

SUSTAINABILITY CHARRETTE SUMMARY

The Evergreen State College, New First Year Student Housing

April 5, 2017

EXECUTIVE SUMMARY

On April 5, 2017 **Mahlum Architects** and key consultant design team members met with the Design Committee for the Evergreen State College new First Year Student Housing project and other stakeholders to focus on the sustainability goals for this new 480-bed, 127,000-square-foot residence hall and to identify collaboratively the strategies to achieve those goals.

This report captures the ideas, images, considerations and recommendations shared during the charrette, and these will be studied for implementation throughout design, construction and operations.

During the charrette, participants progressed through a series of exercises to discuss and prioritize important initiatives for the project within the major sustainability issues of: Energy, Water, Wellness and Site. Charrette participants self-selected to join break-out working groups, each dedicated to one major sustainability issue. Each breakout group was tasked with the following:

- Draft a Guiding Principles statement for their sustainability issue. Groups were provided a draft statement to review and refine.
- Propose and discuss the “Top 10” strategies that would be well suited and most valuable for the project.
- Evaluate the “Top 10” strategies and plot each on a matrix of “Value x Lift,” with “Value” meaning impactful and supportive of the project’s goals, and “Lift” meaning cost and/or effort to design, coordinate or gain approvals.

The group then participated in a round-robin report out by each of the working groups on their respective “Top 10” and Value x Lift matrix, and addressed others’ questions and comments. Then the group engaged in an informal, quick-cycle, straw poll voting exercise to prioritize the project’s sustainability focal issues and its overall “Top 10” sustainability strategies. The results were as follows:

“Sustainability Focal Issues”	Straw Poll Votes
Wellness	★★★★★★★★★★ (10)
Energy	★★★★★★★★★★ (9)
Site	★★★★★★ (6)
Water	★ (1)

Priority Overall Sustainability Strategies	Straw Poll Votes
Design for Social Interactions	***** (14)
Create Indoor/Outdoor Spaces	***** (5)
Visible Water-use Metering & Monitoring	**** (4)
Stormwater Collection, Display & Dispersion	**** (4)
Natural Daylighting	*** (3)
Fossil Fuel-free / Fossil Fuel-free-Ready	*** (3)
Master Power Switches to Save Energy	** (2)

Lastly, the group participated in one more straw poll voting exercise to prioritize the sustainability strategies deemed as “High Value / High Lift,” with the following results.

Priority “High Value / Heavy Lift” Sustainability Strategies	Straw Poll Votes
Design for Social Interactions	***** (10)
Master Power Switches to Save Energy	***** (5)
Energy Use Intensity (EUI) of 25	***** (5)
Third-party Certification (LEED, SITES, other)	**** (4)
Flexible and Diverse Spaces	**** (4)
Graywater Reuse	**** (4)
On-site Power Generation	**** (4)

The group voted most for Wellness and Energy as the top priority “Sustainability Focal Issues,” and the definitive highest priority strategy was “Designing for Social Interactions.” The group deemed as priorities several specific related and supporting Wellness and Energy-related strategies. Overall, the group favored strategies that support student engagement and learning. As the project’s schedule progresses, the project team will revisit the ideas, priorities and direction provided by charrette participants, and the project team will refine analysis and coordinate findings to present timely options for decisions.

PROJECT VISION & GOALS

In a March 1, 2017 Visioning Session, the Design Committee identified the top goals and priorities for the design of the new residence hall:

- ① Energy Efficient / Sustainable Building
- ② Create Community
- ③ Daylight and Solar Access

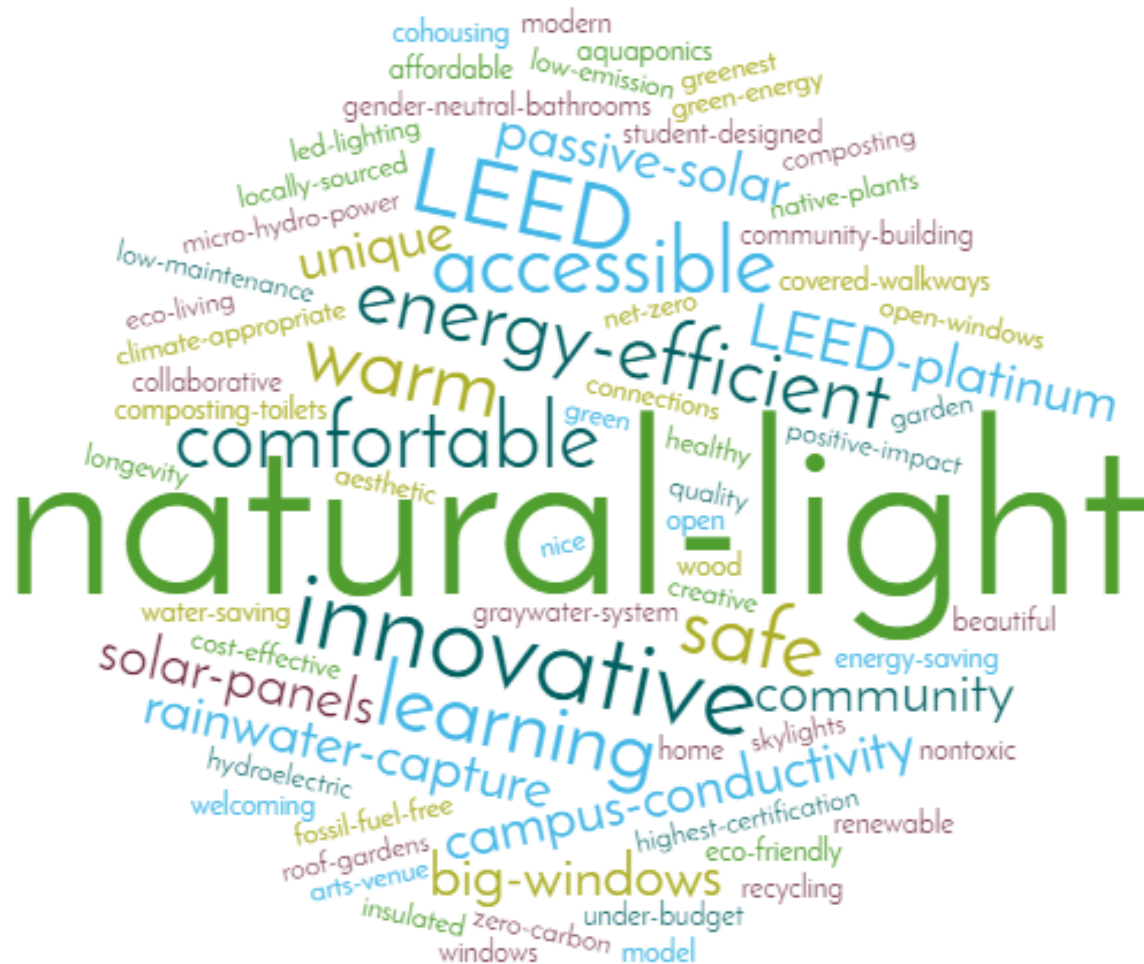
- ④ Accessible
- ⑤ Equitable

In addition, in advance of the Sustainability Charrette, through a brief survey of approximately 40 students and staff, many of whom serve on the project's design committee, were invited and encouraged to "think big" about the project's potential "sustainability story."

Survey questions included:

1. *"Picture yourself in 2019, when your project is complete. How would you finish this headline? BREAKING NEWS: The Associated Press reports today the completion of the much anticipated new First Year Student Housing at The Evergreen State College in Olympia, Washington. The project is a beacon of success for campus housing and builds off the College's commitment to being a 'laboratory for sustainability.' The project is being heralded for..."*

Here's a word cloud representing the responses (the size of the words correlates to the number of times those ideas were repeated):



2. *The news story continues: "The project has created a holistic solution addressing many concerns raised in the College's mission. Key outcomes that are raising the bar include ...*

Word clouds representing the responses are shown below within the section corresponding to the breakout group for that topic.

BREAKOUT WORKING GROUP SUMMARIES

Each of the breakout groups was tasked with identifying the top strategies and opportunities for their issue (Energy, Water, Wellness, and Site) to support meaningful outcomes and to rank each strategy on a matrix of Value vs. Lift. The following pages record those ideas and recommendations.

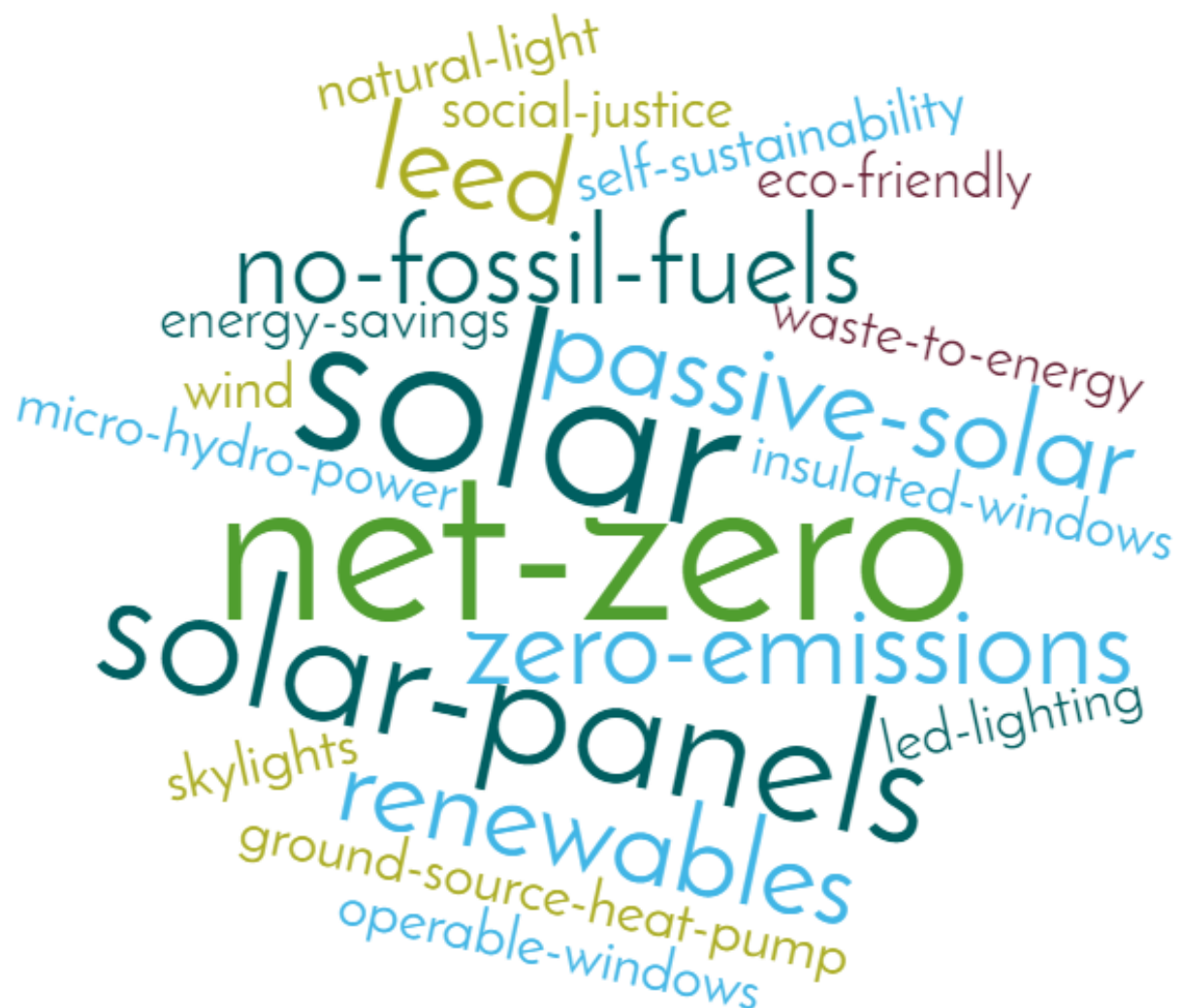
To guide these discussions, each working group was first asked to identify the "Top Ten" most important and impactful strategies within their category relative to the aspirations, needs, and circumstances presented by the project. This exercise was intended to draw out diverse and interesting strategies, as well as focus the discussion on a limited number (10) that are of highest importance and impact relative to the College's goals and project circumstances.

After developing their "Top Ten," each working group was asked to plot each of their strategies on a graph representing the total "Value" to the College and "Lift" to achieve. The groups were instructed to define "Value" broadly to include at least all three triple bottom line considerations—financial, environmental, and social—as well as additional considerations unique to the College such as educational value, etc. The working groups were likewise instructed to define "Lift" broadly to include cost to implement, institutional barriers, risk/uncertainty, etc.



Sustainability issue: ENERGY

Survey responses for Energy solutions:



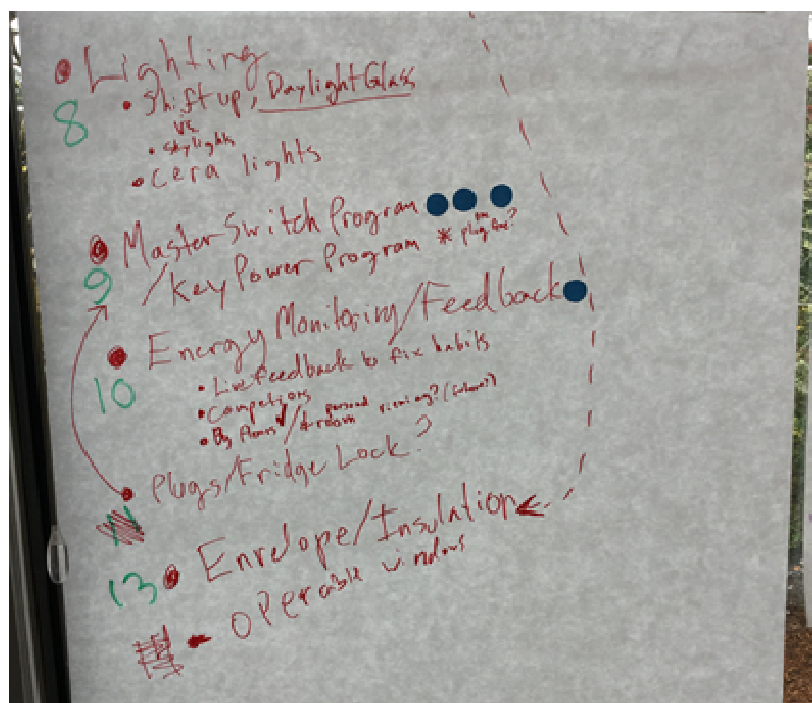
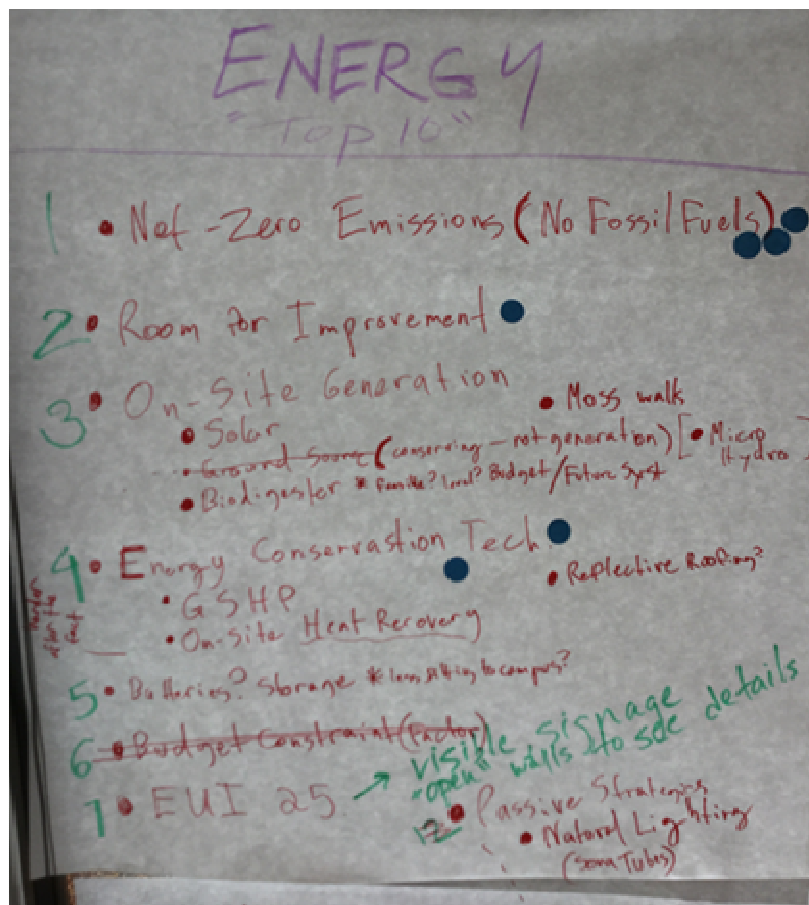
Guiding Principles:

- Utilize the most efficient and effective strategies to achieve zero carbon emissions (or zero carbon emissions-ready).
- Create a “Living Lab” to inform and engage residents to understand and participate in a high-performance, low-energy residence hall.

KEY: * = Overall Priority Strategy; * = Priority Strategy among High Value/Heavy Lift Strategies

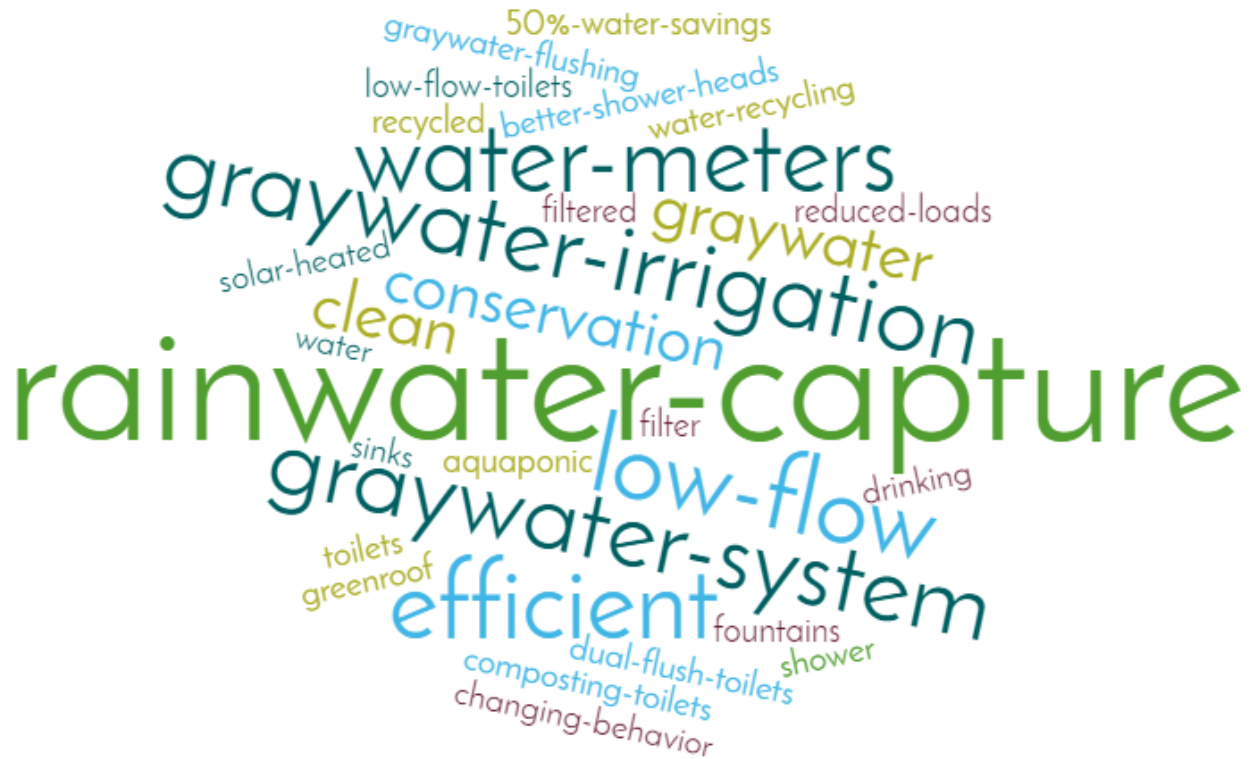
Strategy	Notes from charrette discussions	Value x Lift	Straw Poll Priorities
1. Net Zero Emissions	Design with a focus on achieving a non-fossil fuel building. Use systems such as geothermal heat pump which are all electric.	High Value / Heavy Lift	*** *
2. Room for Improvement	Design a Net Zero Ready building leaving room for improvement for future.	Mid Value / Mid Lift	*
3. On Site Generation	Solar; Rooftop solar array or Pilot solar array for demo purpose only. Campus visibility. Moss Walls and Bio digester	Mid Value / Mid Lift	***
4. Energy Conservation Technology	Use of Geothermal Heat Pumps and on-site heat recovery. Higher efficiency; significant energy savings	High Value / Mid Lift	** **
5. Battery Storage	Store solar energy for later times	Low Value / Heavy Lift	
6. Energy Use Intensity of 25 kbtu/sf	Campus visibility. Use passive strategies, efficient envelope and natural lighting in design.		
7. Lighting	Introduction of natural light into spaces for health and wellbeing of the students. Increase access to light to lower artificial lighting energy use.	High Value / Heavy Lift	*****
8. Master Switch Program	Equipment like microwaves, refrigerators and others locked by master switch and one plug is kept free.	High Value / Heavy Lift	***
9. Energy Monitoring	Monitoring per floor to encourage competitions. Provide live feedback to the students and encourage good habits	Mid Value / Heavy Lift	* *****
10. Envelope	Operable windows can give occupants control over thermal comfort and ventilation.	High Value / Mid Lift	

ENERGY: TOP STRATEGIES & VALUE x LIFT



ENERGY: TOP STRATEGIES & VALUE x LIFT



**Sustainability issue: WATER****Survey responses for Water solutions****Guiding Principles:**

- Utilize the most efficient and effective strategies to achieve at least a 50% reduction in potable water consumption.
- Manage stormwater in a way that reflects the natural ecosystem.
- Leverage stormwater planning on this project to inform a campus-wide stormwater approach.

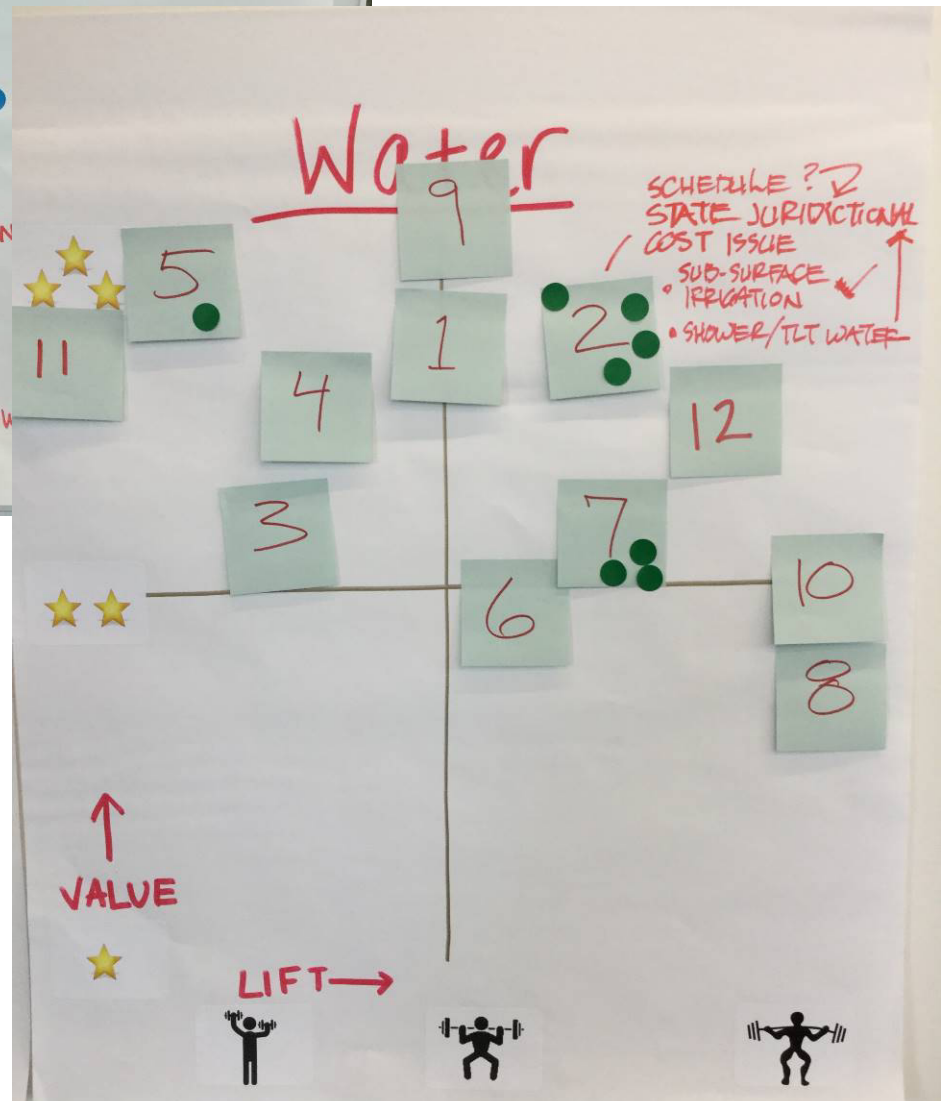
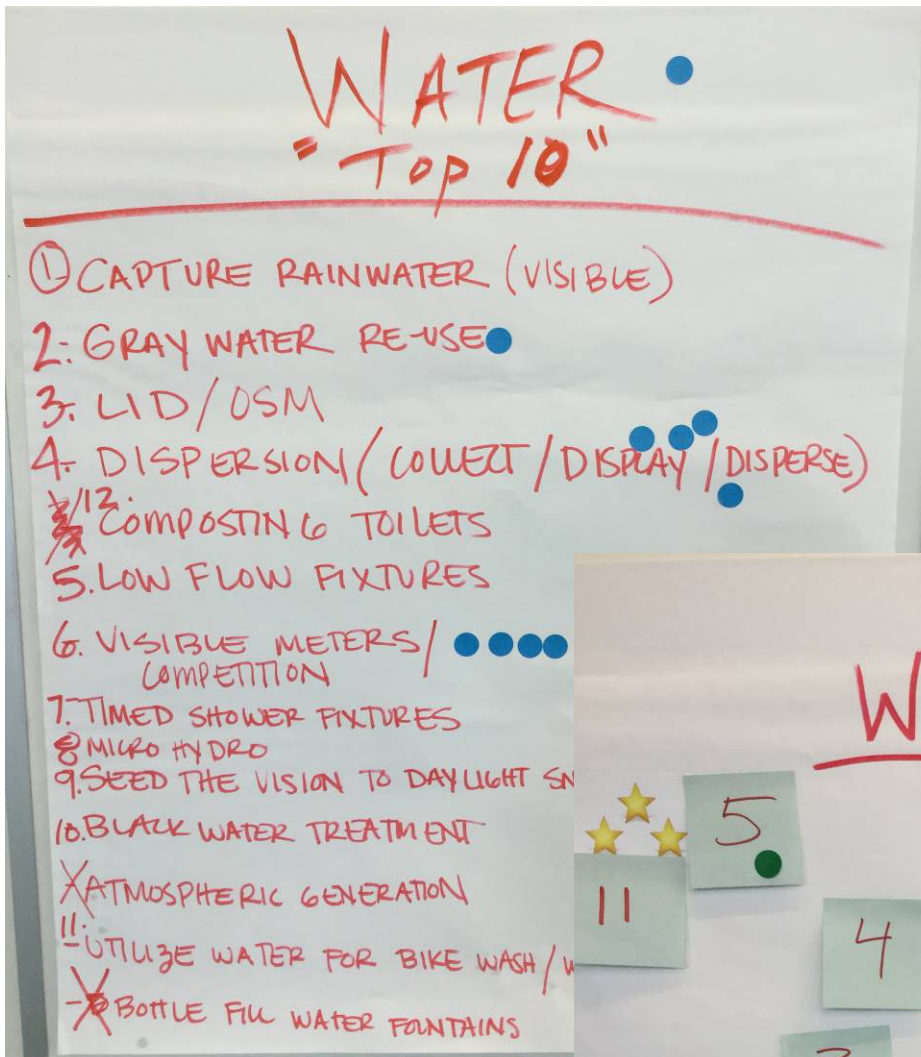
KEY: * = Overall Priority Strategy; * = Priority Strategy among High Value/Heavy Lift Strategies

Strategy	Notes from charrette discussions	Value x Lift	Straw Poll Priorities
1. Capture Rainwater	Capture rainwater for reuse. Identify potential ways to use rainwater across project.	High Value / Mid Lift	
2. Graywater Re-use	State of WA does not allow graywater systems. Regulatory approval would be difficult.	High Value / Heavy Lift	* *****
3. Low Impact Development / Onsite Stormwater Management	Use LID strategies to manage stormwater on-site using natural means. Reduce the need for infrastructure while creating beautiful outdoors spaces.	Mid Value / Mid Lift	
4. Stormwater Dispersion	Collect, display and disperse	High Value / Light Lift	*****
5. Water-efficient Fixtures	Reduce water demand by selecting low flow fixtures.	High Value / Light Lift	
6. Water Metering & Reporting	Install visible water meters to inform residents of how much water they are using. Set-up competitions among floors/groups.	Mid Value / Mid Lift	*****
7. Timed/Auto-off Showers	Consider providing showers with timers to encourage water use reduction in students. Emphasize importance of water and larger impact.	Mid Value / Mid Lift	***
8. Micro-hydropower	Micro hydro turbines integrated into gutters/downspouts to generate electricity.	Low Value / Heavy Lift	
9. Daylight Snyder Cove Creek	Seed the vision to daylight Snyder Cove Creek. Actual daylighting of the creek could be a larger, long-term campus-wide effort – initiated by this project.	High Value / Mid Lift	
10. Blackwater Treatment	Explore potential for on-site treatment through wetlands versus building new infrastructure for sewage processing.	Mid Value / Mid Lift	
11. Rainwater for Bike Wash & Gardening	Use captured rainwater for bike wash and garden irrigation to reduce potable water demand.	High Value / Light Lift	

WATER: Inspiring images shared by charrette participants



WATER: TOP STRATEGIES & VALUE x LIFT



KEY: * = Overall Priority Strategy; * = Priority Strategy among High Value/Heavy Lift Strategies

Strategy	Notes from charrette discussions	Value x Lift	Straw Poll Priorities
1. Irresistible Stair	Design stairs to invite physical activity and serve as a social center.	High Value / Heavy Lift	* *
2. Natural Light	Provide natural daylight, promoting mental health. Consider electric lighting that is tunable, transitioning over the course of the day. Window equity for each roommate.	High Value / Mid Lift	* * *
3. Exercise / Bikes / Activity	Integrate features that promote an active lifestyle and connect to other campus programs.	High Value / Mid Lift	
4. Indoor/Outdoor Connections	Provide glass/openings to connect spaces with outdoor spaces. Make outdoors spaces covered for use even when it's raining. Provide spaces to gather, such as a fire pit. Use natural materials to bring nature indoors.	High Value / Light Lift	*
5. Healthy Indoor Air Quality	Provide ample fresh, outside air.	High Value / Light Lift	
6. Healthy Materials	No materials with toxic ingredients. Consider following some criteria for selecting and specifying products with minimized potential harm.	Mid Value / Heavy Lift	*
7. Flexible and Diverse Spaces	Provide spaces that are welcoming, adaptable, unique, transparent and accessible. Provide some special-use spaces for music, art, quiet, etc.	High Value / Heavy Lift	* * * *

8. Colorful	Paint (and paint colors) are inexpensive. Use color to create fun, exciting, interesting and aesthetically pleasing spaces.	High Value / Light Lift	
9. Thermal Comfort	Provide spaces that are warm to counter the cold and rainy climate.	High Value / Heavy Lift	
10. Task Lights	Provide ample task lights, not just overhead lights, to accommodate personal light preferences.	High Value / Light Lift	
11. Design for Human Interactions	Design the building to promote human interactions, encourage residents to come out and socialize. Evolving exhibits of students' art would support interactions.	High Value / Heavy Lift	<p>*****</p> <p>*****</p> <p>**</p> <p>*****</p> <p>****</p>

WELLNESS: Inspiring images shared by charrette participants





WELLNESS: TOP STRATEGIES & VALUE x LIFT

WELLNESS
"Top 10"

- 1. IRRESISTIBLE STAIR**
 - STAIR PERFORMS MULTIPLE FUNCTIONS
- 2. NATURAL LIGHT**
 - FOR MENTAL HEALTH
 - ELEC. LIGHTS THAT TRANSITION W/ DAY
 - TUNABLE LIGHT LOUNGE
- 3. EXERCISE / BIKES / ACTIVITY**
- 4. INDOOR / OUTDOOR CONNECTION / SPACES**
 - MATERIALS ALSO CONNECT US TO NATURE
 - ↑ FIRE PIT
- 5. INDOOR AIR QUALITY - AIR FLOW**
- 6. NO TOXIC MATERIALS**
- 7. WELCOMING ROOMS / ADAPTABLE**
 - TRANSPARENT / ACCESSIBLE
 - SPECIALIZED - IE MUSIC ROOM, ART ROOM
 - ↳ NOT ALL SPACES ARE SAME
- 8. COLORS (PAINT IS CHEAP)**
 - FUN, EXCITING, BETTER LOOK
- 9. TEMPERATURE**
 - WARMTH
 - THERMAL COMFORT
- 10. PERSONAL LIGHTS / TASK LIGHTS, NOT OVERHEAD LIGHTS**
- 11. WINDOWS**
 - EQUITY FOR EACH RM. MATE
 - LIGHT FROM SIDE & ABOVE
- BIG IDEA**
 - BUILDING INCITES INTERACTION - BRINGS PEOPLE OUT
 - ART
 - STUDENT ART / CHANGING EXHIBITS

Strong connection to CPC
ADEQUATE STORAGE (camping gear, bikes)

WELLNESS: TOP STRATEGIES & VALUE x LIFT





Sustainability issue: SITE

Responses for Site solutions:



Guiding Principle:

- Protect, restore and support the natural ecosystem while providing spaces to play, rest, learn and engage with the landscape.

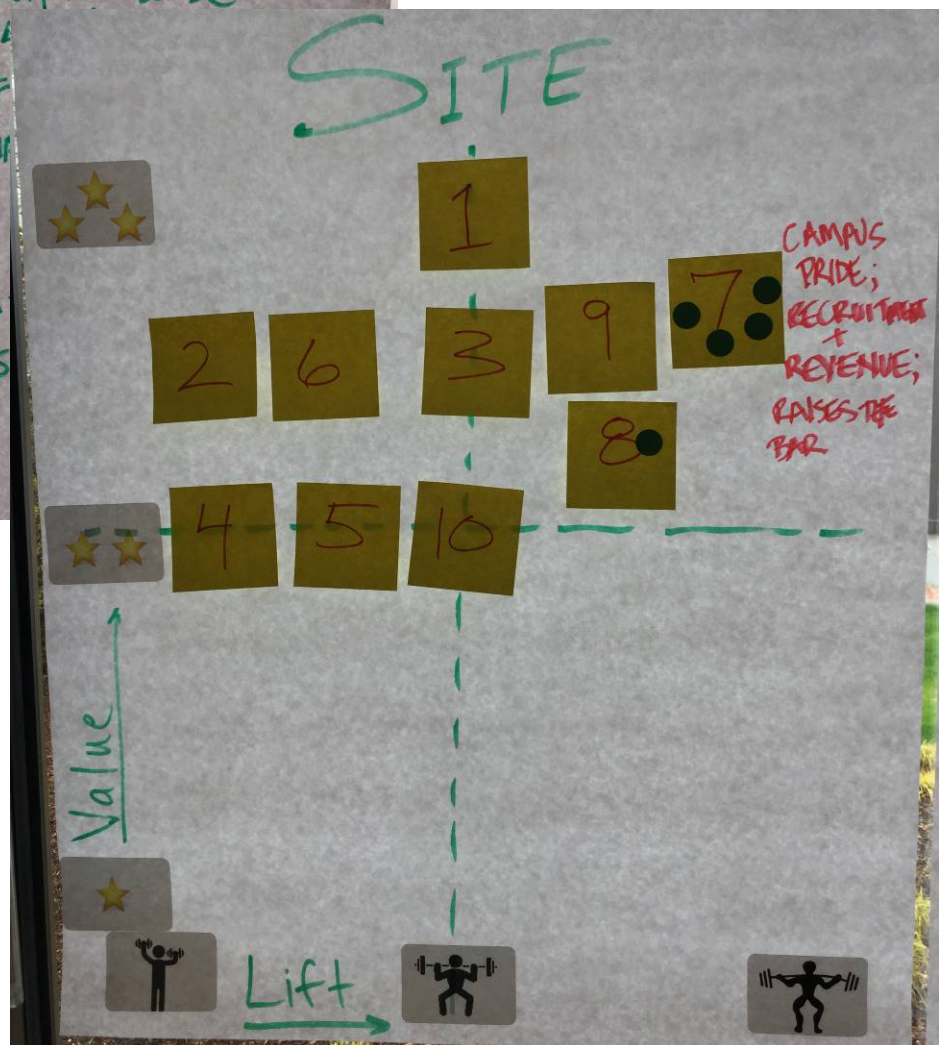
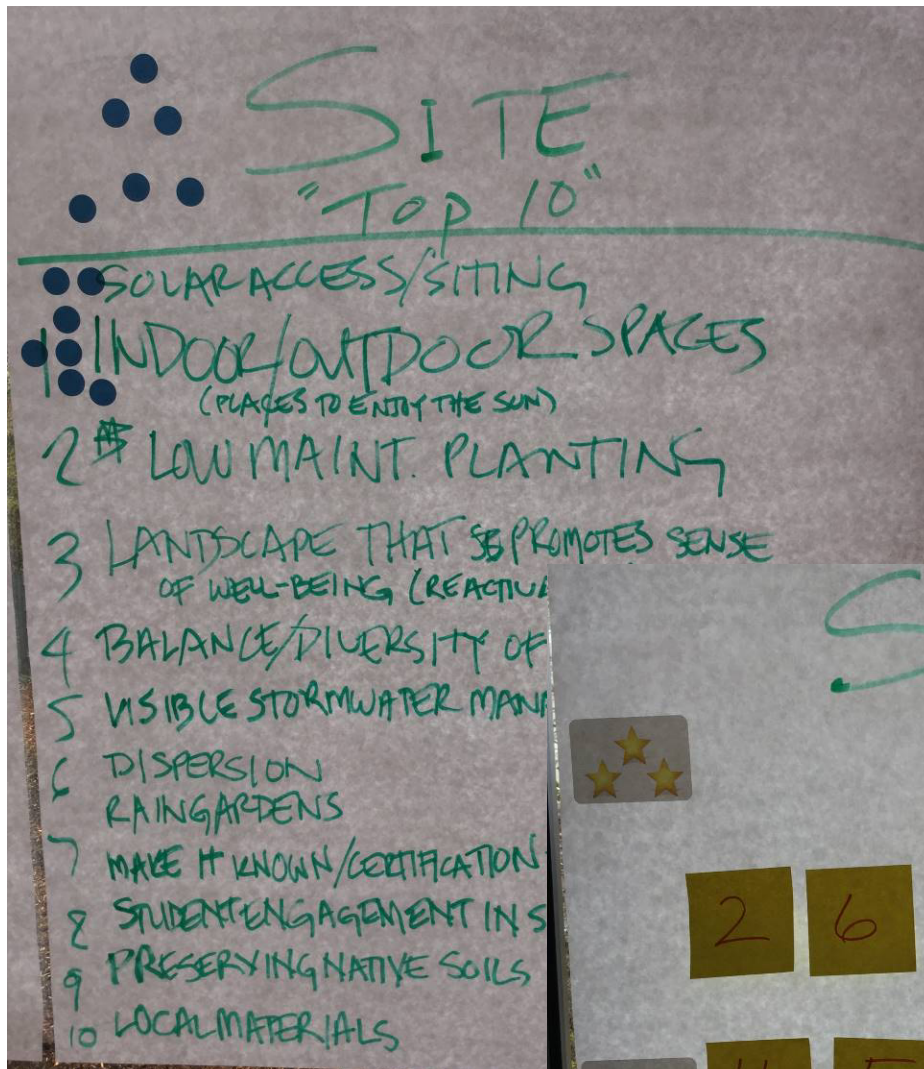
KEY: * = Overall Priority Strategy; * = Priority Strategy among High Value/Heavy Lift Strategies

Strategy	Notes from charrette discussions	Value x Lift	Straw Poll Priorities
1. Indoor/Outdoor Spaces	Provide places to enjoy the sun. Select site, in part, based on solar access.	High Value / Mid-Lift	***** *
2. Low maintenance Plantings	Provide plantings requiring little or no maintenance or irrigation.	High Value / Light Lift	
3. Landscape promoting a sense of well being	Provide spaces that are reactivating, rejuvenating.	High Value / Mid-Lift	
4. Balance/Diversity of landscape types	Avoid mono-culture landscape. Create a more natural and native landscape form.	Mid Value / Light Lift	
5. Visible stormwater management	Celebrate the rain with exciting features that are exposed for viewing and understanding and celebrating our climate	Mid Value / Mid-Lift	
6. Dispersion raingardens	Provide multiple opportunities for rainwater to be visible	High Value / Light Lift	
7. Certification	Make known the sustainability strategies through a third-party certification (LEED, SITES, Living Building Challenge Petal or other).	High Value / Heavy Lift	****
	A source of campus pride, raise the bar on campus. A mechanism for holding the design and construction team accountable. A strategy to attract new students and additional revenues.		
8. Student Engagement in Planting	Get students involved in landscape planting activities.	High Value / Heavy Lift	*
9. Preserve native soils	Maintain the richness of existing soils by keeping all soils on-site and reusing as possible.	High Value / Heavy Lift	
10. Use locally-sourced materials	Utilize materials that are sourced locally, with preference for those from within 100 km	Mid Value / Mid Lift	

SITE: Inspiring images shared by charrette participants



SITE: TOP STRATEGIES & VALUE x LIFT



April 5, 2017 Sustainability Charrette Participants

The Evergreen State College	
Matthew Strickland	Student, Clean Energy Committee
Hazel Petrinovich	Student
Lucy Pierce	Masters Student
Erin Sherrer	Student, Clean Energy Committee
Michael Joseph	Student, Clean Energy Committee
Cassandra Houghton	Student, Green Future
Sharon Goodman	Residential and Dining Services
Scott Morgan	Office of Sustainability
Tim Byrne	Facility Services
Jaymie Lacina	Residential and Dining Services & Residential Facilities
Lisa Dawn-Fisher	Office of Planning and Budget
Azeem Hoosein	Facility Services
N. Diems Haffner-Ratliffe	Student

Design Team	
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Andrea Kuns	Walker Macy
Marty Chase	KPFF
Michael Herseth	KPFF
Christen Sanders	Coughlin Porter Lundeen
Jeff Frost	Brightworks Sustainability
Shilpa Surana	Brightworks Sustainability
Rita Haberman	Brightworks Sustainability