california polytechnic state university
landscape architecture department
la402 fall2016

in | VISIBLE

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COURSE DESCRIPTION

> *LA 402 – DESIGN THEORY AND EXPLORATION FOCUS STUDIO (4 units). Exploration and application of design theory, exploratory design process and form exploration to design and planning projects. Emphasis on incorporation of inquiry techniques based on the synthesis of interdisciplinary frameworks or art and design theory with historical and cultural issues.* (CALPOLY CATALOG)

This quarter we will expand our design abilities outward from the studio and into the richness and complexity of the LANDSCAPE. The ability to see and synthesize the complexity of the landscape as FOUND and CONSTRUCTED is primary; for DESIGN is more than just problem solving. We will focus on design as a critical act of DEFINITION versus design as SOLUTION to a given problem.

We will put on our DESIGN goggles and go SITE-SEEING this quarter. Not just for views, snap-shots and vistas, but to look to understand all the things that shape a site, to question what it means to the people and landscape around, within and beyond the site boundaries. We will be looking at truly ordinary landscapes. Through exposure, design and representation, we will envision the transformation of the ordinary into the extraordinary – the invisible to the VISIBLE.

Our design subjects will be local, accessible, personal, unique and somewhat ordinary. Our intentions will strive to find, elevate, expand and define the richness and complexity of the landscape. Our methodology will include a proactive role for theory, regenerative processes and landscape performance.

We will be spending considerable amounts of time outside of the studio and ON-SITE – to experience, to record, to react and to propose. Our SITES will be simultaneously theoretical and real, with definition but without limits, with designated functions BUT without assigned program. We will focus specifically on design, representation and technical skill. Our quarter will be rich, complex, challenging, full of growth and development as designers of the LANDSCAPE, and ultimately rewarding.

AGENDA

In and out of studio we will concentrate on an agenda of the following:

DESIGN: as both a form-giving **PROCESS** and as the actual **FORM + CRAFT** given to the product.

LANDSCAPE: as a unique **PALETTE** of materials, qualities, characteristics, processes and experiences.

SITE: as a layered **COMPOSITE** of past cultural + natural events and a **CANVAS** for the next evolution.

REPRESENTATION: as a medium for **SEEING** what is both apparent and hidden in the landscape + as a medium for **PROJECTING** the future of the very same landscape.

VOCABULARY: as more than a collection of TERMS, but as a visual language to **COMMUNICATE, EDUCATE** and **ENGAGE** an audience.

PERMORMANCE: as a landscape that performs critical social and ecological functions, provides benefits, creates awareness of the landscape and operates beyond simple aesthetic roles.

LEARNING OUTCOMES

Through coursework, projects, desk crits and reviews, students will be expected to meet the following learning outcomes:

- interpret the vocabulary of design into projects.
- demonstrate various ways of interpreting and representing the landscape (at a variety of scales) using digital and analog media skills.
- synthesize the application of design theory (-ies) to a process of exploration of a project.
- formulate individual methods (including research, analysis, theoretical positions, and experimentation) in the quest for design form.
- demonstrate an understanding of the social, cultural, theoretical, performance and environmental conditions that go into the evolution of landscape form.
- demonstrate the value of using evaluative techniques in design criticism
- initiate a series of intellectual and practical design skills, tools and techniques to be further developed over time.

These objectives provide a framework for our activities and a basis for evaluating performance.

FORMAT

A quarter-long project will structure student learning throughout the quarter. The site for this work will be the Cal Poly campus. The updated campus master plan and discussions with campus planners will guide project locations and inform student decision making. Sites will be selected to help students assess existing conditions, make proposals for design improvements, and assess changes in performance values. Students are encouraged to make interdisciplinary and professional connections during the quarter. The course will connect with faculty and students in Civil Engineering, Architecture, Planning, Horticulture and Biology. Professional contacts include lectures, workshops, trainings and reviews with the Landscape Architecture Foundation (https://lafoundation.org/) and the Central Coast Low Impact Development Initiative (http://www.centralcoastlidi.org/), allied professionals and the department's advisory council.

Course activities will be structured around three areas with each area having specific learning outcomes, information sessions and assignments. The technical module and seminar will inform the studio project. The three areas are:

Technical Module – A series of three projects will expand understanding of landscape performance including the definition and scope of the term, communicating opportunities and calculating existing conditions and proposed improvements.

Design Project – A quarter-long exercise will guide learning and expand research, analysis, design and communication skills. The focus will be a self-selected site located on the Cal Poly campus using a design competition. We will also conduct fieldtrips, workshops and reviews during studio hours. Work outside of class hours is to be expected and might include: team meetings, presentation attendance, completing assignments, studio work and consultation with team partners, consultants and professionals.

Seminar – A reading, response and discussion seminar will develop a deeper understanding of design theory and the application of theory to the design process, design projects and the profession. Every student will read and respond to a set of texts. Design Project work should respond accordingly to readings and inform decision-making.

STUDIO RULES

- Report to studio on time and expect to stay the whole studio period. There will be no working from home during studio times.
- Class meets M W F from 8:10 to 12:00pm in studio 252.
- Take advantage of work periods to discuss your work with the instructor, fellow students and other faculty.
- Three unexcused absences will result in the drop of one whole letter grade. Notify the instructor PRIOR to the start of class if it is impossible for you to attend class.
- All students must have **2 desk crits per week – MINIMUM**. Desk Crits will not be given for ideas, notions or thoughts floating in the ether or still being developed inside of your head. Have physical work at your desk for discussion everyday.
- **NO TRACE, NO MARKERS FOR PRESENTATIONS or REVIEWS. PERIOD**. We will be building on your representation repertoire through model-making and digital media techniques. You are expected to grow and extend your representation skills.
- **WORK HARD, PLAY HARD!! NO FOOLIN'.**

ASSIGNMENTS

The course is defined by the following project segments. Refer to Project Assignment Handouts (provided separately) for specific requirements and the attached SCHEDULE for the required due dates. Each segment is weighted as follows:

Technical Module (20% final grade)	**Studio Project** (60% final grade)	**Reading Seminar** (20% final grade)
Project 1: Introduction to Landscape Performance: Communication + Precedent Project 2: Establishing Baseline / Existing Conditions Project 3: Landscape Performance Benefits Calculation	Project 1: Hydrological Transect – An Introduction to Campus Project 2: Design Project Project 3: Final Packaging / Presentation	Theory Seminar: Ecology, Sustainability, Design and Performance.

The technical module and reading seminar will be graded on a 100 point scale. Comments and a numerical grade will be provided for all work in these areas. All design project work will be evaluated based on three components of EQUAL value:

PROCESS: The act and actions of design – class participation, desk crits (2 per week), project research and investigations and project evolution. Evidence of design process will require time in class working as a group, as an individual at your desk and in consultation with the instructor. Your task is to continually improve upon and develop your ideas.

CONTENT: The thingness of design – depth, quality and sophistication of ideas, development of conceptual ideas and ultimate transformation into landscape form with attention to detail.

PRODUCT: The representation of design – landscape architects make representations before making landscapes. Effective visual communication from hand drawings, sketches, digital montage, models and final drawings must be completed with an eye for aesthetics, legibility and detail. Exploration and experimentation are considered – it's better to try and fail, than not.

ASSESSMENT AND GRADING

Your accomplishments will be measured by the instructors and also by peer review. Refer to the ASSIGNMENTS section for the grade percentages for each.

Assignments must be submitted on time. Refer to the attached COURSE SCHEDULE for required due dates and presentation reviews. A penalty of 10% of the total available grade will be assessed for lateness not covered by approved personal or family emergencies. This includes weekend and holiday days. No submissions will be accepted and no credit given after four late days.

LA 402 is a graded course. "I" grades will be issued only upon prior discussion with the instructor and receipt of appropriate documentation.

Letter grades will be assigned on the following basis:

93-100%	**A**	80-82.9%	**B-**	67-69.9%	**D+**
90-92.9%	**A-**	77-79.9%	**C+**	63-66.9%	**D**
87-89.9%	**B+**	73-76.9%	**C**	60-62.9%	**D-**
83-86.9%	**B**	70-72.9%	**C-**	Below 60%	**F**

GRADE LEVELS

Each assignment will be graded based on the following criteria:

A: Work which shows a superior understanding and execution of learning objectives and outcomes, design quality, and / or technical ability and which is creative, logically thought out, and well presented. Design intent and resolution are clear and creative, and an excellent overall response to a decision-making process has been undertaken.

B: Work which shows a good understanding of the learning objectives and outcomes, design, and / or technical issues. Designs are well presented. Some changes might be warranted to improve the design.

C: Work which shows a minimum and satisfactory understanding and execution of the learning objectives, required outcomes and design presentation needs.

D: Work which shows poor attainment and an inconsistent and incomplete understanding and execution of the course objectives, learning outcomes and effective presentation techniques. Extensive revisions are necessary.

F: Insufficient work and / or a project which shows a failure to comprehend or sufficiently grasp and demonstrate completion and attainment of course objectives, learning outcomes and required presentation techniques.

INTERESTS, ASPIRATIONS AND HOPES

During this quarter, I hope you will:

- **Explore place, theory, design activism, design process, strategic thinking and representation as applied to Landscape Architecture**
- **Analyze, Critic, Draw, Research, Compose, Model, Form, Repeat.**
- **Learn new design, technical and communication skills**
- **Refine your existing skills in order to work efficiently and effectively through the design investigation.**
- **Emphasize process OVER product in the studio.**
- **Challenge the campus landscape and community and give them something to ponder**
- **Do your very best work.**

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SCHEDULE ***(activities and deadlines subject to change).***

	M	W	F
week 0			**9/23** **INTRODUCTIONS** **Syllabus + Assign Design Project 1**
week 1	**9/26**	**9/28** **Design Project 1 Due (Webinar)** **Assign Tech Project 1**	**9/30** **SEMINAR 1**
week 2	**10/3** Information Session	**10/5** **Tech Project 1 Due** **Assign Tech Project 2**	**10/7** **SEMINAR 2 (LADAC VISIT)**
week 3	**10/10** Information Session	**10/12** **Tech Project 2 Due** **Assign Design Project 2**	**10/14** **SEMINAR 3**
week 4	**10/17** Information Session	**10/19** Information Session	**10/21** **SEMINAR 4**
week 5	**10/24** LOCAL FIELD TRIP TBD	**10/26** LOCAL FIELD TRIP TBD	**10/28** **SEMINAR 5**
week 6	**10/31** **Design Project 2** **MID REVIEW**	**11/2** Information Session	**11/4** **SEMINAR 6**
week 7	**11/7**	**11/9**	**11/11** **VETERAN'S DAY**
week 8	**11/14** **SEMINAR 7 (wrap up)**	**11/16**	**11/18** **Design Project 2 Review** **Assign Tech /Design Project 3**
week 9	**11/21** **THANKSGIVING BREAK**	**11/23** **THANKSGIVING BREAK**	**11/25** **THANKSGIVING BREAK**
week 10	**11/28**	**11/30**	**12/2**
week 11	**12/5**	**12/7**	**12/9** **FINAL REVIEW**
finals week	**12/12**	**12/14**	**12/16** **Competition Entries Due**

COMMUNICATING PERFORMANCE

LEARN, PROCESS, COMMUNICATE, INSTRUCT
PROJECT 1

introduction

Landscape Performance

Landscape performance can be defined as a measure of the effectiveness with which landscape solutions fulfill their intended purpose and contribute to sustainability. No matter how sustainability is defined – zero carbon, net zero water, biodiversity, quality of life – it cannot be achieved without considering landscape.

http://landscapeperformance.org/about-landscape-performance

The technical module will focus on the understanding, communication, use and integration of landscape performance into the studio project. For this effort we will be assisted by the Landscape Architecture Foundation. Founded over 50 years ago, the LAF provides critical leadership and support to the profession. For information on the mission and scope of effort for LAF (including scholarship availability), visit: https://lafoundation.org/.

This first project of the technical module provides an overview of Landscape Performance, an orientation of available resources (including a webinar from LAF) and an opportunity to communicate to the campus community about Landscape Performance. Working in teams, you will communicate specific aspects of Landscape Performance to a defined audience.

scope of work

Create teams to address the following scope of work. Each team member is responsible for knowing and contributing to the project.

STEP 1: KNOW YOUR INTENDED AUDIENCE

Groups will select one of the targeted audiences and be responsible for developing an audience profile. Questions to consider about your audience: *What are their roles on campus? What are their responsibilities? Who typically communicates with them and how? How do they use or think about campus? What are 'their issues' for campus? How are they concerned about issues related to the campus landscape, the role of the campus in the community, the campus in bigger contexts, and issues facing the environment (sustainability, resiliency, climate-change)?*

Audiences:
Administration - President, Provost, College Deans, Deciders + Decision Makers
Facilities & Operations – Planning + Campus Development, Facilities Operations, Grounds
Campus Faculty + Staff – All levels of instructional faculty and support staff.
Campus Students – Current students (might consider future and recent as well)
General Community – Neighbors, City Officials, City Residents

STEP 2: KNOW YOUR MATERIAL

Know the following:

Groups will be responsible for knowing the ins and outs of LP in order to craft a message for the assigned audience. Each team member is responsible for knowing the definition of, the purpose of, the goals for, the basic mechanics of and some representational projects from the references provided. Individual knowledge will need to be coalesced into the message, but will also be utilized later in the quarter. The main source of material can be found on the Landscape Performance website: http://landscapeperformance.org/. Additional resources are posted on blackboard.

STEP 3: DEVELOP A MESSAGE

Groups will develop a message for the selected audiences that covers at a minimum: a definition in terms your intended audience can understand, the purpose and value of the program, the basic mechanics of evaluation, and a figurative comparison to help facilitate understanding of these concepts. Groups will need to consider what the audience knows, what they are concerned with, what they need to know, and why this is important for them to know and match these concerns with the basics of landscape performance. The goal for making this presentation is to have your audience pay attention to, be concerned with, learn about and in turn promote the idea of landscape performance on campus.

STEP 4: DELIVER YOUR MESSAGE

Groups will create a delivery method and product in the mediums (minimum 2, preferred 3) appropriate to the audience, the material and the message. While a powerpoint might seem like the only method, you are encouraged to save this for the class presentation. Each group will provide a simulated presentation of their work to the class and invited guests. A package of materials will be turned in for credit. Consider the following communication medium for your work:

Group presentation (slides, handouts, videos)
Social media strategies
Information campaign (open house, booth, fliers, walking campus, handouts)
Guerrilla messaging/marketing
Wildcard / Hybrid / Invented (perhaps a combination, perhaps something not thought of).

deliverables

The following are required:

1. Focused content and packaging that addresses the audience, the material and the message for landscape performance.
2. A simulated presentation to your target audience or a review of your delivery strategy.

Materials for this assignment will be posted on the Landscape Performance Series 'Resources for Educators' section. Your very best work is required. Work will be presented on Wednesday, October 5th beginning at 8:30am.

project goals

1. **to describe basic concepts, functions and purposes of landscape performance.**
2. **to consider the audience in your communication strategy (beyond your fellow students and the faculty)**
3. **to communicate the value of the landscape to the campus community, beyond landscape as a pleasing aesthetic.**

BASELINE DATA

REVIEW, COLLECT, CALCULATE
PROJECT 2

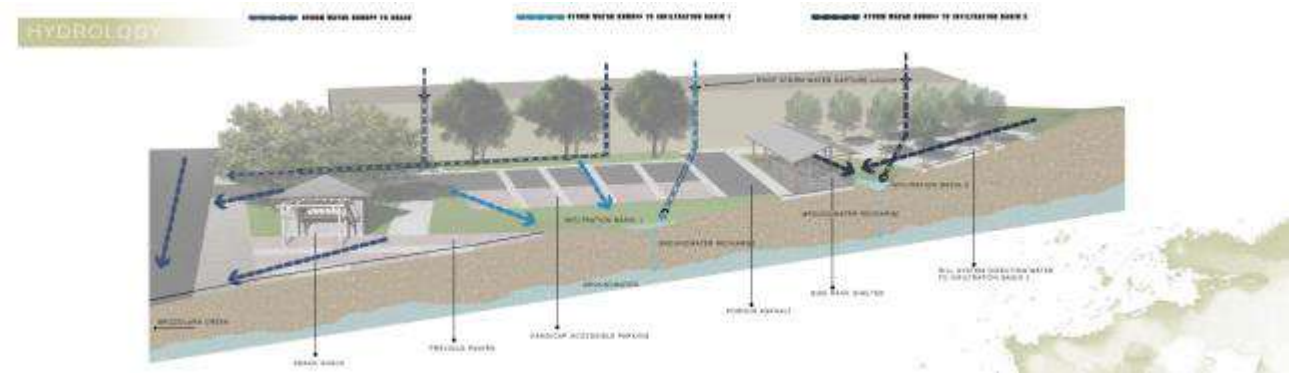

image from: LA 402, fall 2014 student work

introduction

The second project in the technical module will focus on establishing baseline data for specific areas of campus. This project is intended for you to – get a handle on how campus landscapes are currently performing, understand basic methodology of calculating performance measures, and to tease out potential campus sites for future design efforts.

Before starting this work, it is important to understand that there are not simple or direct methods for calculating baseline data. While there are some helpful internet calculators to use, most of the work will rely on emulating methods established in the case studies. This work requires an ability to dissect case studies and an ability to work through problems to a point of resolution.

scope of work

Working in teams of two and threes (one team of three, five teams of two), you are to establish baseline data for a pair of campus sites. There are six pairs of sites and teams will select pairs on Wednesday.

STEP 1
Review your site(s) in person and refine site boundaries. Initial outlines on Google Maps are based on aerial maps only. Adjust boundaries to include peripheral areas, walkways, drainage paths or other aspects that make your site. Using an online map or resources available on Polylearn, create a precise outline for your sites. Use as accurate base map as you can find and take as accurate measurements as you can given the time constraints of the project.

STEP 2
Review the list of proposed metrics to evaluate as well as various methodologies for calculating performance. Review the Landscape Performance: A Guidebook for Metric Selection. Additional resources include review of the Case Studies, the Fast-Fact library or the LAF Guidebook. Select 4-6 metrics to analyze for both of your sites. Sites were paired to establish 'compare and contrast' scenarios across two projects.

STEP 3
Calculate performance. You are to keep a record of your methodology and your sources. Establish an estimate for the selected metrics and record the outcomes.

STEP 4

Create a simple graphic on 11x17 sheets. The first page should clearly identify your site, site boundaries and outcomes. Use subsequent pages to document the process and methods utilized.

deliverables + schedule

The following is required:

1. A 11x17 package as noted above..
2. Participation in the peer-review session on Monday, October 10th.

The following dates should serve as a guideline for your work:

Friday, October 7	Desk crits to review sites, preliminary metric selections and methodology
Monday, October 10	Peer-review session and desk crits.
Wednesday, October 12	Project due for presentation and discussion

project goals

1. to describe basic landscape performance metrics and methodologies.
2. **to establish landscape performance baseline conditions for campus sites**

metrics

Total Square Footage of Refined Site (Everyone Must complete these)
Square Footage of Individual Surfaces
-Materials (Asphalt, Concrete, Lawn, Ground Cover, etc.)
-Impermeable vs. Permeable
-Hardscape vs. Softscape
-Uses – Parking/Car/Bike vs. People/Social

Environmental Metrics

Plant Facts:
-Water Use (high, medium, low)
-Ecological Value (food, pollination, habitat, etc.)
-Lawn, Ground Cover, Shrubs, Trees (square footage or quantities)

Tree Facts:
-Storm Water
-Carbon Sequestration
-Shade
-Air Pollutant Removal

Water Facts:
-Annual Precipitation
-Annual Volume of Storm Water
-Average Storm Size
-Volume of Water in Average Storm Size

Transportation Facts:
-Automobile lanes and parking
-Bike Lanes and bike parking
-Walkways

Social Metrics

Recreational/Social Value:
-Seating
-Play / Recreation
-Study spaces
-Number of Visitors / Overall Use

Educational Value:
-Signage
-Teachable moments

Awareness, Access + Safety:
-Directional signage
-Lighting
-Accessible features

PERFORMANCE BENEFITS

REVIEW DESIGN, CALCULATE BENEFITS, RE-DESIGN, COMMUNICATE
PROJECT 3

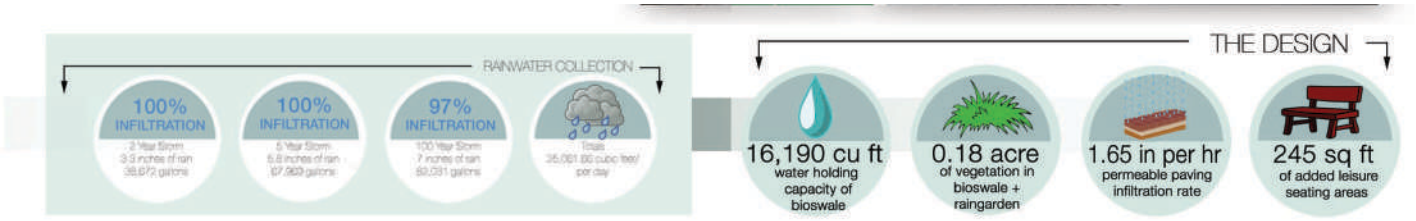

image from: LA 402, fall 2015 student work

introduction

The third project in the technical module will have you calculate the performance benefits for your studio project. If you have not already established the baseline conditions for your site, you will need to calculate that as well.

This project is intended for you to understand how your design decisions have improved (hopefully) aspects of landscape performance within your project. You are expected to recall earlier work from the quarter regarding the communication of landscape performance and the methodology of calculating baseline conditions. Use of the Landscape Performance: A Guidebook for Metric Selection, the LAF Landscape Performance Case Studies and the LAF Landscape Performance Fast-Fact library are required references for this work.

As with project 2 in this series, it is important to understand that there are not simple or direct methods for calculating baseline data. While there are some helpful internet calculators to use, most of the work will rely on emulating methods established in the case studies. This work requires an ability to dissect case studies and an ability to work through problems to a point of resolution.

scope of work

Reviewing your studio work to date, establish baseline data and noted improvements in landscape performance for your studio project. For this project, you will create 11x17 sheets that document your work and your calculations.

STEP 1
Review your site(s) in person and delineate site boundaries for your work. Quantify the following data for your existing site:

- Total Square Footage of Refined Site
- Square Footage of Individual Surfaces
  -Materials (Asphalt, Concrete, Lawn, Ground Cover, etc.)
  -Impermeable vs. Permeable
  -Hardscape vs. Softscape
  -Uses – Parking/Car/Bike vs. People/Social
- Drainage Area (Square Footage of landscape that create a contributory watershed for your project)
- Any baseline(existing) conditions for the Environmental or Social Metrics you have considered in your design.

STEP 2
Review and evaluate your current design. Many of you have noted improvements in conditions. Review and follow-through with these efforts for each category of performance. For each category you must have

existing and proposed benefits. While this work might seem painstaking or tedious, consider how you might use your final data to help frame your design proposal.

STEP 3
Document your calculations. In order for your performance benefits to move from 'claims' to 'calculations' you must document how you established your baseline and improved benefits. Keep your work legible, simple and easy-to-follow.

STEP 4
Create compelling GRAPHICS for your before and after conditions. Consider how this work reads as stand-alone graphics as well as could be integrated into your final design boards.

For the submission of this work, all work should be on 11x17 sheets. The first page should clearly identify your site, site boundaries and an overview of landscape performance. The following pages should CLEARLY note 'current' and 'improved' (or BEFORE and AFTER) conditions. The remaining pages should include your calculations. The last page should include any references. This work will be featured on Landscape Performance Series 'Resources for Educators' website.

deliverables + schedule

1. A 11x17 package as noted above.
2. All work should be completed by Wednesday, December 7th at 12noon and uploaded to Polylearn.

project goals

1. **to apply basic landscape performance metrics and methodologies to gauge changes in performance within your studio project**

metrics

Total Square Footage of Refined Site (Everyone Must complete these)
Square Footage of Individual Surfaces
-Materials (Asphalt, Concrete, Lawn, Ground Cover, etc.)
-Impermeable vs. Permeable
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Environmental Metrics

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Tree Facts:
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-Shade
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Transportation Facts:
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-Walkways

Social Metrics

Recreational/Social Value:
-Seating
-Play / Recreation
-Study spaces
-Number of Visitors / Overall Use

Educational Value:
-Signage
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Awareness, Access + Safety:
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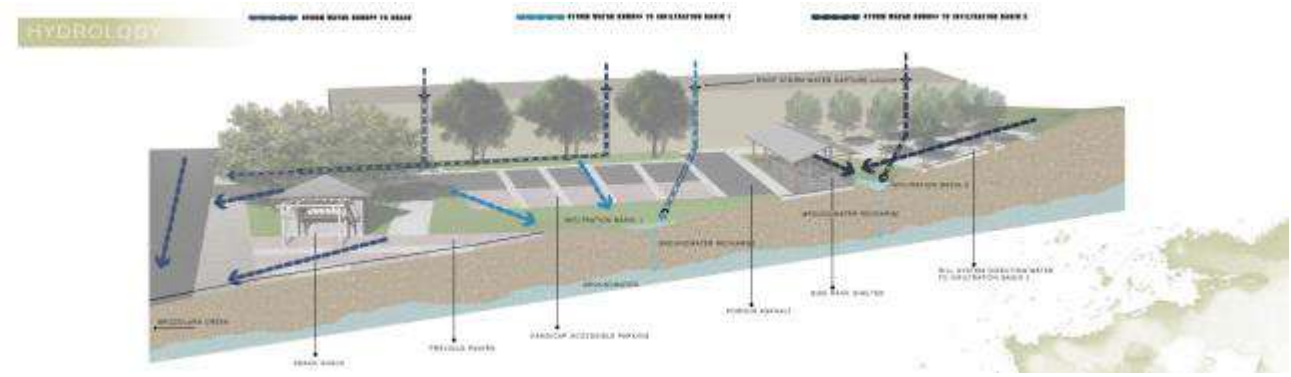

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Social Metrics

Recreational/Social Value:
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-Play / Recreation
-Study spaces
-Number of Visitors / Overall Use

Educational Value:
-Signage
-Teachable moments

Awareness, Access + Safety:
-Directional signage
-Lighting
-Accessible features

N PERIMETER RD.

ZACHARY STREED,RYAN CHASE

SOCIAL METRICS

Seating: very limited, no benches along entire length of curb or shoulder
play/recreation: opportunity to incorporate animals in irrigation testing field, animal watching/birdwatching
Study spaces: Via Carta leads to botanic garden that has study spaces, none along road, not an ideal place for study space anyway due to high traffic and noise, safety concerns
Number of visitors/overall use: roughly 2,000 spaces, filled to near capacity on weekdays

ENVIRONMENTAL METRICS

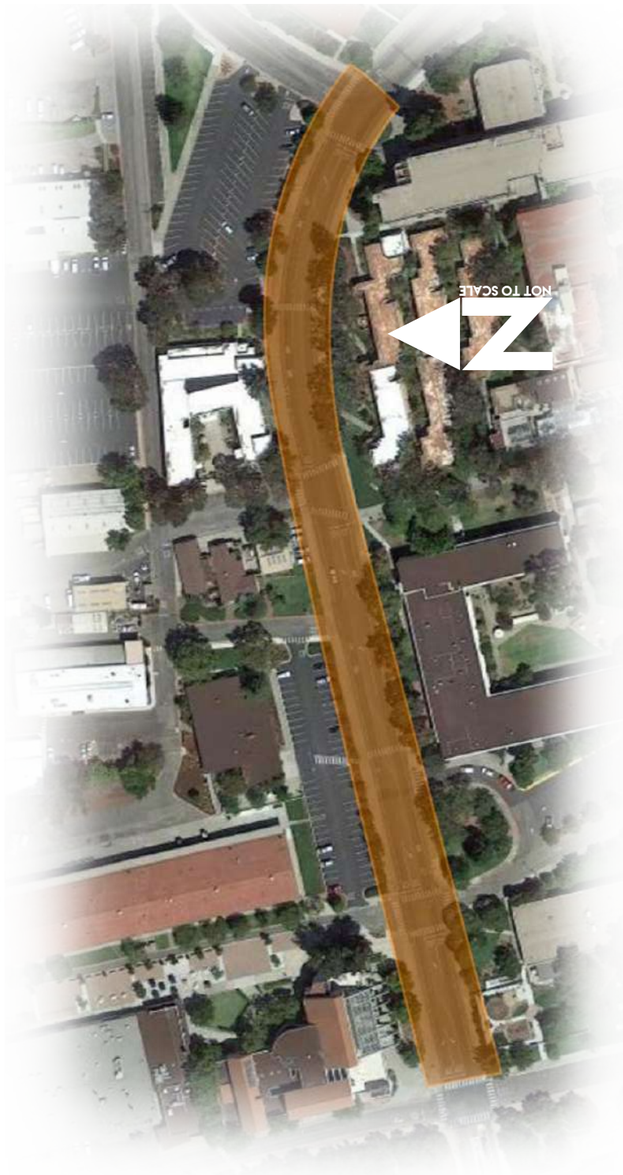
Water Facts:
Annual average precipitation: 19.02 inches
Volume of water in average storm: 0.13 cubic feet per second (cfs) rational method
Soil: Los Osos loam classified as very high surface runoff
1% annual flood hazard along via carta

TRANSPORTATION METRICS

2/3 lane road, one lane each way
consistent bike lane on both sides of the road
Site terminates at a bus stop
Feeds into 5 cross streets
4 Stop signs
16 Crosswalks
Multiperson sidewalks on both sides through entire site
Direct link to 3 parking lots, one with 95 spots, one with 60 spots, one with 15 spots
3 small bike racks, one large on site

PLANT METRICS

Plant Species: Manzanitas, Floss Silk Oaks, Protea Pincushion, California Sycamores, Jacarandas
Water Requirements: Low to Mid, primarily CA natives or similarly drought tolerant plants



VIA CARTA RD.

ZACHARY STREED,RYAN CHASE

SOCIAL METRICS

Seating: very limited, no benches along entire length of curb or shoulder
play/recreation: opportunity to incorporate animals in irrigation testing field, animal watching/birdwatching
Study spaces: Via Carta leads to botanic garden that has study spaces, none along road, not an ideal place for study space anyway due to high traffic and noise, safety concerns
Number of visitors/overall use: roughly 2,000 spaces, filled to near capacity on weekdays

ENVIRONMENTAL METRICS

Water Facts:
Annual average precipitation: 19.02 inches
Volume of water in average storm: 0.13 cubic feet per second (cfs) rational method
Soil: Los Osos loam classified as very high surface runoff
1% annual flood hazard along via carta

TRANSPORTATION METRICS

2 lane road, single dividing line
Single bike lane, consistent through site
Site has one dead end for the public
Feeds into 2 cross streets
No Stop signs
2 Crosswalks
Single person/Dual sidewalk on one side, inconsistent and terminates before end of site

PLANT METRICS

Plant Species: Pines, Manzanitas, Chaparral Brush
Water Requirements: Low to Mid, primarily CA natives or similarly drought tolerant plants

BASELINE DATA

PRECEDENTS IN LANDSCAPE PERFORMANCE

Two Study Sites: Campus Way & Mustang Way

Overall Metrics:

Total Square Footage: 126, 250 sq. ft.
Campus Way - 18,750 South Perimeter: 107,500

Materials - Concrete, LID Lawn line edges, Tree Canopies

Surfaces - S.P. 70%/30% imp/perm | C.W. 58%/42% imp/perm

Hardscape vs. Softscape - 64% hard vs. 36% soft

Uses- Minimal parking, mostly used for tranportation via bike or car. No spaces for social gatherings

1 Environmental Metrics:

Plant Facts:
- Water Use - Low
- Ecological Value - Trees for bird nests
- Lawn, Ground Cover - 25% Ground cover

Tree Facts:
- Storm Water - 1995 gal/yr
- Carbon Sequestration - 2,200 lbs CO2
- Shade - Full Shade
- Air Pollutant Removal - Ozone, Nitrogen Dioxide, Sulfur Dioxide

Water Facts:
- Annual Precip - 20 in./yr
- Annual Volume of Storm Water - n/a
- Average Storm Size - 2in per storm
- Volume of Water in Avg. Storm Size n/a

Transportation Facts:
- Automobile lanes in parking- 1-lane, no parking
- Bike Lanes and Bike parking- bike lanes only
- Walkways- 2 sidewalks

2 Environmental Metrics:

Plant Facts:
- Water Use - Low
- Ecological Value - Low
- Lawn, Ground Cover - Low

Tree Facts:
- Storm Water - n/a
- Carbon Sequestration - n/a
- Shade - n/a
- Air Pollutant Removal - n/a

Water Facts:
- Annual Precip - 20in./yr
- Annual Volume of Storm Water - n/a
- Average Storm Size - 2in. per storm
- Volume of Water in Avg. Storm Size - n/a

Transportation Facts:
- Automobile lanes in parking- 2-lane, minimal parking
- Bike Lanes and Bike parking - bike lanes, minimal parking
- Walkways - 2 sidewalks

1 Social Metrics:

Recreational/Social Value:
- Seating - n/a
- Play/Recreational - n/a
- Study Spaces - n/a
- Number Visitors/Overall Use - low

Educational Value:
- Signage - n/a
- Teachable Moments - 1 instance

Awareness, Access + Safety
- Directional Signage - minimal
- Lighting - poor lighting, not safe at night
- Accessible Features - n/a

2 Social Metrics:

Recreational/Social Value:
- Seating - low
- Play/Recreational - n/a
- Study Spaces - n/a
- Number Visitors/Overall Use - med

Educational Value:
- Signage - n/a
- Teachable Moments - med

Awareness, Access + Safety
- Directional Signage - low
- Lighting - poor lighting
- Accessible Features - even grade

Joe Ragsdale | LA 402 | Fall 2016
Nate Noblitt & Nathan Torres

Michael Lenahan
Ileana Konvisor

LA 402

Poly Canyon Village

Site 1

~85% Softscape

~15% Hardscape

0% lawn space for seating

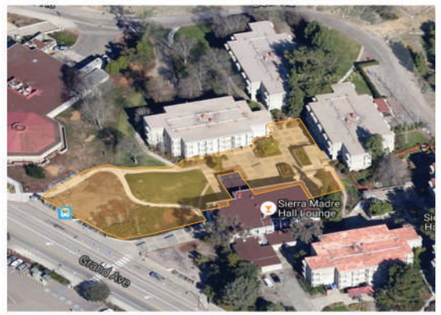
Over 1000 students living along the perimeter of the site

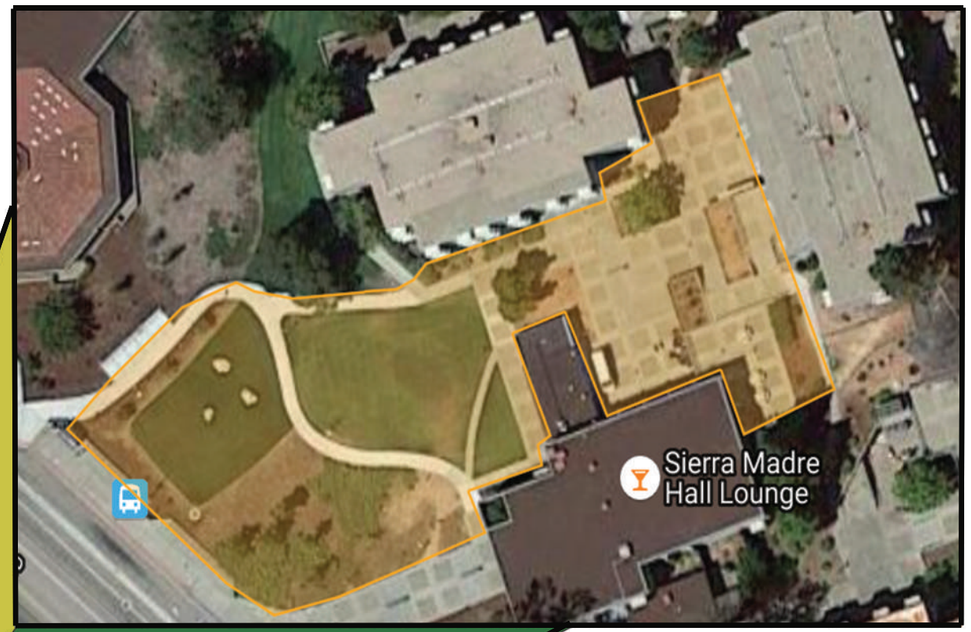
8 entrances to buildings

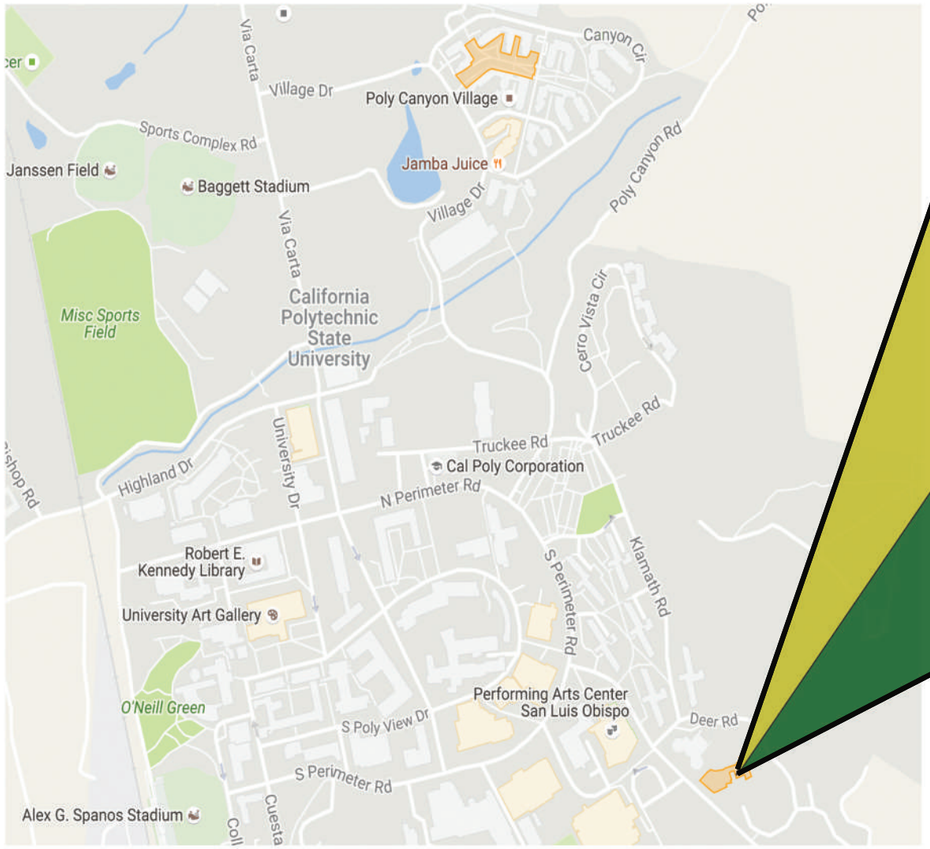
~80% of the time the site is used for walking by students

Sierra Madre Dorms

Site 2







~45% Softscape

~55% Hardscape

90% of the time the site is used is student walking

Most common material is concrete

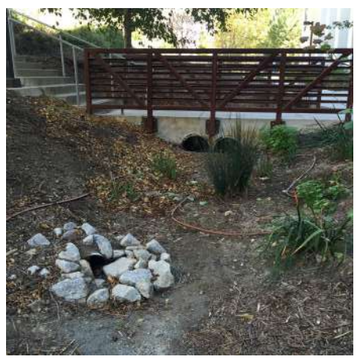
~35% available lawn space

Climate:

San Luis Obispo recieves an average of 31 inches of rain per year.
Over the course of a year the temperature typically varies from 40°F to 79°F.
There is an average of 49 days of percipitation each year.
There is an average of .63 inches of rain per storm.

PCV Dorms

- Area of Site: 70,000 square feet
- Volume of rain: 180,833 cubic feet/year
- Volume of rain: 3,690 cubic feet/storm
- 25 trees on site
- 3 Storm Drains
- 1 Continuous Swale



Sierra Madre Dorms

- Area of Site: 32,000 square feet
- Volume of rain: 82,667 cubic feet/year
- Volume of rain:1,687 cubic feet/storm
- 3 trees on site
- 5 Storm Drains
- No Swales



Plant Invantory

PCV Dorms

Heteromeles arbutifolia
Sunset Zones 5 - 9 and 14 - 24.
Exposure: Full Sun to Partial Shade.

Quercus agrifolia
Sunset Zones 7 - 9 and 14 - 24.
Exposure: Full Sun to Partial Shade.

Rhamnus californica
Sunset Zones 3a-10, 14 - 24.
Exposure: Full Sun, Deep Shade, Light Shade

Salvia clevelandii
Sunset Zone 8-9, 12 - 24
Exposure: Full Sun

Juncus patens
Sunset Zones 4-9, 14-24
Exposure: Sun or Shade

Arctostaphylos pacific mist
Sunset Zones 1 - 24
Exposure: Full Sun, Part Shade

Fremontodendron californicum
Sunset Zone 4 - 12
Exposure: Full Sun

Platanus Racemosa
Sunset Zones 4 - 24
Exposure: Full Sun

Plant Invantory

Sierra Madre Dorms

Callistemon speciosus
Sunset Zones 8 - 11
Exposure: Full Sun, Part Shade

Magnolia grandiflora
Sunset Zones 7 - 9
Exposure: Full Sun

Poa pratensis
Sunset Zones 7 - 10
Exposure: Full sun

Arbutus unedo
Sunset Zones 4 - 9
Exposure: Sun or Semi-shade

Aloe vera
Sunset Zones 7 - 10
Exposure: Full Sun

Liquidambar styraciflua
Sunset Zones 5 - 9
Exposure: Full Sun

Arctostaphylos pacific mist
Sunset Zones 1 - 24
Exposure: Full Sun, Part Shade

Pinus ponderosa
Sunset Zones 3 - 7
Exposure: Full Sun

Recreational/Leisure

Poly Canyon Village

2,670 residents housed total
~1000 of those residents live in buildings that border the site

0% lawn space for seating
3 Gathering Spaces
8 Benches
1 Bike Rack (fits ~10 bikes)

Overall Use of Space:
~80% Students- Walking
~15% Housing Maintenance Use
~ 5% Students- Bikers

~85% Softscape
~15% Hardscape

Sierra Madre Dorms

Unknown number of residents total
~600 residents live in the buildings that border the site

~35% of site is lawn space for sitting/recreational activity
6 Gathering Spaces
- 2 softscape/4 hardscape
3 Benches
2 Bike Racks (~20 bike spaces)

~ 90% Students- Walking
~ 10% Housing/Mainenance Use

~ 45% Softscape
~ 55% Hardscape

Safety/Sustainability/Education

Poly Canyon Village

- Pathway system can be misguiding, less efficient
- Use of energy efficient outdoor lights
- Some sinage for handicap access
- Drip-line irrigation

- Teachable moments on site include:
  - 1 nature sign about habitat
  - Study use of native plant and plant design
  - A Swale system
  - Learn about grade change regarding ADA

1 Blue 911 call tower located just off the site
19 Light Poles
1 Educational Sign
8 Entrances to the connected buildings

Sierra Madre Dorms

- Pathways are more simple
- High use of concrete, creates more risk of injury
- Energy efficient outdoor lights
- Some sinage for handicap

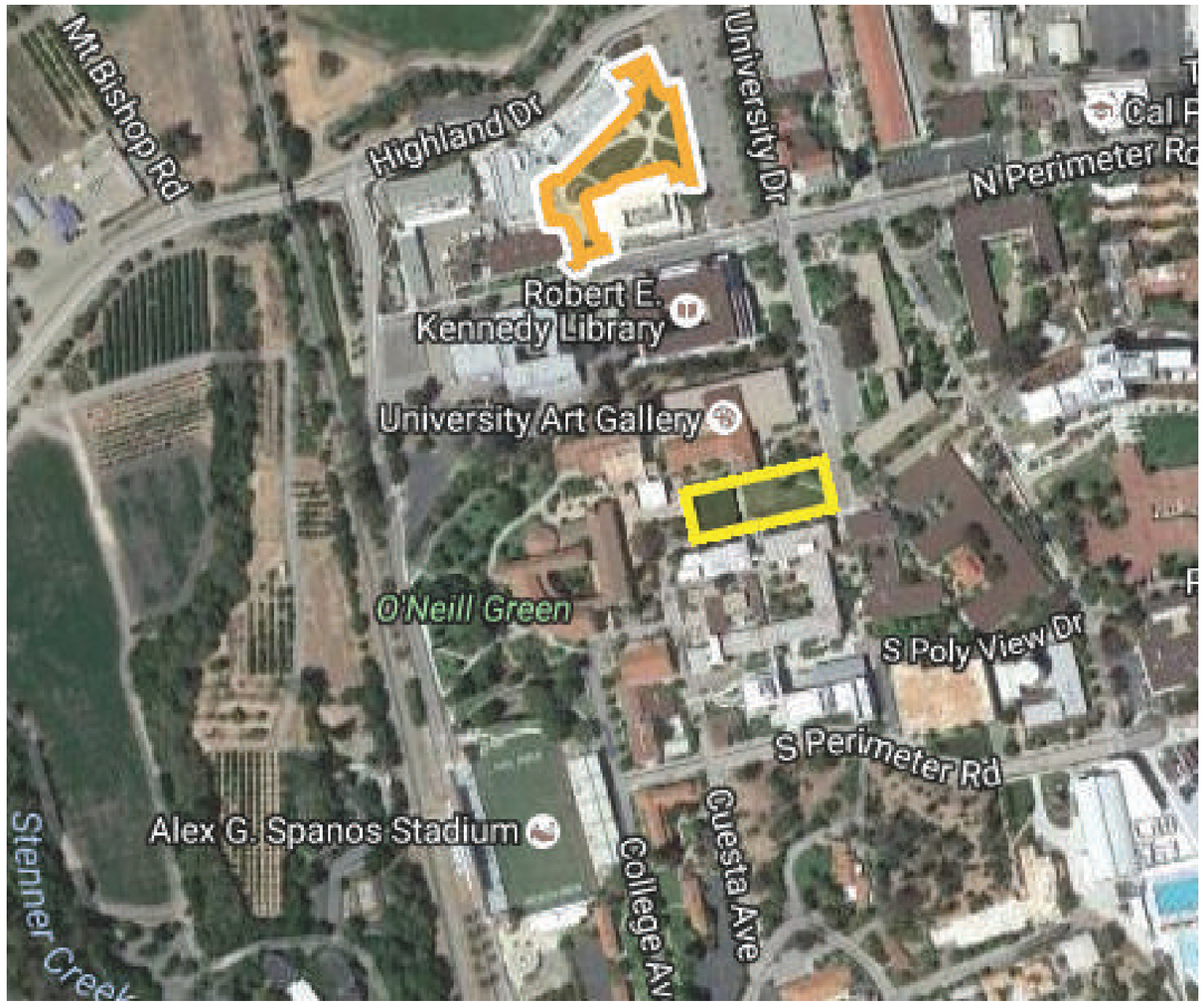
- Some native plant use
- Topography in softscape
- Enough room in some parts to fit a classroom

0 Blue 911 call towers
~17 Light Posts
0 Educational Signs
6 Entrances to the connected buildings

METRICS

LANDSCAPE PERFRORMANCE IN DEXTER LAWN & THE ENGINEERING LAWN AND PLAZA

LIBBY JACOBSON, BLAKE RAWLINGS,
SILVIA VIOLA
LA 402
FALL 2016



DEXTER LAWN

SOCIAL METRICS

Seating: 1 bench (3 people), lawn seating
Play/Recreation: Thursday Volleyball, frisbee, yoga, reading. Create your own activities.
Average Lawn Size: 10,716 sq ft (3 larger lawns)
Study Spaces: 0, create your own
Overall Use: Active space. People passing through constantly as well as hanging out for long periods of time.

Data Gathering Method: Observation, Google Maps

SQUARE FOOTAGE

Square Footage: 51,836.4 sq ft
Materials: Concrete, Brick, Grass
Grass: 32190.84 sq ft
Brick: 6664.68 sq ft
Concrete: 12980.88 sq ft
Hardscape: 38%
Softscape: 62%

Data Gathering Method: Google Maps

TRANSPORTATION

Bike parking: 0. No Bike Zone.
Walkways: 19,241 sq ft or 37% of the site, 4 walkways cut through lawn

Data Gathering Method: Google Maps and Observation

WATER FACTS

Annual Precipitation: 12.33”
Annual Volume of Stormwater: 52,218 ft cubed
Average Storm Size: 90% storm
Volume of water in average storm size: (depth x area) 3,878 ft cubed
Water Use: High due to frequent lawn maintenance

Data Gathering Method: National StormWater Calculator by the EPA found through the Landscape Performance Series.

TREE FACTS

Storm Water: 6,873 gal per year
Carbon Sequestration: 1.093 lb per year
Shade: 2,831 sq ft
Shrubs: N/A

Data Gathering Method: Tree Calculator by Landscape Performance Series

ENGINEERING LAWN AND PLAZA

SQUARE FOOTAGE

Square Footage: 80150.4 sq ft
Materials: Grass, Concrete
Grass: 32234.4 sq ft
Concrete: 47916 sq ft
Hardscape: 60%
Softscape: 40%

Data Gathering Method: Google Maps

SOCIAL METRICS

Seating: 5 tables, 9 benches, 1 seat wall
Play/Recreation: space for it, plenty of shady lawn area
Average Lawn Size: 6,795 sq ft (5 small lawns)
Study Spaces: plenty of shady lawn areas, tables and benches more in direct sun
Overall Use: Active, lots of potentials for outdoor study spaces

Data Gathering Method: Observation, Google Maps

WATER FACTS

Annual Precipitation: 12.33”
Annual Volume of Stormwater: 80,741 ft cubed
Average Storm Size: 90% storm
Volume of water in average storm size: (depth x area) 5,997ft cubed
Water Use: High due to frequent lawn maintenance

Data Gathering Method: National StormWater Calculator by the EPA found through the Landscape Performance Series.

TRANSPORTATION

Bike parking: 8 racks
Walkways: 12980.88 sq ft or 38% of the site

Data Gathering Method: Google Maps and Observation

TREE FACTS

Storm Water: 5,610 gal per year
Carbon Sequestration: 1588 lb per year
Shade: 3,092 sq ft
Shrubs: 04% or 3,291 sq ft

Data Gathering Method: Tree Calculator by Landscape Performance Series

Baseline Data.

Patrick Kelty - Kimberly Emmen - LA 402 - Fall Quarter 2016

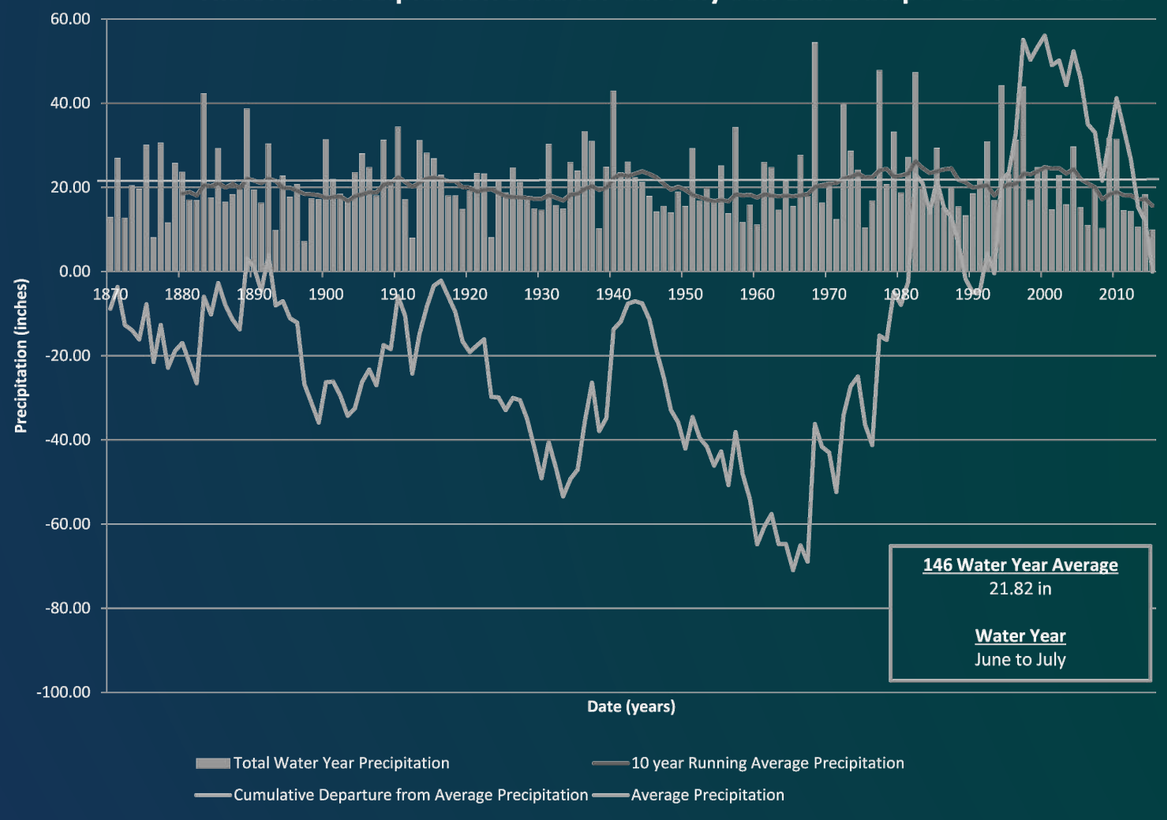
Introduction and Findings:

The campus sites for this technical module were two parkings lots; parking lot A is a staff parking lot located off of California Blvd near O'Neill Green and parking lot B is a general parking lot off of Via Carta near the John L. Merriam Irrigation Practices Field. Both parking lots were found to have a high percentage of impermeable paving. Storm water from both parking lots has the potential to add millions of gallons of polluted runoff into storm drains with outlets in Brizzolara Creek. The trees in both parking lots were of varying species and sizes, but overall it was noted that there were many older trees. According to the National Tree Benefit Calculator, older trees are less effective at capturing CO2. The rainfall map (below) shows rainfall data over the past 146 years (1870-2015) collected and tracked by the Cal Poly weather station. It indicates that rainfall has fluctuated a great deal, but shows the average was 21.82 inches, with the past 5 years falling well below that average.

The Method:

The initial analysis was done by site visit survey, where we counted parking spaces (and types) and measured diameter of trees. We then analyzed the data collected to calculate base line metrics. The rainfall data was calculated using the Cal Poly Irrigation Training and Research Center website (http://www.itrc.org/databases/precip/) where we located a rainfall graph. The tree data was calculated using the National Tree Benefit Calculator (http://www.treebenefits.com/calculator/index.cfm). Each tree was calculated for its total CO2 reduced in the atmosphere (which is a combination of sequestered and avoided) and the total storm water intercepted. It was also noted that there was no functioning irrigation at either parking lot, therefore the base line irrigation water usage is zero.

Historical Precipitation Data for Cal Poly San Luis Obispo - 1870 to 2015



Do The Math:

- Annual Rainfall 21.82 inches (~1.82 ft.)

- Annual Rainfall in volume

PARKING LOT (A) 82,004 ft² Area
× 1.82 ft annual rainfall
149,247.28 ft³ (1 ft³ = 7.48052 gallons)
× 7.48052 gallons
1,116,447.26 gallons/annually

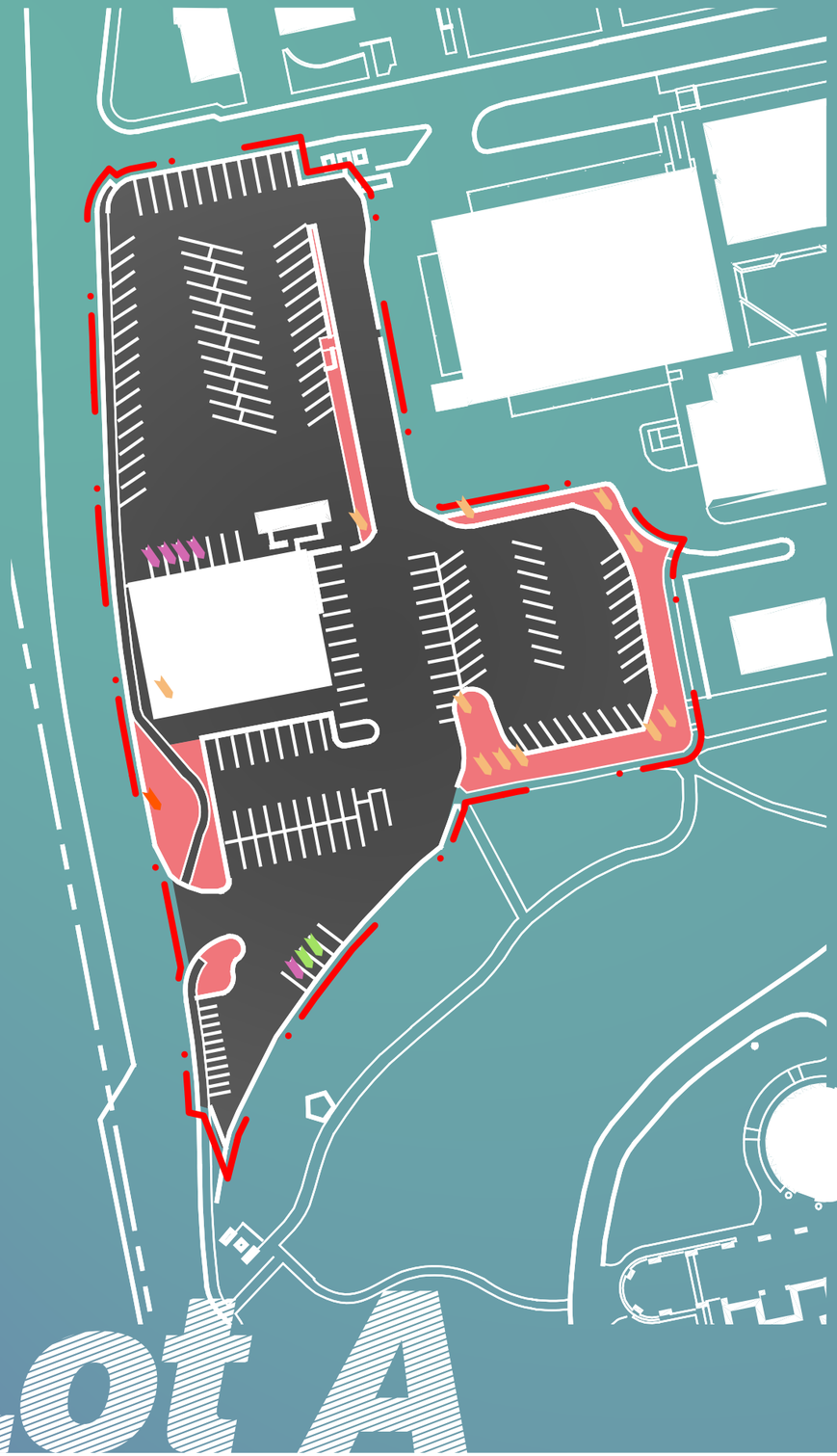
PARKING LOT (B) 201,088 ft² area
× 1.82 ft annual rainfall
365,980.16 ft³ (1 ft³ = 7.48052 gallons)
× 7.48052
2,737,721.91 gallons/annually

- TREES – TOTAL CO_2 REDUCED IN ATMOSPHERE (Combo of sequestered + avoided)

PARKING LOT (A) 2,820 lbs./annually
PARKING LOT (B) 11,993 lbs./annually

- TREES – STORM WATER INTERCEPTED

PARKING LOT (A) 19,606 gallons/annually
PARKING LOT (B) 53,788 gallons/annually



Lot A

SCALE: 1" = 50'

N

The Score So Far:

Parking low A sits on the western side of campus. The lot is characteristic of many parking areas on campus, being dominated by impermeable asphalt. Very little shade is available in the lot, with vegetated areas pushed to the edges. There are several large trees on the site however, some larger than 4ft in diameter. There is one historically significant tree on the western side of the lot which commemorates the 1906 Cal Poly graduating class.

82,004 sq.ft. ..... Total Surface
74,080 sq.ft. ..... Impermeable Surface
7,924 sq.ft. ..... Permeable Surface
1,116,447 gal. Annual ..... Rainfall
2,820 lb. Annual ..... CO2 Sequestered
19,606 Gal. Annual ..... Storm Water Intercepted
0 sq. ft. ..... Irrigated
11 ..... Trees
..... Commemorative Oak
148 ..... Parking Total
2 ..... Guest Parking
5 ..... Disabled Parking
0 ..... Metered Parking
130 ..... Staff Parking
11 ..... Motorcycle Parking

Campus Map

Lot B

SCALE: 1" = 50'

N

The Score So Far:

Parking lot B is part of Cal Polys more northerly parking areas, and shares use between commuting students, resident students, and faculty. Although there are vegetated medians in the lot they provide little shade. Existing irrigation infrastructure appears to be abandoned in place.

201,088 Sq. Ft.	Total Surface
74,080 Sq.Ft.	Impermeable Surface
1,573 Sq.Ft.	Permeable Surface
2,737,721 Gal. Annual	Rainfall
11,993 CO_2	CO_2 Sequestered + Avoided
53,788 Gal. Annual	Storm Water Intercepted
0 Sq. Ft.	Irrigated
45	Trees
535	Parking Total
0	Guest Parking
0	Disabled Parking
0	Metered Parking
52	Staff Parking
20	PCV Parking
463	General Parking

Campus Map

PERFORMANCE BENEFITS

REVIEW DESIGN, CALCULATE BENEFITS, RE-DESIGN, COMMUNICATE
PROJECT 3

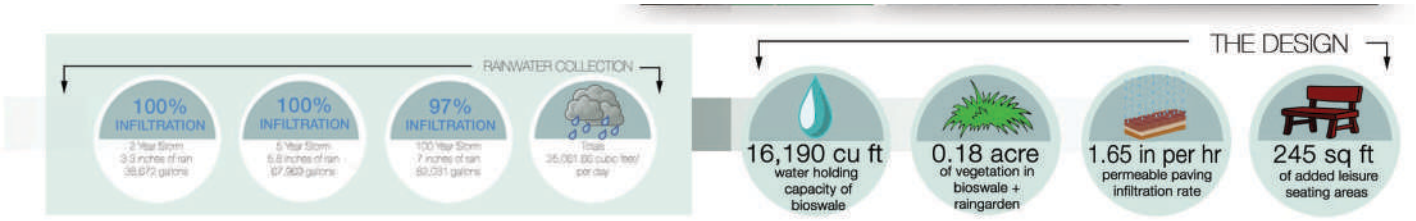


image from: LA 402, fall 2015 student work

introduction

The third project in the technical module will have you calculate the performance benefits for your studio project. If you have not already established the baseline conditions for your site, you will need to calculate that as well.

This project is intended for you to understand how your design decisions have improved (hopefully) aspects of landscape performance within your project. You are expected to recall earlier work from the quarter regarding the communication of landscape performance and the methodology of calculating baseline conditions. Use of the Landscape Performance: A Guidebook for Metric Selection, the LAF Landscape Performance Case Studies and the LAF Landscape Performance Fast-Fact library are required references for this work.

As with project 2 in this series, it is important to understand that there are not simple or direct methods for calculating baseline data. While there are some helpful internet calculators to use, most of the work will rely on emulating methods established in the case studies. This work requires an ability to dissect case studies and an ability to work through problems to a point of resolution.

scope of work

Reviewing your studio work to date, establish baseline data and noted improvements in landscape performance for your studio project. For this project, you will create 11x17 sheets that document your work and your calculations.

STEP 1
Review your site(s) in person and delineate site boundaries for your work. Quantify the following data for your existing site:

- Total Square Footage of Refined Site
- Square Footage of Individual Surfaces
  -Materials (Asphalt, Concrete, Lawn, Ground Cover, etc.)
  -Impermeable vs. Permeable
  -Hardscape vs. Softscape
  -Uses – Parking/Car/Bike vs. People/Social
- Drainage Area (Square Footage of landscape that create a contributory watershed for your project)
- Any baseline(existing) conditions for the Environmental or Social Metrics you have considered in your design.

STEP 2
Review and evaluate your current design. Many of you have noted improvements in conditions. Review and follow-through with these efforts for each category of performance. For each category you must have

existing and proposed benefits. While this work might seem painstaking or tedious, consider how you might use your final data to help frame your design proposal.

STEP 3
Document your calculations. In order for your performance benefits to move from 'claims' to 'calculations' you must document how you established your baseline and improved benefits. Keep your work legible, simple and easy-to-follow.

STEP 4
Create compelling GRAPHICS for your before and after conditions. Consider how this work reads as stand-alone graphics as well as could be integrated into your final design boards.

For the submission of this work, all work should be on 11x17 sheets. The first page should clearly identify your site, site boundaries and an overview of landscape performance. The following pages should CLEARLY note 'current' and 'improved' (or BEFORE and AFTER) conditions. The remaining pages should include your calculations. The last page should include any references. This work will be featured on Landscape Performance Series 'Resources for Educators' website.

deliverables + schedule

1. A 11x17 package as noted above.
2. All work should be completed by Wednesday, December 7th at 12noon and uploaded to Polylearn.

project goals

1. **to apply basic landscape performance metrics and methodologies to gauge changes in performance within your studio project**

metrics

Total Square Footage of Refined Site (Everyone Must complete these)
Square Footage of Individual Surfaces
-Materials (Asphalt, Concrete, Lawn, Ground Cover, etc.)
-Impermeable vs. Permeable
-Hardscape vs. Softscape
-Uses – Parking/Car/Bike vs. People/Social

Environmental Metrics

Plant Facts:
-Water Use (high, medium, low)
-Ecological Value (food, pollination, habitat, etc.)
-Lawn, Ground Cover, Shrubs, Trees (square footage or quantities)

Tree Facts:
-Storm Water
-Carbon Sequestration
-Shade
-Air Pollutant Removal

Water Facts:
-Annual Precipitation
-Annual Volume of Storm Water
-Average Storm Size
-Volume of Water in Average Storm Size

Transportation Facts:
-Automobile lanes and parking
-Bike Lanes and bike parking
-Walkways

Social Metrics

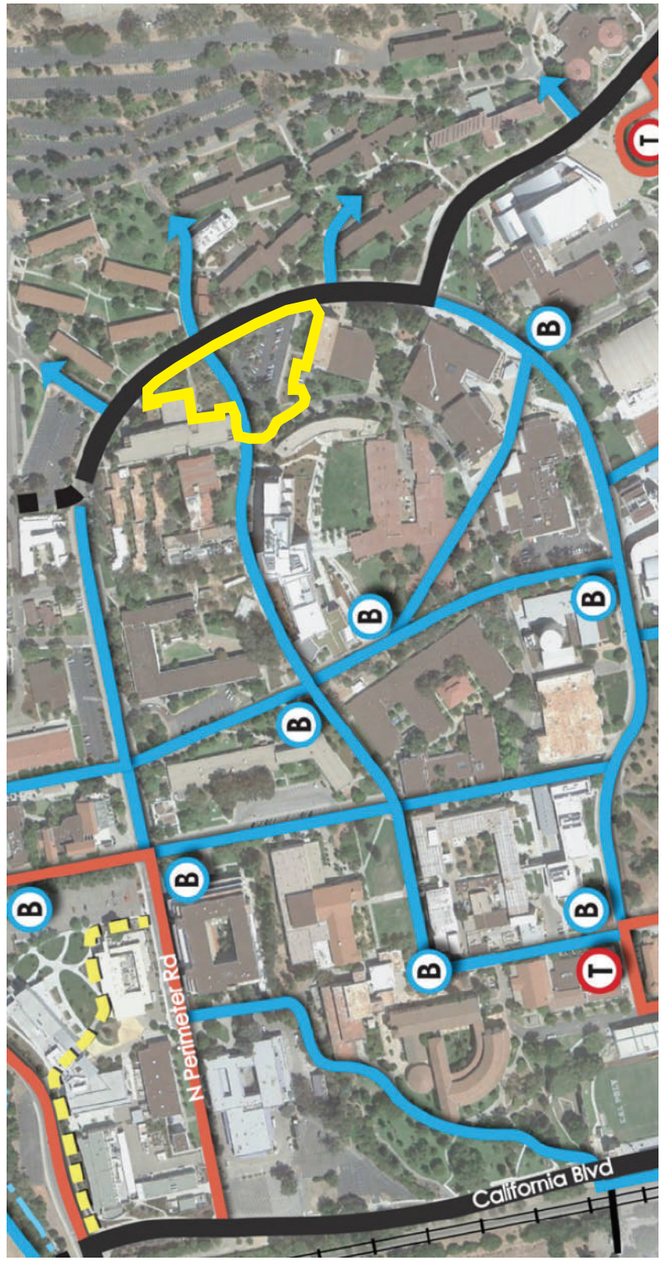
Recreational/Social Value:
-Seating
-Play / Recreation
-Study spaces
-Number of Visitors / Overall Use

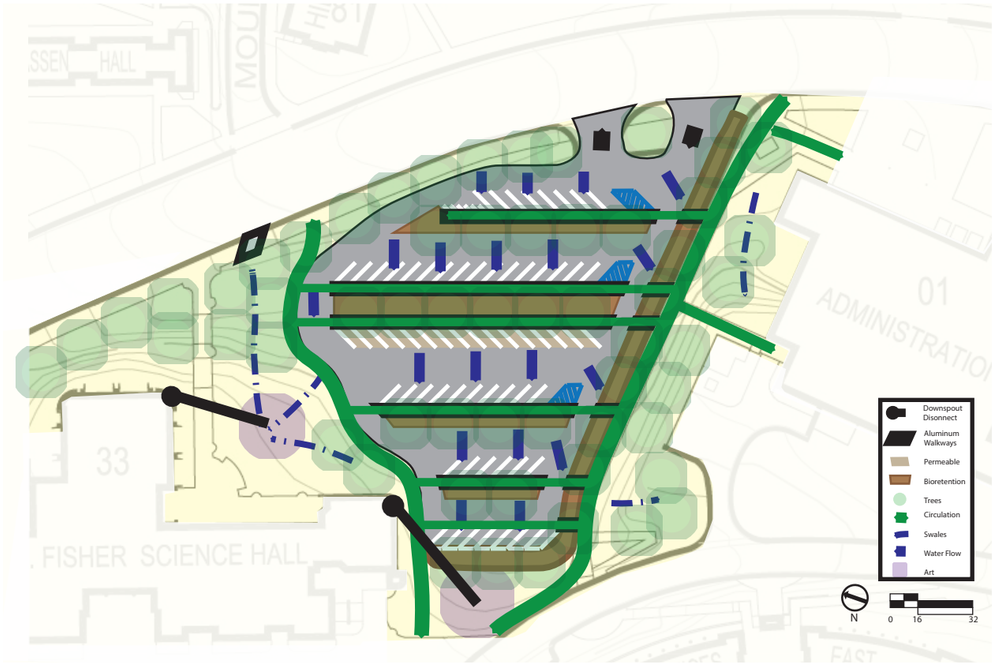
Educational Value:
-Signage
-Teachable moments

Awareness, Access + Safety:
-Directional signage
-Lighting
-Accessible features

Green over Gray:

An Exploration of Landscape Performance





Site Location:

-Parking Lot #A1 on Cal Poly's campus

-Between Administration & Clyde P. Fisher Science buildings

Landscape Performance Goals:

1) Capture and infiltrate ~100% of stormwater on site

2.) Increase carbon sequestration

3.) Reduce heat island effect

4.) Provide safe pedestrian routes

5.) Improve cultural quality

Overview of Landscape Performance:

According to the Landscape Performance Series website, landscape performance is defined as "a measure of the effectiveness with which landscape solutions fulfill their intended purpose and contribute to sustainability." The measures focus on the three pillars of sustainability: environmental, social, and economic. By incorporating landscape performance measures into design and development programs, the quantifiable benefits will inform investors and may potentially have a positive impact on public policy.

Existing Site Conditions

Stormwater

Site area:
76,752.72 sq ft

Annual rainwater:
1,044,953.47 gallons

Storm drains capture 100% of parking lot runoff

Storm drains capture runoff from planted areas that does not infiltrate

Trees

59 trees of varying sizes and species

Carbon sequestered:
4,567 pounds

Stormwater intercepted:
35,696 gallons

Parking

Heat island effect:
Parking lot is oriented so that cars park in N/S direction

Heat island effect:
Small trees in parking lot do not cast shade onto asphalt surface

66 parking spaces:
4 handicap
4 motorcycle
9 staff loading
49 metered

Pedestrian

One primary pedestrian route on south side, near Admin building

Pedestrians have created a path on north side of site, cutting through the ground cover

Pedestrians must walk through parking lot and/or cross planting areas once they exit their vehicle

Cultural

Two benches are available for seating

Lacks interest and cultural value

Overall appearance and plantings lack interest or cohesion

Proposed Site Conditions

Stormwater

Site area:
76,752.72 sq ft

Annual rainwater:
1,044,953.47 gallons

Infiltrate ~100% of site stormwater

Additional runoff captured from road:
37,955.18 gallons

Additional runoff captured from downspout disconnects:
91,922.69 gallons

Trees

59 Coast Live Oaks mature,18" diameter

Carbon sequestered:
19,470 pounds

Stormwater intercepted:
95,757 gallons

Parking

Heat island effect:
Parking lot orientation changed so that cars park in E/W direction

Heat island effect:
Mature oak trees cast shade on asphalt surfaces:
-west in the morning
-east in afternoon and evening

68 parking spaces:
3 handicap
7 motorcycle
7 staff loading
51 metered

Pedestrian

One primary pedestrian route on south side, near Admin building

One new pedestrian route created for north side circulation

Five new pedestrian designated routes created over infiltration basins for safety and aesthetic value

Cultural

Five benches are available for seating

Two art pieces are added for cultural value

Cohesive planting of California natives will unite the site, provide aesthetic value, and improve biodiversity

Overview and Metric Calculations

Total Site Area = 76,752.72 sq ft

Overview:

	Existing:	Proposed:
Impermeable area:	35,414.28 sq ft	34,592.15 sq ft
Permeable area:	41,338.44 sq ft	42,160.57 sq ft
Asphalt area:	27,573.48 sq ft	26,751.35 sq ft
Concrete area:	7,840.80 sq ft	7,840.80 sq ft
Ground cover area:	41,338.44 sq ft	27,038.68 sq ft
Infiltration basin area:	0	10,862.29 sq ft
Permeable pavers area:	0	4,259.60 sq ft
Carbon sequestered:	4,567 lbs	19,470 lbs
Stormwater intercepted:	35,696 gallons	95,757 gallons
Stormwater (in gallons) site- annual total:	1,044,953.47	1,044,953.47 gallons
captured from downspout disconnects:	0	91,922.69 gallons
captured from roadway:	0	37,955.18 gallons

Calculations:

Basic Information and Conversion Calculations:

Historic Cal Poly Annual Rainfall: 21.82 inches

Rainfall conversion to feet: 21.82 / 12 inches= 1.82 feet

Gallon conversion: One cubic foot = 7.48052 gallons

Stormwater Calculations:

Site area:	76,752.72 square feet
x rainfall conversion:	x 1.82 feet
=	139,689.95 cubic feet
x gallon conversion:	x 7.48052 gallons
=	**1,044,953.47 annual gallons**

Downspout Disconnect Capture:

Rooftop drainage area:	6,751.80 square feet
x rainfall conversion:	x1.82 feet
=	12,288.276 cubic feet
x gallon conversion:	x7.48052 gallons
=	**91,922.69 annual gallons**

Roadway Runoff Capture:

Roadway drainage area:	2,787.84 square feet
x rainfall conversion:	x1.82 feet
=	5,073.8688 cubic feet
x gallon conversion:	x7.48052 gallons
=	**37,955.18 annual gallons**

Performance References:

Landscape Performance Series website
-Case Studies and Fast-Fact Library: http://landscapeperformance.org

Landscape Performance: A Guidebook for Metric Selection

National Tree Benefit Calculator: http://www.treebenefits.com/calculator/treein-for.cfm?zip=93407&city=SAN%20LUIS%20OBISPO&state=CA&climatezone=Inland%20Valleys&country=US

U.S. Environmental Protection Agency website: https://www.epa.gov/heat-islands

Performance Improvements at the Cal PolyEquine Facility

The existing conditions on the Cal Poly Equine Unit site feature relatively small remnant areas of riparian habitat beside two of the campuses major reservoirs. The bulk of the site is made up of heavily grazed pasture areas. During rain events these areas flow storm water into the adjacent reservoirs, and eventually into Stenner creek further downstream. Pollution from nitrates running into Stenner creek has resulted in fines to the Cal Poly University in the past.

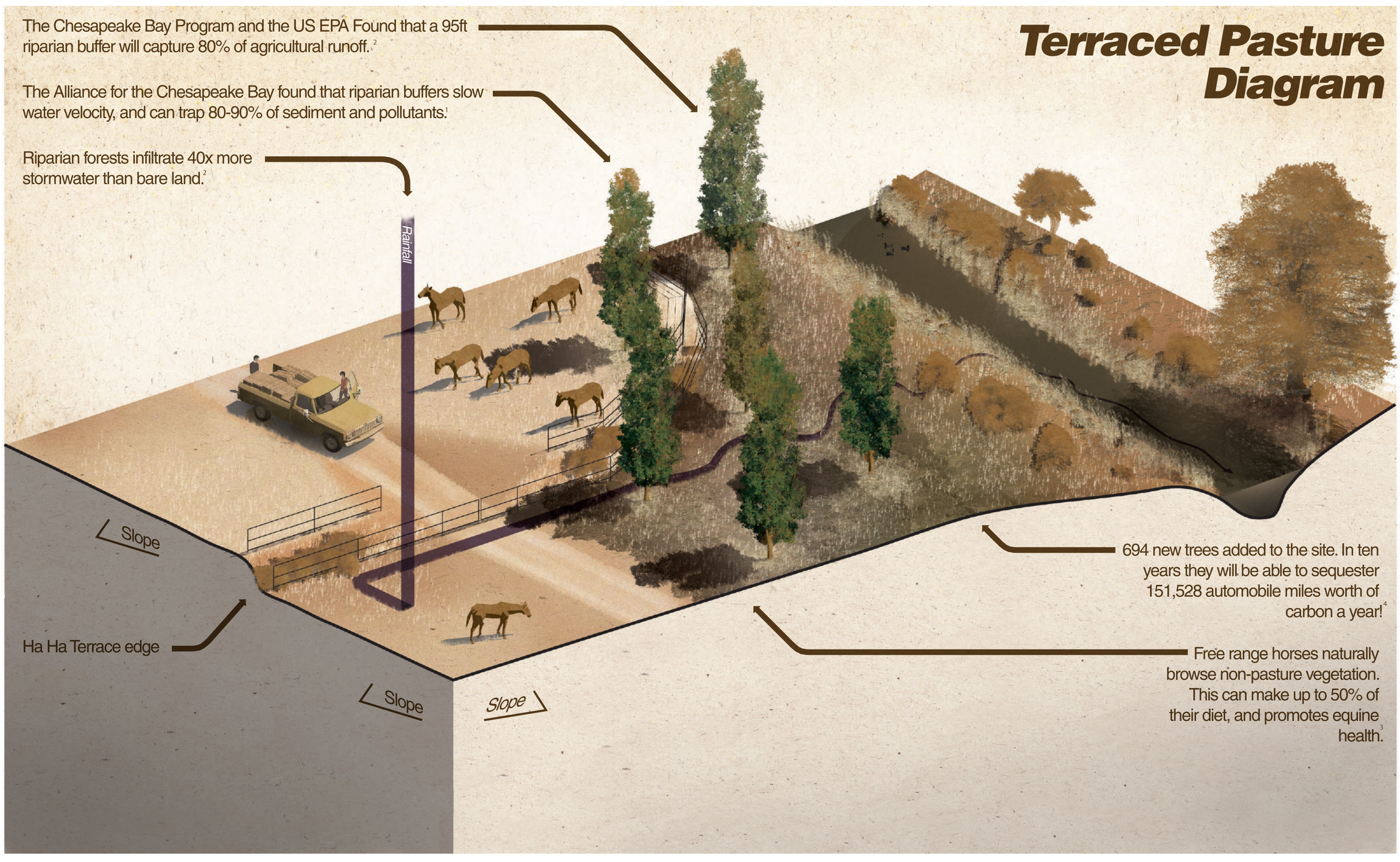
The area marked out in the red dotted line identifies the boundaries for the site. This proposed design adds wide riparian buffer areas adjacent to all waterways in order to mitigate storm water pollution. This will entail, amongst other things, the planting of 694 poplar trees on site. These trees are intended to intercept nitrates flowing from horse pastures into adjacent water bodies. These trees also provide an opportunity for carbon sequestration on site and act as a source of browse for the horses grazing in the pastures. This non-pasture browsing mimics browsing behavior horses normally engage in in the wild. The diagram on the proceeding page illustrates the movements of water across terraced pasture areas proposed in the site, and illustrates the relationship between grazing land, riparian areas, and water bodies on site.

Terraced Pasture Diagram

The Chesapeake Bay Program and the US EPA Found that a 95ft riparian buffer will capture 80% of agricultural runoff.[2]

The Alliance for the Chesapeake Bay found that riparian buffers slow water velocity, and can trap 80-90% of sediment and pollutants.[1]

Riparian forests infiltrate 40x more stormwater than bare land.[2]



694 new trees added to the site. In ten years they will be able to sequester 151,528 automobile miles worth of carbon a year![4]

Free range horses naturally browse non-pasture vegetation. This can make up to 50% of their diet, and promotes equine health.[3]

Work Cited:

[1] Alliance for the Chesapeake Bay. January 1996. Alliance for the Chesapeake Bay white paper: Riparian forest buffers. Accessed 9/25/02. www.acb-online.org/forest.htm.

[2] Chesapeake Bay Program, and US EPA. March 1999. Riparian forest buffers: Linking land and water. United States Environmental Protection Agency. CBP/TRS 220/99. EPA 903-R-99-002.

[3] Putman,R.J., Pratt, R.M., Ekins, J.R., and Edwards, P.J. 1987. Food and Feeding Behavior of Cattle and Ponies in the New Forest, Hampshire Journal of applied Exology 24, 369-380.

[4] http://www.treebenefits.com/calculator/

Calcs:

http://www.treebenefits.com/calculator/

This calculation assumes . . .

- 694 *Populus nigra* 'italica' planted on site.
- Trees planted through out the site at 30' intervals.
- A canopy width of about 15' at maturity.
- A park like or other vacant land setting.
- 12" caliper at 10yrs after planting.

According to the tree calculator; in 10 years each tree will be sequestering 200lb of carbon.
According to the tree calculator; 12,000 driven automobile miles equates to 11,000lbs of CO_2, or .916lbs of CO_2 for each mile driven.

200lb x 694 = 138,800lbs of carbon sequestered a year on site.

138,800lbs sequestered / .916lbs CO_2 burned in a mile of driving = 151,528 driven automobile miles worth of carbon offset.

TOTAL SITE RUNOFF
1,750,004.31 GALLONS PER YEAR OF STORMWATER
PROPOSED SITE INFILTRATION
1,347,503 GALLONS PER YEAR OF STORMWATER

TOTAL SITE RUNOFF
1,750,004.31 GALLONS PER YEAR OF STORMWATER
EXISTING SITE INFILTRATION
450,541 GALLONS PER YEAR OF STORMWATER

Quercus agrifolia sequesters 521 lbs per year, with two on site, they sequester a total of 1042 lbs/yr. The Ficus benjamina on the site each process 39 lbs per year, and with four on site, they process 156 lbs/yr. The 18 Eucalyptus globulus on site process 664 lbs per year, totaling 11,952 lbs/yr. This brings the site total to 13,150 lbs/yr for the existing conditions. The site proposal includes the removal of the four Ficus, and an addition of 50 Alnus rhombifolia, increasing the site total carbon sequestration to 24,794 lbs/yr

The current permeability conditions account for the parking lot tree planters and barriers for the parking lot, as well as the entirely permeable riparian corridor. The parking lot is almost entirely impermeable, at 3.59% permeable, with the creek conditions, it has a baseline of 25.74% permeability. The proposed additions would essentially triple that, bringing site permeability up to 77%, including the addition of 24,094 sq. ft. of bioswales. The only impermeable surfaces are the proposed dormitory additions, and the paved/covered walkways.

Landscape Performance

Project By: Nathan Torres

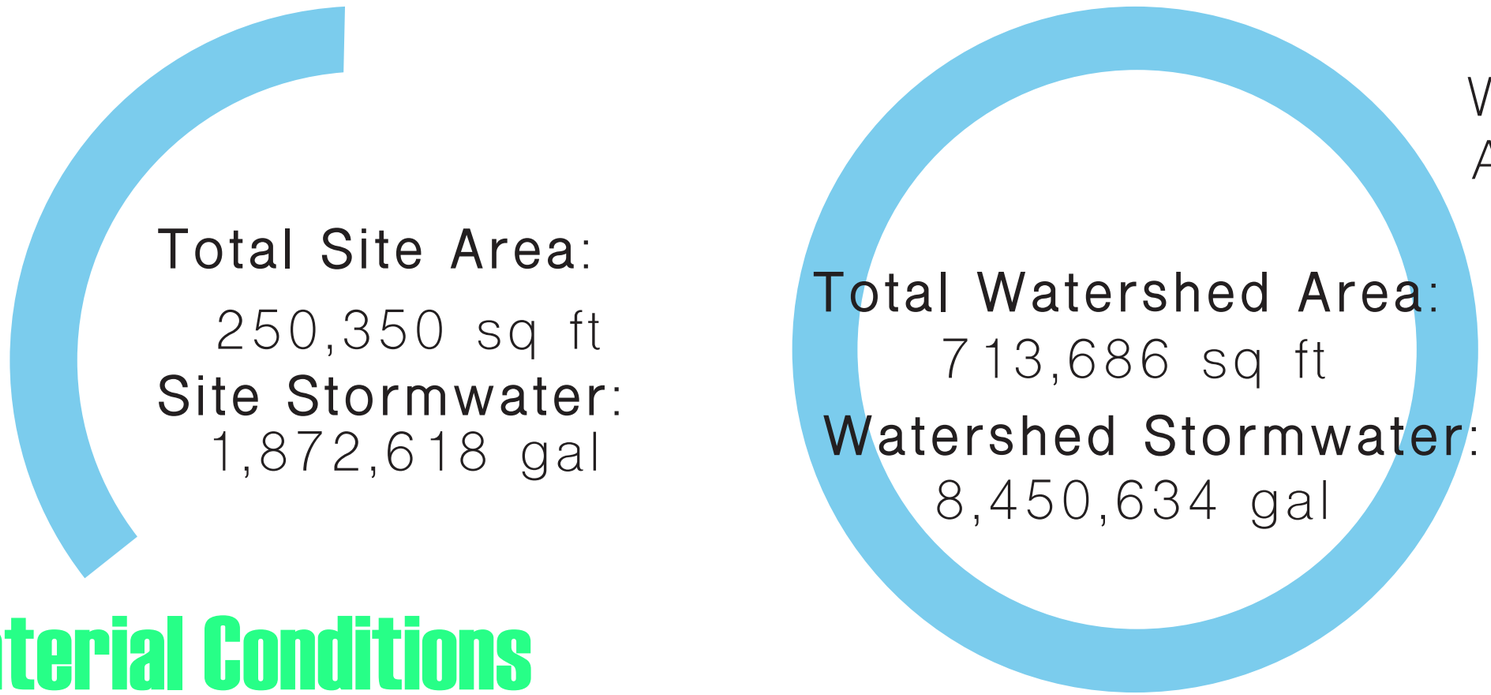
Introduction to Performce

Landscape Performance is the quantifiable benefits that a site will receive if a certain design is installed. The two main metric systems that are calculated are environmental and social.

Site Vicinity Map

Performance Metrics Utilized

Base Conditions



Calculations

Stormwater Calculations:
Watershed Area 713,686 sq ft
Annual SLO RainFall1.583 ft *x*
1,129,764 ft^3 =
Gallon Conversion 7.48 *x*
8,450,634 gal =

Material Conditions

Site Impermeable Area:	130,584 sq ft
Site Permeable Area:	119,766 sq ft
Total Tree Count:	53
Stormwater Intercepted:	73,803 gal
Carbon Sequestration:	17,353 lbs

Proposed

100% Permeability

Area Calculations created using DaftLogic.com

UPGRADE: Performance Benefits

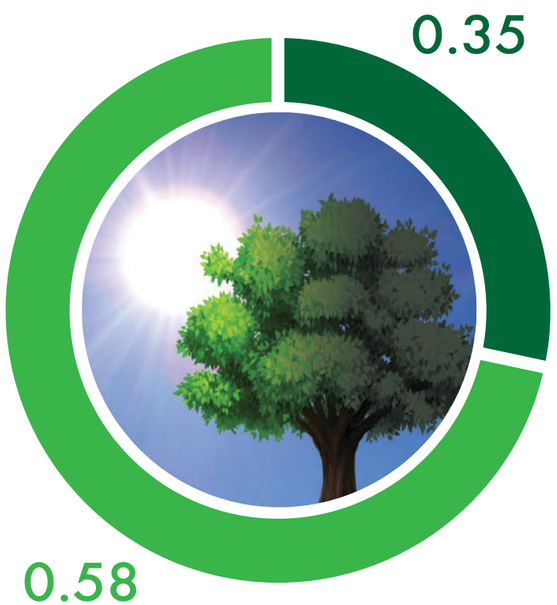
Landscapes and landscape infrastructure posses the potential power to do more than merely their intended purpose. Beautification through aesthetics, as well as utilitarian function, are not mutually exclusive. These seemingly disparate elements of design can come together harmoniously under proper conditions, creating sustainable beauty that performs socially, economically, and environmentally. Landscape architects have the ability to right the wrongs of the past; to shake up the norms and put a spin on tradition. Even in little ways, we can make our landscapes do more for us and other creatures who call this planet home.

What **more** can your project do for you?

Zach Streed
Cal Poly San Luis Obispo
LA 402, Fall 2016

UPGRADE: Performance Benefits

● Current Conditions ● Project Proposal

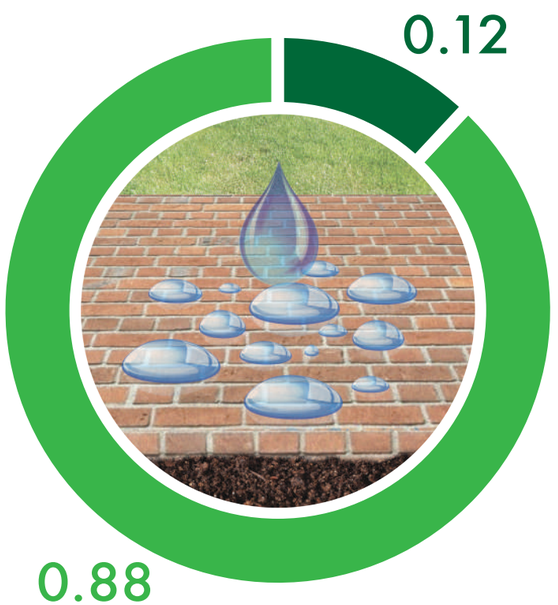


Shade
(Acres)

The addition of the proposed elevated structure would cast shade upon the entirety of the existing site below it. Additionally, tree-like structures on its surface would provide shade to users on the second floor.

Peak Runoff
(Cubic Feet per Second)

Permeable pavers and turf have lower runoff coefficients than concrete, and their inclusion would drop the peak runoff in a typical storm down to a cubic foot every four seconds, rather than every three.



Permeability
(Acres)

The proposed structure acts as a massive funnel that gently and slowly channels water into a controlled, decentralized permeable rill. This method would increase the area of permeability by a factor of over seven.

Usable Space
(Acres)

The current library entrance plaza Is accessible and well-used. The proposed project would only improve it further by doubling the amount of space for pedestrian use, offering choices of full sun, part sun, and full shade.

UPGRADE: Performance Benefits

Shade

DaftLogic Area Calculator was used to define the boundaries of the site (0.58 acres). The selection was then contracted to include only areas within the boundaries beneath the canopies of existing trees or structures, yielding a total of 0.35 acres.

The proposed strcuture in my project would cover the entire existing site, rasing the shaded area up to 100%, or the full 0.58 acres.

Peak Runoff

To calculate the peak runoff of the site in a typical storm, rational method was used. It requires prior information, including rainfall intensity, area, and runoff coefficients for various surface types.

Data from tables provided by the State Water Resources Control Board gave the following coefficients needed:

Lawns: 0.06
Concrete Streets: 0.80
Permeable Pavers: 0.25

The existing site consists of 0.58 acres of lawn and concrete. The proposed site consists of 0.88 acres of permeable pavers and lawn. I divided the acreage into its constituents and calculated the total runoff for each site under the conditions of 1 inch of rainfall (typical for San Luis Obipo).

$Q = ciA$
$Q = (1)(0.06)(0.58) + (1)(0.80)(0.58)$
$= 0.34 \text{ ft}^3/\text{s}$

$Q = (1)(0.25)(0.88)$
$= 0.26 \text{ ft}^3/\text{s}$

Permeability

DaftLogic Area Calculator was used to define the perimeter of permeable areas within the existing site (lawns and tree wells, 0.12 acres) as well as the impermeable (concrete, 0.46 acres). An extrapolation technique provided the area of the proposed site, 0.88 acres, all of which were funneled into permeable surfaces.

Usable Space

A direct comparison of the original area of the site, obtained from DaftLogic Area Calculator, with the area of the new site.

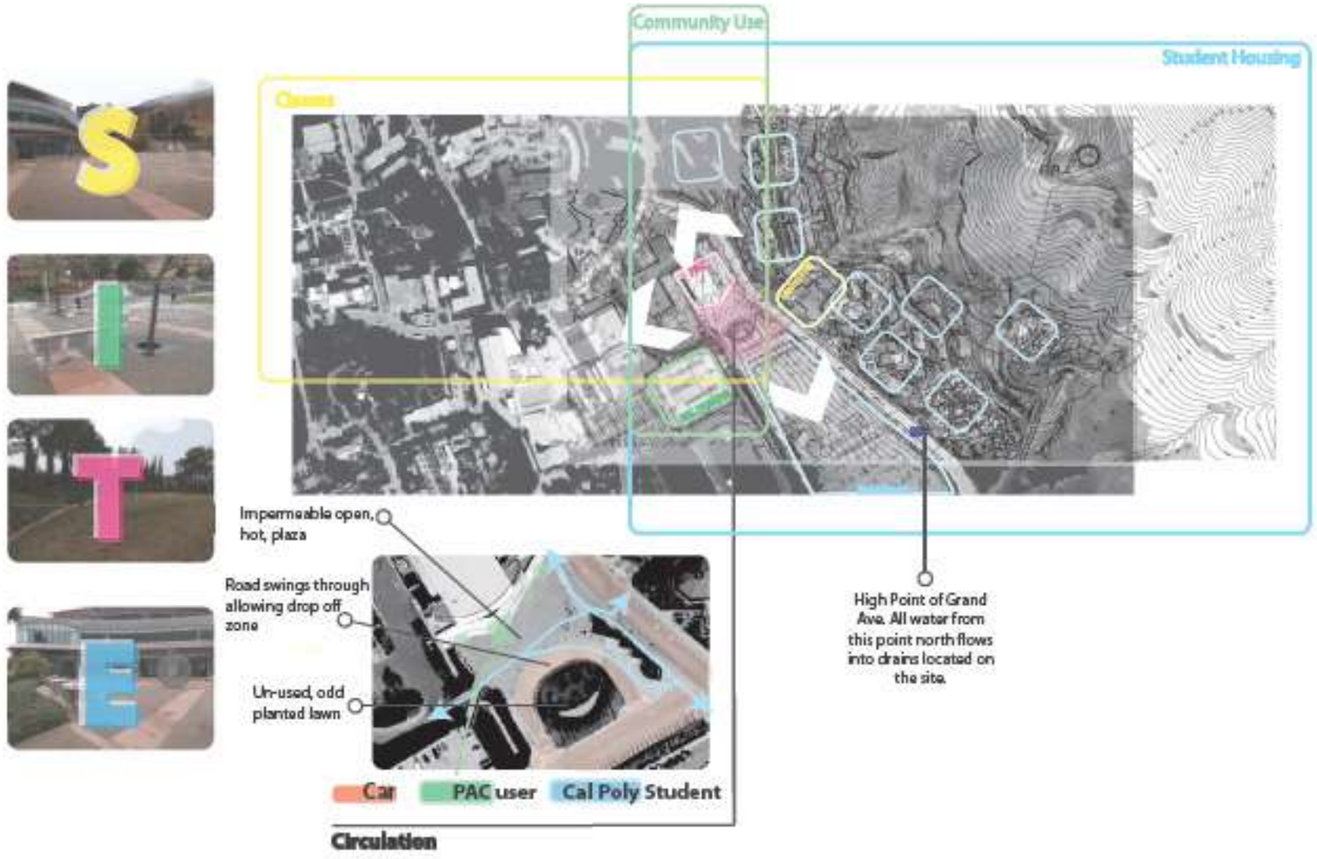
Existing area: 0.58 acres
Area of proposal: 0.88 acres

0.58 + 0.88 = 1.44 acres

Landscape Performance

LA 402 | Cal Poly | Libby Jacobson

Landscape performance is putting outputs of a design into **quantifyable figures**. In the re-design of the Cal Poly Performing Arts Center Plaza there were many improvments socially and ecologically. Using data to analyze improvments showcases the reasoning behind design choices and the ecosystem services a landscape can provide.



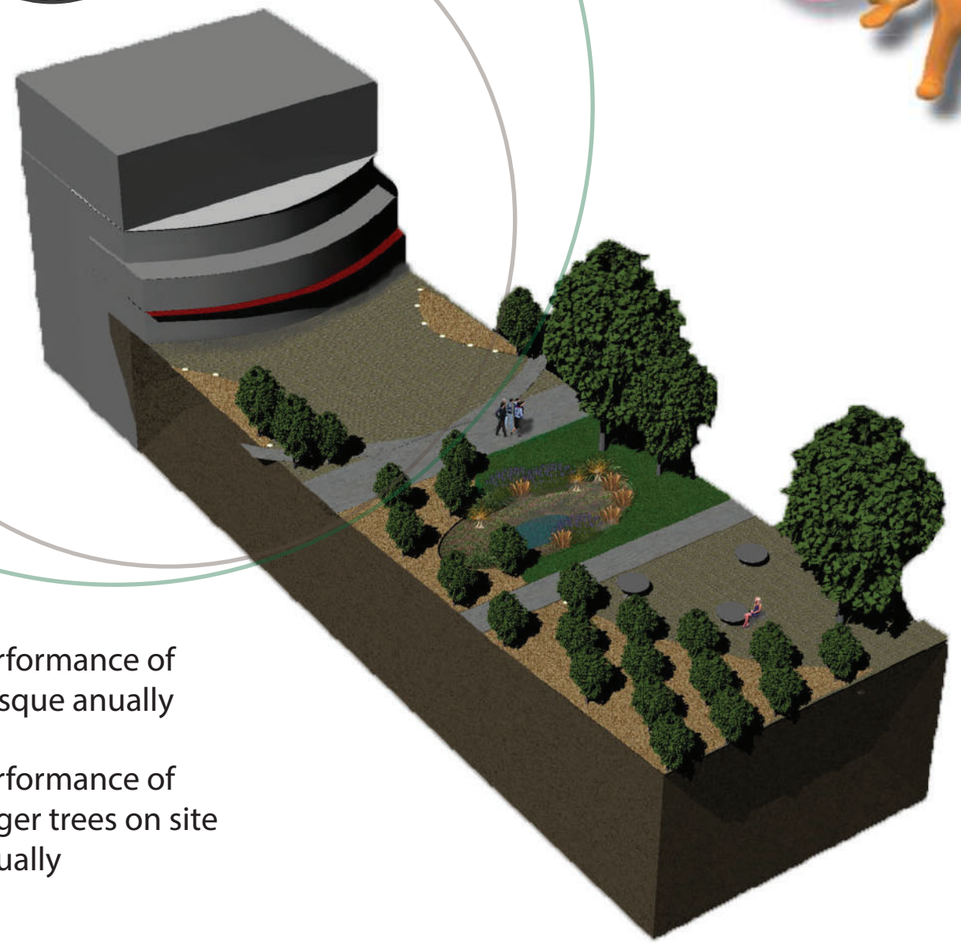
Proposed Site

5,344
pounds of carbon sequestered

11,328
gallons of storm water intercepted

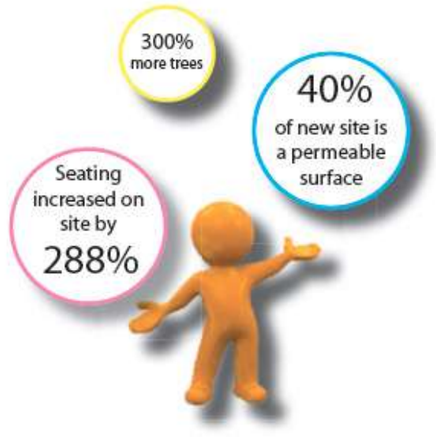
2,716
pounds of carbon sequestered

4,600
gallons of storm water intercepted



Performance of bosque anually

Performance of larger trees on site anually



Exisiting Site

15
trees

8
benches

97,182
sq. feet
THE SITE

17%
permeable surfaces

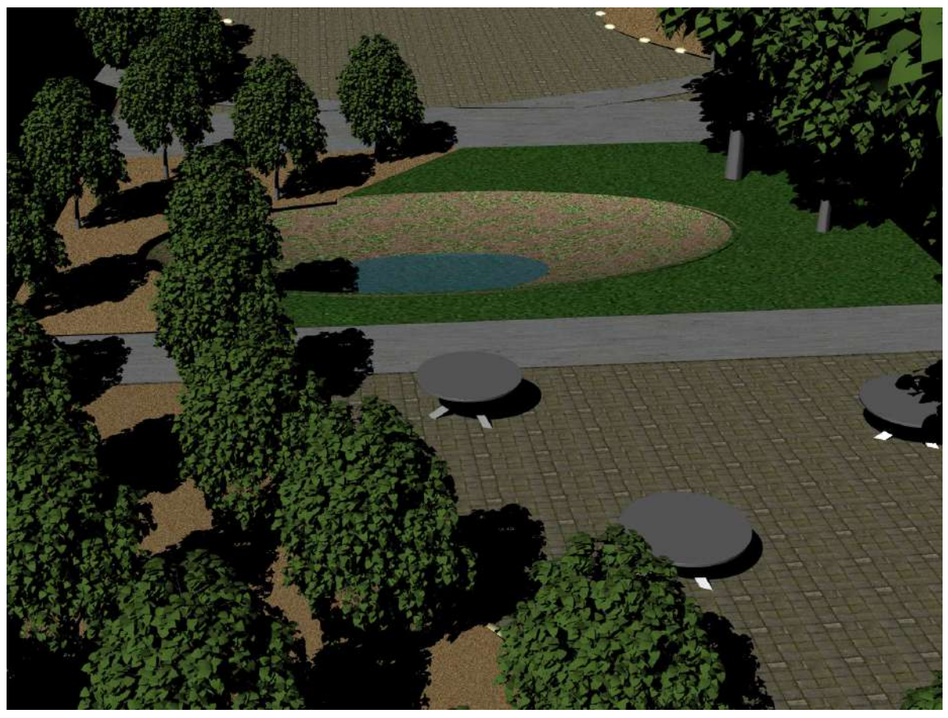
21
Drains

I have established the following performance goals for this project. Socially, I want to increase use and create a space for multiple users. I want to give the space a sense of identity by adding seating, lighting, and sculptures combining art with performance. Ecologically, I want to provide ecosystem services by sequestering carbon, providing shade, and reducing the heat of the plaza by adding trees and plant life. One of the larger goals I have is to treat all the storm water running down Grand Avenue, a surface area of 38,812 square feet. I want to keep all the water on site, by using swales and rain gardens. I want to use permeable pavers and decomposed granite for most of the site to improve ground water infiltration.

The design of this site shows vast improvement in landscape performance as shown: Before, 82.5% of the site was impermeable and now only 60.5% is impermeable and that is including the road from its highpoint to the plaza site. Before hand there was only 8 benches and 15 trees. Now there are 12 benches, 13 tables, and 40+ trees. The bosque alone will intercept 11,328 gallons of storm water runoff in and reduce atmospheric carbon by 5,344 lbs annually. The use of seven large trees will provide 4,600 gallons of storm water runoff to be intercepted and 2,716 lbs of carbon sequestered annually. These calculations were determined by using the Tree Calculator from the landscaper performance website. The Environmental Protection Agency claims that shaded surfaces may be a whole 20°-40°F cooler than peak temperatures of non-shaded materials. Having trees near the building will cool the building and the PAC users relaxing on the plaza before or after a show.

Calculation References Include:

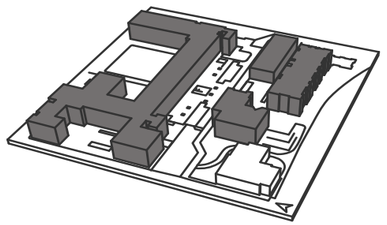
Landscape Performance Series Website
Tree Benefits Calculator
Storm Water Calculator
Cal Poly 2020 Master Plan
EPA

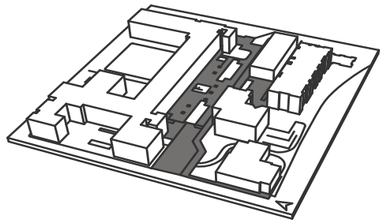


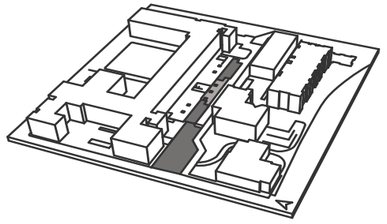
SILVIA VIOLA

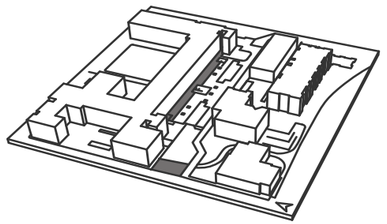
NUVOLA

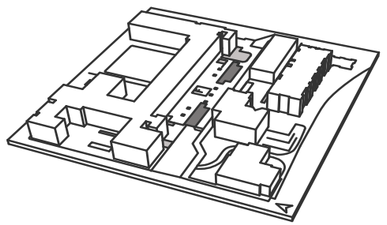
CALCULATIONS

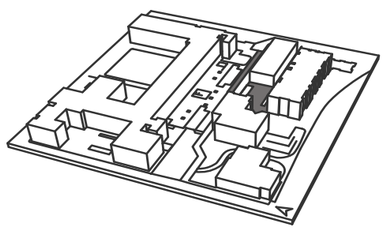












BASELINE

Total Square Footage of Refined Site: or 29107 sq feet
BUILDING FOOTPRINTS
20,189 sq ft of roofs unloading
383,591 cubic feet of water a year onto the site

MATERIALS

Vegetation: 3233 sq feet
Mulch: 2340 sq feet
Concrete: 25.642 sq feet
Impermeable: 23544 sq feet
80.89%
Permeable: 5563 sq feet

OVERHEATING

Temperature: 18.6 degrees higher than non shaded concrete area
19.3 degrees higher than non shaded softscape areas
36 degrees higher on mulch covered areas than in non shaded concrete areas

Temperatures registered manually (temperature laser gun)

POOR HYDROLOGY

due to high percentage of impermeable surfaces and roof runoff

SCARCE VEGETATION

provides very small additional value to the site and surrounding buildings

data collected trhough Google Earth and manual measurements on scaled maps

TOTAL SQUARE FOOTAGE OF WATERSHED: 129982 SQ FT
OF WHICH 65584 PAVED

THE POROUS PAVING AND BIOSWALES ARE DESIGNED TO INFILTRATE 100% OF THE SITE'S AND THE WATERSHED'S IMPERMEABLE SURFACES WATER IN AN 85 PERCENTILE DESIGN STORM.

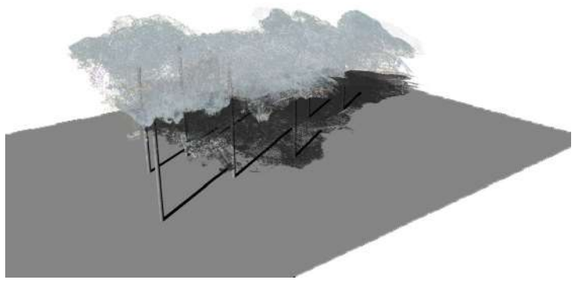
THE OBSERVATION DECKS OFFER AN EDUCATIONAL OPPORTUNITY TO THE CAMPUS COMMUNITY, WHILE THE CLOUD'S UNUSUAL AESTHETICAL QUALITIES CAPTURE THE USER'S ATTENTION

data collected trhough Google Maps and calculated with the California Phase II LID Sizing Tool at http://www.owp.csus.edu/LIDTool/Start.aspx

THE CLOUD

THE IMMENSE STEEL MESH STRUCTURE CAPTURES THE PUBLIC'S ATTENTION AND HOVERS OVER 10,400 SQUARE FEET OF THE SITE, PROVIDING AND ADDITIONAL 19% OF SHADED SURFACE TO THE PLAZA

data collected through manual measurements



THE SWALE SYSTEM INFILTRATES MORE THAN 130,490 CUBIC FEET OF WATER A YEAR, 15 TIMES THE AMOUNT (OF 8,808 CUBIC FEET) INFILTRATED BY THE CURRENT DESIGN.

data calculated with the California Phase II LID Sizing Tool at http://www.owp.csus.edu/LIDTool/Start.aspx

Landscape Performance Knowledge and Familiarity Questionnaire

LA 402 DESIGN THEORY AND EXPLORATION FOCUS STUDIO

fall 2016

california polytechnic state university
landscape architecture department
la402 fall2016

joseph ragsdale
associate professor
jragsdal@calpoly.edu

Technical Module Pre-Survey

- Anonymous, online questionnaire (Polylearn/Moodle “Poll” feature)
- Available for 7 days, during first week of quarter
- Course Enrollment 12 / 7 Responses Gathered

Technical Module Follow-Up Survey

- Anonymous, online questionnaire (Polylearn/Moodle “Poll” feature)
- Available for 7 days, last week of quarter
- Course Enrollment 11 / 8 Responses Gathered

Technical Module Pre-Survey

1 **How familiar are you with the Landscape Architecture Foundation (LAF)?**

Response	Average	Total
Have never heard of it, prior to it being mentioned on the first day of class.	29%	2
Have heard of it (prior to this studio) but can't recall any specifics	57%	4
Have some idea of the organization (developed prior to this studio), and could explain some basics	14%	1
Total	100%	7/7

Technical Module Follow-Up Survey

1 **How familiar are you with the Landscape Architecture Foundation (LAF)?**

Response	Average	Total
Have heard of it but can't recall any specifics	12%	1
Have some idea of the organization and could explain some basics	12%	1
Have a good idea of the organization and could confidently explain what they are about.	12%	1
Have a strong idea of this organization and have interacted with them, their resources and their references.	62%	5
Total	100%	8/8

Technical Module Pre-Survey

2	My first impressions of the Landscape Architecture Foundation (LAF) are:

Response
The organization supports young professionals entering the field.
I'm sure they are knowledgable
not much..
I have heard of them, but do not understand what they are responsibile or striving for.
Probably something important I should look into
It is a good organization that continues to advocate for the use of Landscape Architecture as a way to improve the landscape.
not sure

Technical Module Follow-Up Survey

2	My impressions of the Landscape Architecture Foundation (LAF) are:

Response
This organization is leading the way for the profession to engage in environmental issues and to be part of the solution.
excellent
They advocate for the landscape architecture profession through the promotion of landscape performance.
Helpful Encouraging Engaging
none
A trustworthy organization that simplifies the use of some cutting-edge tools to be used in professional practice.
awesome resource

Technical Module Pre-Survey

3 **How familiar are you with landscape performance?**

Response	Average	Total
Have never heard of it, prior to it being mentioned on the first day.	29%	2
Have heard of it (outside or prior to this studio) but don't remember any specifics.	14%	1
Have some idea of the it (outside or prior to this studio), but not too clearly	29%	2
I know what it is, and could explain what the basics	29%	2
Total	100%	7/7

Technical Module Follow-Up Survey

3 **How familiar are you with landscape performance?**

Response	Average	Total
I know what it is, and could explain what the basics	12%	1
I know what it is and how to utilize it, and could utilize it within the studio project.	88%	7
Total	100%	8/8

Technical Module Pre-Survey

4	My first impressions of landscape performance are:

Response
Green infrastructure: bioswales, constructed wetlands, urban food production, green roofs, etc.
Unsure
unknown
Understand that the total success of a site is a good indicator of landscape performance.
Making a landscape do more than just "look pretty," provide eco services and facilitate desired growth and change in society
It's the ability of a landscape to perform the jobs a particular landscape was meant to or designed to.
not sure, probably concerned with the technical and logical ways a site is organized

Technical Module Follow-Up Survey

4	My impressions of landscape performance are:

Response
Landscape performance is vital to the health of a site and its impact on the greater area around it.
A great way to quantify and add value to any project
Landscape performance is an interesting way to look at landscape architecture, and seems like it would be a very effective way to "sell" people on a project or project elements you have designed.
Multifunctionality Measured
Seems that it is becoming a topic that is necessary when creating a design
Theories that should be put into practice whenever possible, as they ground the profession and bring us into the technical world as opposed to more vague ideas of beauty and aesthetics.
something that really grounds designs
it's useful to the design process and marketing/promotion of it to the clients

Technical Module Pre-Survey

5 **Have you utilized concepts of landscape performance in past studio projects, courses or work?**

Response	Average	Total
Yes	29%	2
No	71%	5
Total	100%	7/7

6 If you marked YES, to the previous question (using landscape performance previously) please state how:

Response
I have used bioswales and rain gardens in my projects.
Designed Playground to strenghthen relationships between children and the elderly

Technical Module Follow-Up Survey

5 **Have you utilized concepts of landscape performance in your studio projects, courses or work?**

Response	Average	Total
Yes	100%	8
No		0
Total	100%	8/8

6 If you marked YES, to the previous question (used landscape performance previously) please state how:

Response
I have used green infrastructure, heat island mitigation, and added cultural value to my projects.
Water Foilage Social
I have used the national tree benefits tree calculator at http://www.treebenefits.com/calculator/
Greatly improving the social and ecological performances of the site through site analysis of both existing and proposed sites
I implemented performance goals in my studio project this quarter to emphasize my design.
Stormwater management, environmental issue awareness, water filtration, heat island reduction
utilized the concept of landscape infrastructure
designed performative landscape on campus

Technical Module Pre-Survey

7	In what ways could landscape performance be utilized in design projects, please list any early thoughts?

Response
Landscape infrastructure should be utilized to address storm water, and environmental issues such as biodiversity, air quality, and heat island effect.
It can be used to keep the purpose of a project on task.

Technical Module Follow-Up Survey

7	In what ways could landscape performance be utilized in design projects?

Response
There are MANY ways to implement landscape performance. There are categories of land, water, habitat, carbon, energy, air quality, materials, waste, social, and economic. Whatever issue can, and should, be addressed in the site design
all ways
You might advocate for an element within your design by presenting the benefits gained its implementation i.e. rain water retention, mitigating stream bed erosion, carbon sequestration etc etc
Addressing the performance measures of things such as social, ecological, or circulation for example could alter the design outcome. So by analyzing the existing sites failures or deficiencies in these types of performance categories, that information can be used in the design phase to become important goals to meet when designing
Any way that may benefit the user or environment
Designs do not have to be purely for aesthetic purposes. We can design for the user by making beautiful spaces, but design for "others" by making these spaces perform for us. E.g. mimicking ecological services
being able to confidently display and sell a design in favor of certain outcomes
to sell a project/ make design decisions based on acual numbers

Technical Module Pre-Survey

8 **The importance of landscape performance to the profession of landscape architecture is:**

Response	Average	Total
A very important and critical skill	43%	3
Very Important	14%	1
Important	14%	1
I don't have enough information	29%	2
Total	100%	7/7

Technical Module Follow-Up Survey

8 **The importance of landscape performance to the profession of landscape architecture is:**

Response	Average	Total
A very important and critical skill	62%	5
Very Important	38%	3
Total	100%	8/8

Technical Module Pre-Survey

9 How familiar are you with metrics?

Response	Average	Total
Have never heard of it?	14%	1
Have heard of it, but don't remember what it is	29%	2
Have some idea what it is, but not too clearly	43%	3
I know what it is, could provide an example and could use it within project work.	14%	1
Total	100%	7/7

10 Have you utilized metrics in past school work, courses or work?

Response	Average	Total
Yes	14%	1
No	86%	6
Total	100%	7/7

11 If you marked YES, to the previous question (using metrics previously) please state how:

Response
Like, the metric system? Or measurements in general?
In school, everyday life, ...

Technical Module Follow-Up Survey

9 **How familiar are you with metrics?**

Response	Average	Total
Have heard of it, but don't remember what it is	12%	1
I know what it is, and could explain what it is about	25%	2
I know what it is, could provide an example and could use it within project work.	62%	5
Total	100%	8/8

10 **Have you utilized metrics in past school work, courses or work?**

Response	Average	Total
Yes	75%	6
No	25%	2
Total	100%	8/8

11 If you marked YES, to the previous question (using metrics previously) please state how:

Response
Stormwater management and carbon sequestration.
quantification
The carbon sequestration numbers provided at http://www.treebenefits.com/calculator/ have been used in several of my class projects.
Calculating things such as annual percipitation on a given site, water infiltration, hardscape vs soft scale materials, etc
Individual trees can reduce maintenance costs through water absorption, carbon sequestration, erosion control, and insulation. This value can be quantified into a liquid dollar amount.
this past quarter throughout our design project

Technical Module Follow-Up Survey

12 **Please list any suggestions you have regarding:**

a) the inclusion of aspects of landscape performance into the design studio and landscape architecture curriculum

b) suggestions for assignments, teaching tools and references that would be helpful to your understanding of landscape performance concepts.

Response

The seminar readings took a lot of time and so having the extra time on the final project by removing the "transfer" assignment would have enabled more metrics to be researched and utilized. I would have liked to have found metrics to assist in the design of my infiltration basins to ensure their size was adequate for runoff amounts. Same issue for the heat island mitigation. The case studies take a lot of time to browse and I wasn't able to locate comparable sources.

none

none

We need better software/apps. Students, and I suspect practicing landscape architects, are calculation adverse. The easier it is for me to plug in areas or measurements and get out usable data, the more likely I am to use that data. There is a whole field dedicated to metrics within architecture (architectural engineering), but I dont feel that there is any analogous field in landscape architecture. There is no single profession I can go to to ask what the landscape is doing in a technical sense. In lieu of this, it would be nice to have as much of this as automated as possible.

Look at current design examples and see the performances of those sites as well to see how other places are performing and are measured

I feel that by giving us a better understanding of why we need to be utilizing landscapes for more than just a space to be pretty would be important

More accessible readings regarding the topic of landscape performance in seminar would help.

A) good

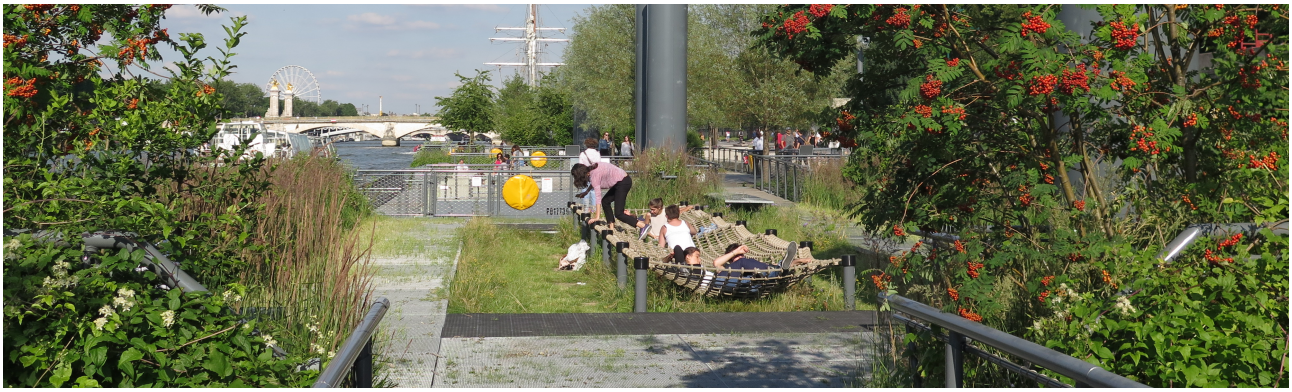
B) mini precedents module? to help students understand importance

promote landscape performance not only in this class but also in classes like LA 101 or other intro classes

la402 fall 2016
i n | V I S I B L E

SEMINAR

incorporating THEORETICAL APPROACHES to STUDIO PROJECTS



Floating Gardens, Promenade des Berges de la Seine

background

> *"Theory spans, intercedes, and joins. It removes design from the isolation of the individual ego and from the service of variables, opportunities, and constraints. Theory connects built landscape form to the cares and concerns of humanity. Landscape architectural theory reconciles design form with the particulars of time and place and the aspirations and motivations of humankind. As such, situated theory enables and ennobles practice."*
>
> - "Situating Modern Landscape Architecture, by Elizabeth Meyer in Theory in Landscape Architecture: A Reader, edited by Simon Swaffield.

As part of la402, we will read and engage with various articles related to course themes. We will read to engage our minds in critical thought about what how we approach our profession, our site and our projects. An open, questioning and critical mind is required. Some readings will be straightforward and matter of fact, other readings will be challenging and require additional research, thought and clarification.

the SCHEDULE

We will hold discussions on the following SEVEN (7) days during the quarter. Discussions will begin at 8:30am. 4 students have been assigned to direct the conversation for the week. Every student will be required to complete a response to the reading that will involve writing, thinking, researching and making. Participation during the discussion times is required.

SEMINAR ONE	Friday, September 30
Readings	*Landscape ecological urbanism: Origins and trajectories.* Steiner, Frederick. *Landscape Infrastructure: Systems of Contingency, Flexibility, and Adaptability.* Hung, Ying-Yu **[NATHAN T, BLAKE, LIBBY, MICHAEL, LUKE]**
SEMINAR TWO	Friday, October 07
Readings	*Sustaining Beauty. The Performance of Appearance.* Meyer, Elizabeth K. **[KIMBERLY, NATHAN N, ZACH, ILEANA]**

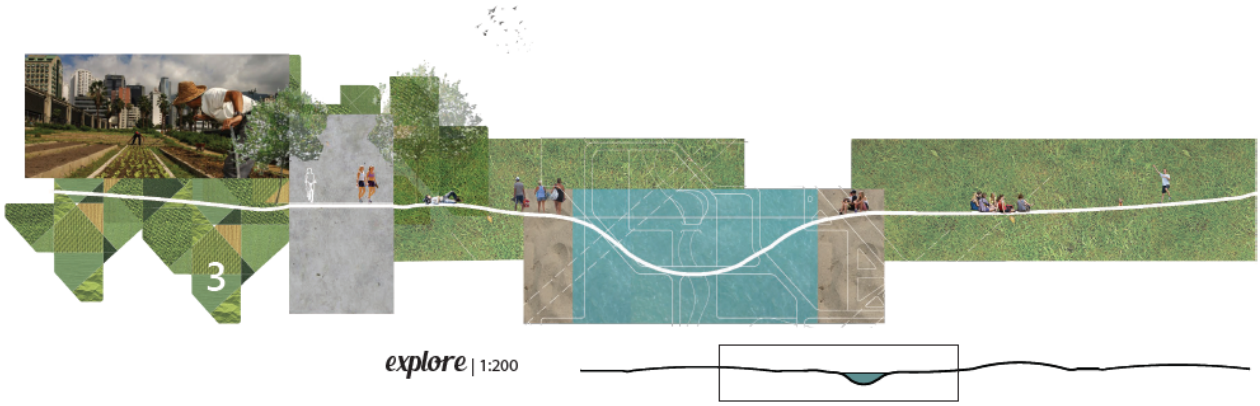
SEMINAR THREE	Friday, October 14
Readings	*Towards a New Infrastructure: Aesthetic Thinking, Synthetic Sensibilities* Salomon, David. **[PATRICK, TIFFANY, SILVIA, RYAN]**
SEMINAR FOUR	Friday, October 21
Readings	*Designing Landscapes for Performance Based on Emerging Principles in Landscape Ecology.* Lovell, Sarah T and Johnston, Douglas M. **[NATHAN T, BLAKE, LIBBY, MICHAEL, LUKE]**
SEMINAR FIVE	Friday, October 28
Readings	*Editorial: Hyper-landscapes*. Rinaldi, Bianca Maria. *Beautiful Landscapes in Drag, the Material Performance of Hypernature.* Bennett, Katherine. **[KIMBERLY, NATHAN N, ZACH, ILEANA]**
SEMINAR SIX	Friday, November 04
Readings	*Landscape Machines: Productive Nature and the future sublime.* Roncken, P, Stremke S, Paulissen, M. **[PATRICK, TIFFANY, SILVIA, RYAN]**
SEMINAR SEVEN	Monday, November 14
Readings	**Seminar Compilation Presentations + Discussion** **[ALL]**

RESPONSES ARE REQUIRED TO INCLUDE:

1. A WELL-WRITTEN, ONE PARAGRAPH SYNOPSIS of the articles (include both articles if two for the week).
2. A LIST of the CENTRAL FIGURES, VOCABULARY AND/OR PROJECTS presented in the article and a brief synopsis or definition of the article. RESEARCH 20 to 40 minutes after reading the article for the people and projects discussed in each article. Include relevant imagery to support your response. Head shots of people NOT encouraged – Images, diagrams and notes of projects ARE ENCOURAGED. Cite all imagery collected.
3. A LIST OF QUESTIONS FOR DISCUSSION – these can range from things you wish to challenge, statements not quite clear, or better yet, questions directed toward the city and landscapes that we are currently studying.
4. A WELL-WRITTEN, ONE PARAGRAPH RELFECTION that connects suggested reflection questions (see PolyLearn) with your current studio assignment, readings from other/past classes, etc.
5. TWO to FOUR pithy, bulleted statements that connect your current approach to the studio project with the urban environment that engage, question or answer issues raised within these articles. Responses should be directed toward critical thinking. Connect text and images. You will create a final compilation of your reading responses.
6. COMPOSE A SPREAD OF TWO, FACING 8.5”x11” PAGES or ONE 11”X17” PAGE in landscape format – like a book spread. Be SURE to include your NAME, THE ARTICLES AND THE DATE.

SEMINAR is worth 20% of final grade. Grading will be based on response, participation in discussion and reading discussion leadership. Each week a small group of students will lead the discussion. This is an opportunity for you reflect on your project, the writings of various leaders in landscape architecture and to talk with your peers.

PERFORM



Rhaisa Capella de Almedia, 'The Virus.' winter 2016

background

"It is critical that (we) create high performance landscapes – landscapes that can perform many functions at once. They must provide cleaner air, a cooler environment and sinks for stormwater, in addition to more opportunities for healthy activities including more extensive walking and biking."

- excerpt from High Performance Landscape Guidelines, 21st Century Parks for NYC.

Through the first projects, you should have become more familiar with the Cal Poly campus as well as broadened your approach to with the inclusion of landscape performance. For our design project, we will remain working on campus and envision future high performance landscapes for the Cal Poly community.

The design work for the quarter will start as individual projects. You have an option for the final submittal to complete an individual project or to develop a collective group project (groups of no larger than three). This choice is entirely up to you. The design project will move from site selection, to design proposals, to refinement, to calculation of benefits to packaging. We will use the EPA's Campus RainWorks Challenge as a framework for the final submittal – everyone must know the particulars of the competition. You are to connect readings and work to date with seminar presentations, technical studies, campus sites, guest presentations, individual research, competition guidelines and past design work. You will be expected to experiment and test new ideas, research and investigate new practices, and define and articulate a compelling finished product / competition entry. For this project, work to be specific and to articulate the complexity of your design ideas through words, plans, perspectives, sections, calculations and supporting graphics.

Milestones and production requirements are provided in order to guide the development of your work. We will embark on a 'design thrill-cam,' looking and proposing at a variety of scales and resolutions. This ride is intentional and intended to avoid a linear progression from large to small to detailed – rather we will start at the middle (the site), then zoom in to work at a detail scale, then zoom out to connect to the site context. All work must have a component of performance and goals for increasing the ecological and social benefits through the inclusion of ecosystem services, landscape infrastructure and other improvements in the design process. You are encouraged to consult with your peers inside and outside of class and incorporate an interdisciplinary perspective to your project.site selection, design iteration

october 12 – 21

For the next week+ you will propose a site and project that meets the competition guidelines of providing "multiple environmental, educational, and economic objectives" (aka a high-performing campus landscape). Your site can be at any scale and size, but must meet the following criteria:

- Has potential for improvement – or – in the context of our recent project work and discussions, the site should currently be under-performing and have opportunities for significantly improved performance.
- Has potential to be of interest to the campus community
- Could serve as a unique exploration, demonstration or education site (or sites).
- Has potential to support aspects of landscape performance through additional ecological (clean water, air, provide cooling, sequester carbon, etc.) and social benefits (use, accessibility, education, etc).
- Has potential to connect to other spaces/places to create a network of functional, multi-purpose sites.
- Has potential to serve as a CSU, public university and LAF case study landscape performance project.
- and when designed, will function as a stand-alone landscape project and does not rely on the design of a new building. Projects can interact, adapt or co-opt any existing structure.

The following ambitious deadlines and deliverables are to be used guide your work and to help you come prepared for desk crits and class interaction:

Friday, October 14th
Diagram or graphic that supports your site selection. Diagram, calculation or 'claim' that supports the current performance levels of your site (note – this diagram does not need to be site plan scale)
Scalable printed site plan. Scalable printed plan of your site in the context of Cal Poly's master plan.

Monday, October 17th
Refined site support diagram. Conceptual design ideas in plan. Work on trace or similar medium to show proposed conditions over existing conditions.

Wednesday, October 19th
Refined conceptual design idea (next iteration). Design idea framed in the context of the masterplan (how does your site fit into the master plan?)

Friday, October 21st
Refined conceptual design idea (next iteration). Preliminary statement of performance goals or targets. Support Drawings.

Monday, October 24th
Material due for pinup discussion:

Initial and Refined Site Selection Diagram (2 versions)

Conceptual Design Ideas (3 versions)

Design Idea framed with masterplan

Preliminary Performance Goals or Targets.

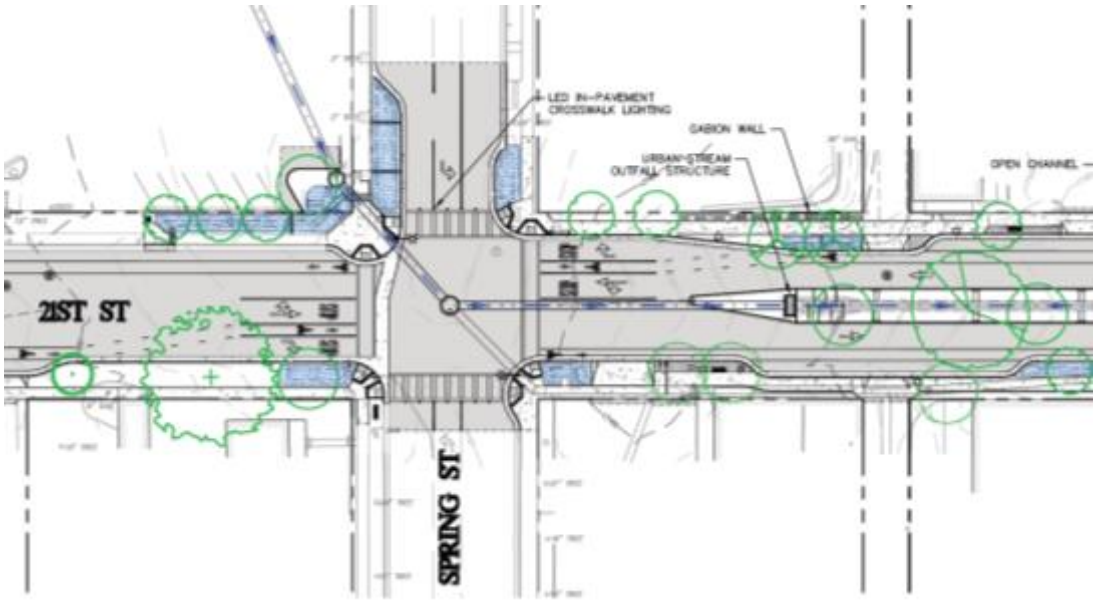
Support Drawings

project goals

1. **to ferret out the BEST possible ideas for additional study, refinement and collaboration.**
2. **to test performance goals/targets in the early stages of the design process and as a starting point for a design problem.**
3. **to integrate aspects of theory, as discussed in seminar, and apply ideas from precedent case studies, as utilized in the technical module, into studio design projects.**

PERFORM

take 2 - November 01 - November 18



City of Paso Robles, 21st Street Project

project refinement

For these next three weeks, you will refine your work to date to advance into the competition. Your work should build complexity in theory, performance and related issues (representation, technical solutions, etc.). Keep in mind readings, Polylearn references, seminar discussions and references, review feedback, desk crits and invited presentations. You are expected to experiment and test new ideas, research and investigate new practices, and define and articulate a compelling competition entry. In this phase, work to be specific and to articulate the complexity of your design ideas through words, plans, perspectives, sections and supporting graphics. Rely on analytical methods in making design decisions and quantifying the benefits of your design to make the case for your work.

Deliverables will be required every class period for review and/or check in with the instructor. This is to avoid the 'I am thinking of….' conversations from the last few weeks and get to 'This is what I have currently explored.' Work is required outside of class in preparation for in-class discussions.

This phase of work will culminate in a 'formal review' with invited guests of well developed proposals on November 18th.

deliverables

FRIDAY, NOVEMBER 4

- Seminar Discussion
- Refined Design Plan (please work to a scale that will fit on an 18"x24" piece of paper)
- Preliminary Water Collection / Watershed Diagram
- Preliminary/Refined area calculations of baseline conditions
- Review and written/graphic summary of competition requirements/deliverables

deliverables (cont.)

MONDAY, NOVEMBER 7

- Field Trip – Paso Robles and Atascadero (7:30am – 12pm. Arrive in SLO by 12noon)

WEDNESDAY, NOVEMBER 9

- Existing Conditions Plan(s) with contours of demonstration area(s).
- Refined Demonstration Concept Plan(s)
- Research on appropriate technologies
- Preliminary Performance Details / System drawings

FRIDAY, NOVEMBER 11 (VETERAN'S DAY)

MONDAY, NOVEMBER 14

- Key Site Analysis, Context, Opportunities and Constraints Information
- Existing Conditions Plan(s) with contours
- Refined Demonstration Concept Plan(s)
- Preliminary Project Sections
- Refined Performance Goals, Preliminary Performance Assessment (how well is your project doing?)

WEDNESDAY, NOVEMBER 16

- Refined Demonstration Concept Plan(s)
- Finalized Project Sections
- Refined Performance Details / System drawings

FRIDAY, NOVEMBER 18

(All work for this project, beginning to end for review and presentation). New work should take center stage, process work should be represented. Work does not need to be 'complete' or 'formatted,' however, work should communicate to professionals.

- Key Site Analysis, Opportunities and Constraints Diagram including context.
- Existing Conditions Plan with contours (no larger than 1/16" scale)
- Finalized Demonstration Concept Plan with contours (no larger than 1/16" scale)
- Water Collection / Watershed Diagram
- Key Project Sections (may be combined with diagram above)
- Refined Assessment of Landscape Performance benefits
- Preliminary Landscape Framework Plan / Diagram (your design project in the context of the larger campus landscape)
- Preliminary Perspectives (x2)

project goals

1. to build on experimentation and iteration within a design project
2. to understand, quantify and utilize aspects of landscape performance within the design process.
3. to use quantified performance benefits to make the case for your design ideas.
4. to frame your design ideas within the context of theories of landscape infrastructure, ecological urbanism, sustainability - aesthetics - function and eco-literacy.
5. **to enter a competition with the intent of winning.**

PERFORM

finishing touches - final presentation

image from: LA 402, fall 2015 student work

project submission

For these next two weeks, you will refine your design project and concentrate on creating a cohesive written and graphic presentation for the final review on Friday, December 9th. Much of your work has been competed – much more remains. Use the work posted in studio, EPA's Campus Rainworks Challenge documents and other resources as guidelines for developing your work.

deliverables

You are responsible for crafting a compelling presentation that includes the following deliverables:

- Existing Conditions Plan and Location Plan
- Key Site Analysis, Opportunities and Constraints Diagram including context.
- Finalized Plan with contours, elevations and appropriate notes
- Key Project Sections
- Illustrative Drawings as necessary to communicate the experience of the places you have created
- Your final design in context of the campus landscape currently and in the context of the masterplan.
- Graphic Display of Landscape Performance Benefits (include current and proposed)
- Support Drawings (details, system diagrams, material palettes, plan diagrams – how your project works, before and after diagrams, precedent studies, infographics, watershed / water collection diagram)

- Written Narrative (a minimum of five pages that cover an introduction to the project, the project site, the project design, any applicable theories and/or references to seminar readings, landscape performance data, etc. Refer to the 'Presentation Structure' document handed out a few weeks ago for additional possibilities and direction in crafting this narrative).

deliverables

A maximum of THREE design boards may be utilized. Board Dimensions are considered to be 24”x26” to match the EPA’s Campus Rainworks Challenge submittal information. All boards may be presented as individual panels or continuous (this is the suggested format) display. Horizontal or Vertical format should be decided with the instructor.

The written narrative may be in 8.5”x11” or 11”x17” format and must include a cover sheet and any references used.

All work is due for review at 9am on Friday December 9th in the 2nd year hallway. Printed presentations are due by 9am for review, electronic files are due on Polylearn by 5pm on Friday December 9th.