is unoccupied.

3.02 MECHANICAL SYSTEMS

What would be the ideal mechanical systems for each area type? Design team to research and bring system suggestions to the next meeting.

- In slab - Radiant is potentially a good system for student unions and office areas.
- *Question: Can we completely eliminate cooling system entirely?* Challenges: get air movement, ventilation, naturally. Eliminating cooling seems possible in the student areas where the potential for natural ventilation is highest, especially given the very narrow floorplate, Design team to study natural ventilation opportunities. However eliminating cooling could be deal breaker for booking Conference Space during hottest months of year, eliminating biggest potential revenue opportunity (Conference Space). Space has to generate revenue or building will shut down. Might try a hybrid solution where some newer areas that have good potential for natural ventilation are not cooled while other areas – particularly those in the existing building are cooled.
- Regardless the building should be flexible to allow air cooling system by future generations. Consider radiant systems as a possible system to incorporate heating now and through connection to a chilled water loop – cooling in the future.
- Concert Hall: in order to achieve acoustic excellence, proper air cooling systems that doesn't sacrifice acoustic quality is crucial – need low air velocity system, with no fan noise.

3.03 BUILDING ENVELOPE

- Currently the 1970's space which is primarily single paned glass creates challenge for design team both in heating and cooling.
- Focusing on the building envelop, instead of fancy high end mechanical systems allows for incorporation of passive systems and uses resources where they will affect the building the most for the longest time frame.
- Transition areas, especially atrium, will play key role to reduce load
- South facing glass needs to be shaded by harsh summer sun – ideas include sun shades, over hanging classrooms, vegetative shading.

3.03 PV READY - defined as incorporating the basic infrastructure needed to allow for easy installation of PV in the future.

- This will enable to project to take advantage of changes in the PV market. Current PV prices have significantly reduced compared to only a year ago, in part due to improvements in technology. (Price reductions are also a result of Chinese manufacturing strategies.)
- Consider using National Renewable Energy Laboratory's definition of PV ready for EMU project.

3.04 OREGON MODEL - 35% better than OR code with a stretch Goal of 45% better than OR code.

- *Question: Is this goal realistic?* It was pointed out that the new Science, Alumni buildings which are some of the most efficient buildings on campus, are seeing energy conservation strategies that are resulting in 55% energy savings. EMU is a building with a great deal of process loads. These need to be addressed in energy saving strategy.
- Additional energy savings could be achieved if EMU had student lead group to champion educating students Christine T. suggested a class where the students of the class function as building operators. Each classes goal is to beat the previous year's energy savings. Also could engage an eco- concierge since students paying the energy bills for the building, they will have a direct incentive to reduce energy consumption since they will pay less for the buildings operation.
- Lillis – passive systems weren't working initially, once wrong settings were corrected systems worked perfectly in "passive" setting. Commissioning the building with knowledgeable staff is very important to making sure the passive systems are operating as designed.

3.05 DAYLIGHTING / VIEWS

This is both a health and energy saving issue. Studies have shown that students perform better in naturally daylight spaces, but the savings are hard to quantify. In order for energy savings to be real, need to turn off lighting. System needs to perform so that occupants do not try to disable the system.

- Goal: All student spaces receive natural daylight. This will require the design team carefully orchestrate the relationship of closed offices to ensure they do not block valuable daylight.
- Goal: 90% of all spaces receive views to exterior.
- It will be more challenging to incorporate daylight and access to views in the existing building.
- OMSD relates to campus as a whole, so the project is still required to treat any impervious surface it creates or touches on site, but the OR model will kick in and say the sidewalks on your side are clean already. Let's use that money on another dirty sport around campus.

4.0 WATER CONSERVATION

Oregon model for sustainable development suggests cleaning dirty street water from parking lots as a more important strategy than cleaning runoff from sidewalks. Need to still treat rooftop water.

- Space and cost of mechanical systems to treat storm water drawn from 13th as irrigation system for landscape needs to be considered when determining budget.

Reducing vehicular use on adjacent streets would make treatment of dirty storm water more feasible.

- Can we use grade adjustment to drain water?
- Introduce permeable paver systems as filtration system around walkways, biological filtration through plants.
  - Bioswales and vegetation filtration.

- Greywater re-use:
  - Probably not effective for this project, better fit for something like a student housing building that has greater quantity of water for re-use
- Rainwater collection and reuse:
  - Project should consider the possibility of incorporating a rainwater tank as a demonstration, assuming it can be cost effective. Best way to do this is to reuse existing basement area filling it with a water tank instead of fill.
  - Also need to stack toilet rooms.
- Incorporate water saving fixtures and fittings as an important first step in water conservation.

End Time: 5:00pm
Recorded by: Caity McLean
Date of Report: 01/10/12