

Charette Report

# Galbreath Field Station

Sonoma State University



RIM Architects

July 11, 2011

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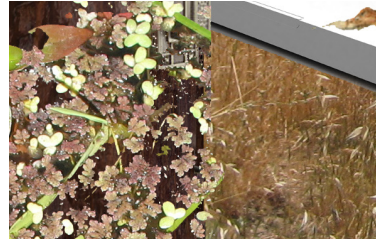
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## Tab 1 :: Introduction









## GOALS and OBJECTIVES

At the beginning of the charette, we reiterated what the goals were for the two days:

- 1. Information.** Through a site visit and facilitated work sessions we would present information to the group, but more importantly, gather information from the group. By having a broad group of stakeholders represented, the goal was to gain relevant project-specific information from participants, and to create an atmosphere where participants would interact and learn from one another.
- 2. Validation.** Through conversations and activities, stakeholders would be asked to comment on some of the information that we had developed and to verify where possible. This included site characteristics and information, needs and desires for the programming of the site, and overall confirmation of project direction.
- 3. Unique needs.** Similar to validation, sessions would be used to understand any unique needs that users of the site might have.
- 4. Brainstorming.** Beyond the gathering of information, the sessions would begin with divergent thinking exercises where the goals were to think outside of the box and develop a broad range of ideas and potential solutions. Each exercise would build on the previous one so as to fill out this big picture and set the stage for subsequent convergent exercises.
- 5. Prioritization.** Beyond brainstorming, exercises would begin to bring things together into more concrete results that would help to direct conceptual master planning for the site.
- 6. Champions.** As the success of this field station is based on the ability to raise funds for its development, one of the goals of the charette was to not only inform and involve, but to encourage people to become “project champions”. Project champions will spread word about the project, try to generate interest, and contribute to its success however possible.

In summary, the main intent of any charette is to brainstorm in an organized fashion. The goal is to open the process up to ‘blue sky thinking’ where all ideas are worthy of consideration. This allows otherwise unexpected and good ideas to be considered, rather than just moving pre-supposed ideas forward. The other intent of a charette is to organize and prioritize the ideas and concepts that are introduced. The desire is that there is an orderly movement from ‘free thinking’ to a grounded and useful product for the next stages of the project. At the conclusion of the charette, we will have a higher level of understanding how a prescribed development type (field station) needs to be tailored to the specific needs of Sonoma State University and those individuals who will use the site.



The Galbreath Field Station Conceptual Master Plan Development project is an effort comprised of many parties from the University and the Design Team. Many of these parties were represented in the two days of the charette. The participants, including their responsibilities, are outlined as follows:

**Sonoma State University – SSU:**

Claudia Luke	Field Station Director	Key Stakeholder in the development of this Field Station and future Field Station Manager.
Christopher Dinno (day 2)	SSU Campus Architect	SSU Stakeholder providing input and direction for design of the site and facilities.
Carol Ingerman	SSU Contract Specialist	Responsible for ensuring the Design Team meets the requirements of the Agreement.
Nora Hild	SSU Project Manager	SSU Project Manager overseeing the University's commitments to meeting goals for the project.
Dr. Scott Severson	Director, School of Science and Technology	Director providing input for development of the Observatory.
Saeid Rahimi	SSU Provost	SSU Stakeholder providing input and direction for design of the site and facilities.

**Donors:**

Bob Johnson	Galbreath Preserve Donor	Donor responsible for funding this charette effort and providing input for design of the site and facilities.
Terri Yost	Family member of the Johnsons	Responsible for providing input and feedback for design of the site and facilities.
Kristi Yost	SSU Student and Grand-daughter of Bob Johnson	Responsible for providing input and feedback for design of the site and facilities.
Michelle Covington	SSU Development Office	Manager in support of donor family and providing input and direction for development of the site and facilities.

**Program and Use Development:**

Derek Girman (day 1)	Biology	SSU Instructor often bringing classes to the Preserve for observation. Provides input for educational benefits the preserve offers.
Jim Kuhns	Business and Economics	Provides input for educational benefits the preserve offers.
Suzanne DeCoursey	Preserve Coordinator	Responsible for providing input and feedback for design of the site and facilities.
Kate Erickson	Anthropology	Archaeology investigation and provides input and feedback for design of the site and facilities.
Matt Thompson	History Assistant	Responsible for providing input and feedback for design of the site and facilities.

**Program and Use Development (continued):**

Margot Rawlins	Local Community – Neighbor	Representing the local community as a neighbor to the preserve - responsible for providing input and feedback for design of the site and facilities.
Philippe Cohen	Administrative Director Jasper Ridge Biological Preserve, Stanford University	Responsible for providing input and feedback for design of the site and facilities.

**RIM Architects (RIM) Design Team:**

Michelle Jones	Managing Principal (CA) :: PIC, RIM	Principal in Charge overseeing Scope of Work and ensuring the Design Team delivers the project according to the terms of the Agreement.
James Dougherty	Managing Principal (AK) :: Design Architect, RIM	RIM's Design Architect responsible for setting the goals, objectives and vision for the Master Plan Development.
Steve Kushner	Project Manager, RIM	RIM's Project Manager, assisting PIC with scheduling, investigation and delivery of the scope of the project.
Peter Briggs	Landscape Architect, Corvus Design	Site and Landscape designer, responsible for collaborating with James to set the goals, objectives and vision for the Master Plan Development.
Dan Sicular	Senior Managing Associate, ESA	Responsible for coordinating the ESA team for the Environmental assessment for the Master Plan Development.
Peter Hudson (day 1)	Geologist/Engineering Geologist, ESA	Evaluated geology, hydrology, and groundwater issues and potential constraints at the proposed project sites using available published information and observations made during a field reconnaissance, and contributed to the CEQA environmental checklist
Chris Rogers (day 1)	Plant Ecologist, ESA	Evaluated SSU's background biological resources information and conducted a reconnaissance survey to identify potential biological constraints and sensitivities for the proposed project, in collaboration with ESA's wildlife biologist.
Richard Ingram	Vice President, Brelje and Race :: Civil Engineering	Responsible for coordinating the Civil and Geotechnical investigation for the roadway access and site development improvements.
Dana Brock	Geotechnical consultant to Brelje & Race	
John McKernan (day 1)	Vice President, BCCI Construction :: Construction Costing and Constructability	Responsible for providing feedback and input for remote construction factors, project phasing and cost estimating
John Quackenbush	Pre-Construction Manager, BCCI	Responsible for providing feedback and input for remote construction factors, project phasing and cost estimating

## INITIAL AGENDA

The following agenda represents the proposed method of covering the topics needed during the short time that all participants were together. The intent was to maximize the time available by addressing site evaluation and understanding, tapping into specific needs of user groups, and collaborating to uncover the greatest use of the site and facility. However, it was always the intent that this agenda was flexible, based on the direction of the group, allowing for emphasis in certain areas and accepting new topics. The Agenda was modified on Day 2 to maximize available attendees and attention towards programming, aesthetics and vision.

<b>DAY 1 :: DISCOVERY &amp; BRAINSTORM :: MEET @ SITE</b>		
Wednesday, June 29, 2011		
9:00 am to 9:30 am	Introductions and Opening Keynotes	Galbreath Main Gate
9:30 am to 12:30 pm	<b>Discovery</b> Site walk / ride	Galbreath Observatory and Field Station sites
12:30 pm to 1:00 pm	TRAVEL	
1:00 pm to 2:00 pm	<b>Brainstorm</b> Recap and Record during lunch	Tea Room, Citrus Fair, Cloverdale
2:00pm - 4:00pm	<b>Refine</b> Group discussion	
4:00pm - 5:00pm	<b>Discuss</b> Share group discussion and prepare for Day 2	
5:00pm ish	Adjourn	
<b>DAY 2 :: DEVELOPMENT &amp; INNOVATION :: MEET @ SSU</b>		
Thursday, June 30, 2011		
8:00 am to 8:30 am	Arrive at SSU Conference Room	1121 Schulz Information Center, SSU
8:30 am to 9:30 am	Introductions and Opening Keynotes :: recap of Day 1 and info for Day 2	
9:30 am - 11:00 am	<b>Development Sessions</b> Small Group design sessions and recap	
11:00am to 12:00 pm	<b>Sustainability Brainstorm</b>	
12:00 pm to 12:30pm	<b>Innovation :: Working Lunch</b>	
12:30 pm to 1:00 pm	Break	
1:00 pm to 2:00 pm	<b>Budget, Cost, Constructability, and Phasing Session</b>	
2:00 pm - 3:30 pm	<b>Refine</b> Program and Facility visualization	
3:30 pm to 5:00 pm	Final Charette Summary & Outbrief	
5:00pm	Adjourn	



Tab 2 :: Charette Day 1 -  
Session 1









## INTRODUCTIONS

The team introduced themselves and Claudia Luke of SSU provided an overview of the process to date. Participants were provided an orientation to the day and given site journals. People were asked to ride into the site with people they may not know, and to share their knowledge and new experiences on their way into the site.

At the commencement of the site tour, the Journals were distributed to all participants as a method of documenting thoughts, questions and ideas. Although all of these notes were not discussed during the charette, the Design Team has read and recorded all of this information and synthesized into the input and direction for the masterplan development. Scans of these notebooks are included in Appendix B.





## EXERCISE 1: 10 CAPTIVATING THINGS

Each car was asked to develop a list of 10 unique things they observed (or knew about) on the drive in. The intent was for people to share their knowledge of the site as a reflection of their discipline and experiences. These were shared in two ways – as journal entries and as a group at the road split-off to the observatory site.

The following is a list of statements taken from the participants as they arrived at the site:

- A stunning big leaf maple with a huge burl and the biggest patches of madrones.
- The madrones were so large and so many (a lot of “board feet”).
- The enjoyment of seeing others experience and enjoy the place for the first time, taking pictures etc.
- It was clear that it had been raining - unexpected for late June. Mount St. Helena could be seen from the field station site a few days earlier.
- It was interesting to see all the evidence of logging from the past; it seemed to be all over the area.
- There was a lot of elymus glaucus, a beautiful native perennial bunchgrass that can live for hundreds of years.
- There was a lot of diversity in the micro areas passed through; the different types of environment and their resources, oak, madrones, bay... It evoked the previous uses of the land and its inhabitants.
- It was a unique experience to see so many vehicles and people on the Preserve.
- The dense forest felt like a scene from a movie like The Lord of the Rings or Harry Potter.
- A few weeks ago mountain lion scat was found in the middle of the road at the field station site.
- There are two ponds at the borders of the field station sites; they are more characteristic of the valley floor; it was cool to see them at the top of the ridge.
- The “Wildlands” of the Galbreath Wildlands Preserve really hit home. There was an urge to get out of the car and experience this amazing place.
- The road was a lot better than feared.
- The Native American history of the Preserve is very interesting; while they were in the car another person mentioned finding arrowheads there.
- Much was shared about salamanders, newts, bears and pigs. It was very interesting to learn about the wildlife including observing the damage caused by boars.
- There were a lot of large, old Douglas fir trees that had escaped logging. Some of the trees had very interesting structures and evidence could be seen of wildlife habitation in the trees.
- Weather was expected to be around 95 degrees at this time of year, but this year there had been storms. It was a reminder that the planet is changing and that the Preserve will be a place where people will reflect on that.

- Two interesting aspects of the Preserve: the fact that you can see the geysers from certain points and that it is very quiet, part of the experience of the Preserve is not hearing man-made noise.
- The creek appeared to be an all-year-round creek. The bridge on the giant tree trunk was interesting.
- The size of the place was awe inspiring and makes you feel so small and the great diversity of the area.
- The day brought back a lot of memories.
- Having visited the site many times, it is always different and always changing.
- The recent damage to the ground by the pigs was likely not to last while damage from earlier in the year would.
- The place is special because of its great diversity.
- The interest and dedication of the group was impressive.
- It was an amazing place to which photos did not do justice.
- The moss climbing up the trees was very beautiful.
- There would have to be a careful balance struck in the design so that it did not become too urban and detract from the experience.
- People's perceptions about accessing the site will set up their expectation of the experience as a whole.

To the right and on the following page are notes from the journals documenting participant's thoughts. Refer to the Appendix for additional journal notes.

10 THINGS

Chadia Bridges	BOB	CARA
BRIDGES (challenges but opportunities)	DIVERSE NATURE	Moss on the trees
ROAD AND PERCEPTIONS OF ACCESS		BIG
SOUND		THE VIEW FROM THE OBSERVATION
NARROW FOREST		
PIG DIGGING		

10 Unique Things

- 1 Redwood Log Bridge
- 2 Board & Batten Outhouse
- 3 Deciduous oak, tan oak, and Doug fir dominated forest
4. very steep road not built for regular use
5. very large Doug fir with large branches and broken bark near Field Station site.
6. Nice bedrock outcrops
7. Need for turn-arounds eg. at observatory road junction
8. Many large fir canyons
9. Sheep barn in great shape! classic lines, newer construction
10. observation site - very windy!

Observations

1. Steep slopes
2. Changing Scenery within a short distance
3. Primitive bridges
4. moss covered tree trunks
5. while climbing or descending, the road goes up and down
6. ~~cut~~ Cut tree trunks and <sup>branches</sup> ~~branches~~
7. Branches hanging
8. Road and vegetation conditions change within a short period of time (even a week).
9. few points where one can see mountain ridges.
10. try to utilize the usable portion of the cut logs for some outdoor features of the field station (also the trees that will be cleared for the site).
11. Sustainable aspects of the site will be noted for publication



## SITE WALK and NAMING

Several locations were walked on the site, with an intent of ensuring people had a mental map of the site.

- Observatory – a short walk along the ridge to point out the potential location of the observatory at the end of the ridge, as well as the potential site closer to the road Expand on items discussed
- Sheep barn – an existing building designed as a sheep barn that is used by SSU for some storage. Noted at this location was the history of the site, the form of the shed, and the way the shed reflected the nature of the function of the use
- Main site – roadside – clear area next to the road in the center of the potential development area
- Main site – View point – a site promontory that has long views to the east and south, and shorter views back to preserve areas to the north
- Main site – test pit – an area more southerly within the potential development area that is close to the identified archaeological zone
- Ponds – southwest of the potential development area. They are unique in that they exist along the ridge. The pond closest to the road is spring-fed. The second pond drains and fills annually.
- Classroom - An area of 25x35 feet was laid out with stakes and flagging tape to show what the approximate size of a classroom would be on the site. The intent was to give an idea of scale and how it related to the site. The group size was about 26 people, so it was also representative of how many people would normally use such a space.



## EXERCISE 2: GUIDING QUESTIONS

For the drive out from the site to Session 2 in Cloverdale, each car was asked to respond to the following questions included in their Journal:

- Why do we have field stations?
- What is the best possible use of this site to achieve the mission of Sonoma State University?
- What can be accomplished here that is impossible elsewhere?
- How must the experience be different from campus facilities?
- What do users of the site need in order to be successful?
- Consider technology, sustainability, and visitor experience. What technologies are needed and are they available?
- What does sustainability mean to you for this future research station?
- How would you define success for this project?

Some sample responses as written in the Journals are included below:

① DON'T HAVE MUCH W/OUT IT. TO HELP CLAS  
STAY LOGISTICS,

② Field station and lands THIS HELPS  
Sharpen our academic excellence.

③ ~~the~~ North Coast (fish + lumber) unique

Field Stations unique interactions

Galbreath Field Station - Design Charrette

History vs trail moment NEW MODEL

June 29-30, 20

### Dream Field Station

Create a field station that will serve the educational needs of students, as well as providing a showcase and example on how scientific activities can be done within off-the-grid buildings that are sensitive to ~~our~~ the sustainable needs of our fragile environment.

Success - teaching first, students involved  
- hands on/whole pkg.  
- college can be intimidating, know professor

Sustain visceral experience  
- enhances need for preservation

- bldg.  
- water reclaim/solar  
- if you  
- part of life

Technologies wi-fi (top of hill)  
- unite cross disciplinary  
- recording/mapping  
- build path through grove of trees  
- small groups

Users  
- trans/food/water/comfortable  
- remote

- Consider **technology, sustainability, and visitor experience.**  
What technologies are needed and are they available?
- What does **sustainability** mean to you for this future research station?
- How would you define success for this project?

water > power? natural resources  
recording  
Having Juxtaposition  
↓  
communication w/ifi  
a must  
small observatory measuring  
sun

Galbreath Field Station - Design Charrette

June 29-30, 2011

Student - using satellite  
- long classes - live solar/  
images

Hodland Institute

- school groups 2-5 days  
learn what would be  
& how to make it better
- business world - retreats  
(mission in life similar)  
outreach/support  
- commonality

Experience  
- campus sterile/isolated  
- broad range of groups  
- need to have private  
private area w/ stone  
fireplace

Accomplished

- student out of environment  
- used to have

Tab 3 :: Charette Day 1 -  
Session 2







POTABLE, NON-POTABLE USES  
Filtration

- COLLECTION, SEASON DRIVEN
- LEAD TO ACT LESS DESIRABLE CHOICES

EC POWER ON SITE OFF GRID

- SOLAR / WIND
- BATTERY STORAGE / RECHARGE STATIONS
- GENERATOR BACK-UP POWER

→ 24/7 ON SITE PRODUCTION ~ CHARGE TANKS

→ BEST PRACTICES DATA TRANS

Chill / Infrastructure

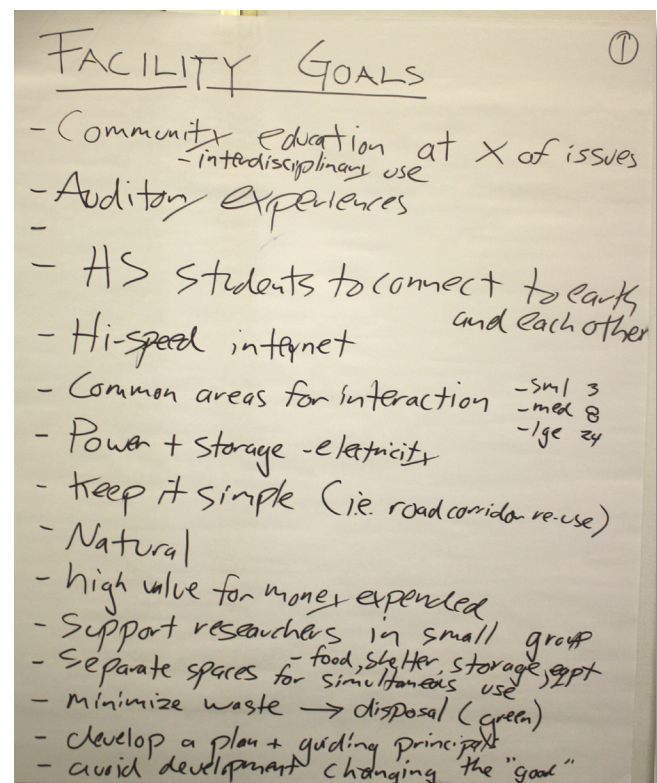


For session 2, the group moved from the Galbreath Wildlands Preserve Site to the Tea Room at the Citrus Fair in Cloverdale, California. This location allowed for the group to share their experiences from the site visit and begin to synthesize the most important aspects of the project.

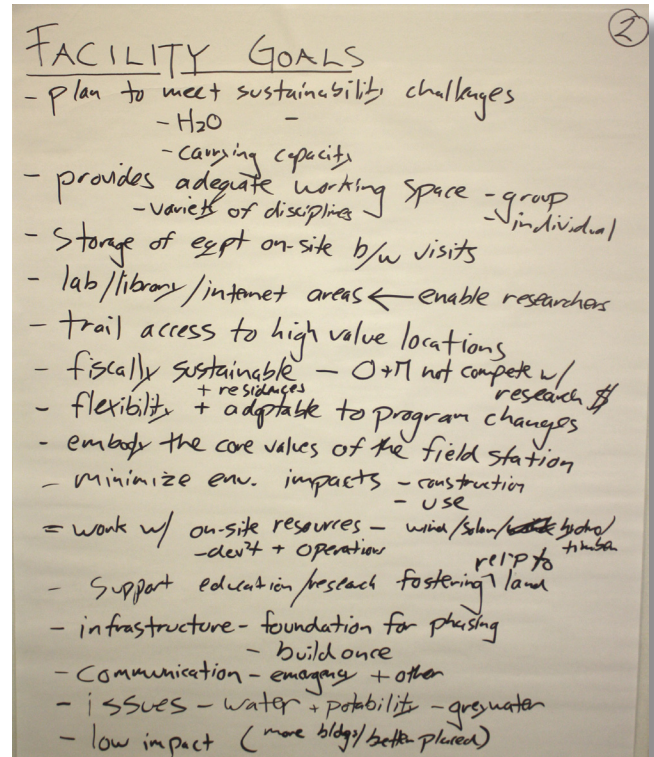
### EXERCISE 3: FACILITY GOALS

Participants were asked to write down their top three goals for their use of this site, specifically noting things that were important to their particular field or discipline. These were shared with the group (items in **BOLD** were mentioned several times):

- Community education at intersection of issues (interdisciplinary use)
- Auditory experiences
- High School students to connect to earth and each other
- Hi-Speed Internet
- Common areas for interaction (3,8,24 person spaces)
- Electricity capacity and storage
- Keep it simple (i.e. use existing road corridor)
- Natural
- Maximize value for money expended
- Support researchers in small groups (food, shelter, storage, equipment)
- **Separate spaces for simultaneous uses**
- Minimize waste and develop appropriate disposal methods
- Develop a plan and guiding principals
- Avoid the development altering the resource that it is the reason for its existence
- Plan to meet sustainability challenges on this site (water)
- Plan within a quantified carrying capacity for the site
- **Provide adequate working space for different group sizes and discipline needs**



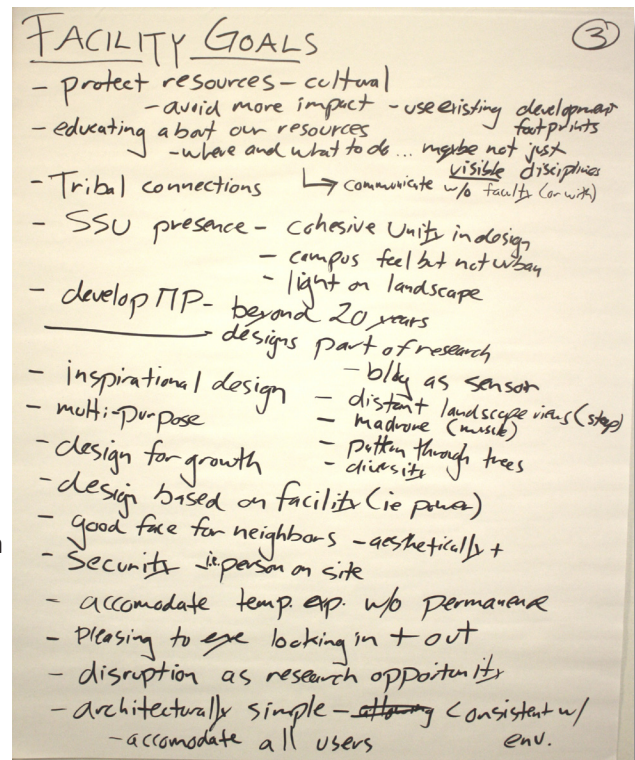
- Storage of equipment on-site between visits
- Enable researchers – lab/library/internet areas
- Provide trail access to high value locations
- Fiscally responsible – Minimize O&M so that it doesn't compete with research dollars
- **Facility is adaptable to program changes and expansion**
- Embody the core values of the field station
- Minimize environmental impacts of construction and use
- Maximize the opportunities of on-site resources (wind/solar/timber) for both development and operations
- Support education and research and foster relationship to the land
- Smart infrastructure – ensure that things are only built once, and each phase establishes the foundation for the next
- Reliability for normal communications, but especially emergency
- Low impact – balance of small building distributed vs. more consolidated
- Protect resources including cultural – use existing development footprints where possible
- Educate about on-site resources (not just the visible ones) to tell people where they are and what to do with them
- Tribal connections
- SSU presence
  - cohesive unity in design
  - feels like a campus, but a field station campus
  - light on landscape
- Develop MP to account for beyond 20 years
- The facility design itself should be part of research



- Develop the building as a sensor
- Inspirational design
- **Multi-purpose design**
- **Design for growth and expansion**
- Design is grounded on site resources as limiting factor
- Provides a good face for neighbors
- Security through design, and management (on-site person)
- Accommodate temporary expansion without permanence (i.e. forest tent sites, area for a tent for larger gatherings...)
- Pleasing to the eye to look at, as well as look out of
- **Accommodate all users**
- Use the visual resources of the site

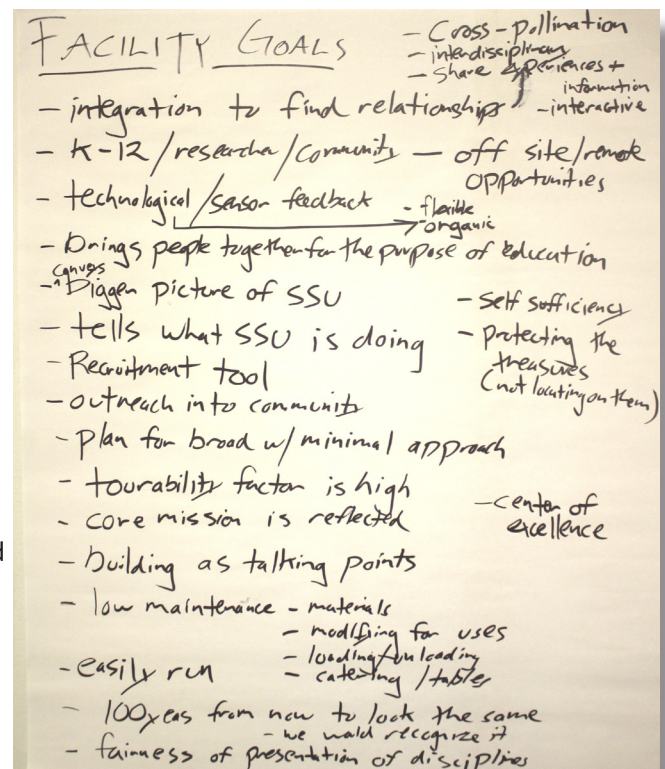
- Long views
- Vegetation inspiration (madrones)
- Pattern of trees and canopy
- Diversity of site

- Encourage cross-pollination, interdisciplinary missing, shared experiences and information, interactive
- Integration of people to identify previously unknown relationships
- K-12/research/community – on site, and off-site/remote opportunities
- **Plan for growth/change of technology/sensors to allow flexibility and future unknowns**
- Brings people together for the purpose of education
- Conveys the bigger picture of SSU
- Tells what SSU is doing here and beyond
- Self-sufficiency





- Protecting the treasures of the site (not locating on them)
- Recruitment tool
- Community outreach
- Plan for broad with minimal initial approach
- Develop with a high "tourability" factor
- Core mission is reflected in the development
- Building provides talking points
- Low maintenance
  - Materials
  - Modifying for uses
  - Loading/unloading
  - Catering/tables
- Easily run
- 100 years from now it will look familiar (we would recognize it)
- All disciplines shall be presented fairly, regardless of day to day presence on site



## EXERCISE 4: GUIDING PRINCIPLES

Building upon the facility goals (exercise 3), participants were then asked to think about five things they would need as part of their ideal field station in order to use it effectively and fully. Each idea was written on one sticky-note, and then organized by the group into logical categories of similar ideas.



Once categorized, the follow-up exercise broke the whole into sub-groups, each taking the similar categories and determining Guiding Principles for the development of each of these components.

## Structures

- The facilities must respond to the access controlled storage needs of users in the following ways:
  - Long term field equipment for researchers (remote)
  - Storage for frequently used items
  - Personal storage
  - Facility-specific storage



- All spaces connect people to the environment and each other
- All spaces should be flexible for two or more uses
- All spaces should be safe from pest intrusion
- Facilities should not attract pests
- Facilities are designed to provide transitions between work & non-work
  - Hygiene and cleanliness

### Social Spaces

- Create multiple social gathering spaces
- Create gathering spaces in different environments
  - Indoor
  - Outdoor
  - Focal element
- Create gathering spaces that create/foster interaction
- Create social opportunities through the food experience
- Provide opportunities for people to be alone or in small groups



### Access

- Establish daily and weekly maximum numbers of vehicles and visitors
- Minimize impervious surfaces
- Establish a trail network to encourage travel on foot
- Universal Design (Barrier Free Access) & Title 24 (California Accessibility code compliance)

## Utilities

- All water use will be from on-site resources
- All electricity shall be generated on-site, off-grid
- Communications shall be reliable, sufficient and flexible
- Security will provide a site where people feel safe, SSU facilities and properties are protected, and user properties are protected.

## Environmental

- Minimize air pollution
  - Particulates
  - CO2
- Minimize biological impacts
  - Site surveys prior to siting
- Limit change by minimizing size of development footprint
- Protect watershed and aquatic resources

## Programming

- Develop standards and programs for site interpretation

## General Guidance

- Foster interaction between humans and the environment
- Foster the sharing of information
- Develop multi-sensory environments
- Foster laughter



## REFLECTION and DAY 2 PREPARATION

To close the first day of the charette, the group was asked to share one idea or experience that stood out from the day as something to build on for day 2. The following ideas were shared:

- Madrone trees are distinguishing feature of site
- Trails and connecting the different areas
- Integration of available natural resources
- Creativity in how the constraints will be accommodated
- Prioritization of programming goals
- Feeling privileged to be involved in the process of shaping how the place will work in the future
- Great opportunity to participate in the design process and collaborate with so many kinds of people
- Logistics of getting everything to the site should not be too great a challenge.
- Great beginning, still much to do
- Importance of a digital interaction with the outside world; sharing ideas, information and experiences
- Although there was agreement amongst everyone on the guiding principals of the design, realizing every idea to the same degree would be impossible: compromises will have to be made but there is great potential.
- Looking forward to seeing a document outlining where the project is going
- Importance of sharing information and collaborating with key faculty members and with RIM Architects in deciding on what will be included in the final program
- Importance on considering what parts of the program will be permanent and what parts will be temporary
- The barn was awesome
- Wonderful to get so much input during the design process rather than having issues come up during construction
- The history and impact of human occupation on the site
- The acoustics of the pond

In preparation for day 2, the Design Team then re-organized to modify the agenda, making sure that certain topics would be included to ensure success on day 2. These included a recap of the site walk and importance, a recap of the site analysis done in the previous two months and the opportunities and constraints discovered, and understanding of program, and opportunities for the participants to think about how to use the program according to the mission of the Field Station.



Tab 4 :: Charette Day 2 -  
Session 3







## INTRODUCTION and ICEBREAKER

Participants gathered on the second day of the charette at 1121 Schulz Information Center on the Sonoma State University Campus. The room itself was a good model for the group, as it was about 700 square feet and limited by signage to 49 occupants. The session began with a welcome from Claudia Luke, Director of Wildlands Preserves for SSU, and then an outlook for the day presented by Peter Briggs of Corvus Design. To get ALL involved in the session, participants were asked to share one thing that stuck with them on the first day about the site that they felt was a significant constraint/challenge to this development:

- Providing necessary support and infrastructure
- Presence of mosquitoes and pigs
- User needs such as daytime sleeping
- Recognizing impacts and balancing solutions – “educating people about our choices”
- Utilities – potential difficulty
- Creating an awareness of limited resources, that people will act on
- “Wildlands” – challenge of not harming the primary resource
- Cohesive marketing plan – finding the balance between appealing to everyone with “watered down content” or appealing to one particular group only
- Perception of distance (ease of use and type of experience)
- Universal Design (Title 24 access)
- Life cycle & cradle to cradle
- Developing low tech solutions – simplicity
- Priority development that sticks to a vision with clarity, yet is flexible
- Developing criteria for decision making (quantitative where possible), grounded in existing guidance where possible (i.e. SSU mission, land transfer agreement)
- Security challenges
- Code requirements
- Sonoma State development/facility standards
- Balance of meeting desires, yet being achievable



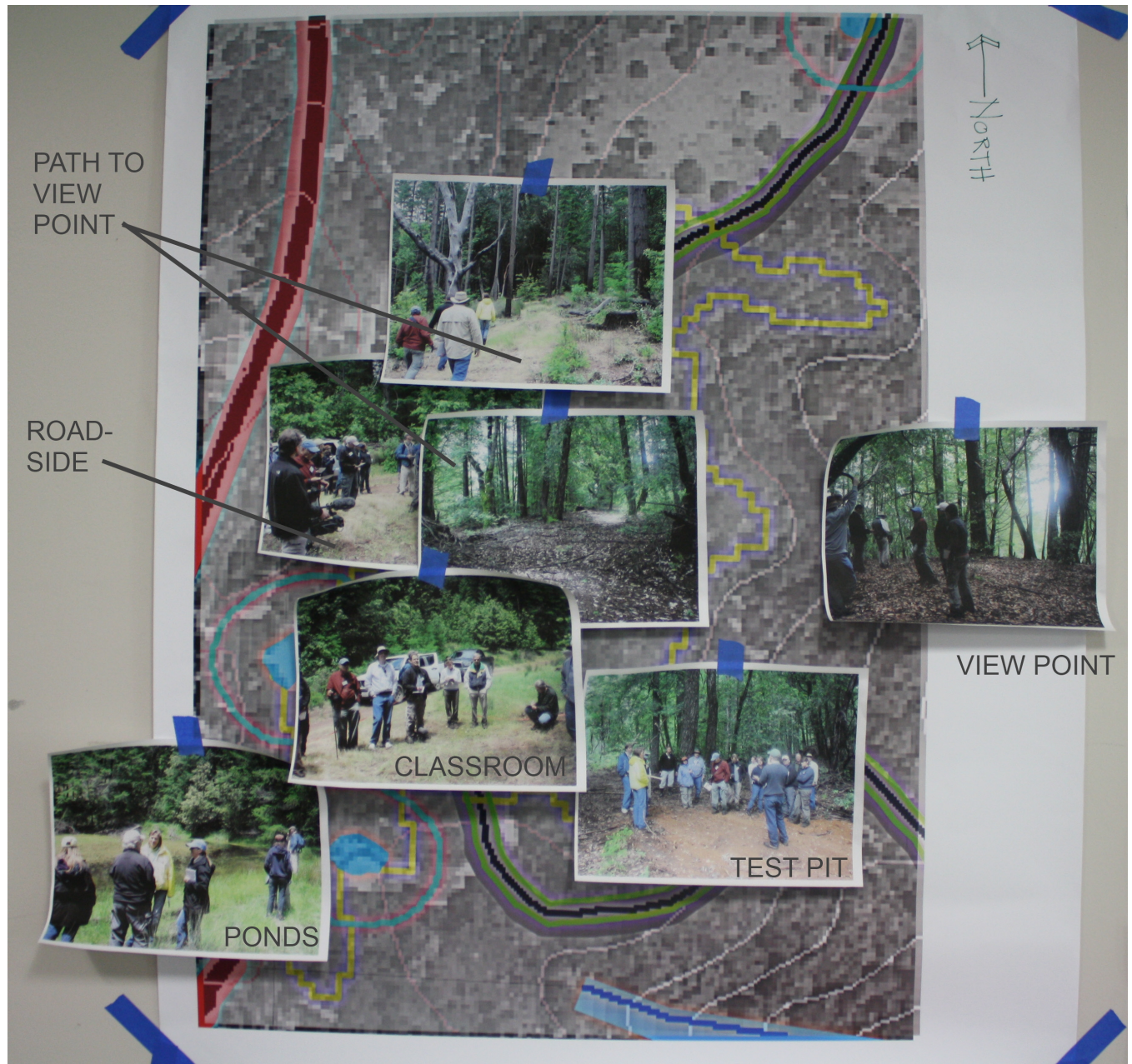
- Finding the right level of capital investment to minimize operations and maintenance costs
- Finding the right balance between planning for peak uses versus average (# of users)

Participants were then asked to share one thing about the site that they saw as an opportunity that should not be missed:

- Social hub
- All-year use
- A place to engage SSU students and community in authentic research
- Seen as a part of the community
- “Wildlands” – bring people in
- A place to introduce people to nature
- Recruiting tool
- SSU has non-science disciplines that can be involved
- Retreat for groups – income opportunities
- Increase awareness of resources (i.e. water)
- Life cycle & cradle to cradle
- Sustainability – full integration
- Teach by doing (through master plan and design process, construction and operations and maintenance)
- SSU as a DISTINCT institution (not a copy)
- Stories to be created and told (local, regional, national and world)
- Pull people out of their comfort zones, and force them to consciously make choices
- The process itself – new and open to innovation

## SITE WALK RECAP

Using photos taken from the first session, Peter identified the major locations that had been named on day one. This map generally served to recall the spaces that the group had seen and highlight those locations on the map.



## REPORT OF FINDINGS DISCUSSION

Based on the Report of Findings developed as a summary of the initial site investigation, Michelle Jones led a discussion on the results of the initial studies, site analysis and their impacts. The topics discussed included Road Analysis and Civil/Geotechnical Investigation, Code Research, Environmental Investigations, and Archaeological Investigation.

### Road Analysis and Civil / Geotechnical Investigation

Richard Ingram from Brelje & Race provided a briefing on the existing conditions and evaluation of the roads on the preserve. A detailed summary of these findings is included in the Report of Findings. In summary, the existing road conditions do not appear to be extremely difficult to modify to achieve access to the field station site. Some areas are steep in grade, but with some minor roadway improvements such as gravel, some drainage modifications and some spaced turnouts, access to the site should be achievable.

Beyond the field station site, roadway access to the observatory becomes more challenging, but 2WD access was not originally envisioned beyond the field station site. Off of the roadway, the pathway is steep and will require thought on the type of access that will be developed for the observatory location.

### Code Research and Constructability

Michelle Jones with RIM Architects provided a briefing on the investigation and discussions that occurred with CALFire, Anderson Valley Fire Department and the Division of the State Architect (DSA) for accessibility. A detailed summary of these findings is included in the Report of Findings. In summary, fire access is not as challenging as originally anticipated due to initial review of the roadways. CALFire met on-site with Brelje & Race and Claudia Luke and the result was promising with CALFire – they responded that access and ability to respond to the site was achievable. They did raise concerns about the Occupancy Type and number of occupants. Once an Assembly load (50 or more) occurs in any single space, it would trigger additional requirements for fire protection and life safety, including wider less steep road requirements. This constraint is a factor that we incorporated into the discussions throughout the charette – the intent to keep all spaces lower than an Assembly Occupancy group.

Further, RIM met with DSA to review accessibility for the project and site. The project will include a universal (barrier free) approach to the planning and design of the development, so RIM coordinated and discussed an understanding of the minimum requirements and potential enhancements that support the mission of education and research coupled with universal design.

One question that remains is how the visitors to the site will utilize the facility beyond the immediate arrival, site circulation and facilities :: Will 4WD wheelchairs be provided to allow researchers to travel on pathways?





Lastly, Michelle presented BCCI's initial review of the road investigation provided by B&R, coupled with their experience building in remote areas. The observatory will most likely require an air-drop installation via helicopter for the observatory structure. The structures for the field station should consider use of as many on-site resources as possible. The possibility for premanufactured structures is promising understanding their will be some limitations to consider based on length, weight and size of the structures.

## Environmental Investigation

Dan Sicular of Environmental Science Associates (ESA) provided a briefing on the Environmental Investigations performed during our initial phase of the project. A detailed summary of these findings is included in the Report of Findings. This investigation was supported by SSU's Biologists and Archaeologists who provided summaries of species and the information for Archaeology included in the DRAFT CEQA checklist. Most notably, there is a potential traffic concern for the number of vehicles along Elkhorn Road due to poor sight lines and the general narrowness of the road, both of which raise safety issues. Depending on the number of vehicles that travel his route daily, upgrades to this non-paved road could be triggered. Further investigation will be required to determine this value so the University can program the project appropriately.

Dan also presented potential environmental concerns with the observatory. First of all, there are potential visual impacts of the white observatory building as viewed from surrounding sites. Based on field observations, there is also a concern regarding slope stability at the observatory site, especially if the site is graded and cleared of vegetation. Construction of an improved access road to the observatory could have further impacts on vegetation, slope stability, and erosion.

There are similar concerns regarding visual and noise impacts associated with the field station. Vigilant erosion control and other water quality protection during construction and occupancy, due to the high sensitivity of aquatic resources in the Navarro River watershed (the river supports steelhead and coho salmon) and its listing as an impaired water body for sediment and temperature. Further investigation of these components will be necessary.

## Archeological / Cultural Investigation

Kate Erickson of Sonoma State University presented the University's findings that occurred during multiple site investigations that occurred in May and June. A detailed summary of these findings is included in the Report of Findings. There are archaeological zones that have been documented and were discussed as a part of the charette and have been incorporated into the Site Analyses as 'avoidance areas' for future development.

## FIELD STATION CASE STUDY

Philippe Cohen, Director of the Field Station at Stanford University, was asked to present ideas on how that Field Station operates and is successful. He shared the following case study:

The building was constructed in 2002 and was listed by the AIA as one of the countries most sustainable buildings in 2005. The programming stage was very important to the success of the project. The team spent a lot of time thinking about who the users would be, the patterns of use, and intensity of the use. Despite their careful planning they could not anticipate every behavior pattern, leading to unexpected energy costs at night time when students would work all night in the building.

One of the reasons for the success of the building was that they value engineered at the beginning of the design process. They predetermined which aspects would be cut out if they started hitting cost constraints. Having these compromises built in to the design allowed them to avoid potential future operational difficulties. For example, they thought that their budget would not stretch enough to buy solar collectors at the time of construction. They installed the entire infrastructure to allow for solar collectors to be added in the future. During construction it became clear that they could afford to buy the solar collectors, in fact they could buy even more than originally specified.

**bp solar**  
**Redwood City Electric**  
**Rob Wellington Outley, FAIA**  
Architecture/Planning

### Exploiting Our Most Abundant Resource

## Leslie Shao-ming Sun Field Station

If the Leslie Sun Field Station is to achieve its goal of an annual energy budget that results in net zero carbon emissions, it must also have energy producing capacity. Hence, one of the significant ways the Sun Field Station takes advantage of the sun is by converting sunlight into electricity, employing a 20 kilowatt photovoltaic (PV) array composed of BP Solar's Apollo thin-film modules—25 strings of 11 panels wired in parallel and series. In addition, a complete energy monitoring system was installed that can be seen at [lincoln.solar.stanford.edu](http://lincoln.solar.stanford.edu). The monitoring system has already identified some inefficiencies that we are currently correcting. If, as we project, the system then produces more energy than is consumed, we will achieve our goal of net zero carbon emissions on an annually recurring basis.

A second benefit derived from roof-mounted PV panels is reduced roof exposure to the sun. This indirectly contributes to the passive cooling of the building during the summer season, further reducing energy demand.

**Sun path for the southeast corner of the building**

**Sun path for the southwest corner of the building**

**Passive Cooling Elements**  
Insulation  
Shading  
Operable windows  
Cooling capacity

Sunlight is used to heat the building during the winter months. This is done with solar collectors mounted along the south face and on the roof mounted light monitors. These collectors are filled with a glycol solution (similar to antifreeze) to transfer heat from the collectors to a water storage tank (see photos above & below). The water is then pumped to radiators in the building. Each room has its own thermostat to control heating comfort.

This monitoring system, installed in April 2003, provides real-time data on the world-wide-web from 14 sensors that monitor various aspects of energy flows to and from the building. The system also maintains an extensive database of minute-by-minute data for subsequent retrieval and analysis, and regularly updates hourly, daily, and monthly summary performance graphs.

The combination of high quality insulation and glazing, combined with operable windows and shading from the solar collectors allows the building to stay cool during the hottest days of summer without air-conditioning. The photo above is of the research space as seen from the west end.

Philippe emphasized the importance of looking at the bigger picture whilst examining costs. Although they spent a great deal of money on high-end glazing, this cost was offset by the fact that they did not spend any money on air conditioning. (It can be 100° outside and only 74° inside without any air conditioning.)

They installed a sophisticated energy monitoring system in the building. Through analysis of this data they have been able to enhance the performance of the building and hope to be at net zero energy within the next year. The most efficient building on campus of comparable use uses 14.2 kWh per sq. foot per year. This building uses only 0.89 kWh per sq. foot per year. This huge energy saving was achieved without exceeding the costs of similar buildings that were built on the campus during the same time period.

Goals & Values

## Leslie Shao-ming Sun Field Station: Lessons Learned

**The Jasper Ridge Community of Users**

- 65-70 Research projects annually.
- 1,500-2,500 Stanford undergraduates / year.
- 300-500 Non-Stanford undergraduates / year.
- More than 100 docents providing tours.
- Annually, 1,500-2,000 K-6 students.

**Effective Programming Provided Two Major Benefits that Enhanced Project Goals**  
Reduce project size during design without sacrificing any programmatic goals.  
Focused attention on cost, quality, & schedule rather than programming need.

**Net Zero Carbon Emissions & Counting**  
So why haven't we achieved our goal of net zero emissions?

- 1) PG&E meter misses about 8% of the load
- 2) 3 electric vehicles
- 3) Unanticipated night-time use
- 4) Special events

**Project Team:**  
Jasper Ridge Staff—Philippe Cohen  
Stanford Capital Mgmt & Planning—Laura Goldstein, Ted Geising  
Architects—Rob Wellington Quigley, FAIA (Catherine Herbert)  
General Contractor—W. L. Butler Construction  
Structural Engineer—EndresWare

**Effective & comprehensive programming allows that sustainability does not appreciably increase cost.**

**Integrated planning & design with prioritized features can avoid value engineering efforts that compromise system efficiencies & performance.**

**A well designed energy monitoring system can provide information that can yield insights for improved performance.**

**By using a combination of energy efficient design, renewable energy, and other sustainable design strategies, it is possible to construct a building that provides almost as much energy as it consumes without costing more than a traditionally built facility.**

**Air vs. water for distributing heat**

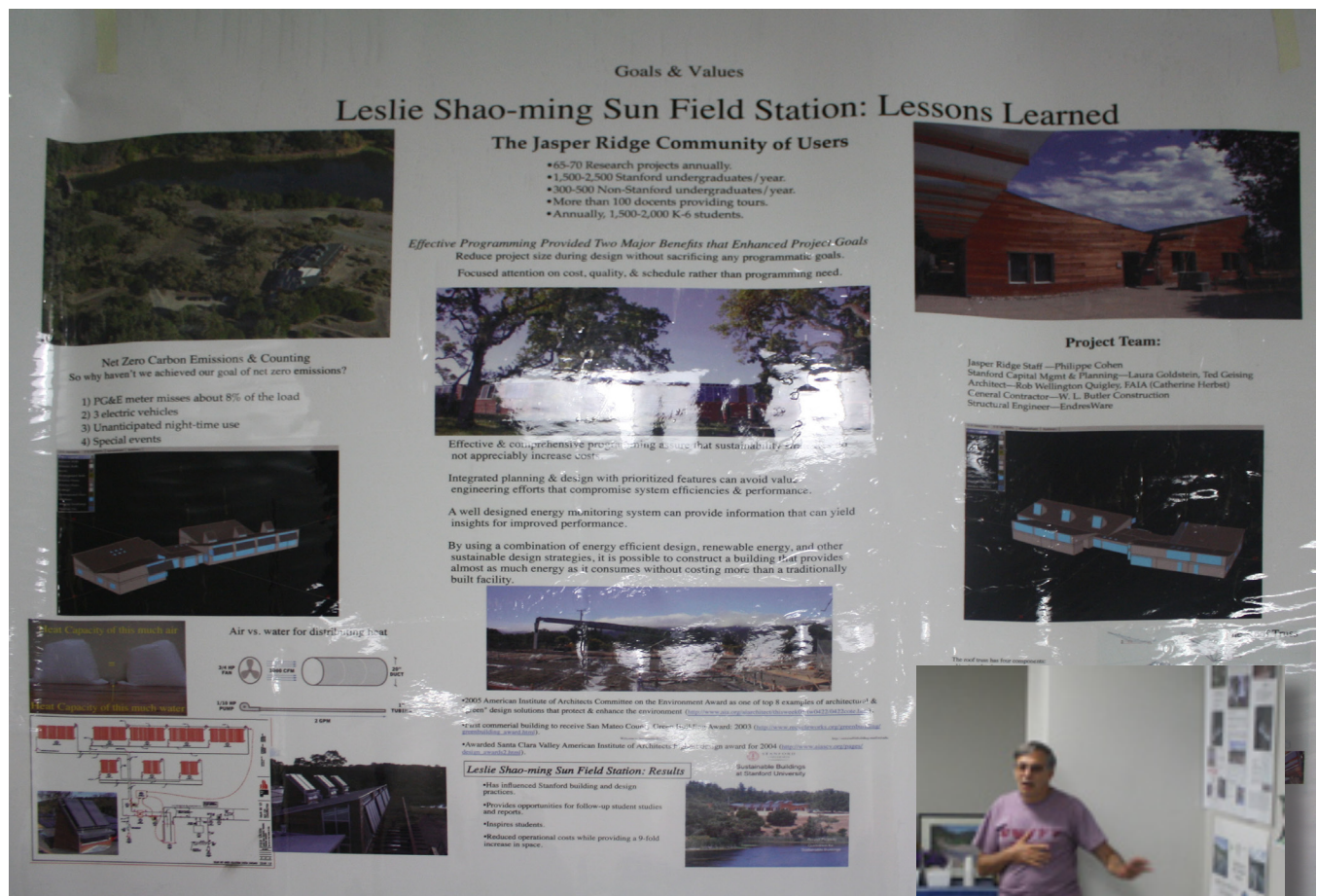
**2005 American Institute of Architects Committee on the Environment Award as one of top 8 examples of architecture & "green" design solutions that protect & enhance the environment (<http://www.aiaa.org/awards/2005/2005winners.htm>)**

**2004 Santa Clara Valley American Institute of Architects 7th annual design award for 2004 (<http://www.scvai.org/2004/>)**

**Leslie Shao-ming Sun Field Station: Results**

- Has influenced Stanford building and design practices.
- Provides opportunities for follow-up student studies and reports.
- Engages students.
- Reduced operational costs while providing a 9-fold increase in space.

**Sustainable Buildings at Stanford University**





## PROGRAM UNDERSTANDING

RIM Architects prepared an analysis of the field station program spaces as provided by SSU. This programming document was included in the Report of Findings and is included at the end of this section. Without filtering out any spaces, RIM assigned areas to the given spaces based on past projects, code requirements, and experience. RIM also added some support spaces that might be necessary and tried to include some space for circulation into the calculations. RIM then further grouped the spaces into organizational clusters - Vehicle Areas, Kitchen, Eating, Caretaker, Back-of-House (Support Spaces), Communication & Relaxation, Sleeping, Gathering / Admin, Restroom, Camping, and Teaching & Research. James Dougherty presented each of these spaces and an intended function. Early on, questions were asked as to why RIM included certain spaces or assigned certain areas. It was addressed that this was not RIM's assessment of spaces needed, but program provided to us. This also afforded an introduction into the next activity, inviting the charette participants to analyze the pre-programming that had been done.



# Charette Report

## Galbreath Field Station

Sonoma State University

## CHARETTE DAY 2 - SESSION 3

Program Understanding

Galbreath Wildlands Preserve Field Station Planning  
SSU Field Stations & Nature Preserves  
Facility Spaces

Functional Space	Capacity	Functional Description		Possible Other Uses
<b>Vehicle Areas</b>				
Parking	for 45 cars	parking for passenger vehicles and vans; is parking needed near entrance for events?	18,000	solar panels
Loading and Unloading	for 1 car	vehicles can drive up to kitchen, sleeping areas, storage areas, garage, and fireplace to load/unload supplies	700	mudroom
Garage	4 ATVs	mouse-proof garage for Preserve vehicles; safety storage for storing gasoline; car repair area	600	long-term storage
<b>Kitchen</b>				
Cooking	4 groups simultaneously	communal cooking stations with all necessary equipment for personal, group cooking and catering; include communal dishwashing site for diners	4x300	social gathering area (everybody always ends up here)
Food Storage	food for one week for group of 30	easily designated/separated cold and dry storage for multiple groups	250	
Equipment Storage	4 groups simultaneously	pots and pans for groups of 1 to 60; easily visible and accessible	250	
Serving	up to 60	easily served to inside and outside dining areas	350	serves break and snack areas
<b>Waste</b>				
Composting, Recycling, Garbage		waste stream separation; bear, pig and mouse proofing; methods for measuring waste produced	400	landscaping and small food garden; art works surrounding waste production
<b>Eating</b>				
Dining Area	up to 45	immediately adjacent to, or part of kitchen	735	meeting area or classroom
Outside Dining	up to 60		1200	meeting area or outside classroom
Snack Area		location for visitors to sit, share coffee, tea on a break; easily accessible and serviceable from kitchen	120	meeting area
Break Area	up to 60 people standing up	morning and afternoon coffee break area for meetings and workshops; drinks during meetings; easily serviceable from kitchen	350	hallway
<b>Communication and Relaxation Areas</b>				
Central Meeting Area	up to 60 people	central location that attracts visitors due to its beauty, comfort, food, fire, etc; provides gradient of engagement to observation	735	
Other Meeting Areas	4-5 areas with capacity of 4 to 15 people	seating areas of various sizes that allow for observation, reflection and quiet conversation	200x4	
Active Noisy Area (Outdoor)	up to 30 people	area for relaxation and exercise; space for throwing balls and frisbees; and group sport participation (i.e., volleyball)	27500	
Exhibit Areas		spaces for sharing information and creativity; art gallery place for people to share art and research results; sculpture garden	4000	
<b>Bathrooms</b>				
Showers		separate showers for men and women; low water use; personal and communal options; water use tracking	8x30	
Toilets		composting, not stinky, easy to clean, easy to unload compost	8x30	
Sinks		low maintenance designs; low water use; water use tracking	8x20	
<b>Sleeping Areas</b>				
Beds / Cabins	60 beds broken into sleeping areas of 1 to 8 people	comfortable protected sleeping locations that provide a good nights sleep; within easy walking distance of bathrooms and showers	80 x 60	meeting rooms, study areas, family living room, artist workshop
<b>Camping</b>				
Tent Sites	up to 30 people	tent sites or camping platforms for groups that prefer camping; maintains a low or no-cost overnight option; can be used as Phase I lodging; needs to be near bathrooms, showers, toilets	10000-20000	
Cooking	up to 30 people	water; tables for food preparation; grill; place to wash dishes; place to store food coolers; propane?		
Dining	up to 30 people	picnic tables	500	
Mobile Campsite	up to 2 remote camping groups	Place to store a trailer unit that includes bathroom, kitchen facilities for camping on other areas of the Preserve; mostly for use by researchers and land management groups; pop up trailer	250x2	
Composting, Recycling, Garbage		bear and mouse-proof areas for storing garbage	100	same as areas for main facilities
<b>Staff Residence</b>				
Home	4-person family	family residence situated to easily notice vehicles entering and leaving Preserve while also maintaining privacy.	2500	
Yard	4-person family	designated private outdoor area	3x2500	
Parking	2 vehicles	personal vehicle parking	500	
<b>Teaching, Research, Working Areas</b>				
Meeting Room (Indoor)	up to 60	indoor meeting room for up to 60 people working in break out groups (i.e., 10 tables) with A/V and Internet	735	classroom, dry lab

Amphitheater (Outdoor)	up to 60	gathering place for arriving groups; outdoor presentation areas for teachers, student presentations	1000	
Classroom	up to 40	area for teaching with A/V equipment capacity	980	
Dry Lab		work spaces for working with "dirty" materials or studying (no utilities needed)	500	classroom, meeting room
"Wet" Lab		modular bench spaces with access to suite of commonly used utilities (water, electricity, sensor hookups, gas lines, septic system)	500	
Shop	class? 2 people?	area with equipment for fabricating field equipment, art, and with tools for light maintenance; what kind of tools should we use?	500	artist work spaces
Library	2 walls of shelf space; seating for 4	field guides and resources unique to local area; copies of publications and reports conducted at Preserve; check out area; place to sit and read books	120	informal meeting area, relaxation; could be part of hallway
Teaching Collections??	???	plants, animals, rock specimens that support learning about identification; usually needs cool constant temperatures and no light	120	
Bone Yard	n/a	outdoor storage; area hidden from view that allows staff to store materials and supplies (e.g., wood, fencing materials, reclaimed objects) for future use	5000	resource for artists
Long-term Storage		lockable lockers that provide space for researchers to leave equipment for use next season	250	garage
Daily Storage and Mud Room		porch area adjacent to kitchen and other indoor use areas for temporarily dropping off equipment, packs, etc. when returning from field	550	
Equipment Room		equipment and vehicles regularly used by docents and others that can be checked out and tracked by staff	250	
Power Generation			300	
Fuel Storage			300	
Water Storage Tank			300	
Water Treatment?			200	
Battery Storage			200	
<b>Greeting and Administrative Areas</b>				
Front Gate		easily usable; best location for tracking use of the Preserve; information for passers by		
Bridges		first facilities viewed; should be compatible with facility design		
Information Hub	viewing by groups	provides logistical, place-based, preserve information for all visitors; may include computer displays	1500	sales
	2 staff members, summer interns, docents, volunteers	working area for staff, interns, volunteers (e.g., check-in, administrative supplies for visitors, data entry, etc.); place for visitors to find staff; check out equipment; check in etc. allows staff to act as logistic resource for groups; check out equipment; know if someone is arriving; enforce rules and regulations; work with volunteers and interns	300	
Office			150	
Sales		designated location to display products made available by business and art students		
<b>IT Technology</b>				
Data Transmission		equipment and utilities needed to establish high-band width capabilities for observatory, sensor network, etc.	200	
Sensor Network Center		central hub for computer and telecommunication equipment needed for data transmission from sensors located on the Preserve and in surrounding facilities; establishes the field station as an experimental laboratory for research in sensor development, telecommunication, and software development by students and faculty;	200	
Cell Phone		booster needed; coverage provided for safety reasons; can be shut off when requested	100	
<b>Trails and Walkways</b>				
Trails		among facilities and from facilities to other places on Preserve; some self-guided (interpretive trails)		
Walkways		designed to bring people into contact and to provide remote experiences in nature; stopping areas for talking; bring people to areas where they can see what other people are doing		
<b>Specialized Facilities</b>				
Outdoor Leadership		areas to install a high ropes course; zip line; other	27500	
Exploration and Canopy Research		canopy bridges; raised decks under large madrones; labyrinth; Fibonacci series; astronomical design		
<b>Observatory</b>				
Telescope		Telescope enables multi-disciplinary interactions with astronomers and enhances possibilities for adaptive optics collaborations.		
Support Buildings		Provides storage and equipment needed to run telescope		
Utilities		separate solar or wind for operation of telescope		

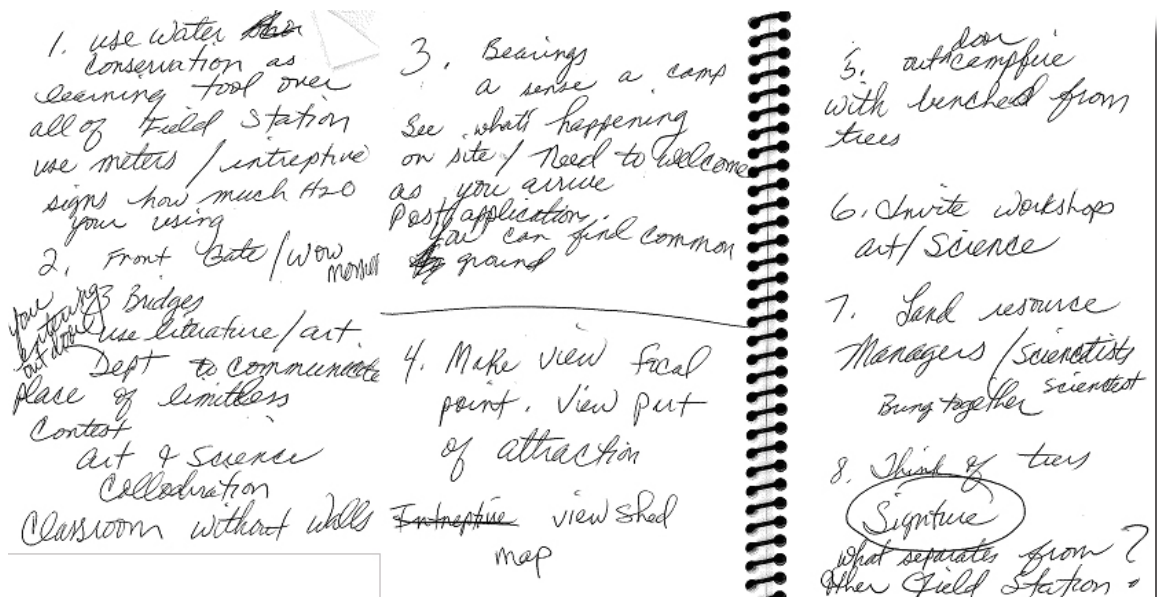


## EXERCISE 5: INNOVATIONS

In sequential order, this exercise was completed during a lunch break that took place between the Program Understanding session and the Program Analysis exercise. Participants were asked to form groups to come up with a list of ten concrete things that could be done to achieve the desire for innovation/cross-pollination for the field station. The following were shared with the group:

- Signature – Upon arrival, you are connected to the current people on site for who they are, what they are doing, and where they are doing it.
- Wow – The entry sequence to the site is such that you are made aware of the mission of the facility, and how you will fit into that mission
- Social – Gathering areas will not have computers
- Personal Knowledge – Ability for people to track their resource use on-site
- Mixing – The site acts as a place where groups can mix for collaborative benefit (citizen science, participatory research, etc...)
- Vision – Combine people to create opportunities to see things in new ways (i.e. artists asked to take inspiration from research)
- Controlled access for experience - specific vehicle collects visitors at gate; reduces parking at field station and forces interaction and shared experience.

Other ideas were included in the charette notebooks:



- 10 concrete ideas: an innovation cross discipline
- 1) drop people off, no parking planned event from SSU
  - 2) control - control of usage (gate keeper)
  - 3) power generated on site/vehicles - staging by gate - more safe on road
  - 4) sustainability of discipline - interpretive (water cycle, etc.) carbon - obligated to test cycles
  - 5) Ea. group competitive - coordinate (who uses less)
  - 6) think of overlap between groups needs; have to acct. for things - accountability
  - 7) Don't limit social/staging spaces - mix people up
  - 8) Eat/drink/clean up - lottery/draw task from hat
  - 9) No computer access in gathering area
  - 10) Student population - no access to game boys etc.

Warren Wilson College Headlands Institute  
Wm. T. Foster

bring business people up  
survival in the community/  
business

business people learn survival/  
team building skills

Dept/Programs Retreats share  
at comes with others at  
Galbreath method?

Art gallery exhibit show Preserves And  
- web cans on a flat screen  
tip

Performance artist in Residence  
to work w/ various groups

Board Mtgs SSUAF or SSUAA or ASI

OLLI students invited

acct for impact of resource use  
not just a score card

water  
meter  
in the  
shower

## EXERCISE 6: PROGRAM ANALYSIS

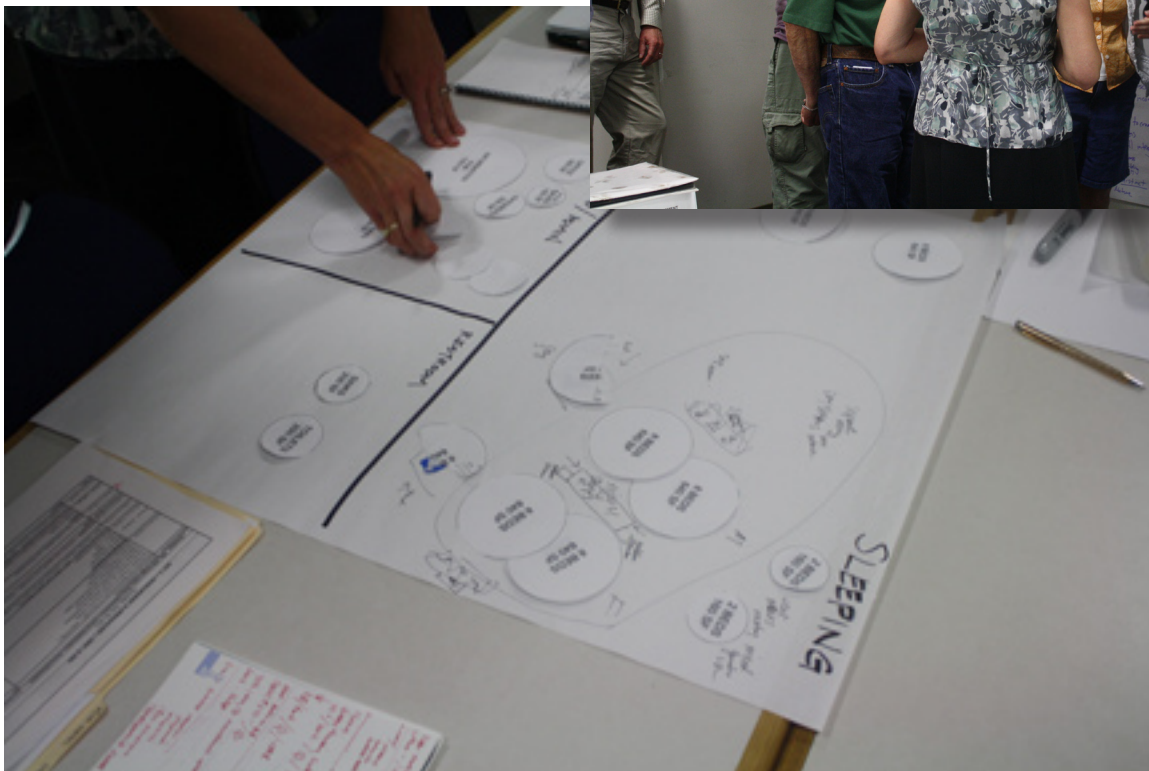
In groups, participants were asked to analyze the spaces included within the organizational clusters shared in the Program Understanding session. It was their responsibility to respond to the given program in several ways:

- 1) Verify the square footages as they related to that activity,
- 2) Examine potential spatial overlap with other program elements,
- 3) Examine spatial relationships to other program elements (compatible and non-compatible) within a sub-group (i.e. research and education facilities)
- 4) Examine spatial relationships at the site level for how different elements are benefitted through proximity to others, or have potential conflicts with other elements.

To make the exercise a little more challenging and fun, in order for groups to pass a functional space along to another cluster, both groups had to come to an agreement on how and why the given space made more sense in one cluster or another. As a result of this exercise, several of the meeting spaces were deemed duplicate and violated the guiding principle of flexible spaces.







## EXERCISE 7: PROGRAM COORDINATION

A representative from each group, starting with the group with the cluster for Communication & Relaxation, was invited to share what the group had discovered in the analysis of the clusters, noting relationships and space needs. They also shared what spaces seemed unnecessary and any other spaces that were needed. They were then invited to start to place the clusters of spaces onto a generalized site layout.

The placement of the spaces, and the relationships between them, if carefully placed, could encourage natural movement through the site. It is desired that in addition to teaching and learning, this movement will encourage visitors and potential donors to quickly understand the significance of the mission, and be amazed by the beauty and potential this preserve represents.

There is need for connection, but there is also need for separation of spatial functions.

### Discussed examples of good connections:

- Parking and recreation
- Parking and loading or unloading
- Loading and orientation/check-in
- Sleeping and showers
- Dining and recreation
- Arrival and information hub
- Information Hub and Central Gathering
- Teaching and resource storage
- Classrooms and research labs
- Informal meeting space (gazebos) and recreation
- Food storage/prep and loading
- Social Gathering and panoramic views
- Teaching/learning and shade
- Solar power generation and direct sunlight
- Social gathering and food
- Caretaker and access road
- Food Prep and Dining
- Water tower visible to water users

### Discussed examples of good separations:

- Day Sleeping and Night Sleeping
- Sleeping and active recreation areas
- Development areas from ponds and cultural resources
- Bone / Maintenance functions from station visitors
- Caretaker's residence from caretaker's work functions
- Camping from noise (power generators)

The previous day's discussion on goals and objectives stressed both sustainability, and flexibility. A bold guiding statement was made to "think of each space as having multiple functions". Some of these ideas were revisited when determining the true need for constructed space.

### Discussion leading to reduction of program space -

- The largest indoor gathering space (to prevent expensive road improvements beyond the reasonable scope) is to accommodate 49 occupants. Multiple gatherings of less-than-49 are not triggers for road upgrades.
- A distinguishing feature of the site is the quiet surroundings. Many impromptu discussions occurred while on-site for the charette, demonstrating the ease of speaking to large groups without having to be in sound-isolated "classrooms".
- If we want to limit vehicular travel on Elkhorn Road, and also the preserve access road, to no more than 20 vehicles per day, we need to envision a site capacity that respects (20) vehicles of 2-4 passengers each. A "normal" site capacity of 60 was the number used most. This shows a maximum turnover in any daily interval of 80 people. With the "reduced" program, we have: 1) Dining Room; 2) Information Hub; 3) Classroom; 4) covered outdoor Dining; and 5) Central Meeting Area; all capable of hosting a maximum 49 occupants each in bad weather. There are additional gazebos, circulation spines, amphitheaters and bunkhouses with additional informal gathering shelter, safe from pests. With an overnight guest capacity of 50 in cabins, and an additional sleeping capacity in tents of 30 and potentially more in mobile camp trailers, the daily use would be as follows: 80 people (potentially) from daily vehicles, 50 in cabins, 30 in tents, that gives a max capacity of 160 people. If the weather forces those guests all inside, there is capacity for 245 inside programmed gathering spaces. This is clearly more than envisioned for the site at any one time, but demonstrates adequate capacity within the footprint that has been reduced approximately 20% during the charette discussion.
- Dining spaces act as social interaction spaces
- Dining spaces can act as teaching spaces
- Residential space allotments were too generous- the residence and yard can be scaled downward, with prefabrication an opportunity for these structures
- Classroom spaces may be used for gathering or socializing on off-peak hours
- "Dedicated" exhibit space is not warranted. Exhibits can be disbursed throughout the occupied areas of the site.
- The cooking areas appeared oversized for their intended use. A total group of sixty divided into (4) smaller components could easily get by with a smaller communal kitchen.
- Serving can be directly from food prep area to dining. (informally)



### **Discussion leading to an increase in program space -**

- “Shop” space for teaching and art are different in nature to repair and maintenance shops. Plan on a shop in the Learning Hub, as well as within the maintenance area.
- Solar panels will likely be the primary source of electricity. Plan on areas (beyond rooftop resources) that may host panels in non-objectionable ways.
- Many of the program spaces are functional needs (cell phone repeaters) and must be placed where they are functionally needed.
- Though both an increase and decrease- the use of moveable acoustic partitions within larger spaces enable more flexibility for smaller group gatherings.
- There will be periods where buildings are “off line” for maintenance purposes, so some redundancy is desired for critical functions.

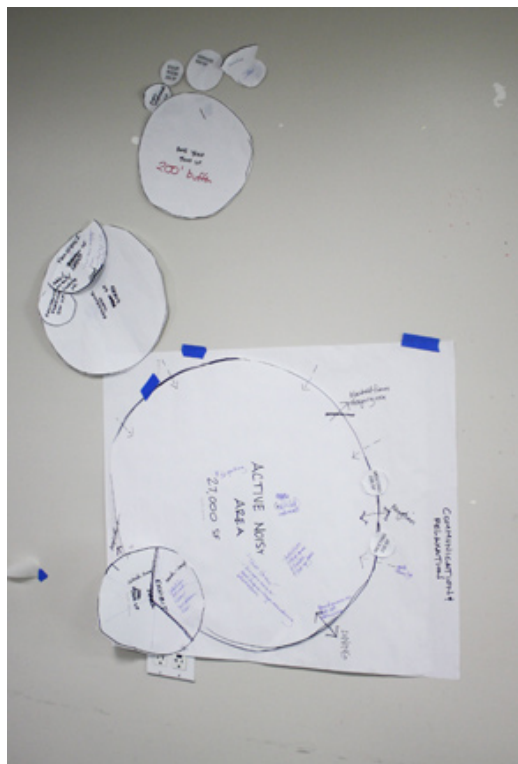
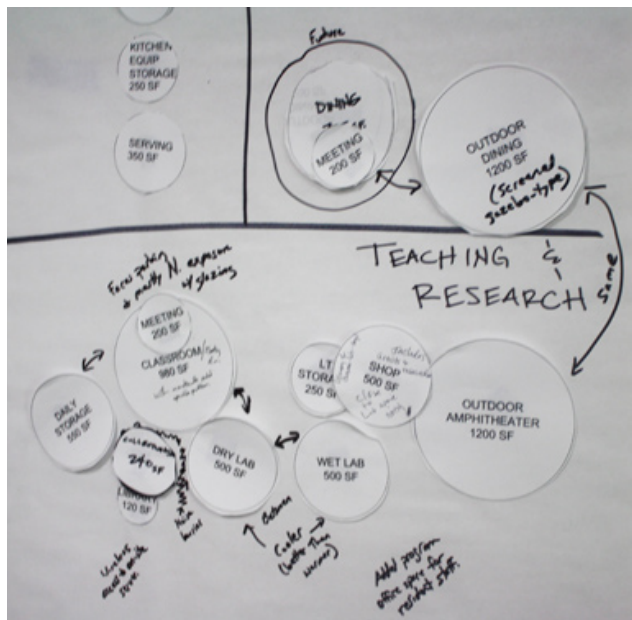
### **Discussions on additional configuration concerns -**

- Functional Clusters developed into the following logical groupings:
  - Maintenance (with natural buffer)
  - Tent Camping
  - Overlook
  - Learning
  - Food Services
  - Caretaker
  - Recreation
  - Parking
  - Housing
- Some spaces are clustered temporarily with maintenance, until their functional need is revealed through more study.
- Teaching Spaces and research laboratories benefit from North-facing windows. Daylight will reduce electricity needs for lighting, and northern exposure limits the intense heat gain that comes from direct sun exposure on windows.
- Showers and toilets need to be convenient to overnight guests, but daytime activities will require ready access to toilets as well. Suggest more than one zone for toilets.
- A “spine” is desired to move residents and visitors through connected focal points, and to help organize the journey from arrival to “overlook”.

- It is desired for the Information Hub to touch people as they arrive, and touch people before they depart.
- The main social gathering space should act as a “magnet” with inviting materials and features, but all recognize that informal social gathering occurs where there is opportunity- dining rooms, trails, gazebos, cabins etc.
- Parking is desired to be scaled as to not overpower the scale of experience. If the design occupancy is 60 people, the parking should reflect approximately half that many independent vehicles, plus some site-specific vehicles, and with smaller groupings to fit more within the landscape.
- Some functions- septic leach field, may occur under ground surfaces used for outdoor recreation.
- “Arrival” and check-in should not occur within the relaxation/social space, but visitor curiosity should develop through a visual connection that is later returned to and naturally draw guests toward the social function space, perhaps through the spine
- Buildings and parking and other developed spaces shall be spaced and grouped to keep the scale of development more humanistic, and not overly institutional or urban. It will be important to overlay the scale of conceptual space “bubbles” with the scaled site boundaries for verification. (Time expired in the charette, but the design team will provide such a diagram with this report)

As part of this discussion, several tension points were noted relating to the trade-offs of relationships and potential merging of spaces. These tension points included:

- Should dining and meeting areas be shared?
- What is exhibit space? Distributed? Shared? Alone?
- What is the nature of the caretaker’s role. Should he be a sentry? Does he physically meet vehicles when they come onto the property, or is this a function of deterrence through constant 24/7 presence?
- How does one make the caretaker function visible, to accommodate the presence, but not welcome newcomers to this structure, as the first experience or event on-site?
- Reception location? What is the entry sequence that brings someone into the site and welcomes them?
- Location of sleeping areas?
- Relationship of parking to entry sequence and particular goal locations? Where do we need to have loading areas? How far from their destination?
- Sleeping areas – if shared space, how does that relate personal space and belongings?
- Combined structure efficiency vs. benefits of separation
- Security – benefits of open and visibility vs. feeling of being spread throughout?





The result of this exercise also modified the program matrix:

Galbreath Wildlands Preserve Field Station Planning  
SSU Field Stations & Nature Preserves  
Facility Spaces

Facility Spaces  
Page 1 of 2

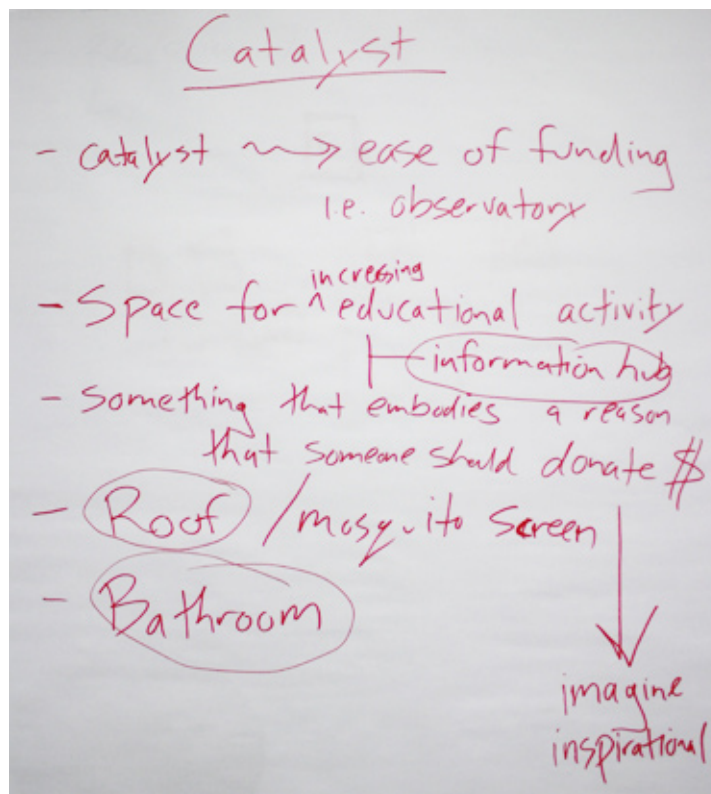
Functional Space	Capacity	Functional Description	Site Area (pre)	Building Area (pre)	Site Area (post)	Building Area (post)	Change	Possible Other Uses
<b>Vehicle Areas</b>								
Parking	for 45 cars	parking for passenger vehicles and vans; is parking needed near entrance for events?	18,000	18,000	12,000		-6,000	solar panels
Loading and Unloading	for 1 car	vehicles can drive up to kitchen, sleeping areas, storage areas, garage, and fireplace to load/unload supplies <b>Broken into (2) functional zones</b>	700	700	700			mudroom
Garage	4 ATVs	mouse-proof garage for Preserve vehicles; safety storage for storing gasoline; car repair area	600		600	600		long-term storage
<b>Kitchen</b>								
Cooking	4 groups simultaneously	communal cooking stations with all necessary equipment for personal, group cooking and catering; include communal dishwashing site for diners	4x300		1200	600	-600	social gathering area (everybody always ends up here)
Food Storage	food for one week for group of 30	easily designated/separated cold and dry storage for multiple groups	250	250		250		
Equipment Storage	4 groups simultaneously	pots and pans for groups of 1 to 60; easily visible and accessible	250	250		250		
Serving	up to 60	easily served to inside and outside dining areas	350	350		-350		serves break and snack areas
<b>Waste</b>								
Composting, Recycling, Garbage		waste stream separation; bear, pig and mouse proofing; methods for measuring waste produced	400	400		400		landscaping and small food garden; art works surrounding waste production
<b>Eating</b>								
Dining Area	up to 45	immediately adjacent to, or part of kitchen	735	735		735		meeting area or classroom
Outside Dining	up to 60	<b>partially screened enclosure</b>	1200	1200		735	735	mtg or outside classroom
Snack Area		location for visitors to sit, share coffee, tea on a break; easily accessible and serviceable from kitchen ( <b>became part of dining room function</b> )	120	120		-120		meeting area
Break Area	up to 60 people standing up	morning and afternoon coffee break area for meetings and workshops; drinks during meetings; easily serviceable from kitchen ( <b>became nook within dining area</b> )	350	350		-350		hallway
<b>Communication and Relaxation Areas</b>								
Central Meeting Area	up to 60 people	central location that attracts visitors due to its beauty, comfort, food, fire, etc; provides gradient of engagement to observation ( <b>became "Magnet" function</b> )	735	735		735		
Other Meeting Areas	4-5 areas with capacity of 4 to 15 people	seating areas of various sizes that allow for observation, reflection and quiet conversation ( <b>2</b> ) became gazebos adjacent to outdoor activities, <b>one evolved to occur within dining space</b>	200x4	800		400	-400	
Active Noisy Area (Outdoor)	up to 30 people	area for relaxation and exercise; space for throwing balls and frisbees; and group sport participation (i.e., volleyball)	27500	27500		27500		
Exhibit Areas		spaces for sharing information and creativity; art gallery place for people to share art and research results; sculpture garden ( <b>spread throughout site, not necessarily dedicated new space</b> )	4000	4000		-4000		
<b>Bathrooms</b>								
Showers		separate showers for men and women; low water use; personal and communal options; water use tracking	8x30	250		250		
Toilets		composting, not stinky, easy to clean, easy to unload compost ( <b>8</b> ) near sleeping, ( <b>4</b> ) more distributed	8x30	250		360	110	
Sinks		low maintenance designs; low water use; water use tracking ( <b>8</b> ) near sleeping, ( <b>4</b> ) more distributed	8x20	160		240	80	
<b>Sleeping Areas</b>								
Beds / Cabins	60 beds broken into sleeping areas of 1 to 8 people	comfortable protected sleeping locations that provide a good nights sleep; within easy walking distance of bathrooms and showers ( <b>(4) 8-person cabins, (2) 4-person cabins; (2) 2-person cabins</b> )	80 x 60	4800		3520	-1280	meeting rooms, study areas, family living room, artist workshop
<b>Camping</b>								
Tent Sites	up to 30 people	tent sites or camping platforms for groups that prefer camping; maintains a low or no-cost overnight option; can be used as Phase I lodging; needs to be near bathrooms, showers, toilets	10000-20000	20000		20000		
Cooking	up to 30 people	water; tables for food preparation; grill; place to wash dishes; place to store food coolers; propane? <b>Occurs within camp area footprint</b>	200	200		-200		
Dining	up to 30 people	picnic tables	500	500		-500		
Mobile Campsite	up to 2 remote camping groups	Place to store a trailer unit that includes bathroom, kitchen facilities for camping on other areas of the Preserve; mostly for use by researchers and land management groups; pop up trailer	250x2	500		500		
Composting, Recycling, Garbage		bear and mouse-proof areas for storing garbage <b>Occurs within camp area footprint</b>	120	120		-120		same as areas for main facilities
<b>Staff Residence</b>								
Home	4-person family	family residence situated to easily notice vehicles entering and leaving Preserve while also maintaining privacy.	2500	2500		1500	-1000	
Yard	4-person family	designated private outdoor area	3x2500	7500		4000	-3500	
Parking	2 vehicles	personal vehicle parking	500	500		500		

Teaching, Research, Working Areas									
Meeting Room (Indoor)	up to 60	indoor meeting room for up to 60 people working in break out groups (i.e., 10 tables) with A/V and internet	735		735			-735	classroom, dry lab
Amphitheater (Outdoor)	up to 60	gathering place for arriving groups; outdoor presentation areas for teachers, student presentations	1200	1200		1200			
Classroom	up to 40	area for teaching with A/V equipment capacity [may be subdivided for smaller meeting room(s)]	980		980		980		
Dry Lab		work spaces for working with "dirty" materials or studying (no utilities needed)	500		500		500		classroom, meeting room
"Wet" Lab		modular bench spaces with access to suite of commonly used utilities (water, electricity, sensor hookups, gas lines, septic system)	500		500		500		
Shop	class? 2 people?	area with equipment for fabricating field equipment, art, and with tools for light maintenance; what kind of tools should we use? <b>Actually (2) shops- one for teaching/art, one for maintenance)</b>	500		500		750	250	artist work spaces
Library	2 walls of shelf space; seating for 4	field guides and resources unique to local area; copies of publications and reports conducted at Preserve; check out area; place to sit and read books	120		120		120		informal meeting area, relaxation; could be part of hallway
Teaching Collections??	???	plants, animals, rock specimens that support learning about identification; usually needs cool constant temperatures and no light	120		120		240	120	
Bone Yard	n/a	outdoor storage; area hidden from view that allows staff to store materials and supplies (e.g., wood, fencing materials, reclaimed objects) for future use	5000	5000		5000			resource for artists
Long-term Storage		lockable lockers that provide space for researchers to leave equipment for use next season	250		250		250		garage
Daily Storage and Mud Room		porch area adjacent to kitchen and other indoor use areas for temporarily dropping off equipment, packs, etc. when returning from field	550		550		550		
Equipment Room		equipment and vehicles regularly used by docents and others that can be checked out and tracked by staff	250		250		250		
Power Generation			300		300		300		
Fuel Storage		[added gasoline storage]	300	300			600	300	
Water Storage Tank		[An elevated water tank may reinforce way-finding- traditional tower]	300	300		0		-300	
Water Treatment?			200		200		200		
Battery Storage			200		200		200		
Solar Collector Area		Requires careful thought- year-round access to sun is critical				5000		5000	
Greeting and Administrative Areas									
Front Gate		easily usable; best location for tracking use of the Preserve; information for passers by							
Bridges		first facilities viewed; should be compatible with facility design							
Information Hub	viewing by groups	provides logistical, place-based, preserve information for all visitors; may include computer displays <b>Doubles as drop-off and orientation- has view connection to "Magnet" (central meeting area)- adjacent to Sales and admin offices</b>	1500		1500		735	-765	sales
Office	2 staff members, summer interns, docents, volunteers	working area for staff, interns, volunteers (e.g., check-in, administrative supplies for visitors, data entry, etc.); place for visitors to find staff; check out equipment; check in etc.allows staff to act as logistic resource for groups; check out equipment; know if someone is arriving; enforce rules and regulations; work with volunteers and interns	300		300		300		
Sales		designated location to display products made available by business and art students	150		150		150		
IT Technology									
Data Transmission		equipment and utilities needed to establish high-band width capabilities for observatory, sensor network, etc.	200		200		200		
Sensor Network Center		central hub for computer and telecommunication equipment needed for data transmission from sensors located on the Preserve and in surrounding facilities; establishes the field station as an experimental laboratory for research in sensor development, telecommunication, and software development by students and faculty;	200		200		200		
Cell Phone		booster needed; coverage provided for safety reasons; can be shut off when requested	120	120		120			
Trails and Walkways									
Trails		among facilities and from facilities to other places on Preserve; some self-guided (interpretive trails)							
Walkways		designed to bring people into contact and to provide remote experiences in nature; stopping areas for talking; bring people to areas where they can see what other people are doing							
Specialized Facilities									
Outdoor Leadership		areas to install a high ropes course; zip line; other	27500						
Exploration and Canopy Research		canopy bridges; raised decks under large madrones; labyrinth; Fibonacci series; astronomical design							
Observatory									
Telescope		Telescope enables multi-disciplinary interactions with astronomers and enhances possibilities for adaptive optics collaborations.							
Support Buildings		Provides storage and equipment needed to run telescope							
Utilities		separate solar or wind for operation of telescope							
<b>Total areas</b>			86,820	22,125	76,520	17,600	-13,625		
<b>Building Area * \$300/sf (as an example)</b>				6637500		5280000			

## EXERCISE 8: CATALYST

Participants were asked to identify: "What is the one item you would choose to put on this site that would be a catalyst for achieving your dream field station?" This question begins the concept of phased construction, which could be achieved by constructing a certain portion of the spaces at a time, or, in accordance with the guiding principles, the first items constructed may serve an immediate need, but are built in such a way as to become a different function in the future.

- Some items will be more easily funded than others, so will be a catalyst in the sense that they activate other items through bringing people and development to the site (i.e. observatory)
- A space that will increase opportunities for educational activity on site (i.e. class shelter that provides a space to get out of the elements)
- An information hub that would be at least the first step in visualizing the desire that this field station be a place of integration/cross-pollination/center of excellence. Something inspirational with imagination
- Whatever is done should embody the reason that donors should be contributing.
- Toilet/bathroom facility





## EXERCISE 9: AESTHETICS

Participants were asked to write three adjectives or phrases in their notebooks stating how they would like to describe their facility, outside of flexible and sustainable. These ideas were shared with the group

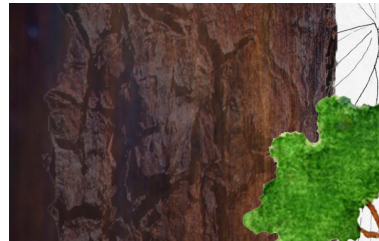
- Grounded
- Subterranean
- Joyful
- Intriguing
- Spacious
- Comfortable
- Natural
- Curiosity inducing
- Blendy
- Curvy
- Camouflaged
- Rustic
- Donation inspiring
- Lodgy
- Lights
- Inspirational
- Welcoming
- Memorable
- Pure
- Rugged
- Cool
- Asymmetrical
- Unexpected
- Airy
- Flowing
- Open
- Contextual
- Transparent
- Organic
- Integrated
- Modern
- Clean
- Simple

## CLOSING

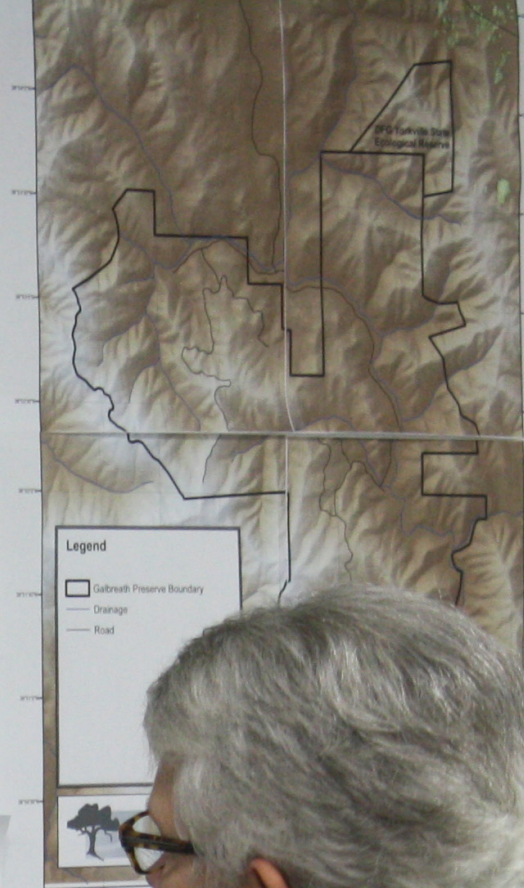
After a very full two days of brainstorming and prioritizing, the charette closed with words of thanks from Claudia Luke. She expressed her thanks to all of great participation and her excitement about the project moving forward. All participants were invited to socialize and reflect, with celebratory wine and cheese served.



## Tab 5 :: Summary







(+ flexibility)  
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vulnerable to  
activity decision  
- core mission

cross - AD





## MEASURES OF SUCCESS

For all parties involved, the Galbreath design charette appeared to be a success. For Sonoma State University, this effort represented taking another step closer to the goal of developing the Wildlands Preserve site into a more vitalized place for education and community, a goal that already has had years of hard work and determined vision put into it. For the design team, it provided great input into the needs and desires of many different groups that all have interest in the project. It was rewarding to see so many individuals committed to the success of this project. It was mentioned several times that different individuals appreciated being part of the project up front instead of being brought on at a stage when it was “too late” to make an impact. This was evident in the way that all participants showed “big picture” thinking, attempting to make the Field Station a place for interaction and cross-pollination, not just respond to the needs of certain disciplines.

At the beginning of the charette, the goals for the two-day event were outlined in 6 key points: Information, Validation, Unique needs, Brainstorming, Prioritization, and Champions. Each of these goals were addressed during the charette:

**Information** – Knowledge gained through site analysis and observation was shared with the group, including specific areas and disciplines sharing project-related facts

**Validation** - All participants joined in reviewing each other’s work and determined whether pre-prepared assumptions about the site and program continued to make sense

**Unique needs** – Through the Journal documentation and discipline-specific questions, the unique needs of the various users of the site was determined. Also, much thought was given to ways the project could be sustainable, a unique need for the unique location

**Brainstorming** – This was the main idea behind day 1 – to share any idea without concern for the potential constraints. This was evident all the ideas shared in the various exercises

**Prioritization** – This goal was achieved on both days, first by the participants establishing Guiding Principles for the development of the project, and on the second day by determining shared resources and the hierarchy of spaces on the journey through the new Field Station

**Champions** – This goal definitely appeared to be achieved. While difficult to measure in tangible product, it was obvious that all participants are passionate about the success of the Galbreath Field Station and Galbreath Wildlands Preserve as a big part of Sonoma State University. From the inspiring site visit to the thought put into each exercise, the participants in the design charette are very invested in making the project happen.

The charette was also very successful in that it provided the resources for our design team to move forward with developing a master plan for the Galbreath Field Station.

## OUTSTANDING ITEMS & MOVING FORWARD

From the information provided from the site visit and design charette, RIM Architects and Corvus Design was able to create a series of diagrams as a summary. These are intended to be the first steps in moving forward toward the generation of a Galbreath Field Station Master Plan document.

The first image, included in Exhibit A, is a Site Analysis Diagram for the Field Station site. This diagram tracks the specific boundaries and items observed on-site, tracking items learned from the various groups that participated in the Site Analysis, as noted in the Report Of Findings. Also included in this diagram are the prevailing winds on the site and tracking the path of the sun at different times of year, information that will be very useful as we begin to locate the structures on site and develop parameters for their design.

The second image included in Exhibit A is the Site Programming Diagram. This diagram overlays the prioritization and programming discussed in session 3 onto the site at a matching scale. It maps the typical relationships and needs discussed for the functional clusters.

The third image included in Exhibit A is the site programming at a larger scale, showing the relationships of the individual program spaces within the functional clusters. These diagrams will be the foundation for the development of the master plan.

Despite the grandiose amount of information collected during the charette, there are still several outstanding items that will need to be addressed as RIM Architects works with Sonoma State University to create the Master Plan.

- Traffic issues will need to be addressed for Elkhorn Road and the Galbreath access road. Estimates for the number of trips of construction and operational vehicles will need to be established, and from these values, the design team will need to work with local authorities to measure the extent of the impact and level of potential upgrades required.
- As mentioned by Dan Sicular, aesthetics and viewshed will need to be researched and understood so as to have a minimal and pleasant impact on neighboring properties
- Further biological surveys conducted at appropriate times of year, such as during flowering times of special status plant species, protocol or focused surveys for yellow-legged frog, northern spotted owl, bats, Sonoma tree vole.
- Seeps and drainage that cross the road at multiple locations do present a regulatory constraint, though not insurmountable. As a State agency, SSU is subject to the standard suite of regulatory purview and permitting related to wetlands and other waters of the U.S. and of the State, involving US Army Corps, Regional Water Quality Control Board, and Department of Fish and Game. The State Historic Preservation Office and US Fish and Wildlife Service may also need to be consulted in the event that the proposed drainage improvements affect cultural resources and federally listed endangered or threatened species. These potentially jurisdictional features also present an engineering problem to confront from the standpoint of improving the road (culverting drainage from one side to the other, impacts of erosion and sedimentation on the downslope side of the road, etc.).



- Determining ways to measure and mitigate greenhouse gas emissions of construction and operation.
- Water source is still a major issue to be determined – many of the sources (springs associated with a couple of the ponds) support jurisdictional areas of scientific interest
- Sewage systems are of equal issue – how can we achieve the size of septic filtering required and how will it avoid negatively impacting the site
- Further code research will be required, working with SSU to determine with authorities having jurisdiction will need to provide review. Included in this is the final determination of whether the site parcels need to be modified / combined and the schedule of that work

With further input into these items and in collaboration with Sonoma State University, RIM Architects' next steps will be to create a concept master plan document. This will establish the site usage in both content – expanding upon the general layout as determined in Exhibit A, and in theme – pulling from the input of the group as to ways of creating a place for interaction and cross-pollination through structures that are flexible and sustainable. From this master plan, a phasing concept will be developed, addressing what can be constructed on the site initially to propel the project forward.

## CONCEPTUAL COST STUDY

BCCI Builders staff, John McKernan, VP/Sr. Cost Estimator, and John Quackenbush, Preconstruction Project Manager, joined the team during the two day charette to understand the conditions of the site and requirements for development and construction, as well as participate in the spirit of the project moving forward with development of the Masterplan.

Based on the initial program and functions of the site plan BCCI was able to provide a conceptual cost for the types of buildings as well as the site improvements. The following pages contain two spreadsheets which are estimates and anticipate a contingency of 15% for “unknowns”. Please note that these are very **conceptual** prices that represent the current understanding of the site. These values should be the mid-point of a range that the cost of the project would be in.

Figure 1 - includes a list of site improvements with a list of descriptions and comments. The estimated total is \$10,515,200.

Figure 2 - includes a matrix of the different building types with estimated unit cost and totals. The building types Grand Total \$1,979,700.

- Carport Grade Area
- Gazebo Grade Roof, Floor, Screen & Doors
- Industrial - Butler Building Grade
- Passively Conditioned Space
- Lodge - Standards with wood paneling and stone fireplace
- Shower/Bath
- Platforms & Tents

Assumptions are that all structures will be timber framed with on-site milled main elements (4x4, 6x6, 8x8). Other materials will be sourced within 500 miles of the project. It is recommended to use FSC-certified wood, low VOC products, and formaldehyde-free wood panels for maximum sustainability credit, as well as the use of recycled materials to the maximum extent possible. From a constructability standpoint, it is assumed that the structures will also attempt to use pre-fabricated structures where appropriate to limit the impact on the site.

For the purpose of exhibit, tours, and fundraising, the interpretive displays to explain the facilities, Preserve, and sustainable features are estimated to be in the \$1.5 - 3 million range with the anticipation of interactive technology included. This estimate is based on a previous visitor center budget that shows a 20-30% of project budget for the interpretive displays.

DESCRIPTION	UNIT	UNIT COST (\$/Unit)	TOTAL	COMMENTS
1-1/2 mile of road improvements	1-ls	\$700,000	\$700,000	Compacted gravel, single lane, no turn-outs
(3) vehicle bridges	3-ea	\$25,000	\$75,000	Pre-Cast Concrete or Steel / Possible use of flatbed rail-car
12,000 sf of non-paved parking development (geogrid stabilization)	12,000-sf	\$20	\$240,000	Assumes Clear & Grub, Tree / Stump Removal
25,000 gallon of underground cistern for rainwater storage	1s	\$50,000	\$50,000	Assumes Pre-Fab Tank & Misc Site work
Horizontal Wells for water supply	5000-lf	\$250	\$1,250,000	HDD, Assume that a potable reservoir is available - This is a big unknown
5000 gallon water tower (historical wooden structure)	1-ls	\$100,000	\$100,000	Assumes Pre-Fab Tank & Misc Site work
Water treatment system for resident population of 60 occupants	1-ls	\$150,000	\$150,000	
residence fenced yard of 4000 sf	4000-sf	\$9	\$36,000	Assume Clear & Grub / Galv Wire Mesh Fence
fenced "boneyard" of 5000 sf	5000-sf	\$9	\$45,000	Assume Clear & Grub / Galv Wire Mesh Fence
Residential parking / carport (geogrid stabilization) 600 s.f.	600-sf	\$32	\$19,200	
Loading / Unloading Areas 700 sf. (geogrid stabilization)	700-sf	\$25	\$17,500	Assumes Clear & Grub, Tree / Stump Removal / Compacted Gravel
Septic system for 60 occupants	1-ls	\$50,000	\$50,000	
Water filtration for use of rainwater and gray water for cooling/fire suppression	1-ls	Inc Above	Inc Above	Water Treatment Allowance provided above
Cooking Shelter (roof only with cmu pavers) 500 sf	500-sf	\$55	\$27,500	
Propane Backup Generator	1-ls	\$50,000	\$50,000	Assume 50kw - 75kw / 120/240 VAC on Concrete Pad
12000 s.f. of PV panels	25,000 - Watts	\$12	\$300,000	
3000 s.f. of solar hot water collectors (roof - mounted)	1-ls	Inc Above	Inc Above	Included in PV Panel Cost
"Gateway" heavy timber arch at Development Camp	1-ls	\$25,000	\$25,000	
Installation of pre-fab Observatory to Remote Site	1-ls	\$650,000	\$650,000	PIP Concrete Pad, Erect Small mobile Crane
"Gateway" heavy timber signage and new security gate at entry from Elkhorn	1-ls	\$25,000	\$25,000	
Site Interpretive signage / Wayfinding signage (20 total)	20-ea	\$750	\$15,000	150-ft monopole tower
Cell Tower and Repeater	1-ls	\$250,000	\$250,000	
Bear-Proof Waste Receptacles (10)	10-ea	\$1,500	\$15,000	
Picnic Tables (20)	20-ea	\$2,500	\$50,000	
Basic Logging and Land Clearing for 75,000 sf (selective thinning for fire safety and view access)	75000-sf	\$5	\$375,000	
Sawmill setup for milling of oak timbers + storage + roof for drying	1-ls	\$150,000	\$150,000	
\$50,000 for on-site wood pellet production + (2) silos for storage	1-ls	\$250,000	\$250,000	
Assume 25,000 sf of revegetation / transplantation of landscaping materials	25000-sf	\$8	\$200,000	
Assume 1 mile of internal camp pathway hardening	1-ls	\$350,000	\$350,000	
Assume 5 miles of regional trail improvements, including wayside interpretive signage every 1/4 mile	1-ls	\$500,000	\$500,000	
Propane Storage	100-sf	\$150	\$15,000	CMU Structure
Battery banks for nighttime power	1-ls	\$20,000	\$20,000	4-kw outdoor rated panel & batteries
Power inverters for DC/AC conversion	1-ls	\$50,000	\$50,000	
Diesel Storage with double-wall tank and containment field	1-ls	\$35,000	\$35,000	500-Gal - Pre-Fab
Daylight sensors on all electric lighting	1-ls	\$10,000	\$10,000	
Gasoline Storage	1-ls	\$50,000	\$50,000	500-Gal - Pre-Fab
IT and Telephone infrastructure	1-ls	\$500,000	\$500,000	
Power/Energy monitoring and reporting network	1-ls	\$250,000	\$250,000	
Interpretive displays for central information hub	1-ls	\$2,500,000	\$2,500,000	
Water source (pump?) at campsite	2-ea	\$7,500	\$15,000	Hand operated (manual) pumps
(2) RV hookups for trailer parking	2-ea	\$15,000	\$30,000	
Closed-circuit TV for connection of entry gate, and throughout camp	1-ls	\$75,000	\$75,000	
Australian Spec power outlets to prevent unauthorized usage	1-ls	\$1,000,000	\$1,000,000	Similar to a Security system, integrated to monitor energy & utility usage
		<b>TOTAL</b>	<b>\$10,515,200</b>	



### Matrix of Cost Items for Galbreath Charrette

8-Jul-11

	Carport grade Area	Gazebo Grade Roof, Floor, Screen & Doors	Industrial- Butler Bldg Grade	Passively Conditioned Space	"Lodge" Standards with wood paneling and stone fireplace	Shower/B ath	Platforms & Tents
Frames (Carports) to support solar panel arrays	8000		600				
Garage for ATVs							
Dining / Cooking Building		735		2235			
Outside Dining					735		
Central Meeting							
"Other" Meeting Areas		400					
Shower/Baths						850	
Sleeping Cabins				3520			
Floor Platforms (Tents)				1500			1500
Residence							
Residence Parking	400						
Aphitheater							1200
Shop and Utilities			1900				
Teaching and Ancillary				3590			
Covered "Spine" with roof-only enclosure and raised deck		3000					
Totals	8400	4135	2500	10845	735	850	2700
Unit Cost (\$/sf)	55	65	75	65	150	115	55
<b>Total's</b>	<b>\$462,000</b>	<b>\$268,775</b>	<b>\$187,500</b>	<b>\$704,925</b>	<b>\$110,250</b>	<b>\$97,750</b>	<b>\$148,500</b>
							<b>\$1,979,700</b>
							Grand Total

Assume all structures will be timber framed with on-site milled main frames (4x4 6x6 8x8). Other materials to be sourced within 500 miles of project. Use FSC-certified wood, and low VOC products, and formaldehyde-free wood panels for max sustainability credit. Use of recycled materials to maximum extent possible.

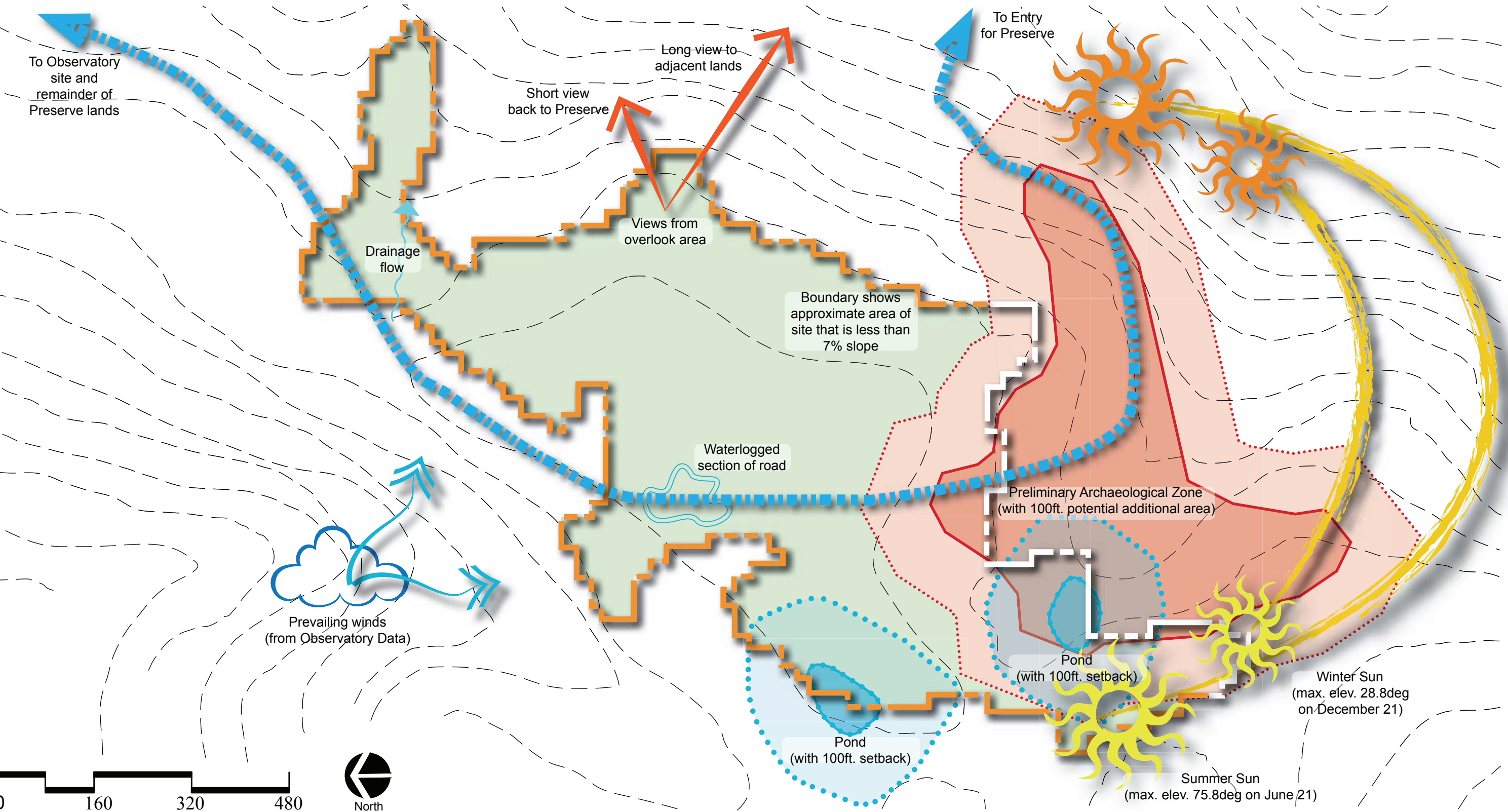
## Tab 6 :: Exhibits

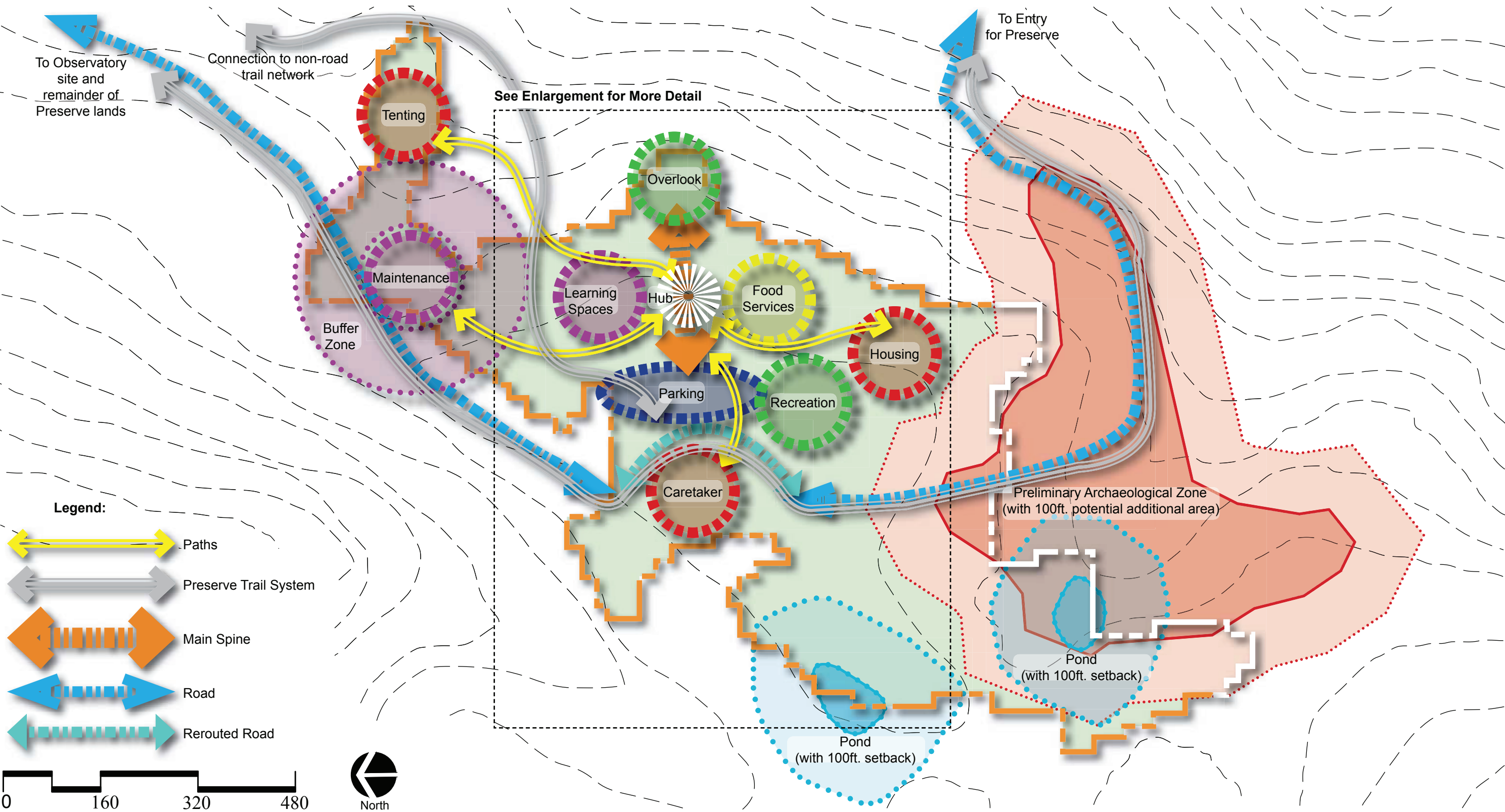




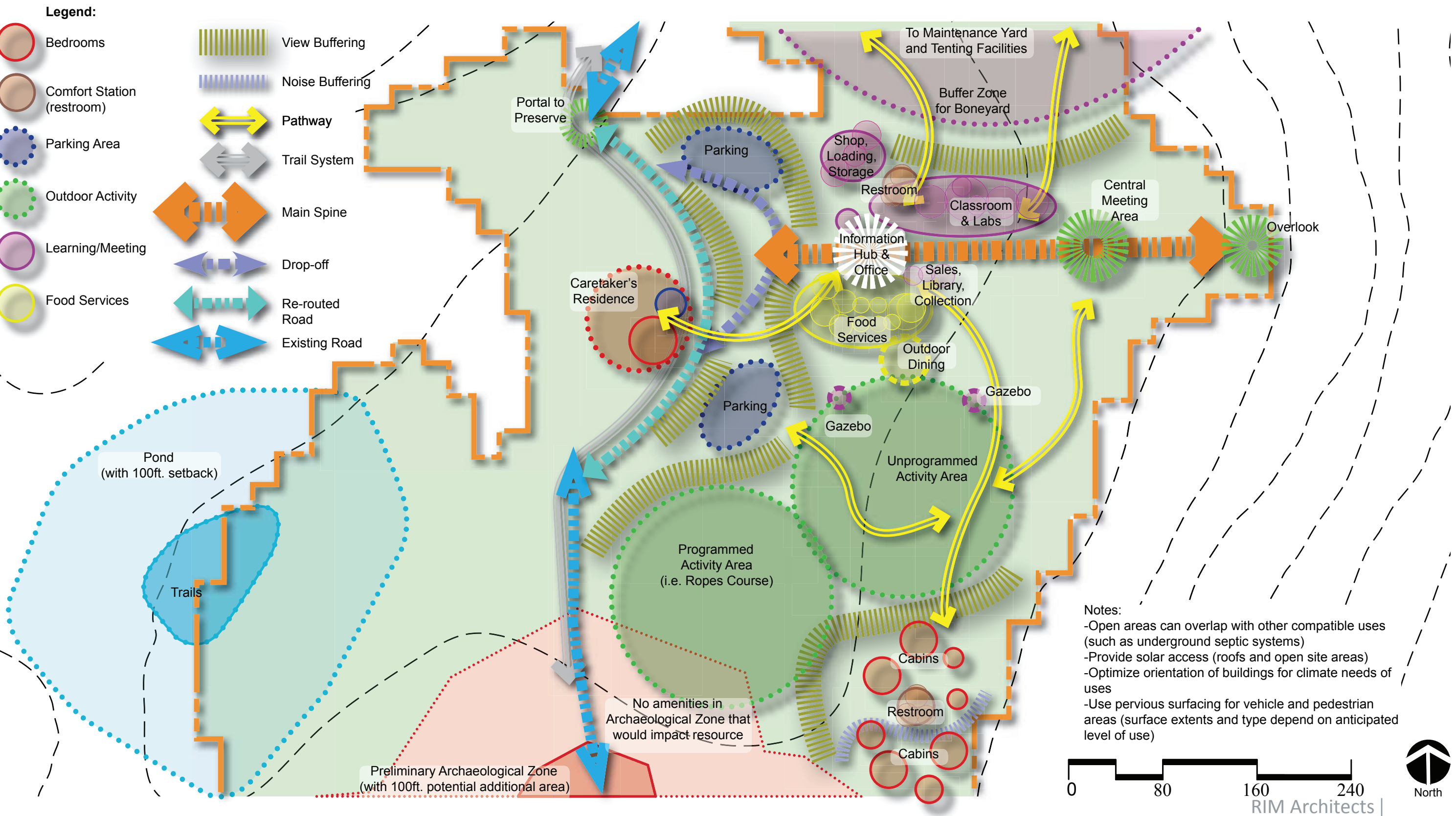














10 THINGS

Claudia Bridges	BOB	CARA
BRIDGES (challenges but opportunities)	DIVERSE NATURE	Miss on the trees
ROAD AND PERCEPTIONS OF ACCESS		BIG
SOUND		THE VIEW FROM THE OBSERVATORY
NARROW FOREST		
PIG DIGGING		

4 - Learning as social activity  
NOT TRANSPARENT / R

### Goals and Objectives

**What is a Charette?**  
The purpose of a design charette is multi-faceted. First, it is the goal to **share** information about the project and site. Second, **freely brainstorm** without limits – NO IDEA IS A BAD IDEA. Finally, we will **organize and prioritize** the ideas, bringing the separate points of view to a consensus on the most critical elements. Our goal over the next two days will be to **charette** about the development of the Galbreath Wildlands Preserve Field Station.

Below are some questions to consider:

- Why do we have field stations? ①
- What is the best possible use of this site to achieve the mission of Sonoma State University?
- What can be accomplished here that is impossible elsewhere?
- How must the experience be different from campus facilities?
- What do users of the site need in order to be successful?
- Consider **technology, sustainability, and visitor experience**. What technologies are needed and are they available?
- What does **sustainability** mean to you for this future research station?
- How would you define success for this project?

- ① DON'T HAVE MUCH W/OUT. / TO HOLD CLASS STAY, LOGISTICS,
- ② Field station and lands THIS HOPE Schreyer on academic excellence.
- ③ ~~the~~ North Coast (fish + lumber) unique  
Field stations unique interactions  
Hakum vs. trail monitoring NEW MODEL

ENCOURAGE THE CROSS OVER  
10 WAYS TO ENTICE STUDENTS TO COME

- 1) EXTRA CREDIT
- 2)

3 THINGS ADJECTIVES OF HOW  
IT IS TO LOOK:

- 1) RUGGED (APPROPRIATE - NOT FLAUNT)
- 2) ASYMMETRICAL (TO REFLECT THE AREA NOT BEING HAVING SYMMETRY)
- 3) UNEXPECTED (DO NOT MAKE IT TOO CONTRIVED. UP THE EXCITEMENT)

Comparison of data from the records that have been collected, analyzed the data to show high/low use times.

Value engineered - up front  
the

Stanford 2002 Building cost  
\$340 / sq. foot -

3 things that stuck me:

The size of the sites

The diversity of the sites

The Barn - loved it! Hope it  
will not be taken down.

The site must be kept as is to preserve  
the preserve.

I would like to see a lot of interpretive signage  
to outside on trails to point to different  
areas - the ponds, the machones, monument  
signs like in National Parks? This is educational.

The design of the facility should  
reflect the Univ. but not like  
the university (too much focus on aesthetics  
and not enough on the mission). The tie  
in should be our logo but not too  
much. The history Claudia gained  
on the Galbreath/Johnson family should  
somehow be integrated into the design -  
for example the sheep business - maybe ~~there~~  
could be some element of the incorporated into  
the design. ~~From~~ Tying the history of  
how the land was and is to remain.

### 3 Goals for the facility

- 1) SPACES FOR A VARIETY OF USERS  
WHEN BEING USED (FUNCTION) / MULTI-USE
- 2) ~~INTEGRATE K-12~~ INTO LEARNING
- 2) ~~USE~~ USE LOW MAINT. MATERIALS - HIGHER  
QUALITY
- 3) DESIGN FOR GROWTH

### 3 USES FOR THE FACILITY

- 1) RETREAT CENTER FOR SSU EE's
- 2) INTEGRATE K-12, COMBINE EFFORTS  
IN RESEARCH WITH OTHER UNIV.
- 3) TO USE THE FACILITY ACROSS  
THE DIFFERENT CURRICULUMS.

Charette Field Trip - June 29

Madrones, sugar maple

Invasive Douglas fir - oppty for research on mycorrhizae-facilitated invasion.

Wetlands/Seeps along the road - permitting and road construction challenges.

Any Serpentine on Preserve? Not apparent except one poss. out crop near two stream x'ings near observatory parking area.

Any way to get trail or small vehicle (i.e. electric) between field station and observatory w/out dipping down into valley, as main road does?

Sheep ranch historically; 700-800 sheep until early 1990's

→ No, Pete Hudson explained this is at contact between younger coast range Franciscan, and older formations to east. Serps are assoc. w/ older rocks

Sustainability Challenges

- Development in wilderness
- Carrying Capacity
- Water supply = roof collection/sister wells
- Energy source - solar
- Transportation - electric vehicle to move people between station and observ., or to other research sites.
- Waste Management

Field Station

- Ponds are natural
- Archaeo - scatter, poss. camps
- "Overlook," View site - to Crowdedale, Geysers
- tree clearing for aesthetics, but also connecting Preserve/Field Sta. to region

Wetlands on Field Sta. site, including road through field sta. - Maybe re-route road around it?

SODS - rel. recently arrived

- tan oak death and infection apparent, not as freq. as Doelger Preserve. One coast live oak appeared infected.
- Need Guidance for preventing transmission to other sites.
- Harvest large tan oak in adv. of their death, use for buildings.
- Forest Mgmt Plan - removal of oaks will ~~increase~~ increase light, benefit Douglas fir. Do you want a Doug fir dominated site.

Perennial Pond

- Pond turtle - present acc. Dick Gilman
- Toad and granulos breed in pond simult.; Emily Harney's research.
- 3rd species also present - one of these tends to use the seasonal pond, when full.

Seasonal Pond

- Nearly drawn down dry;
- Eryngium abund., plus several *Corex* sp.
- *Gratiola* not evident anymore.
- *Plagiobothrys* present

← ... Pine near Seas. pond



Want a Doughnut

This may have been a good year for native perennial grass recruitment. i.e. *Elymus glaucus* mentioned by SSU biologist. Are they doing research on this? Would be a good master's project.

10 Unique Things

- 1 Redwood Log Bridge
- 2 Board & Batten Outrance
- 3 Deciduous oak, tan oak and Doug fir dominated forest
4. very steep road not built for regular use
5. very large Doug fir with large branches and broken bark near Field Station site.
6. Nice bedrock outcrops
7. Need for turn-arounds eg. at observatory road junction
8. Many dead fir snags
9. Sheep barn in great shape! classic lines, newer construction
10. observatory site - very windy!

Aesthetics

3 adjectives

- Naturalistic
- Wooden
- Spacious

Sugar pine near Seas. pond



- Top 3 goals ← interdisciplinary avail to people from + instit. sustainability
- Dream Field station use
- How to make it a reality

Nice big Bear scat at overlook.

Waste management -

Preferrable to have:

- NO waste leave property
- All waste " " "

SOD - Was it brought here by visitors, or did it blow in?

Ponds - Man-made? Does it matter?

Sugar pines (?) near smaller pond

3 Goals

- ~~Make~~ Design field station and observatory to be consistent with University's concept for land management
- Manage land toward a restoration vision ~~at restored~~
- Facilitate learning and appreciation of the land

## Biological Resources

- Habitat suitable for numerous special status species
- No species-specific surveys
- Road alignment wetlands, steep slopes jurisdiction

- Zoning - Required design likely to trigger CEQA  
- Thus nexus - involvement of CDFG & USFWS

- Hydrology & UIC  
Rancho Creek - trib. Narrows
- SPMITS SH & COHO
- listed

- Constraints on develop  
surface water sources  
- preventing erosion, sedimentation

- Geo - Slope stability of observing site

traffic: increased use of Elkhorn road  
- Turn from 128 onto Elkhorn

14.2 kWh/sq ft / yr

15.16 by Plate

0.89 kWh / year also extra construction cost

Propane furnace instead of solar collectors as up front value engineering

\$1,340 / ft<sup>2</sup>

7,000 kWh / year

Increment ops 9x, cost went down

Built in 2002

or v.  
# 00 culture

## AQ

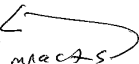
GHG emissions assoc. w traffic and fossil fuel combustion e.g. propane  
Also forested conservation

particulates  
Dust from road surface

## Aesthetics

clearing, reflective building surfaces  
Viewshed analysis?

## Alternatives

- Construction & use: 
- Minimize environmental impacts
- ~~support~~ education & research opportunities to foster understanding of the law
- Work with site resources & limitations

1 RT: 88 lbs - 22 RT/1000  
10 RT/day 4x =  
10 = 20 kWh/day  
1/2 ton = 180 TPT

## Traffic

- Biological resource impacts
- Water, energy, waste

Basement for storage + fire evacuation / security  
(If no basement, then put buildings on drilled piers instead of spread footings).  
Cave?

Air flow studies for observatory site were done at alt. site next to main road. The alt. site would functionally also be an excellent side. <sup>DBrock</sup> much cheaper to access.

Dome for observatory must be white (heat effects @ night, thermal radiation affects quality of visibility).

Someone said no arrowheads or other cultural effects are at Field Station site. - Not my experience

Charlie Hight, as well as one of his employees, Loren, have a lot of good anecdotal info about the site, re arch, construction, some bib.

Extensive pig activity

Suggest a tour of Margot's property to look at housing clusters + camps on a large space (15K acres)

Partially underground  
Fire resistant  
Safe  
Passively cooled

Field Station a reality:

- Be realistic about natural resources available:
  - water
  - septic capacity
  - vehicle access
  - power

Nodal seismic geophone on site

3 goals -

Simple  
Natural

High value for money / expanded

10 ideas <sup>Overnight visit is important for experience.</sup>

- "A spa for your mind."

vs.

Research facility

- Gatekeeper, controlled access

- Park cars at bottom of hill  
Have 4WD electric vehicles at bottom of hill to use above

- Competitive resource use - end group tries to best the other for low impact.

- Acknowledge everyone else's disciplines while you are out there

- No computer access

- Tourists v. researchers

- Limit electronics on site

- 24/7 exposure

- Planned activities at night

- Time to chill

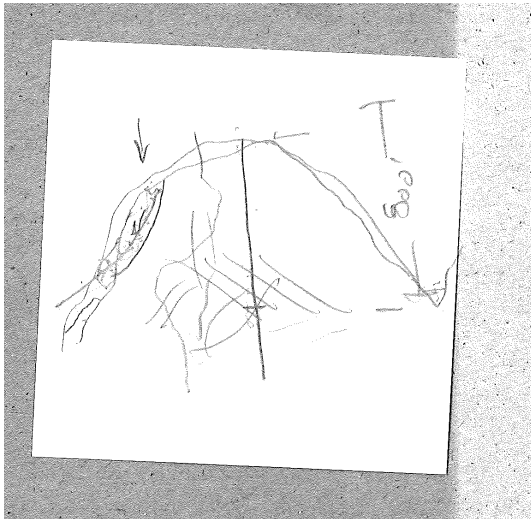
- Hiking class - level of fitness

RIM Architects

07/11/11

EXHIBIT B  
Page 6





Features on drive  
discussion of road  
conditions/improvements  
rain effects

pullouts  
road <sup>when</sup> ~~at~~ SSU acquired  
part time caretaker  
drainage improvements

composting toilet  
needed? where?

varied climate  
- not 1 week ago 90+  
- wet + cool now

logistics of using the preserve  
as a facility

rock outcrops

Kristi - found arrowheads on  
property as a kid  
collection is w/ family

Charlie - why not here?  
knows area well

### Field Findings

12 dia, 12' high = 10,000 gal

30' x 50'

30' footprint x 10' depth

16' square ~~or~~ less footprint facility

20 gal/day w/o food services

### Leslie showing Sun Field Station

Under budget - lowered ~~costs~~ <sup>costs</sup>

Lot of time programming

Patterns of behavior

Night use not anticipated

All nighters in building

Retracts - energy use spiked

Value engineered at front

end - what to leave off

if cost constraints

Sun-day lighting, heating,

passive cooling > 1000K

outside, 7 ft in side

Good glass, no AC

Sophisticated energy monitoring  
system - almost to zero carbon emission

feasibility of observatory site?  
width of road

plan for slash piles?  
x6 survey beneath them

Is a fire place compatible  
with the sustainability/  
environmental vision/goal?

### Trees

- moss
- very green still
- diversity

logging last happened  
23-4 years

site 7 years

fire affects on trees  
controlled burns?

wildlife  
mountain lions  
wild boar  
black bears

tree piles

scraped areas - dirt movement  
not present last week?

forest changes  
microclimates

Count for roads → improving  
drainage areas

Dream field station  
3 key directions  
how help make happen?

provide camp space  
+ cook space  
for small groups

site protection

stay on  
existing  
roads

education  
about  
resources

maintenance  
over  
time

- studies of site  
location

- resources
- native plants
- water
- trade networks

- studies of site  
impacts & time,  
visitors

- obsidian hydration

- involvement w/ local  
tribal groups  
possible

obsidian hydration studies  
- revive as part of our  
CEM program

Kristi - grandfather had a  
horse

learned to drive on  
property

camp, catch crawdads  
salamanders

star gazing

Soil  
observations of insects

bridge

Charlie's family

60-80 years

oral history mentions bridge

working sheep ranch under  
yoster

### look/feel of facilities

- integrated (with environment  
around)
- natural/organic
- modern/clean/simple

Report + sheep farming  
Galbreath Menno wool  
market collapses/imports  
coyotes  
sheep until early 90's  
no plans currently  
other needs new roof  
should make sure we survey/  
record before anything  
done

Cheer about removal of  
tan oaks in site  
- take  
- ground disturbance

plan of how to avoid  
sites during planning  
Brelie  
coord. tree testing, construction  
Richard conducted on site  
Soil testing trenches  
6ft to 10ft. ~ 8 ft  
6 total 2 on site  
3 ft. etc.

Fred Galbreath's wishes:  
100 years from now  
look as it is now  
(Bob Tolman)

### Communication

Need to communicate the resources  
at Galbreath outside of the preserve  
to promote an appreciation for  
the preserve without, or prior to,  
going to the preserve.

This can be done through off-site,  
physical, <sup>interpretation</sup> or web-based, immersive,  
virtual interpretation or representation.

obsidian throughout  
excavation.  
both locations  
had artifacts

### Hilltop facility

- place smaller buildings scattered  
with many trees
- consider weather, bugs, etc
- place facility further away  
from knoll - showcase not  
occupy
- facility will showcase a resource  
not occupy it

### Top three goals:

- 1 - develop a true interdisciplinary  
approach - old barus  
preserve logging activity  
communicate natural-historical
- 2 - ability to stay for longer durations
- 3 - less impact on land  
self-sufficient

Choosing, appropriate  
the right way



### Library / Collection Room ?

Stores easily accessible data  
about everything having to do with  
the preserve.

Written  
Electronic  
Artifacts  
Objects

Allows the ability to display/present  
items - visitor's center or museum  
a ~~new~~ place for exhibits

### The Overlook

Less building - more of a  
platform - could be the most  
central, most appealing location  
on the preserve for gathering,  
reflecting, working, eating  
lunch

### Opportunity

Extraordinary range of resources  
Natural → Cultural  
Past use → current use

### Concern

Immediate, but not large:  
ability to get a 2-wheel drive  
vehicle to facility area

10 concrete things of inspiration,  
driving elements  
encourage interaction  
cross-disciplinary innovation  
tangible way to solve, inspire

- welcome to interact on your own terms  
(mechanism to allow that)
- central social platform  
(physical meeting place)  
socializing
- overlook (glacier point example)  
multi-use viewing  
amphitheater  
this can be the center  
of ~~any~~ everything that  
serves many purposes

### 3 adjectives:

organic - blends in with  
landscape  
integrates  
showcases -  
welcoming

Guiding principles

this building will  
be \_\_\_\_\_

Locals don't want to see  
the observatory

Can see the geysers - John Panning?

Hjalt family built the bridge that  
sits in a tree

- working sheep ranch, sheep dogs  
Bob - bring back a lot of memories

Saeid - field in line  
every time he comes it's  
different

16-17 species in a day  
engage, students want to stay, camp  
w/ the Special  
land

Current  
Campsite

Perennial Native Ranch Grasses

Current regrowth in site  
mosquito heavily

Field Station  
Cultural Resources  
arrowheads etc

Tan Oak thick fire hazard

Fog Rare here

1.5 mile marker - Field Station  
site

Courses SBE  
Jim Whins  
interest & dedication of the group

Amazing  
Moss on the trees

"Balance"

Research Study and Education

high altitude  
atmosphere overhead  
prevailing wind laminar flow less turbulent  
telescope tend to look southerly  
never seen a sky like here

it's about our place in the universe  
white to keep the dome cool to avoid the  
turbulence

take the scene and make it better  
adaptive optics

exercise develop guiding principles  
what are we aspiring to  
"all buildings will be powered w/ alternative"

Coyotes

Addressing questions in book

Field Station

experiential  
transformational

3D

Sensory  
observation

collaborative perspective  
interaction

cross-pollination

market

Barn

merino wool → soldier uniform  
sheep

until the early 90s

last 5-6 years of Fred's life no sheep

Platarea music

educational  
amphitheatre

Barn observation

why like this?  
"Flock" more original?  
"Sheep"

SOP. Tan Oak

proactively use

them to build the site

Muscular Madrones

Dove Fir Domination w/ Tan Oak  
Removal

Windbreak issues Forest Mgmt

UCSC as a model for native trees

< 7° slope

"inspirational  
overlook"

to the south SoCo  
north presence

Wheelchair accessible

"3 bars point"

? Claudia/Andrew?

Advisory  
Board/Council?

Birds Audubon (sp?)

"The New ETC"

Controlled  
Composting

Teaching Tool to the community  
what we all have felt be  
Observed by many

- dream field station

- top 3 goals for using it

- fundraising ops

Road → CDF requirements

letters from the little kids  
FOR to SOZa m

Field Station

View  
line of sight  
Clerendal  
internet connect

The  
Sweet  
Spot



wood dock  
pmd  
remarkable amphitheatre

25 X 30 Classroom

camp old hunters  
bridge built by Chetive  
family has permanent use of  
campsite

Saeid, picture of Fred @ Campsite  
with kids

Sue Johnson's handwriting unusual  
no cursive printing

year round use  
other Universities to use - yes  
- fee for use (self-supporting)  
- Galbreath -  
increases the possibility of funding  
multi-use grant

how will we showcase the Preserve?

at risk teenagers

Perfect Field Station  
screened in area  
outdoors but kept from bugs

PRIORITY  
Field station primary goal  
settle lot then other things

Saeid's view launch pad to  
Bob Terri get other things  
agree ended

Will talk more about the other  
property at dinner

Physics actively work toward  
committed to observatory  
active at Preserve, find, find  
sources

Field station  
Dean & Sue Johnson naming  
need more discussion  
Michelle/Saeid Saeid/Family

Derek Jones / uses it } original  
} push  
} in charge  
} not as active  
{ and other Bio protz  
active w/ bringing students their  
helpful w/ fundraising?

FSU 2-3 yrs.  
New provost in 2 wks. <sup>Andrew</sup> Rogers  
extremely interested in this project  
field stations, Biology <sup>few years</sup>  
10+ papers <sup>young in</sup>  
<sup>Saeid.</sup>

wanted only to meet w/ Claudia  
when he came to campus.

water issues / projects

no vacation in between  
married, no kids  
approachable, <sup>not</sup> pompous

Saeid: To become a Center  
of Excellence

Saeid - GMC community sick  
of it.

prospect of finishing it - fighting over  
use of it.

Issue will happen w/ Galbreath

- Lynn Woolsey  
Bob J. not a fan of Gavin Newsum  
Saeid.  
more conservative "not a very very  
conservative person"

Bob - Canada rail trip } plus on  
Belize } host

Field Station overnight accommodation

Saeid - 20-30 doesn't envision  
a large operation

Bob - not sure.

maybe a prof w/ 1-3 students

Pigs, permanent destruction  
erosion, grasses, trees  
gov't grant to get rid of the pigs  
Haw Cushman used to be the  
Preserve Director expert on  
feral pigs

Bob / Fred Ocean Field Station

- something for everybody
- a lot of teaching & student involved
- research in the field

Michelle

- a place to bring people together  
for education and inspiration
- community involvement / partnering  
w/ University <sup>highlights earth</sup>  
<sup>University</sup>
- planning for <sup>broad</sup> use with a memorialistic  
approach.

20-30 day use

youth hostel style / bunkers

M / F Separation

money making business = research  
grants / papers

Tuesday Robbie works at  
Aquarium

Dan  
Maintains equipment on Fire  
head mechanic trucks/  
United Air fire engines  
no  
pension

Robbie hosting a cocktail party at  
Bob's on Saturday night  
great view

Engineering  
SSU program

CREST  
Book of Lists  
latest version  
get it for  
Saeed

art and technology students to create  
ways to demonstrate visually the  
individual resource use

careful lead walks, tours  
resource to researchers - where  
are things

newsletter, annual report

↓  
use students as spokespeople w/  
potential donors, demonstrate  
the impact on student lives

create both  
indoor and outdoor common  
eating area serendipitous  
comms

hosing and eating areas set  
up to force running into each  
other

develop speakers bureau to do  
presentations to community  
at field station and outside  
community

create environment and  
expectations that people can ask  
and they will be asked

poster session annually on campus  
web cam on flat screen rotate  
images

What we are doing here is  
serious not faculty playground  
research, education  
income is counter to mission

Blend  
spacious  
comfortable



opportunity not to be missed

constraint in my brain

trying to meet <sup>major</sup> all the needs <sup>the project</sup> while having it be <sup>realistically</sup> doable  
so that no one is <sup>only</sup> disappointed

site special location

Select interests subject

at Stanford  
320/square foot  
10K square foot

Metamorphosis: shift in the ~~Stanford~~ Stanford Preserve Direct.  
Valentine Eastern Sierra Reserve

excite lots of interest

Stories

demonstrate the value and impact in real Students Community world.

in advance to build excitement & drive someone without education to tell the world

review MSE research & other campaign prep  
need to do a min feasibility

Study, campaign research done

1) then create a plan

discovery / cultivation / solicitation strategy

- donor pyramid -  
neighbors Emeritus Faculty

Jim Kuhns → Margot → Johnsons →

preserves donors, mailing list

Talk to Phillippe (Stanford)  
re finding

Yorkville Ranch → what's their view  
\* vocal \* help them visualize, simulate  
panels face away from the people.

- Big leaf Maple w/ large bowl
- Madrones \* \* quantity and size - impressive
- Road not so bad
- Mt. St. Helena view
- Evidence of logging
- different environments
- the large group of people
- Forest Environment
- Mountain lion scat
- Ponds - 1 like vernal pool
- Mule deer - desire to get out of car & explore
- Salamanders, pig damage, grubs
- Doug Fir - large branches, defoliated bark

- last tree harvest / logging in 2000 at our site for FS
- Tall Oaks all have Sudden Oak death - or will - can use as construction mat'l prior to disease
- Encourage interaction - Scott Severson - astromony and study of cancer cells

- Environmental change - weather
- Geysers near site
- Soundscapes - so quiet - no human sound
- Water crossing - large log
- The diversity of the drive, large site feel
- Small
- Every time visited its different
- Sheep farm - previously operated
- Damage by bears
- Sudden oak death
- Abundance of species
- Moss on trees
- Balance - think of # of vehicles

Field Station not intended for Public  
(comment by said)

### Observatory

Dome will be visible from point group is  
standing - dome is white (heat effects)  
adaptive optics

### Goals:

- Successful <sup>(design)</sup> development that inspires visitors & stimulates interaction
- Net zero development (low impact)
- Development that is <sup>sett</sup> ~~sustaining~~ <sup>beyond</sup> 30 years
- Master Plan <sup>embraced</sup>
- Design <sup>for</sup> buildings that become part of the research

### Clarida -

Agreement for land transfer - language  
for allowed uses and development

Charlie for Day 2?

Center of Excellence

### Barn

- Merino Sheep herding/farming
- Market drop after Korean War + imports
- Coyotes minor factor
- up until early 90's
- Aesthetically - function reflected in design for air / storage
- Roof is deteriorated
- Intent is to keep Barn

\* Language in land transfer for limits on use

### Field Station Site

- Knoll with the View - challenges for fire
- "Overlook"
- IT connection - cell reception
- In the center of Knoll



### Pond:

Major focus of Visitor Experience to site

- need to protect - light + traffic
- important breeding site of newts

### Wood Duck Pond

- Black Bear
- Pig
- Bobcats

increase in algae? related to pot farming

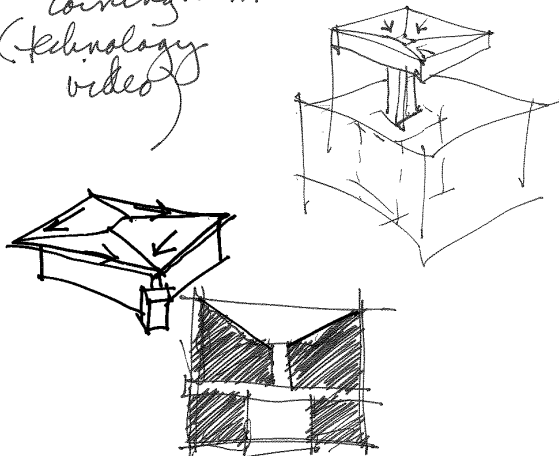
- Soils investigated for load capacity and permeability
- Composting - careful control of other invasive species - look @ other options of waste
- This Field Station will be a Centrepiece Viewed by others
- Sudden Oak Death (Tan Oak) on site Oaks can be utilized for construction that don't have disease
- Madroños will stay - character - on this site
- Ruin of Oak will require film on site
- UC Santa Cruz - good sample of landscape integrated with buildings

\* some geotech trenching was in area of Archaeology finds

- Pond @ ridge - alignment with small pond spring feeds large pond

- 'palapas'
- 'less footprint' in structures
- like Yosemite: tent cabins
- 1) preserve be a good representation of SSU goal & presence
- cohesiveness (campus atmosphere) in materials, colors, finishes

corning.com  
(technology video)



Adrian (from Kate): It's raining and there are a lot of Irish people around ... I'm in Ireland

Claudia: you are out-standing in your Field

Peter: This is the only time we will think Inside the Box

Staked layout 25' x 35'

- provide sense of scale to site
- Modules could be spread out amongst trees without clearing

Success - teaching first, students involved  
- hands on/whole pkg.  
- College can be intimidating, know professor

Sustain visceral experience  
- archives used for preservation

- blog
- water reclaim/solac
- if you
- part of life

Technologies wi-fi (top of hill)

- units cross disciplinary
- recording/moving things
- build paths through grove of trees
- small groups

Users

- trans/food/water/comfortable
- remote



Student - using satellite  
absent  
• large classes - live salon/  
images

### Hadland Institute

- school groups 2-5 days  
learn what world is  
& how to make it better
- business world - retreats  
(mission in life similar)  
outreach/support  
- commonality

### Experience

- campus sterile/isolated
- broad range of groups
- need to have private  
private area of stone  
fireplace

### Accomplished

- shuttles out of environment
- used to haze

- Educating People About Our  
Choices

### Stories:

- preserve hillside, observe  
culverts, good land  
steward

- don't get caught up in  
not doing anything

### Spring:

- grass  
- birds/flowers

### Constraint:

Water gathering/storage  
- cisterns/ catchment

• passive  
- low tech

### Opportunity Not to Be Missed:

- Sustainability, more than lip  
service
- material on site/build kilns

\* More attractive to students

\* Outside your comfort zone

\* Everything is a conscious decision

### Programming: 49 max.

#### • Management of Site

- 1) understand
- 2) prioritize
- 3) ~~not~~ consolidate
- 4) consensus
- 5) separation of compatible vs.  
incompatible

• Design by acting on guiding  
principles

• Example: classroom @ 30'x25'

#### 6) Flexibility

Access-Control from CSU  
Water budget coupled w/ low  
consumptive fixtures  
- could haul

Report on Findings: 6/30/11  
~~Galbreath Field Station~~  
 - Road Eval: Erosion point of view (Pacific Watershed)  
 - Wastewater Disposal  
 - Water

- bridges replaced: CalFire
- Observatory road another consideration. Distance 4/10 mi.

Environmental Analysis:  
 CEQA (Zoning change maybe)  
 • land use permit application  
 • candidate parcels: #  
 • Negative declaration requires initial study  
 • HCP?  
 • Very sensitive stream system (jurisdictional implications; wetland mappings)  
 • mitigation of road dust (dust deprecant applied annually)  
 • vehicle use of Elk Horn Rd. narrow + site lines  
 • greenhouse gas emissions  
 • loss of sequestrations  
 • Observatory site visibility  
 • nighttime light from field sta.

• 18' diameter room for observatory  
 - PV array (panels face sun) [Wayne Penn]

Accessibility:  
 • DSA: wheelchair getting people to site  
 - decomposed granite  
 - boardwalk  
 - all commensurate as all accessible

Archaeological sites:  
 - three found  
 - Needs formal evaluation

University:  
 • max. 49  
 • patterns of use/intensity of use

Leslie Shao-Ming Sun Field Station (Phillips)

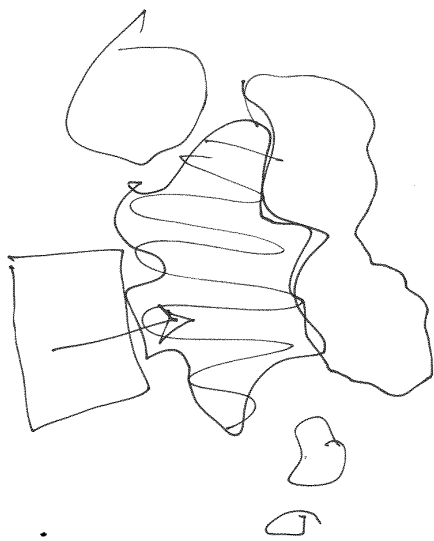
• nighttime activity  
 • value eng. r. @ front end  
 • program evolving to solar heat  
 • \$340k

EXPECT THE UNEXPECTED

10 concrete ideas: on innovation, cross discipline

- 1) stop people off, no parking planned event from SSU  
 (control - control of usage) (gate keeper)
- 2) power generated on site/vehicles - staging by gate - more safe on road
- 3) Sustainability of discipline - interpretive (water cycle etc.) carbon (obligated to eat cycles)
- 4) Ed. group competitive - coordinate (who uses less)
- 5) think of overlap between groups needs; have to acct. for things - accountability

- 6) Don't limit social/sleeping spaces - mix people up
- 7) Eating/clean up - lotter/draw task from hat
- 8) No computer access in gathering area
- 9) Student population - no access to game boys etc.

- 10) Not intent to sleep etc. in comfort
  - 11) Emphasize being present  
\* stay overnight important  
- creation, not just study
  - 12) Communal bathroom.
  - 13) Certain set of activities/  
structured, planned
  - 14) Guest book w/ impressions,  
suggestions for future prog.
  - 15) Gathering (3) times a day  
- rest of time there are  
activities (related to food)  
- hands on
  - 16) For students, real-life application  
information - i.e., what a biologist  
does
  - 17) Food: as researcher, you want  
to 'chill' Maybe food prepared  
ahead of time
  - 18) Physical fitness program:  
(outdoor pursuits) (adventure  
outing) - teach how to be outdoors
  - 19) Place for innovation/inspiration:  
i.e., Glacier Point / Amphitheater
- Camping as a wilderness experience  
24,000 ft  
- log landing
- 
- Phasing  
Contextual.  
unpolished.  
Transparent.

## ROADS - GEOLOGY - ENV GROWING

GRAVEL BASE - MAINTAINED

HOW DO YOU MAKE IT SAFE.  
(CONSIDER SLOPES)

- TRAFFIC CALMING

- LOW DIPS DOUBLE AS DRAINAGE

- TURN OUTS - LINE OF SIGHT

- DRAINAGE TO AVOID PONDING

- PROPER DRAINAGE TO AVOID  
GULLIES / RILLS.

PLS - DRAINAGE. - WATER QUALITY IMPACT.  
HOW DO YOU CONTROL THEM.  
HOW DO YOU FIX DRAINAGE

## GEOLOGY - EDUCATIONAL OPPORTUNITIES.

SITE ON COASTAL BELT FRANCISCAN  
COMPLEX. IN FACT, CONTACT (FAULT)  
W/ OLDER FRANCISCAN ON NORTHEAST  
SLOPE OF OBSERVATORY SITE. GEOLOGISTS  
CAN BENEFIT FROM THIS SITE/FIELD  
STATION. THIS AREA CAN SUPPORT  
SSU GEOLOGY FIELD CAMP.

### GEOLOGY TOPICS

- FRANCISCAN COMPLEX
- ENVIRONMENTAL GEOLOGY
- DRAINAGE
- SLOPE STABILITY.



- 50-60 people
  - top classes
  - different research teams  $\pm$  lot of variety
  - social interaction
  - connecting people to place
  - hallway moments
  - trail moments
  - California Zuni
- ① bridges are unique
  - ② road experience itself - perception of access
    - motion sickness on highway
    - long drive
  - ③ connect w/ large trees
  - ④ geographic unique - culture canyon
  - ⑤ Barrie Knolls came up
  - ⑥ diverse terrain - sound sampling point
  - ⑦ Madrone forest N of field station
  - ⑧ pig activity area 1.7ish
    - water area, 11 spring
    - hawks like it
  - ⑨ waterfall
  - ⑩ Big + diverse
  - ⑪ smells

- wrap up
- Tedrone - James
  - trails and connecting - Scott
  - integration of natural resources w/ site needs
  - creativity out of how we accommodate constraints
  - prioritization of goals
  - his work allows for a level of access - Chris
  - participate at ground level - integrated
  - unique process
  - logistics of getting stuff up is good
  - develop a market plan for use - Jim
  - great ideas - Kristi
  - different perspectives are great + Suzanne and Mary Jackson
  - digital interaction in the air and resource degradation
  - not able to please everybody and all people will need to compromise
  - can't be all things to all people
  - impressed with uniformity of vision - Charlotte
  - share this w/ key players to validate and obtain ideas
  - refreshing to be included early "thought up" - Kate
  - beauty of site
  - permanence vs. temporary -
  - I'll be going back - Carol
  - Site is intact and rich - Dan
  - acoustics of pond -
  - field station for all disciplines

#### • SHEEP BARN -



SHEEP SUPPLY - FIELD  
NEW ROOF  
USABLE BUILDING.  
EASY ACCESS.

#### FUTURE USES?

- FIELD EQUIPMENT
- CAMPING
- SUPPLY
- STOCK(?)

#### OVER LOOK -

REMOVE TREES ?? WHAT ABOUT  
SLOPE STABILITY?  
CAN TREES BE SHORTENED AND  
FACILITY RAISED?

#### SEPTIC TEST PIT SITE.

- SEPTIC TEST NOT SO GOOD
- COMPOSTING TOILETS?

#### FIELD STATION SITE.

#### PERC TEST DATA (AS PER B&R)

- TOPSOIL
- WEATHERED: SANDSTONE, CLAYSTONE
- INCREASING COMPETENT W/ DEPTH

### SUDDEN OAK DEATH.

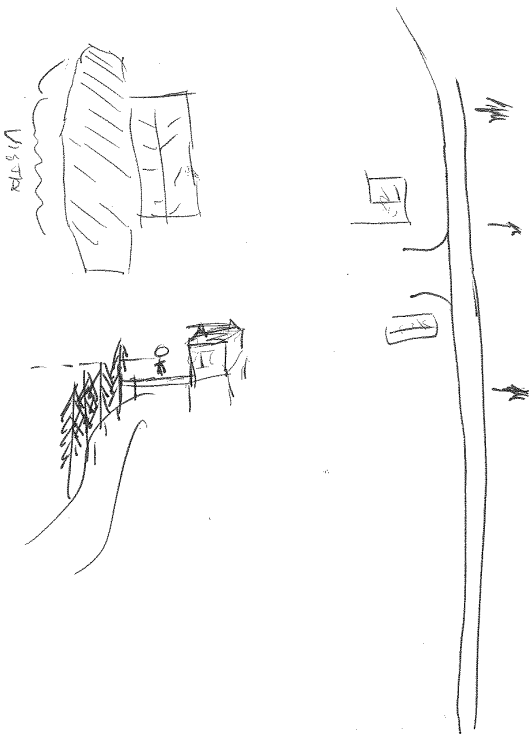
- GIRDLES TREE
- DEAD LEAVES
- USE WOOD?
  - KILN DRY
  - MILLING ON SITE
- REMOVAL OF TANK OAK - NOT ALL GOOD.
- REMOVE WIND BREAK
- OPPORTUNITY FOR ~~THE~~ DOUG FIRS TO TAKE OVER
- DOUG FIRS CAN BE HAZARDOUS

### PIT TOILETS - ?

- COMPOSTING BRINGS PESTS
- COMPOSTING WASTES IN A PROPER WAY → THAT WORKS.

### POWER -

- WIND POWER - NOISE + MILL
- LOCATED @ SADDLE (AT START OF OBSERV. TRAIL)



### DREAM FIELD STATION

- 3 TOP THINGS FOR GROUPS
- FUNDRAISING

### THREE FACILITY GOALS.

- PROVIDE ADEQUATE WORKING SPACE FOR VARIOUS DISCIPLINES - FIELD STUDY
- PROVIDE FACILITY TO ~~STORE~~ EQUIP <sup>GROUP</sup> EACH DISCIPLINE W/ ON-SITE EQUIPMENT
- PROVIDE ~~LABORATORY~~ <sup>LABORATORY</sup>, LIBRARY, INTERPRET.
- PROVIDE ~~NOT A~~ ROOM AND FACILITY FOR LONG TERM FIELD STUDY/CAMP 1-2 WEEKS.
- PROVIDING ACCESS THROUGH TRAILS TO HIGH VALUE LOCATIONS FOR ALL DISCIPLINES.

### INTERPRETATION.

- PROMOTE INTERPRETATION OF WILDLANDS SURROUNDING FS. (e.g. SIGNAGE SHOWING LANDSCAPES YOU ARE SEEING FROM VISTA).

### CONCERNS W/ GEO-ENGINEERING

- STEEPNESS OF SLOPES
- REMOVAL OF TREES
- UNCONTROLLED DRAINAGE
- REMOVAL OF TREE SUPPORT.

WHAT AN EXCEPTIONAL PLACE FOR ALL TO BENEFIT.

HOPING TO BE PART OF THIS PROCESS.

Storage facilities along way

Madrones

Seeps

Fescue

? Big tentacle maple burl

Acorn woodpecker granary @ the 1st pit stop.

Dows fir invasion in several places.

Lawns & subdivisions?

Bridges - RR car flat beds.

Water?

Milling on site

Thermal mass @ tank pt.

Madrones & tank pt.

SoD

Clay septic

Native gardening & greenhouse  
w/ drainfield

Seasonality of facilities

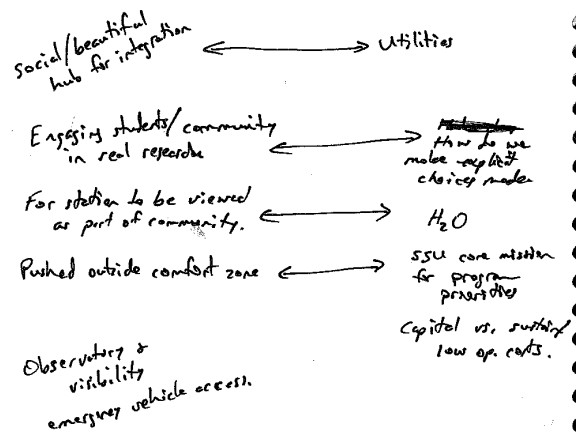
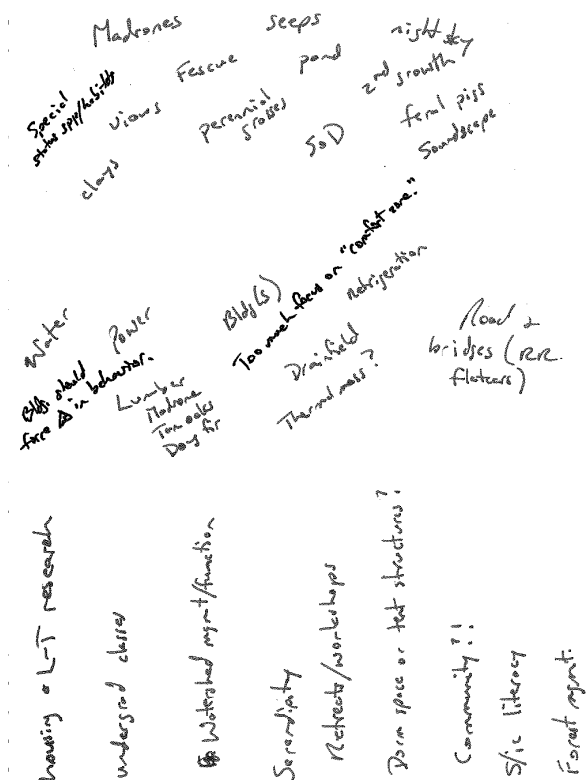
- 1) fiscally sustainable — doesn't compete w/ program funding, but supports it.
- 2) facilities embody core values of FS values
- 3) activities help integrate into programmatic initiatives @ SSU.
- 4) Flexibility — adapt to future programmatic needs.

Top 3 goals:

- ①. Retreat & bring.
- ②. Opportunity - Field Education
- ③. People - develop in connection
- ④. Waste disposal - minimize waste, create system that does not degrade the environment.

Gathering in a circle to speak about everyone's impression of the site was a great beginning to the day. The site offers many places to look; trees, vistas, rocks, grasslands etc. all are seen where one can gather an impression.

typical classroom layout - 25' x 35'



3 adjectives for bluffs.

ambitious  
joyful  
intriguing



water:  
① groundwater resource <sup>potentially</sup> not available

② surface water sources:

- A. reservoir
- B. rain/roof collection with cistern - may meet non potable demand.

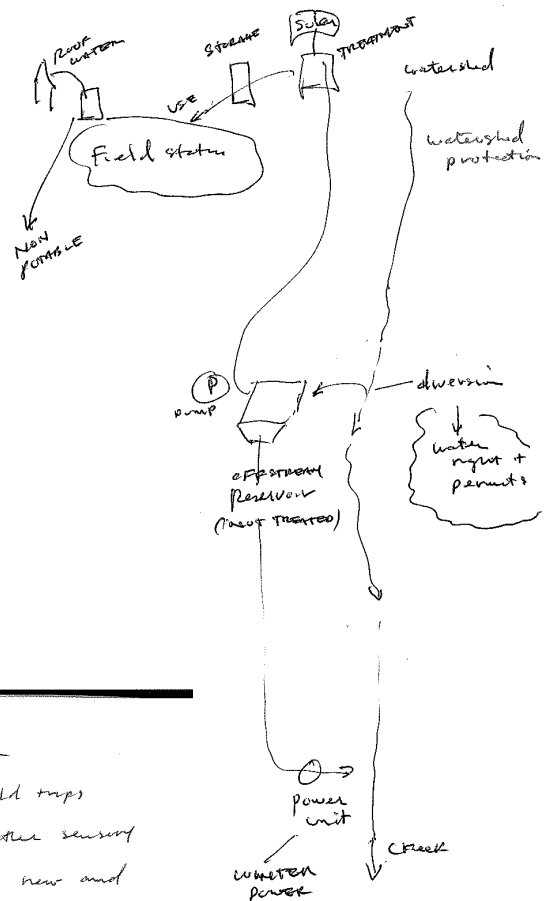
Reservoir needs surface water treatment

- microfiltration - easy maintenance - meets code req.

high energy user

- conventional structures hard to maintain, not as reliable - not good in start/stop operation

Run plant only during solar production i.e. direct, strong water at other times



interesting car notes. Add me intent on contributing. Field trips are constant stimulation either sensory or mental - thinking about new and different ways things could be.

Observations at test pit site - much planning will be necessary to keep the feel of the place the same - maybe that is not the goal? - should look at what will be built/produced and what all needs are.

Observation at the overlook area: Building there might be tricky - do not want to destroy the while feel to get the most view.

Elimination of a lot of trees may cause problems with wind blowing down remaining trees.

top 3 goals - how to use station  
Go pastore -

pond site - good acoustics pointed out in field.

aka Erickson  
ASC Kate.erickson@sonoma.edu

Develop guiding Principles. - 10 minutes

what are guiding principles

Bob Johnson. → water.

Suzanne

check out 820 standards  
state standards.

Excitement: stories being developed  
visibly.  
timber - not represented here.

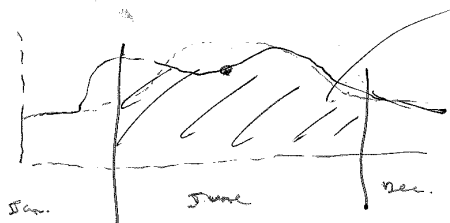
Paulina: pulled outside the  
comfort zone. →  
normal day to day  
behaviors → different.  
comfort zone

Capital investment: sustainability  
Field Station needs ongoing  
money.

Core mission needs to be  
el

water - requires a water use assessment

creates a model of user needs,  
demands, considers conservation efforts,  
growth, climate change impacts.



$$50 - 20 = 1000 \text{ gal}$$

Roof 411

$$30 = 30,000$$

$$m, j, j, a, s, a, n.$$

$$7 \times 30,000 = 210,000 \text{ water}$$

$$\frac{210,000}{5} = 42,000 \text{ gal.}$$

Remind a standard use.

Also requires tough.

John Swadlow.

word cloud: interesting idea.

Reynolds City

Personal region: No region

Habitat conservation plan. HCP

- Mitigation vs. Permit.
- Biological issues.
- Road system: part
- widening: road - wetland area.
- jurisdictional conflicts.
- mitigation.
- wetland delineation. → regulatory loop
- Observing - tree removal
  - protection re stability of slope.
  - brush development.

Roof catchment



Sonoma State University

manoeuvre: unpaved roads: vestigial of  
dirt from road: culture.  
manoeuvre: dirt support.  
applied annually.  
dirt supports: can be  
put into

Traffic - turn on Eucalypt road:  
safety issue: low  
quality road  
County Director of Transportation  
limited side line  
suggestion: require upgrades  
to Eucalypt road:  
understanding number of  
cars. - up quaded signage.

Minimize green house gas emission.

Tree removal. 10% off  
Lost cash.

Aesthetics - obscurity.  
nighttime lights.  
daytime glare.

Small office - 15 kw/sf/room

0.69 kw/sf/room

Field Station

\$340/sf → MAINTENANCE COSTS  
VERY LOW.

Philip - Stanford - comfort zone.

Limits of acceptable change

Site:

IMPACTS

- CARBON FOOTPRINT
- ROAD IMP.
- ROAD MAINTENANCE
- ENV. IMPACTS

justify  
benefit out  
more than  
as energy  
standpoint.

- VAN PARKING
- PARKER FREE
- WORKS DOES IT EVO.
- SITE in the road.
- surface collection of parking.
- ELEVATED PARKING
- NO PARKING

Patterns of Behavior

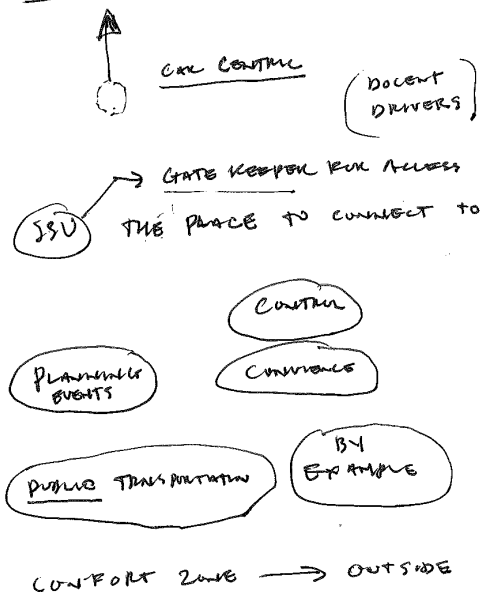
Net Zero Carbon Emission  
Nighttime use not anticipated.

- value Engineering  
to begin with

Sum.

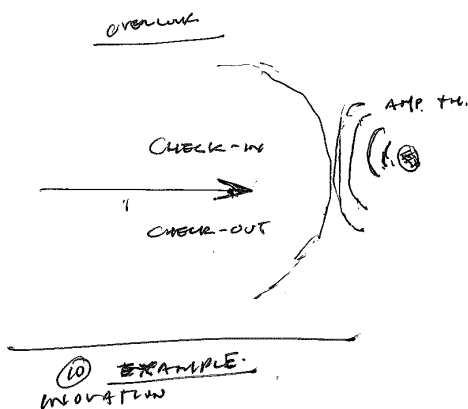
- Heat:
- Pressure cooking:
- Lot of Heavy gear on glom
- Safety-related Monitoring.
- Carbon net 0.
- 1.2 kw/sf/year

The CAR. ???



### Research Labs

- ① Chemical in labs.
- ② Modular utility hook-ups.
- ③ Avoid value excesses:



### 3-4 top goals

#### Vision

1. Fulfill the vision of Fred Galbreath and the Founders of the Preserve.
2. Serve as an exceptional outdoor laboratory for all fields of science and engineering.
3. Serve as an environmentally sensitive educational tool for the local community and beyond.

→ Some complimentary field open area for Co-ping  
→ Address security issues, Facility Goals if necessary

- Make it as versatile as possible to serve the needs of different constituencies: common areas, and laboratories
- Build it in such a way that it can be easily expanded in the future if needed.
- Natural looking buildings that do not present a some eye problem for the neighbors.

### Signature

→ college

wow

1. function - signs.

• Branches

### Observations

1. Steep slopes
2. Changing scenery within a short distance
3. Primitive bridges
4. moss covered tree trunks
5. while climbing or descending, the road goes up and down
6. ~~cut~~ Cut tree trunks and <sup>branches</sup> ~~branches~~
7. Branches hanging
8. Road and vegetation conditions change within a short period of time (even a week).
9. few points where one can see mountain ridges.
10. try to utilize the usable portion of the cut logs for some outdoor features of the field station (also the trees that will be cleared for the site).
11. Sustainability aspects of the site will be beach for publication <sup>the idea as an educational road.</sup>

RIM Architects

07/11/11

EXHIBIT B

Page 28



## Dream Field Station

Create a field station that will serve the educational needs of students, as well as providing a showcase and example on how scientific activities can be done within off-the-grid buildings that are sensitive to ~~the~~ the sustainable needs of our fragile environment.

Pendleton Wool 10,000  
"Place" Sheep

- where are we - place (tree landmark)  
versus map

Get to know professor outside classroom

Hands on learning

- Terri, Kristi, Jim, Nora

I'm a driver so writing time is sparse.

Community space as a b.t of a "museum". Maybe tech based displays showing a variety of discipline-specific reflections on the site.

## Guiding Principles

this — will be —

## ~~Crazy idea~~ Roads

obs. grading some species w/ variance

- Fire road  
can be used as road

Surfacing ~~settling~~ material

→ sustainability

Zoned timber-preserve

if re-zoned

land-use permit but not a zoning adjustment

→ trigger

SEQUA? Veg Dec

Biology / Hydrology / Geology

Expecting Mitigation based on special status species...

→ [ ~~common~~ HS ]

[ ← ]

[ ]

High speed internet  
common areas for interaction  
power + storage - dedicated

Very sensitive  
stream system

↳ clean water act  
Army corps of  
engineers

deliberate wetlands

⇒  
- slopes → act steps

↳ on that knoll (of obs)

so ~~this~~ ~~is~~ could be a  
problem...

Air quality - particulate  
emission  
mitigation of dust  
from road (rock surface)  
→ mit.  
dust suppressant

Elkhorn road  
→ could require upgrades  
→ could be mitigated  
by storage

### Innovation Lunch

10 concrete ideas - interdisciplinary  
- innovation

- Pair student Docents from  
different disciplines.  
(greeting functions)
- Daily cross discip. research  
group meetings (pre-or-post  
dinner - to get best overlap  
of researchers.
- Media / conf room use of  
one room for web-casts  
to SSU / K-12 students.
- Video display w/ updates  
re: SSU research & outreach

GHG emission

site lines to observers  
→ probably not seen  
note "scenic highway"

likely not ~~not~~ parklands - visible

↳ white dome

↳ seen as a  
solar impact

3 Archeological sites  
↳ present in road  
→ constraints - found  
evidence

Jasper Ridge @ Stanford  
Phillips  
\$340 / sq ft  
Bldg cost > \$150  
16x less eners use per sq ft  
than classical bldg.  
"Value engineering" Leslie Shao  
ming Sun

3 Adjectives

Natural  
Flowing

Open

Place to Study  
Global Warming  
tree rings? Past Weather

Build area for  
car park without huge  
~~impact on~~ eyesore

Will the observatory  
be visible to Narky  
she was concerned  
about community

sturdy  
all year round

needs to be  
Living Museum  
name area/point  
Building - pond after B. Johnson  
non science discipline  
don't forget  
~~inter disciplinary~~  
inter-disciplinary  
arts  
writing

Sustainability Retreat  
Have

#### Goals and Objectives

##### What is a Charette?

The purpose of a design charette is multi-faceted. First, it is the goal to **share** information about the project and site. Second, freely **brainstorm** without limits - **NO IDEA IS A BAD IDEA**. Finally, we will **organize and prioritize** the ideas, bringing the separate points of view to a consensus on the most critical elements. Our goal over the next two days will be to **charette** about the development of the Galbreath Wildlands Preserve Field Station.

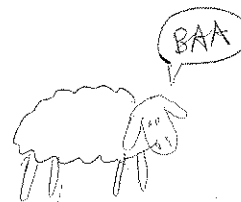
##### Below are some questions to consider:

- Why do we have field stations?
- What is the best possible use of this site to achieve the mission of Sonoma State University?
- What can be accomplished here that is impossible elsewhere?
- How must the experience be different from campus facilities?
- What do users of the site need in order to be successful?
- Consider **technology, sustainability, and visitor experience**. What technologies are needed and are they available?
- What does **sustainability** mean to you for this future research station?
- How would you define success for this project?

water? natural resource  
power? recording  
Having Juxtaposition  
↓  
communication wise  
a must  
small observatory measuring  
sun

Galbreath Field Station - Design Charette

June 29-30, 2011



Field station  
9 acres

mosquito screen in  
area for mtg  
and/or lab

road to observatory  
needs to be  
maintained -  
very expensive to  
maintain  
farcodes

Shorten the ~~hall~~ haul  
The better

49 ppl  
0" less

Observatory  
Aesthetics Big Concern

Visibility from  
128?

Accessibility ADA

Ishi Indian  
Fred Galbreath

Facility Goals  
Fiscally Sustainable

Dream

all year use?  
broad / specific use

Driving the road  
is part of the "experience"  
Gets people out of  
comfort zone

If replace Bridge  
use logs in building  
Field Station - i.e., "rustic"  
Benches around campfire  
(historical value)



### Environmental Concerns

(maybe needs to be upgr)  
Greenhouse gases  
emissions  
lost sequestration  
Road  
Dust particulate  
& a concern

upgrades to  
Elkhorn Road  
needed  
upgraded signage  
would help

### Stanford

Patterns of behavior  
you didn't expect  
Old night time  
use didn't expect  
Retreats / more  
energy use  
valued engineered  
early in planning

### Ideas for Field Station

a room/area  
Have available to  
visitors "Borrow"  
"Loan Room"  
Rubber Boots  
Jackets/rain pants  
mittens/gloves

Library/part of Common  
Room  
Bookshelves ~~books~~ inspire  
conversation starters  
stimulate ideas/conversa-  
tion  
Tangible  
artifacts to handle

used Sunlight  
for energy  
glazing

1. use water ~~then~~  
conservation as  
cleaning tool over  
all of Field Station  
use meters / interpretive  
signs how much H<sub>2</sub>O  
you're using
2. Front Gate / wow  
monument  
Bridges  
use literature / art.  
Dept to communicate  
place of limitations  
Contest  
art & science  
collaboration  
Classroom without walls
3. Bearings  
a sense a camp  
see what's happening  
on site / need to welcome  
as you arrive  
Post application  
you can find common  
to ground
4. Make view focal  
point. View put  
of attraction  
Interpretive view shed  
map

5. <sup>don't</sup> outcampfire  
with benches from  
trees
6. Invite workshops  
art / science
7. Land resource  
Managers / scientists  
Bring together scientists
8. Think of trees  
Signature  
what separates from?  
Other Field Station