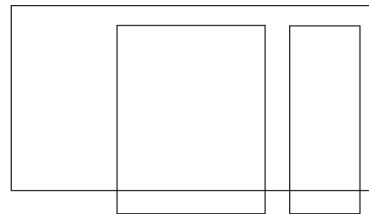
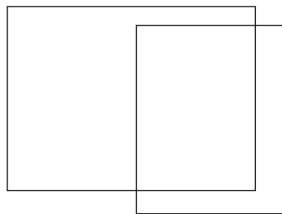
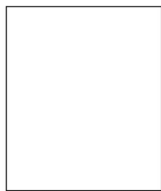




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**MEETING NOTES**

**Project:** University of Washington Tacoma **Project #:** 07308.00  
 Master Plan Update

**Subject:** Infrastructure Master Plan Eco-Charette **Date:** May 27, 2008

**Attendance:** See below **Time:** 8:30 a.m.-11:30 a.m.

**Attendance**

- UWT Administration
  - Ysabel Trinidad, Vice Chancellor for Admin. Services
  - Milt Tremblay, Dir. of Facilities & Campus Services
  - Hugh Smith, Maintenance Coordinator
- UW Seattle Engineers
  - Bill Earhart, Senior Facilities Engineer - Mechanical
  - Jim Morin, Senior Facilities Engineer – Civil
  - Tony Fragada, Senior Facilities Engineer - Electrical
- UW Seattle
  - Lee Copeland, Consulting Architect
- Mithun
  - Brodie Bain
  - Richard Franko
  - Elisabeth Goldstein
- MKA, Civil Engineers
  - Drew Ganges
  - Brook Jacksha
- PAE, MEP Engineers
  - Paul Schwer
  - Grant Parthemer
  - Scott Bevan
  - Art Krenzel
- LUMA, Lighting Design
  - Mark Ramsby

**MKA – Civil Existing Conditions**

- Sanitary sewer network on each alley
- Sewer plant across Thea Foss (less than ½ mile from Tacoma Avenue?)
- Soils Analysis
  - Glacial till soil – impermeable
  - Toxic Plumes
    - Remediation efforts underway
    - Strategies are funding-dependent and under review/study
- Water pressure
  - Science Building - 60 lbs. off main
    - Low water pressure affects distribution to upper floors
  - Some pipes are over 100 years old
  - MKA needs year built and material information for existing conditions
    - The city of Tacoma should be able to provide this information
  - Need water zone (pressure areas) map

**Mithun**

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### **PAE – M/E/P Existing Conditions**

#### ***Mechanical/Electrical:***

- *Electricity demand is significantly lower than system capacity*
- *Increase power factor to reduce energy cost*
  - *\$10,000 – 12,000 increased fees due to negative power factor on existing campus*
- *2 boiler plants serve all existing building on campus*
  - *Aggressively sized and the campus only runs one*
  - *Fairly efficient*
- *No cooling towers*
- *Utilidors*
  - *Clean, rodent free*
  - *Main electrical lines run through*
  - *Excessive capacity*
  - *Library connection is not walkable tunnel*
- *Library has an exterior substation*
- *Main heating plant in Academic Building*
- *Acoustic issues in Mattress Factory*
- *Heating pumps at BB/BHS recently upgraded to 25 hp*
- *Joy Building (Phase 3)*
  - *How will it be cooled?*
  - *Only serving retail right now*
- *Running lines across Market will be challenging, especially with the introduction of light rail/transit*
- *Science walkway is currently unheated, unventilated, and rains inside!*

#### ***Lighting:***

- *Survey of exterior lighting*
  - *Diverse collection of lighting on campus*
  - *High-pressure sodium and metal halide*
    - *Metal halide offers better visibility (white light)*
- *Will make recommendations to improve security issues and reduce total energy use*

#### ***UW Comments:***

- *Boiler efficiency 75-80%*
  - *Currently 10 years-old (25-year boilers)*
  - *21 BTUs/sf – pretty good – it’s not uncommon to size a boiler plant at 30 BTUs*
- *For redundancy - size the system to run even if the largest boiler went out of service*
- *DX coil refrigerant systems – UW has experienced failures with these in the past*
- *Compare Seattle costs to Tacoma costs*
- *It would be ideal to not have chillers on roofs of buildings - too costly to maintain*

### **Sustainability Principles**

- *UWT Chancellor and UW Seattle President have signed President’s Climate Commitment*
- *Cost of CO2 will influence future economic plans*
  - *It’s currently free, but will be taxed in the future (\$40/ton in Europe).*
- *Rating Systems*
  - *Milt is the representative from UWT to pilot STARS program*
    - *More comprehensive rating system – reviews more than facilities and infrastructure*
    - *The Master Plan should similarly address the comprehensive nature of the rating system*
  - *LEED NC – looks campus-wise, not just building by building*

### **Additional Infrastructure Master Plan Goals**

- Educate, innovate, and lead in the field of sustainability
- Think about goals, not just in terms of percentages, but also in absolute terms

### **General Feedback**

- Continue the tunnel
  - Great from maintenance perspective
  - Justify economically (look at gains vs. cost)
  - Added security benefits of walkable utilidor – for evacuation and inconspicuous travel by security staff.
- Keep options ‘Robust, Reliable, and Redundant’
- Engage Tacoma Power in visioning process

### **Sustainability Goals**

#### **Water:**

- Do not introduce potable water for systems that could use non-potable water
  - Toilets
  - Irrigation
  - Sewage treatment
- Water-to-Power
  - Pilot project at UC Davis uses food waste for power - can expand with algae
  - Energy gains can be used for (combined power) electricity and heat
  - Provides community-building opportunities
    - Retail and on-campus activity and the city of Tacoma can all contribute
- Look at overall collection of water on campus
  - Make use of this water
  - Provide on-site sewage treatment
  - Slow down water, collect it, and celebrate it
    - With exposed systems
    - With constructed wetlands or bioswales (flat land preferred to slow water down)
  - Tap into aquifer below campus (30 feet below?)
- Roadways are a pollutant driver for Thea Foss
  - East-west closures and other strategies are a benefit to the city as well
- Water temperature needs to be modified as it travels down the hill
  - Volume is not a challenge

#### **Energy:**

- PV will provide 15% efficiency (need additional strategies)
- Condensor water loop preferred
  - 60-90 degree loop with chiller/heater (function based on season)
  - Heat lost from one building could heat another building along loop (balance system)
- Each building should be required to handle a percentage of renewable energy on-site
- Mitigate carbon output
- Incorporate transportation plan
- UWT can buy green power
- Weather station exists on campus (on WCG) – avg. wind speed is 7.5 mph
- Wind-solar powered streetlights
- Identify (orient) footprints to maximize daylighting opportunities

- *Educate users to operate buildings correctly*
- *Wood waste*
  - *Requires greater infrastructure, transportation needs (small waste stream)*
- *Use third party vendor?*

**Next Steps**

- *Compile a master list of sustainability goals for the Master Plan*
- *Schedule a meeting to go over more detailed sustainability strategies*