FEASIBILITY STUDY FOR

QUARRY AMPHITHEATER RENOVATION

O|CB

OFFICE OF CHERYL BARTON

SITE PLANNING + LANDSCAPE ARCHITECTURE

2014

CONTENTS

...the general effect in main campus areas must be one of sensitive collaboration between the designer and this spectacular environment with the intent that neither shall impose unduly upon the other.

Thomas D. Church,
Long Range Development Plan 1963

Quarry Amphitheater is an extraordinary setting at the heart of the UC Santa Cruz campus with potent historic, cultural and natural landscape attributes. It holds the opportunity to become a vibrant focus of student and campus life, while also retaining its value as a natural open space. The holistic approach of this Feasibility Study ensures that any recommendations and plans for this remarkable site will not diminish, but strengthen, the inherent qualities of place that make it special. The findings of the Study will inform the subsequent design phases for the project.

The Feasibility Study for Upper Quarry Amphitheater has been prepared to refine program elements, develop preliminary phasing concepts, operational and maintenance requirements and prepare a preliminary budget forecast. The budget forecast will assist in the development of fund raising goals for the renovation of the facility. This Study is the initial phase of the renovation and reconstruction project with design, construction and on-going operations to follow. The concepts developed herein may also support preliminary fund-raising activities.

The Design Team, led by a Core Advisory Group, brought an in-depth knowledge of many other outdoor performance venues of similar scale; operations and management of a range of performance and event venues; and deep familiarity with campus operations and facilities to help frame the questions and ensuing discussion with the UCSC community that form the basis of this Report. The Team began by asking ***'Big Questions'***, listening carefully to the valuable insights, experiences and suggestions of the UCSC community, and then worked with the Core Advisory Group to create a set of '***Guiding Principles***.' The Design Team and the Core Advisory Group met monthly over the Winter and Spring quarters in 2014, and held two evening open forums to get direct input on the future of the venue. An on-line survey received more than 1,700 responses from students, faculty and staff. The Study findings were presented at the Advisory Committee of Campus Planning and Stewardship and at a Student Union Assembly. Input and advice was sought from the Student Fee Advisory Committee, key campus facilities staff members, and other campus leaders and groups.

The ***'Carrying Capacity'*** of the site became one gauge by which the impact of change was measured. Gains in revenue generation capabilities were weighed against the importance of openness and availability for student use. Large crowd event-based activities were balanced with a quiet, park-like setting. An assessment and understanding of both the cultural landscape value of the site and its symbolic and emotional value for a diverse range of stakeholders — through careful consideration of ***'Contributing Factors'*** — was critical to the development of the Study.

This Study identifies a way to revitalize the amphitheater and adjacent areas in a two phased approach. The plan includes a wide range of campus uses and identifies infrastructure and support facilities to promote and enhance the student experience, create a sustainable and memorable venue for the campus, and maintain the beautiful setting.

Phase One of the Plan implementation will provide life safety, building code, accessibility and basic operational upgrades to support performances, events and casual daily use of the amphitheater. Seating capacity will be expanded to 2,000, making 'The Quarry' an attractive venue for concert promoters and event planners. Phase One will rely on temporary performance infrastructure, tents, portable restrooms and concession stands to support events.
Phase One Preliminary Budget Forecast: $7.4M

Phase Two will provide a fully built-out venue with a technological infrastructure to host a wide range of contemporary performance and event needs. A new Redwood Lobby and Support Building will provide a full kitchen and concessions facilities, restrooms, storage, a green room and flexible meeting space. An elevator and pedestrian / light-service vehicle bridge will provide a critical link between the site and the campus. The bridge will be designed as both gateway and gathering place. It will provide a direct universally accessible link between Quarry Plaza and the Amphitheater and to restrooms and concessions for all patrons during events.
Phase Two Preliminary Budget Forecast: $10.7M

GUIDING PRINCIPLES

RESPECT THE CAMPUS FRAMEWORK
Establish a "Center of Student Life" that will inspire visitors, engage daily student experience, and strengthen physical connection with the greater campus; while respecting the natural forest system of which the site is a part.

PRESERVE SITE CHARACTER
Expand capacity and infrastructural development for the amphitheater without compromising the intimate, immersive, spiritual and 'magic' quality of the landscape experience and the quirky spirit of the historic amphitheater design.

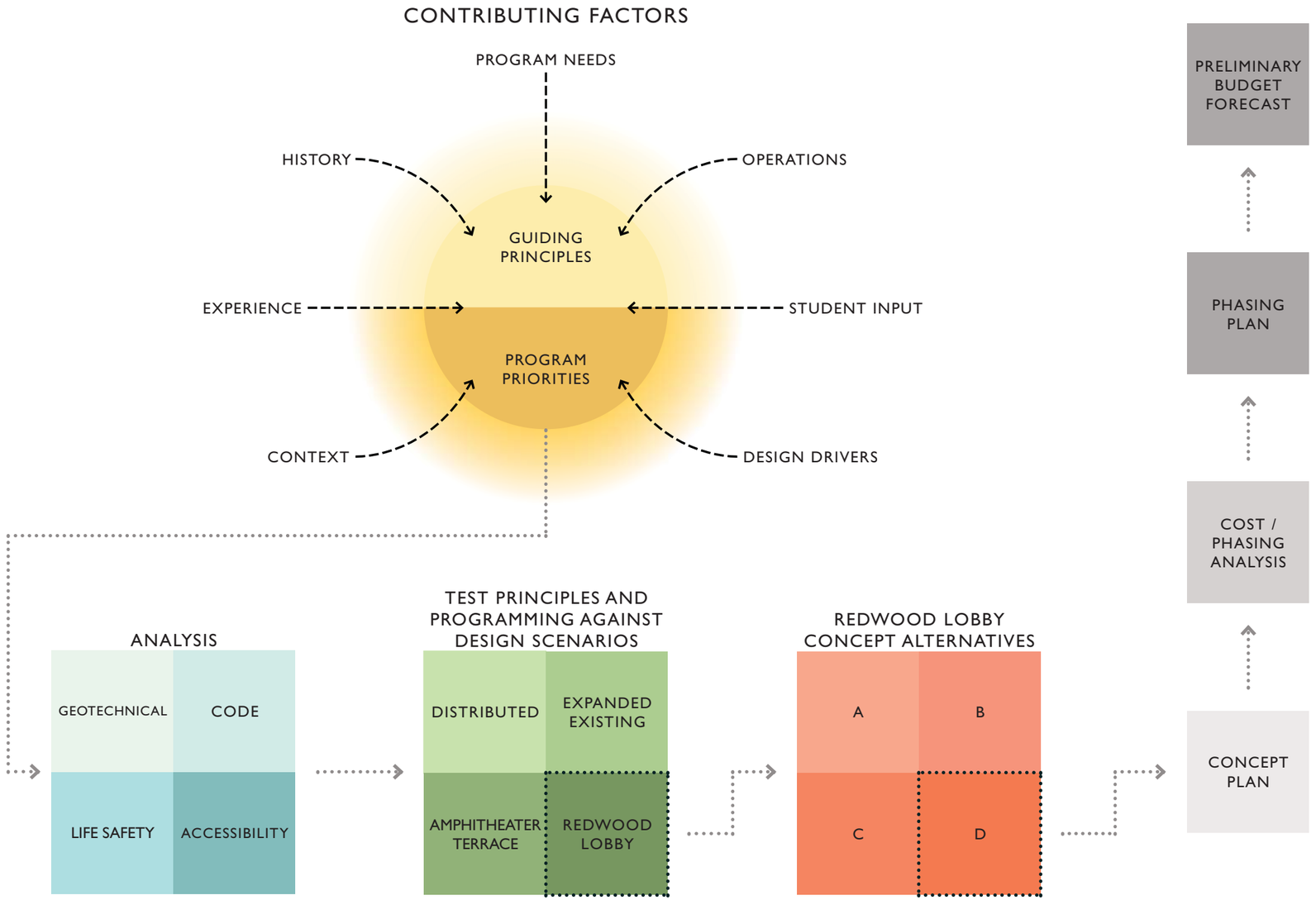
PROMOTE STEWARDSHIP THROUGH INTEGRATED SUSTAINABLE DESIGN
Protect the landscape setting, promote environmental awareness and stewardship, and create a comprehensive and innovative approach to sustainable infrastructure.

ENCOURAGE STUDENT ENGAGEMENT AND PROGRAM DIVERSITY
Provide for a broad spectrum of use from casual, daily use to performance through site development and infrastructure that is flexible and multi-use in nature.

SUPPORT FINANCIAL FEASIBILITY
Respond to campus financial goals and achieve operational sustainability through effective management of resources.

ESTABLISH SAFETY, SECURITY AND UNIVERSAL ACCESS
Provide universal access, a positive, safe place to learn, explore, and share; and prioritize broad student use and awareness.

1.0
INTRODUCTION



1.1 Introduction

Used for performances and events since its opening in 1967 until its closure in fall 2006, the Quarry Amphitheater has become a beloved icon of the UCSC campus. The significance of the Quarry Amphitheater to alumni, students, faculty, staff, community members and visitors makes the approach to shaping the future of this place important and challenging. To effectively execute the Quarry Amphitheater Renovation and Expansion project, this Feasibility Study was initiated and a Core Advisory Group was charged to guide the study.

1.2 Feasibility For What?

The Core Advisory Group engaged in a thoughtful dialogue with the Design Team to explore aspirations, develop fundamental planning and design principles, analyze sustainable operational parameters, and facilitate decision making within the campus community. Together, we considered a wide range of 'Contributing Factors' in order to answer this fundamental question — ***Feasibility for What?***

The array of possible outcomes for this special place is contingent on an assessment of the ***Carrying Capacity*** or ***Tipping Point*** of the site - weighing potential gain for revenue generation as a large-scale ticketed performance venue, against the potential for loss of character and daily availability to student use. A series of site immersion workshops and discussions with the Core Advisory Group and students resulted in a set of ***Guiding Principles*** and ***Program Priorities*** to guide the Study.

1.3 Feasibility Study Process

The ***Guiding Principles*** and ***Program Priorities,*** together with an assessment of all 'Contributing Factors' and analysis of existing conditions guided the development of a Concept Plan.

Analysis of existing conditions from the perspectives of geotechnical, code, life safety, facilites assessment and accessibility established minimum upgrades that would be needed to reopen the venue.

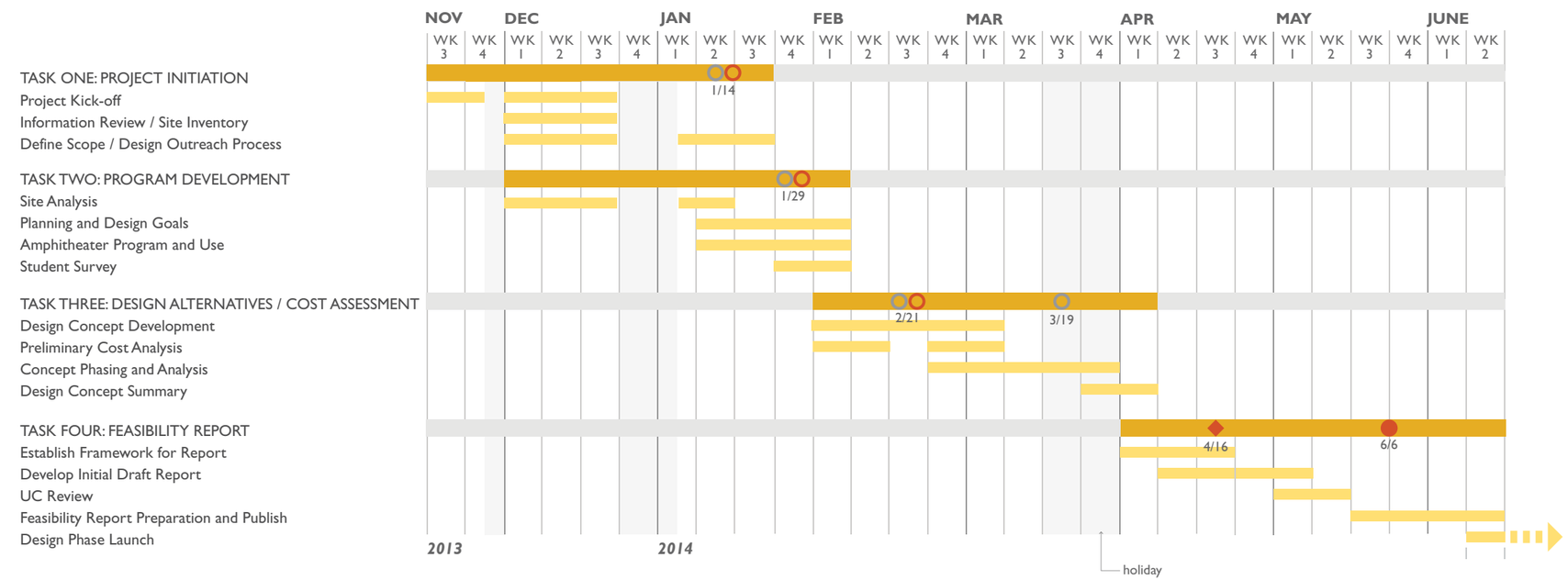
Discussions with the Core Advisory Group and campus facilities and operations staff revealed key design drivers such as connectivity of the site to the larger campus context, flexibilty of use, and event program requirements that would need to be considered.

Facility and operational requirements for compatible revenue generation opportunities were outlined to guide site development considerations.

All of these inputs guided the development of a series of possible design scenarios that tested principles and programming goals. These design scenarios were compared in a 'Choosing by Advantage' matrix and discussed at length with the Core Advisory Group. The resulting 'Redwood Lobby' scheme was selected to be developed into four additional concept alternative schemes to further refine the concept plan.

The Preliminary Budget Forecast and Phasing Plan are based on the resulting preliminary Concept Plan. This plan will be refined in the design phases of the project.

PROJECT SCHEDULE



LEGEND
- Core Advisory Group Work Session
- Student Outreach Session
- Design Advisory Board Review (DAB)
- Student Union Assembly (SUA) Presentation

2.0
CONTRIBUTING FACTORS

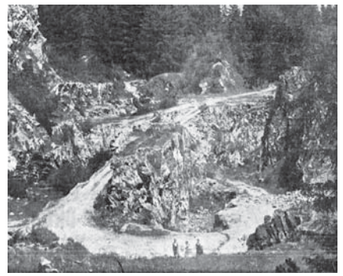
2.1 Historic Framework

The history of the site as a former quarry lends the Amphitheater a unique character that is still present today. This intersection of the natural landscape with human intervention, and the inherent drama of their juxtaposition, frames much of the UC Santa Cruz campus experience. The landscape architecture firm of Royston, Hanamoto, Beck and Abey created a design for the amphitheater near the outset of the campus that spoke to this intersection, and drew inspiration from the angular quarry walls, and colors and textures of the natural landscape. The powerful views of the quarry from the amphitheater, and the containing embrace of the dense redwood forest create a powerful experience, even today. This experience, coupled with the memories of significant campus events that took place here, make this site a very special, and deeply loved place on campus.

1860
Quarry begins operation

1870s-1920s
Santa Cruz limekilns produce a third of California's and 75% of San Francsisco's lime supply, significantly contributing to building construction in the state

1946
Quarry closure



1961
Campus established

1962
Thomas Church visits quarry, suggests possibility for re-use

1965
UCSC opens

1966-1967
Robert Royston designs amphitheater

1967
Amphitheater opens
(Construction cost: $82,000)

1966
Dean McHenry's inauguration at quarry

1968
Honorary doctorates given to Alfred Hitchcock and Ravi Shankar

1967-1985
Commencement regularly held at amphitheater

2001
Quarry Plaza, Bay Tree Bookstore, and Graduate Commons open

2003
Last commencement at amphitheater given by Angela Davis

2005
Multicultural Festival held at amphitheater

2006
Amphitheater closes

---- Phase 1 Amphitheater Reopens

---- Phase 2 Complete

1860 | 1870 | ~ | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 | 2010 | 2020

2.2 Positioning the Quarry

…through the spoken work, the rendition of music, through song and dance the outdoor theater can contribute to mental, physical, and spiritual growth. If it is healthful to exercise, work, play, and sleep in the open, it should be even more beneficial to have our finer sensibilities unfolded in the same favorable atmosphere.

Emerson Knight, in Architect and Engineer, 1924

The UC Santa Cruz Quarry Amphitheater has played a key role in the history of American outdoor theaters. Not only does its asymmetrical design reflect the distinctive formal qualities of one of the country's foremost modern landscape architects, Robert Royston, but it is also one of the few modern American theaters purposely designed to highlight its landscape setting.

During the early 20th century theatrical professionals, naturalists and designers initiated a movement to build outdoor theaters that brought audiences close to nature during performances. Many such theaters were built in estate gardens such as Longwood Gardens in Delaware and Dumbarton Oaks in Washington, DC while others were for public gatherings, including the Forest Theater in Monterey, the Mount Helix Theater east of San Diego and the Hollywood Bowl. But college theaters, including notable ones built at Berkeley and Occidental College, were particularly popular for these "theater and nature" experiences. The 1930s New Deal programs also emphasized the role of nature and the landscape experience in the designs of hundreds of outdoor theaters built by the CCC and WPA. Then, after World War II, priorities in outdoor theater design shifted to comfortable seating, commercial concessions and the lighting and sound technology of interior theaters rather than on the creation of a memorable landscape experience.

As a result, from WWII until the present, few modern outdoor theaters have prioritized the landscape setting in their designs. Nevertheless, some theaters with notable landscape experiences were built on campuses, including the Quarry Amphitheater, the 1964 McIver Theater at Meredith College and the 1942 Scott Amphitheater at Swarthmore College. Although the McIver Theater, surrounded by native trees and overlooking a small lake, has a distinctive layout of complex curves and detailing that clearly place it as a work of modernism, it adheres to the historical convention of a symmetrical auditorium. Similarly, the Scott Theater has a symmetrical auditorium although its randomly spaced tulip poplars interrupt this symmetry to give it a distinctive landscape character. These designs, like the early theaters at Longwood Garden, Occidental College and Mt Helix, were conceived as symmetrical and then the precision of their symmetry was altered to accommodate topography, rock formations and major trees.

In contrast, Royston's initial concept for the Quarry Amphitheater began with an asymmetrical response to the distinctive features of its landscape, particularly the quarry wall. This approach places the Quarry Theater's design in the company of Denver's celebrated Red Rocks Theater and the Sydney Cushing Theater on Mount Tamalpais where the designers developed asymmetrical concepts that responded to surrounding landscape features. Several recent theaters, including Lawrence Halprin's Stern Grove Theater in San Francisco, also have asymmetrical configurations determined by their site's landscape features. These landmarks and the Quarry Amphitheater remain key icons in modern design while also offering memorable landscape experiences.

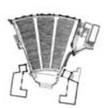
Interestingly, Tommy Church, who provided early oversight of the campus landscape, first proposed a symmetrical theater scheme for the quarry site. Seating 4000 in conventional rows, Church oriented the theater roughly 180 degrees to its eventual alignment. But after this initial study, he recommended Royston, his former employee, to develop a final scheme. Royston, with Church's support, reoriented the theater to focus the visitor's view on the formidable quarry wall and framed this powerful stage backdrop between an existing boulder west of the proposed stage and two towering 48-inch and 18-inch redwoods on a knoll southeast of the quarry wall. Although Royston developed several versions of this scheme, the boulder and redwood trees appeared prominently in each. All the alternatives also kept the diverging angles and variable dimensions between the proposed stepped seat walls. Royston's earliest schemes located the stepped aisles with a more direct alignment than the askance alignment of stepped aisles in the final scheme. The current configuration of these aisles does not meet contemporary code and safety standards. Modifications to the aisle alignments, terraces and construction detailing are necessary in order to update the theater to current standards and provide for contemporary use. Fortunately, these updates can be done in a way that respects the essential components of Royston's vision: an asymmetrical response to the key natural landscape features of the site – its quarry walls, boulder and existing redwood trees.

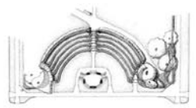
To achieve his vision of a contemporary theater shaped by its landscape features, Royston visited the site regularly during construction and personally staked the layout to ensure that its orientation highlighted the quarry walls, boulder and existing trees. According to his partner Kaz Abey, Royston saw the "monument" boulder on the edge of the stage as an important "starting point" for laying out the asymmetrical theater. Royston directed some reshaping of the stage boulder to facilitate views, requiring the contractor to maintain a weathered surface on one side and precise vertical cuts following the stone's natural cleavage on the other. After the first concerts in the theater, some members of the Campus Planning Commission requested cutting down the boulder to open up more views. But, acknowledging that the boulder was an important feature to Royston, they consulted him on the further reshaping of the boulder. Although the boulder still blocked views from a few seats, the boulder has nevertheless remained a defining element in the theater's landmark design. The asymmetrical design and the landscape experience were well received by both students and the design press at the time and since. But perhaps the greatest compliment came from Royston's mentor, Tommy Church, who, after visiting the theater, was quoted saying "Every time I see it, I think Bob is a genius."

Following is a drawing showing the Quarry Amphitheater drawn to the same scale as other significant American theaters. Although they vary in capacity from 400 people in Berkeley's John Hinkle Theater to 18,000 for the Hollywood Bowl, it is the auditoriums that vary significantly in size. The stages are remarkably similar in size although the Quarry Amphitheater has one of the largest.

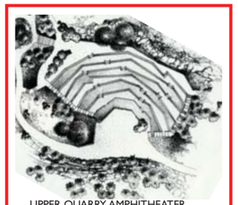

JOHN HINKLE THEATER
BERKELEY, CA


SUNRISE THEATRE
BOULDER, CO

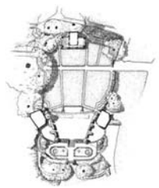

JOHN ANSON FORD THEATER
LOS ANGELES, CA


CAUSLAND THEATER
ANACORTES, WA


FOREST THEATER
CHAPEL HILL, NC


UPPER QUARRY AMPHITHEATER
SANTA CRUZ, CA


ARLINGTON MEMORIAL
ARLINGTON,VA


LONGWOOD GARDENS
DELAWARE


ARNESON RIVER THEATER
SAN ANTONIO,TX

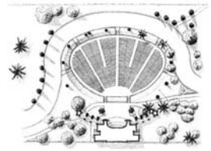

DELACORTE THEATER
NEW YORK, NY

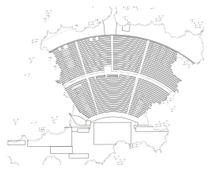

OCCIDENTAL THEATER
LOS ANGELES, CA

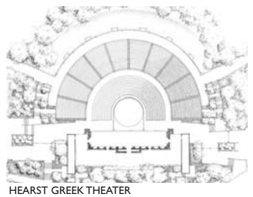

MT HELIX NATURE THEATER
SAN DIEGO, CA

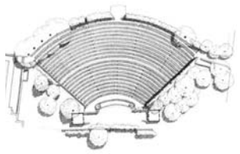

THEOSOPHICAL SOCIETY
POINT LOMA, CA

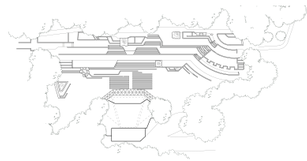

SCOTT ARBORETUM THEATER
SWARTHMORE, PA


REDLANDS BOWL
REDLANDS, CA


CARTER BARRON THEATER
WASHINGTON, DC

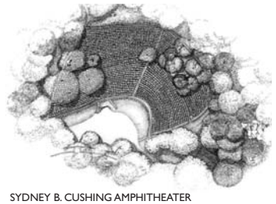

HEARST GREEK THEATER
BERKELEY, CA


RALEIGH ROSE GARDEN THEATRE
RALEIGH, NC

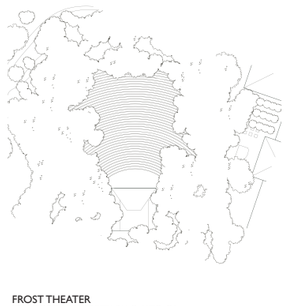

STERN GROVE
SAN FRANCISCO , CA

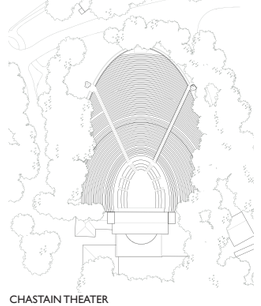

CALIFORNIA SHAKESPEARE THEATER
ORINDA, CA

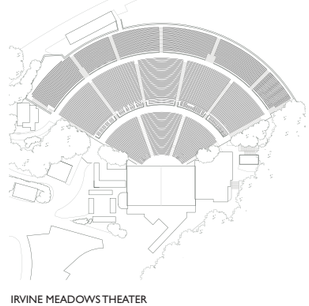

CAMDEN PUBLIC THEATER
CAMDEN, ME

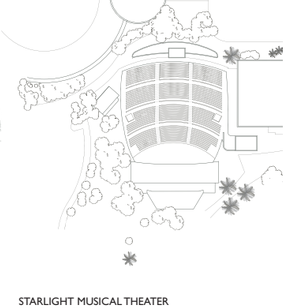

SYDNEY B. CUSHING AMPHITHEATER
MILL VALLEY, CA

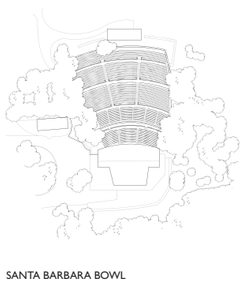

ELVA BRYAN McIVER THEATER
MEREDITH COLLEGE, RALEIGH, NC

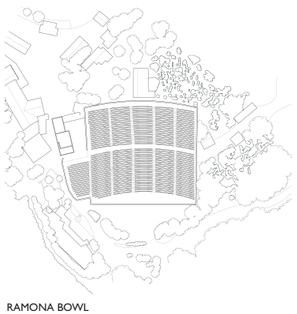

FROST THEATER
STANFORD UNIVERSITY, PALO ALTO, CA

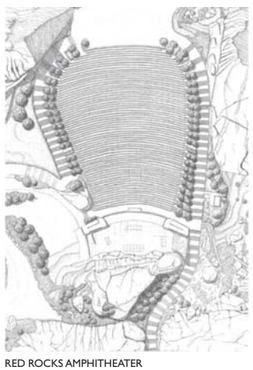

CHASTAIN THEATER
ATLANTA, GA

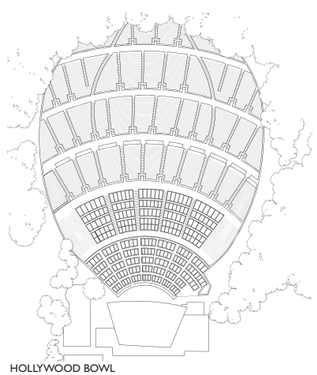

IRVINE MEADOWS THEATER
IRVINE, CA

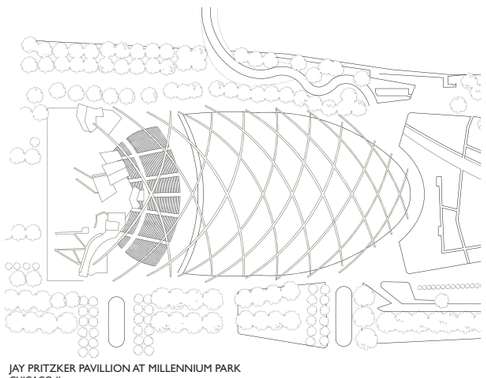

STARLIGHT MUSICAL THEATER
SAN DIEGO, CA

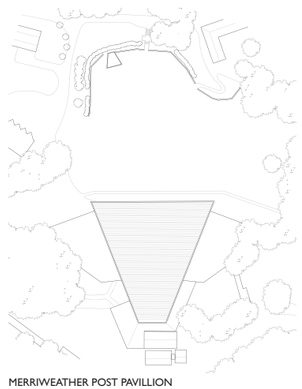

SANTA BARBARA BOWL
SANTA BARBARA, CA


RAMONA BOWL
HEMET, CA


RED ROCKS AMPHITHEATER
MORRISON, CO


HOLLYWOOD BOWL
HOLLYWOOD, CA


JAY PRITZKER PAVILLION AT MILLENNIUM PARK
CHICAGO, IL


MERRIWEATHER POST PAVILLION
COLUMBIA, MD

same scale comparison of peer outdoor amphitheaters

2.3 Previous Planning Studies

Three UCSC planning documents informed the Feasibility Study:

Long Range Development Plan, 2005
Physical Design Framework, 2010
Student Life Facilities Feasibility Study, 2003

Physical Setting

The principal determinant of UCSC's campus form has been the surrounding landscape. It's remarkable beauty and rich variety has been acknowledged from the earlier visits of campus planners and architects; understanding it and enhancing it has formed the core of planning efforts ever since.

Physical Design Framework, 2010

Both the Long Range Development Plan (LRDP) and the Physical Design Framework (PDF) emphasize the physical setting of the campus and its major landscape types as a key consideration for all planning and physical development on campus. Three major landscape types – Meadows, Forests/Forest Edge and Ravines – create the powerful physical presence characteristic of the UC Santa Cruz campus. The 'Forest' Landscape type predominates the setting of the Quarry Amphitheater, framing the large sunny clearing that comprises the former quarry and amphitheater. The PDF recognizes the importance of these clearings within the forest to create 'sunny public outdoor spaces that contrast with the shaded forest, in order to encourage activity and social interaction'.

Student Life Facilities

According to the fundamental campus development pattern established in the LRDP, the Quarry Amphitheater is located within the 'Central Campus Core'. Within this 'Core', which is the academic and service center of campus, specific 'Areas' of campus are identified. The 'Student Life Area' in which the Quarry Plaza and Amphitheater are located is a primary location for student services and campus-serving commercial enterprises. It is also a major transportation hub, traversed by heavily traveled pedestrian, transit and shuttle, and bicycle routes.

The Student Life Facilities Feasibility Study (SLFS) explores alternatives for improving and expanding student facilities within the 'Student Life Area' to address a campus-wide shortage of social places outside the classroom. It recognizes the potential for Quarry Amphitheater to become a sunny hub for student enjoyment on non-event days. Limited rest rooms, dressing rooms, and lack of concessions or support facilities are identified as challenges to be addressed in order to meet this goal.

Additional programmatic requirements for the amphitheater called for in the SLFS include:

- additional power required to upgrade the sound and lights system
- storage area
- accessible pathways and seating areas
- pathway lighting to provide 'campus minimum light levels'

Transportation and Circulation

Walking is the primary mode of travel for students within the academic core and within and between colleges. The pedestrian system is made up of a network of paths connecting individual buildings within colleges and inter-connecting the colleges.

Long Range Development Plan, 2005

Transportation, circulation and parking are an essential part of campus planning. Throughout the UCSC campus, steep topography and sensitive natural environments have challenged the development of an efficient system of vehicular and pedestrian circulation.

Reinforcing pedestrian connections between the residential areas and the core, and between destinations within the 'Campus Core' is considered very important for every project on campus, and became a key consideration for Quarry Amphitheater circulation. The PDF describes an overall campus goal to complete a "warped grid" of pedestrian paths that will make it possible to walk to all major classrooms, libraries, and other major academic and support facilities within 10 to 15 minutes from nearly everywhere on campus.

The campus roadway systems are described as a "ladder of roads" stepping up the contours of the land. Two of the three existing 'rungs' of this ladder flank the Quarry site: McLaughlin Drive to the north and Steinhart to the south. Both of these roads are heavily used by vehicles, bikes and pedestrians, and opportunities to enhance and strengthen campus connections with this project need to be explored.

Design Guidelines

The PDF includes specific design guidelines for the Student Life Area and the Quarry Amphitheater, including recommendations to:

- Integrate approaches, support facilities and entry to the Quarry Amphitheater with development in and around the Quarry Plaza. Design improvements to the Quarry Amphitheater that defer to the scale, character, and form of the historic quarry.
- Explore the potential of adding bridges to create a "triangle" of student serving areas: Quarry Plaza, the OPERS East Field Complex, Hahn Student Services, ARCenter, McHenry Library and the Classroom Unit.
- Design new buildings adjacent to Quarry Plaza to fit the scale and character of the existing complex and the historic character of the site by articulating the separate elements and avoiding massive buildings and a vast open plaza.
- When planning development near the upper edges of the quarry consider the effect of views from the Quarry Amphitheater on its historic character.

2.4 Stakeholder Input Sessions: Site Awareness Walk

The first of a series of Core Advisory Group work sessions with the Design Team was a Site Awareness Walk. The discussion that ensued became the genesis of ***Guiding Principles*** and ***Program Priorities*** that would guide the process of decision making for the Feasibility Report.

The intent of the walk was to simultaneously look to the past and the future to establish the range of perspectives and aspirations the Core Advisory Group members held about the Amphitheater site. An Awareness Walk guide/sketchbook with a series of questions keyed to 14 specific moments in and around the site, helped focus attention on some of the larger themes/big questions for the project, and to elicit specific feedback from the group.

Site Inventory Workshop

The Design Team met with campus staff to inventory their operational and safety experience and recommendations for site design, operation and management. Their input guided this Report's recommendations for site facilities layout, security measures, vehicular and pedestrian access and circulation and site infrastructure.

A complete list of Core Advisory Group and Site Inventory Workshop participants is included in the Appendices.

On-line Survey

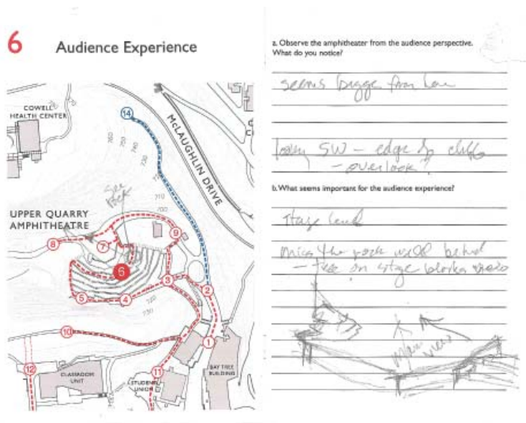
An on-line survey of 12 questions was posted for two weeks. Targeted to UCSC students, faculty and staff, the survey sought to answer the following questions:

- What percentage of students know of and visit the site?
- What qualities or features of the site do they value?
- How would they like to use the site in the future?
- What features would be needed to support that use?

Overwhelmingly, students appreciated the natural setting, seclusion and quiet character. They were more interested in free and campus sponsored events, such as movies, performances and local bands, than big-name ticketed performances. Their responses helped to frame discussion about Guiding Principles and Program Priorities and guide the Preliminary Concept.

1,604 responses were received, 99% of which were from students. Complete survey results are included in the Appendices.

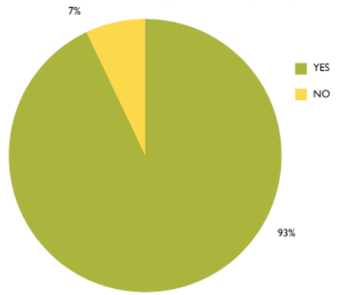
Site Awareness Walk



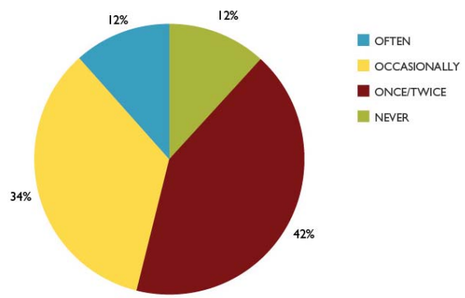
Site Awareness Sketch book excerpts

Site Inventory Workshop

Do you know where the Upper Quarry Amphitheater is?



Have you been there? How often?



Online Survey excerpts

2.5 Student Outreach Workshops

The primary goal of the Student Outreach Workshops was to listen to and understand students' perspectives on significant aspects of the site and their priorities for its future use. Students who participated in the workshops were familiar with the site and held strong convictions of its importance and symbolic significance for the campus. Many told compelling stories of discovery— the site was a stunningly beautiful and magical place that they had happened upon or had been lead to by other students. Legends of past performers, partly true, partly mythical seemed to abound.

A number of general themes emerged from our conversations with students:

Natural Setting:
Future development should not compromise the natural setting and the 'magical', 'spiritual' qualities of the site.

Temporary and removable stage structures are preferable to permanent ones, so that during non-event use the site retains its natural character.

Site integrity and the natural character of the site should be maintained by limiting audience capacity to 2,000.

Small events targeted to student and inter-college use should be given scheduling preference to large events for the outside community.

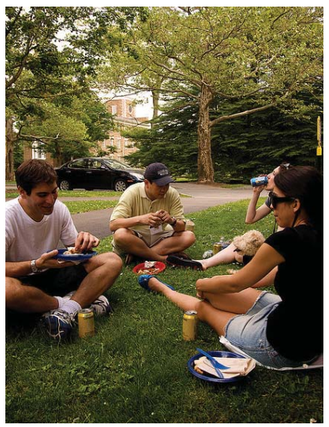
Campus Life:
There is a compelling need for social places to congregate on campus and meet one another. Wifi, café or coffee cart and movie nights would create a draw that would encourage students to use the site for informal gathering. Space for free-speech and artistic expression are also considered important.

The existing broad terraces of the amphitheater provide informal and flexible scattered seating rather than denser, fixed seating. Students appreciate that because of these terraces, the amphitheater doesn't feel like an empty theater during non-event times, but more like a park. The non-symmetric, non-traditional form of the existing Royston design, and its source in the quarry landscape, is generally appreciated. Students encouraged the team to maintain the spirit of the design, while updating the design to contemporary use and improve long-term performance.

Connectivity:
The centrality of the site to campus, and the opportunity that provides to create a space for gathering and day-to-day cross-departmental student interaction is significant. Improved universal access to the site and Quarry Plaza will promote use and awareness of the Amphitheater, while also addressing campus circulation issues in general.

Priority for Student Use:
Campus organized events or revenue generation operations should not out-compete student use of the site.

Providing a place and infrastructure for student-organized performances and events is highly desirable.


	Program Sponsor	Program Element	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions
1	Campus Performance Programs	Rainbow Theater, AATAT	existing through M49	Campus	1400 per season	36 per production	once a quarter	Measure 49 funding	Free for all UCSC, guest 15 per Person concessions sold
2	Speaker Blowout	National speakers	Existing	Campus	500	8 including set up	Annual	Student fees	No sales
3	Poetry/Spoken word performances	Speakers	Existing	Campus	2-300 per event	6 including set up	5-6 events per year	Student fees	No sales
4	Cultural performances	Dance, music	Existing	Primarily campus	4-500 per event	6 including set up	5-6 events per year	Student fees	Refreshment sales
5	Organization orientations	Speakers	Existing	Campus	2-300 per event	4 including set up	5-6 per year	Student fees	No sales
6	Cultural fairs	Live performances	Existing	Campus	2-300 per event	6 including set up	4-5 per year	Student fees	Refreshment sales
7	Lip Sync contest	Live performances	Existing	Campus	3-400	6 including set up	Annual	Student fees	No sales
8	Concerts	Music	Existing	Campus	2-300	6 including set up	1-2 per year	Student fees	No sales
9	Community Events	Professional Theater Productions, Birth of Word	existing through M49	Campus & Community	1000 per production	16 per production	3 times a year	Measure 49 funding	Tickets Free for all UCSC
10	Multicultural festival	performance and food	Existing	Primarily campus	2-3,000 throughout the day	48 including set up	Annual	Various student fees	Food sold by student
11	Disability Resource Center	Guest Speaker re Activism	proposed	campus	500	4	once a year	various sources	concessions sold
12	EOP	Fall Orientation	Existing	1300 incoming	1,100	6 Hours	Fall quarter only	SSF	
13	Graduate and Professional School Fair	Career Development Program	Existing	students, academic advisers, professional and graduate school recruiters	600 annually	9 hrs.	annual	self-funded	$300 per table for recruiters
14	Employer Information Sessions	Career Development Program	Existing - multipile small events	students and recruiters	2000 annually	2 hrs.	several per quarter	self-funded	$100 per employer

Excerpt from full UCSC Program Summary List

2.6 UCSC Program Summary

Program information was gathered from campus organizations to guide potential uses for the Quarry. A total of 37 potential campus uses were identified. The chart to the left is an excerpt of the full summary.

Organizations that provided input were:

- Career Development Program
- DRC (Disability Resource Center)
- EOP (Education Opportunity Program)
- SOAR (Student Organization Advisory Resources)
- SOMeCA (SOAR, Student Media, Cultural Arts and Diversity)
- STARS (Services for Transfer and Re-entry Students)

Key findings from Program Summary:

- >99% of existing programs can be accommodated with an existing audience capacity of 1,600
- Revenue generating conferences and retreats can be scheduled to avoid conflict with campus and student use
- There is wide-spread campus interest in use of the amphitheater for a broad spectrum of programs including performances, events, ceremonies, festivals and gatherings
- Additional input from campus staff is need to further refine the requirements for these uses

Historic Non-Campus Uses identified include:

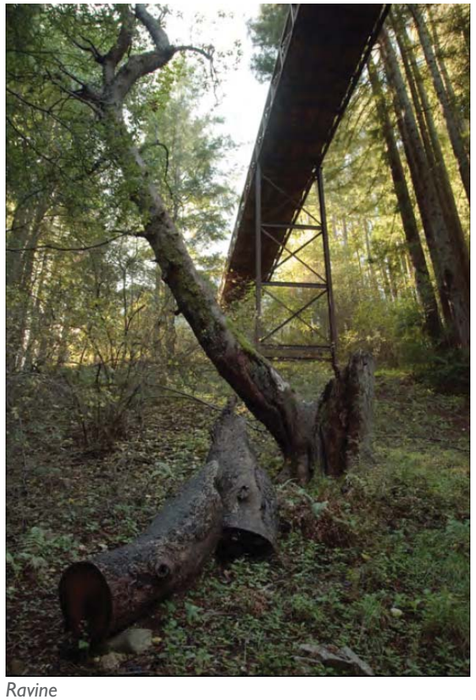
- High School Graduations
- Conferences

A complete Program Summary is included in the Appendices.

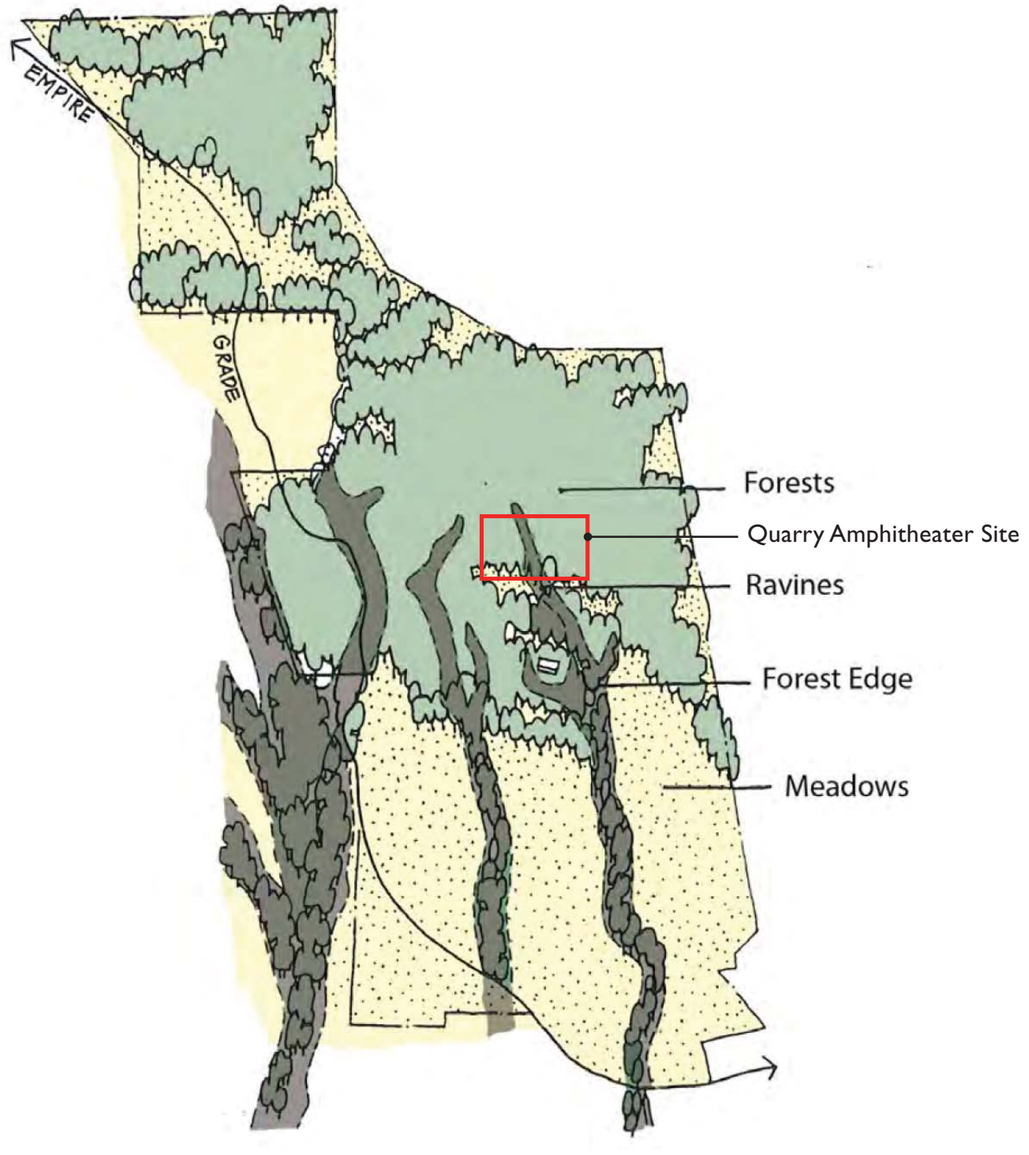
3.0
EXISTING CONDITIONS

Forest

Meadow



Ravine



Major Landscape Types of the UCSC Campus, from the Physical Design Framework, 2010

3.1 Ecological context

The (campus) site demands unique attention. Everyone who saw it during the planning stage was awed and impressed by the need to keep it as unspoiled as possible. 'Any manicuring of this area will produce a commonplace effect,' said Ansel Adams.

1963 Long Range Development Plan

The UCSC campus was founded on a deep reverence for the natural landscape setting in which it is based, and an appreciation of the challenge of building sensitively and responsibly within it. Today, the deep commitment to sustainable development continues.

Landscape character defines the character and experience of the social and academic places within it. The 'Forest' Landscape type predominates the setting of the Upper Quarry Amphitheater. ***Preserving the ecological integrity of the forest and its experiential, even magical, qualities is of utmost importance.***

The entry approach to the Amphitheater through a dense, cool and shaded forest explodes upon the bright sunny opening of the amphitheater and a dramatic view to the sun washed north wall of the quarry. Campus planners and designers have recognized the power of incorporating "the dramatic sense of transition when moving between the shade of the forest and the light of the meadow"; and the importance of sunny places within the heart of campus. ***A warm and sunny clearing anywhere on campus becomes a strong attractor for student enjoyment.***

3.2 Campus Connectivity

The landscape of the central campus, and its full pedestrian circulation system is an organic web of pathways, roads and trails that can be understood as a "warped-grid" system… The experience of walking through a mix of natural and developed areas gives UC its distinctive character.

Long Range Development Plan, 2005

For UCSC students, traversing ravines through the dense forest as they travel from colleges to class and other campus destinations defines their campus experience, and contributes to their deep love and appreciation for the natural landscape of which they are a part.

Each project within the UCSC campus must not only address its own internal circulation, but also strengthen connectivity to the campus beyond. Each new project is an opportunity to build on the system of campus circulation. Planning these connections must embrace not only efficiency and safety but experiential integrity.

Throughout the campus, steep topography and sensitive natural environments have challenged the development of an efficient system of pedestrian circulation. The provision of direct connections from Quarry Amphitheater to Merrill and Crown Colleges to the east and to Upper Classroom Unit and the Science and Engineering campus to the west; to the Cowell Health Center to the north and to Hahn Student Services to the south, will provide critical cross campus linkages. This new system of connectivity will place the Amphitheater and Quarry Plaza at the center of a significant crossroads of student serving destinations.

3.3 Zones of Influence

When planning development near the upper edges of the quarry consider the effect of views from the Quarry Amphitheater on its historic character.

Physical Design Framework, 2010

Students and many others who know this place consider seclusion and privacy to be special attributes of the Amphitheater. The dense forest and steep topography surrounding the amphitheater frames, protects and provides this sense of privacy. In order to maintain these qualities, the integrity of the forest must be preserved, and views from the amphitheater toward adjacent areas of development must remain well screened. Cowell Health Center and the Upper Classroom Unit have had recent or planned expansion projects that have respected the view shed of the amphitheater. This vigilance to protect the amphitheater experience must continue as future expansion pressures continue to spur development within the campus core.

External sounds and smells impact the visitor's experience of the amphitheater. Smells from the Quarry Plaza restaurant exhaust permeate the redwood grove and amphitheater. Sound is a significant concern for performance use of the amphitheater, particularly for spoken word events. There are bus routes stops along McLaughlin Drive. Buses have to climb the steep grade of Hagar Drive, contributing a significant amount of noise to the amphitheater. Sound from the amphitheater to adjacent residential colleges should also be considered when scheduling amplified events.

3.4 Site Experience

Patrons arriving for a performance or event at the amphitheater, as well as students passing through for casual use, experience a ***processional sequence*** — a series of momentary perceptions and transitions that define the experience of the place.

The Design Team closely studied the components and ***contributing factors*** of this processional sequence, in order to fully understand:

- ***what is integral to this place?***
- ***what must be preserved?***
- ***what experiential detractors are present?***
- ***what could be enhanced through redesign?***

A typical arrival through **Quarry Plaza** begins in a sunny, vibrant, and student-filled place, then quickly transitions as one reaches the north end of the Plaza and steps into the Redwood Grove.

The **Redwood Grove** is cool, shady, quiet and impressive with towering redwood trees that surround and frame the space. It seems quiet and calm in contrast to the vibrancy of Quarry Plaza.

The **Arrival Threshold** is the Amphitheater entrance at the top of the main entry steps. The transition from forest to clearing is masterfully employed by the original Royston amphitheater design and is still present today. The main entry steps place arrivers on axis with a sweeping view across the bright sunny opening of the amphitheater to the north wall of the quarry – its ledges, fissures and natural outcropping of stone forming a dramatic composition of light and shadow.

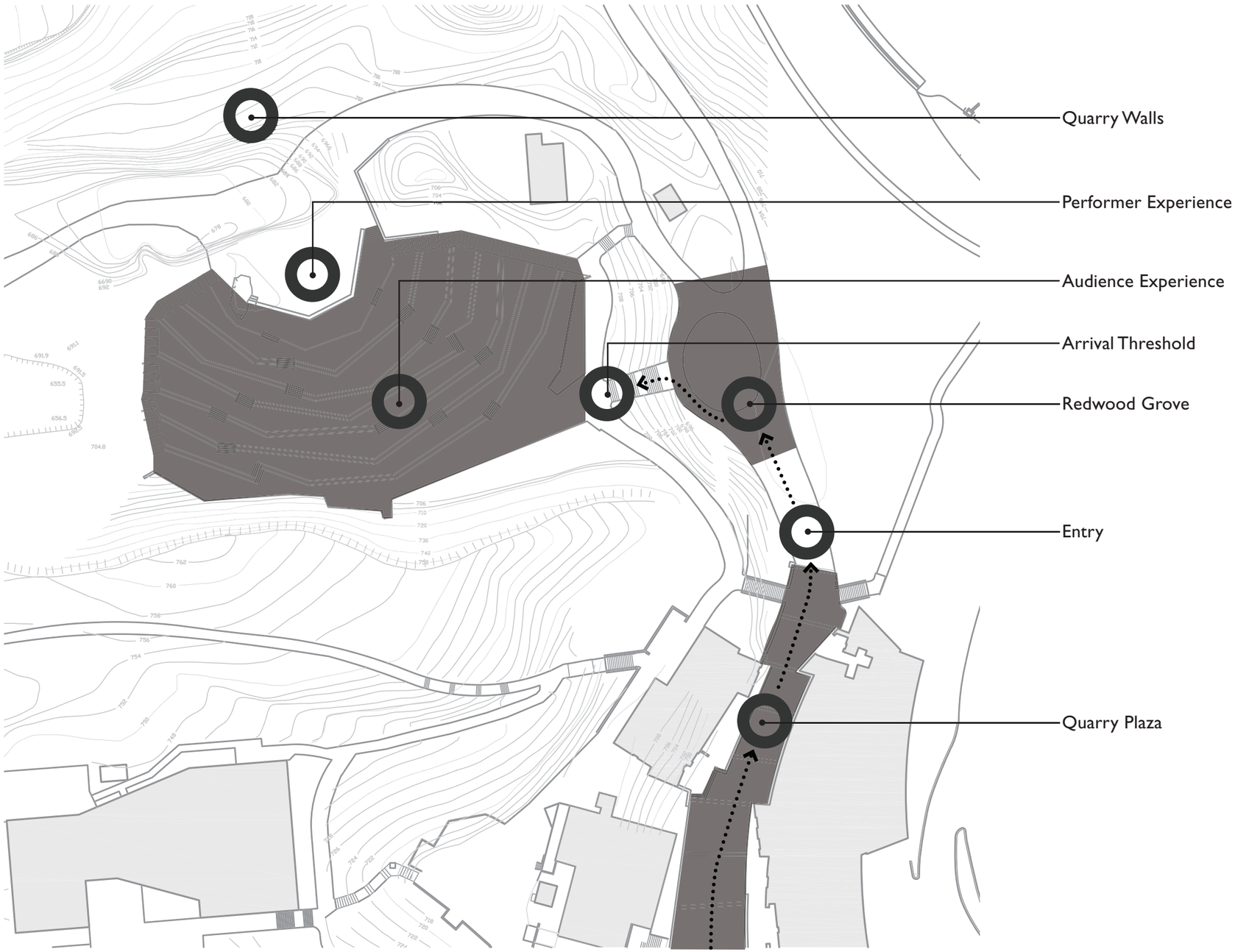
The **Audience Experience** is one of being surrounded on three sides by tall redwood trees that contain and focus attention toward the stage. These trees form a physical and psychological buffer to the outside world, making the place feel remote and serene.

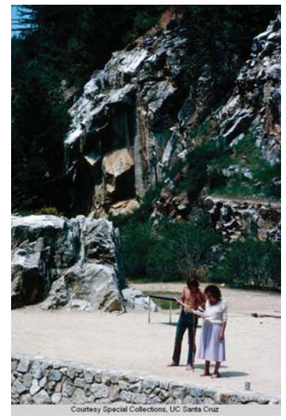
On the **Stage** with a dramatic backdrop of Quarry Walls and a huge boulder (called 'The Rock' by many) that juts through its west edge, performers have an inspiring and unique natural stage set. The stage is basic and austere in form, simply inscribed by a stone wall of roughly stacked quarry stone.

Approach through Quarry Plaza

Redwood Grove

Threshold: Framed View upon Arrival





Historic Views of Quarry Walls

SITE INVENTORY

Uses	CBC Egress Occupants = # Seats	CPC Fixture Occupants = 1/2 # Seats	Men = Plg. Occ./2	Women = Plg. Occ./2	Men - T 422.1			Women –T 422.1	
					WC	Urinal	Lav	WC	Lav
1. Use Existing Building toilets					**(Exist) w/ADA, no unisex**	**(Exist)**	**(Exist)**	**(Exist) w/ADA, & w/unisex)**	**(Exist)**
UQ Restroom					1	1	1	3	1
Dressing Room					-	-	-	1	1
Student Union					1	-	1	1	1
TOTAL	**400**	**200**	**100**	**100**	**2**	**1**	**2**	**5**	**3**
2. Enlarged Assembly A-5 Occ.	2,000	1,000	500	500	4	4	3	9	5
Difference	(1,600)	(800)	(400)	(400)	(2)	(3)	(1)	(4)	(2)

Uses	CBC Egress Occupants = # Seats	CPC Fixture Occupants = 1/2 # Seats	Men = Plg. Occ./2	Women = Plg. Occ./2	Men - T 422.1			Women –T 422.1	
					WC	Urinal	Lav	WC	Lav
1. Use Existing Building toilets					**(Exist) w/ADA, no unisex**	**(Exist)**	**(Exist)**	**(Exist) w/ADA, & w/unisex)**	**(Exist)**
UQ Restroom					1	1	1	3	1
Bookstore					2	2	2	3	2
Dressing Room					-	-	-	1	1
Student Union					1	-	1	1	1
TOTAL	**1,600**	**800**	**400**	**400**	**4**	**3**	**3**	**8**	**5**
2. Enlarged Assembly A-5 Occ.	2,000	1,000	500	500	4	4	3	9	5
Difference	(400	(200)	(100)	(100)	-	(1)	-	(1)	-

Code occupancy calulations based on existing restroom facilities

3.5 Facilities Assessment

- There are currently no concessions facilities for the amphitheater.
- Limited storage facilities are located in the dressing room building east of the stage.
- The existing emergency vehicle access road is functional but should be improved with all-weather surfacing.
- Trash collection vehicles cannot service the existing receptacles for Quarry Plaza. The dumpsters must be rolled out to Steinhart Way for pick up.
- Service and emergency vehicle access through the Plaza during business hours is greatly challenged by heavy pedestrian use and frequent student tabling activity.
- Accessible pathways are functional, but must be regraded and paved to meet code standards.
- To provide a truly 'equal' experience for disabled patrons, the accessible routes must more closely conform to the main able-bodied routes.
- Existing lighting consists of widely dispersed pole fixtures.
- Existing stairs are degraded, unsafe and lack handrails.
- Existing wood seat walls at the amphitheater are deteriorated, unstable and unsafe.
- Restroom facilities are limited and widely dispersed.
- Existing basic (remote) line voltage power, is capable of supporting only a modest, portable 'PA' speech grade sound reinforcement system.

4.0
ANALYSIS AND DESIGN DRIVERS

4.1 Guiding Principles

The Design Team and the Core Advisory Group (CAG) began a series of discussions / worksessions by drafting a set of Guiding Principles for the site - drawn from individual experience, values and vision for the Quarry. Out of ensuing discussions with CAG and students, stakeholder input sessions and on-line survey, the Guiding Principles were refined.

Guiding Principles establish the 'Big Picture' poetic and pragmatic guidelines for Amphitheater renovations. They became a touchstone during the Feasibility Study process to foster the goals and priorities for decision-making. They inform the development of Design Drivers and Program Priorities which guided the Preliminary Concept Design approach and will continue to guide the Design Phase of the project.

4.2 Design Drivers

Center of Student Life

To become a 'Center of Student Life' a place must be available and amenable to use by students. Students and staff repeatedly said that campus planned events and revenue-generating operations - though crucial to the site's success - must not outweigh the availability of the place for casual student use. The design must encourage a vibrant, exciting place of gathering for events, as well as a beautiful and serene place for individuals and small groups on a day-to-day basis.

Connectivity

On the UCSC campus, places of gathering are often compressed and concealed within a dense forest setting and physical distances are extended by a psychological sense of separation. Throughout the Quarry site, challenges of connectivity must be approached as opportunities to solve multiple problems, improve overall campus circulation, and by doing so, to promote site awareness and use. The site must be 'well connected' both physically and technologically to encourage use.

Flexibility and Multi-use

Increasingly campuses are recognizing the need for their facilities to serve multiple purposes and be readily adaptable to growth and change. The Quarry support building, stage and seating infrastructure must be flexible, adaptable, and able to serve a wide variety of potential uses - from performances, classes and campus events to conferences, retreats, and festivals.

Drawing from the landscape

…an architecture must grow out of the problems, restrictions, and potentialities of the site…color and texture will be as important as form."

"…the general effect in the main campus areas must be one of sensitive collaboration between the designer and this spectacular environment with the intent that neither should impose unduly upon the other.

Thomas D. Church, Long Range Development Plan, 1963

GUIDING PRINCIPLES

RESPECT THE CAMPUS FRAMEWORK

Establish a "Center of Student Life" that will inspire visitors, engage daily student experience, and strengthen physical connection with the greater campus; while respecting the natural forest system of which the site is a part.

PRESERVE SITE CHARACTER

Expand capacity and infrastructural development for the amphitheater without compromising the intimate, immersive, spiritual and 'magic' quality of the landscape experience and the quirky spirit of the historic amphitheater design.

PROMOTE STEWARDSHIP THROUGH INTEGRATED SUSTAINABLE DESIGN

Protect the landscape setting, promote environmental awareness and stewardship, and create a comprehensive and innovative approach to sustainable infrastructure.

ENCOURAGE STUDENT ENGAGEMENT AND PROGRAM DIVERSITY

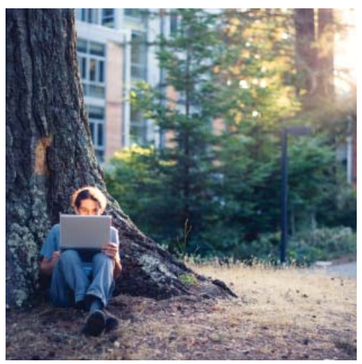
Provide for a broad spectrum of use from casual, daily use to performance through site development and infrastructure that is flexible and multi-use in nature.

SUPPORT FINANCIAL FEASIBILITY

Respond to campus financial goals and achieve operational sustainability through effective management of resources.

ESTABLISH SAFETY, SECURITY AND UNIVERSAL ACCESS

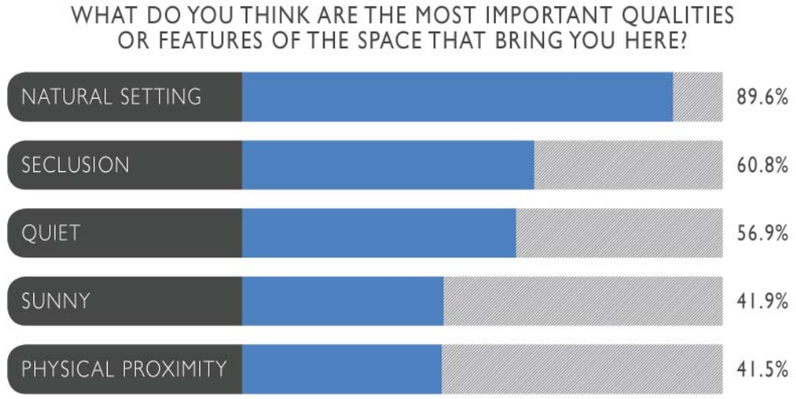
Provide universal access, a positive, safe place to learn, explore, and share; and prioritize broad student use and awareness.

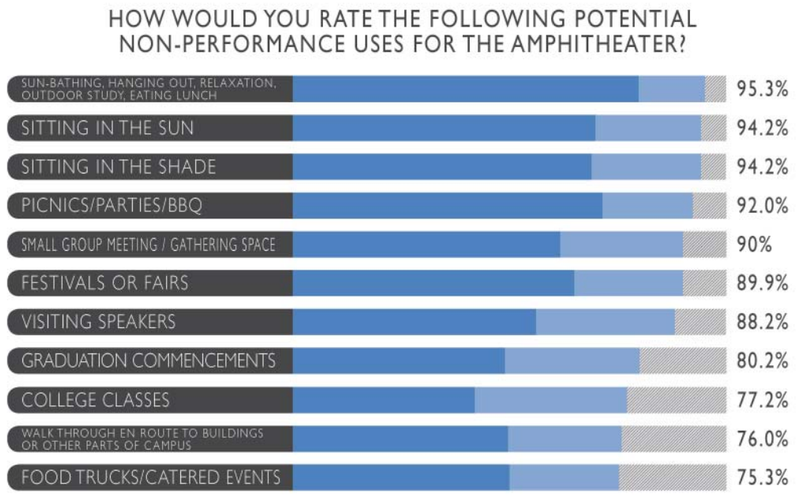


The legacy of the UCSC campus is one of co-existence and responsiveness to the natural landscape. The 'theatrical sublime' beauty of the raw stone quarry walls and redwood forest sets the stage for a powerful experience. The design must strategically reveal, enhance and protect this compelling natural setting. Selective planting and clearing must be carefully employed to uncover dramatic views, and enhance the sense of enclosure and intimacy of landscape rooms. Materials must be chosen to echo or complement the natural palette of colors and textures. Form and structure must be contemporary yet carefully designed to balance the scale and presence of the site.

Sustainability

Longevity, flexibility and resiliency are as much a part of a sustainable site approach as the integration of environmentally responsible site systems. Effective management of resources and design for operational sustainability will be integrated along with stormwater treatment areas, and durable, long-lived materials. Reuse of existing wood and stone materials where possible will be a priority.





Above is a representative sample of survey results.
Complete survey results are included in the Appendices.

4.3 Program Priorities

Based on the Results of the on-line Survey, the Student Outreach Workshops, the Core Advisory Group Discussions, and the summary of existing programs, a number of Program Priorities emerged:

- The amphitheater venue can attract revenue-generating concert promoters with an audience capacity of at least 2,000. In order to maintain the quality and character of the existing site, this capacity should be the target for amphitheater seating, not the 3,000 capacity targeted specified in previous planning studies.
- Students want amphitheater availability for non-scheduled, informal, and day-to-day use and their own self-organized events.
- Site infrastructure should accommodate day-to-day student use as well as performance and events,
- Temporary and removable stage structures should be employed, rather than permanent ones, so that during non-event use the site will retain its natural character and the venue will be readily adaptable to change.
- Flexibility and multi-use features should be incorporated in all aspects of the site.
- The best use of limited University funds, is to solve multiple problems for the campus as they are designed and constructed.

4.4 Events and Income Generating Opportunities

After completion of Phase I, private and public events will reactivate the Upper Quarry Amphitheater. Private events would pay fees for the use of the venue, while public events may include ticketed entry.

For private events, user fees could serve as a significant income generator. For public events, which are more common on university campuses, access to events could generate income from ancillary permitted uses. In addition, public events provide an opportunity for vendors to sell wares, with fees or a percentage of gross sales going to support the venue. Both public and private events can generate revenue from equipment rentals and fees.

Events that would be compatible with the Upper Quarry Amphitheater upon completion of Phase One include:

- **Charity benefits and parties**
- **Corporate retreats**
- **Cultural and Arts festivals**
- **Film screenings**
- **Food festivals**
- **Outside performances and concerts**
- **Private commencement and graduation ceremonies**
- **Weddings**
- **Wellness retreats**

Income generating opportunities that would be compatible with the site upon completion of Phase One include:

Site Fees

- Sponsor signage: Signage and banners offer a source of one-time income for temporary and permanent signs. These amenities assist with way-finding and could provide event specific signage for public events. Apparatus used to hold signage can also be rented-out, and should follow in-house aesthetic standards and specifications.
- Labor costs: Providing University-employee or student labor to assist with set-up or take-down of private events with an appropriate mark-up. Labor rates should include internal costs and benefits load, and administrative mark-up.

Equipment Rentals

- Audio equipment (speakers, microphones, mixing boards, sound monitors)
- Video equipment (LED screens, recording equipment)
- Cables
- Cam-locks
- Blankets and cushions for lawn or ground based seating
- Rectangular tables (either 4’ by 8’ or 3’ by 6’)
- Barricades and stanchions
- Pop-up canopies
- Tables with umbrellas
- Electric heaters
- Small generators

Temporary Concessions/Pop-up Retail Stands

- Food and beverage
- Sunblock, hats, fans
- Umbrellas for shade
- Performer or event-specific merchandise
- UCSC apparel and “The Quarry” branded promotional material

Restoration Fee

All events on-site must include fees to assist with the overall maintenance costs for the Amphitheater.

Materials and Supplies Fee

- Trash bags
- Restroom maintenance
- Cleaning supplies

Temporary concessions could be leased-out to an outside operator. This structure allows for an income-generating opportunity without the additional capital costs to invest in specific facilities; and will incur minimal labor and capital costs for the campus. A cohesive presentation and design standard will be created for outside vendors to ensure a unified aesthetic and clear identity of the site. These policies will be addressed in a user-friendly Operations Manual.

4.5 Operations

An Operations Manual and a Policies and Procedures Manual will be created for the users, event producers, and managers of the Amphitheater. Since the Amphitheater does not have a regular operator and can be used by a myriad of groups, these manuals must be clear, concise, and easy for the one-time event user or professional producer to understand.

The Operations Manual will describe the requirements and standards pertaining to the Amphitheater, and include the following items:

- Site map
- Power capabilities and locations
- Event contact list
- Labor Rate sheet
- Tents and tenting restrictions and policies
- Signage standards
- Insurance and indemnification requirements
- Stage production
- Temporary structures restrictions
- Load-in/Load-out procedures
- Applicable campus code
- Parking information
- Trash and recycling plan
- Event guidelines

The Policies and Procedures Manual will include the following items:

- Rules and regulations for Amphitheater use
- Rental policies and guidelines
- Personnel requirements and costs
- Vendor rules
- Permitting requirements
- Fire Marshal recommendations
- Alcohol requirements
- Sound policies and permitting
- Trash and recycling rules
- ADA compliance factors
- Patron shuttle services

Site Access

The campus shuttle system may provide service for large events that require parking at remote lots. However, the cost and coordination required for this service may be prohibitive for certain event sponsors. Event planners will be advised to implement a shuttle program for patrons with disabilities with an accessible cart-type vehicle dedicated to Amphitheater service that can provide reliable, localized service to seats distributed through the site. A pool of trained student staff may be employed to drive the cart.

4.6 Site Requirements

New opportunities for power, audio, video, and internet cabling equipment will be readily available at the front of the stage. Key points on the periphery of the Amphitheater will also contain this expanded selection of equipment. Wifi access will be available throughout the amphitheater seating area. The access points surrounding the Amphitheater will run connections to the center stage electrical access cabinet, so microphones, video, and other equipment can be plugged-in from these periphery areas and have the capability to broadcast to the center stage electrical access cabinet.

In the Amphitheater's seating terraces, built-in electrical and USB outlets will be available at determined locations. This will give users the capabilities to recharge computers as well as phones, tablets, and other electronic devices. In addition, new light fixtures may contain electrical outlets. These outlets will enhance the site's usability for students and corporate event users to "plug-in" and extend their stay onsite.

In the planned concessions area at the 'Upper Terrace' to the rear of the Amphitheater, additional outlets will be provided to enhance the range of activities and events that can be hosted there.

Furniture and Equipment Lifecycle

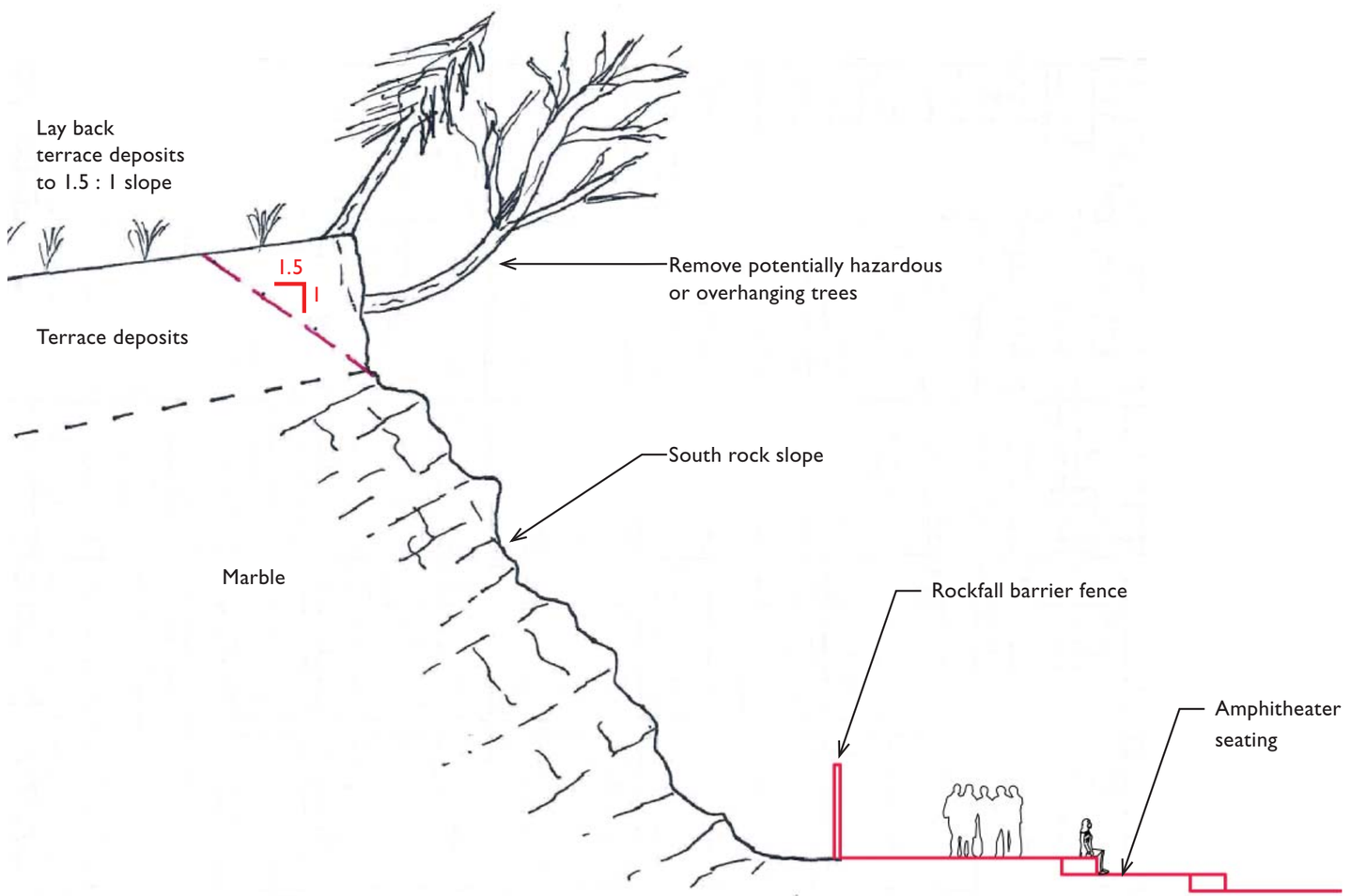
While preventative maintenance and adherence to proper event guidelines will help extend the lifecycle of the fixtures, furniture, and equipment on-site, fees from events will be collected and pooled into a Reserve or Lifecycle Fund. This fund will collect event and user fees over an extended period of time to ensure immediate replacement or repair of equipment when necessary. This will guarantee the Amphitheater remains in usable, working condition, limits repair "down-time," and continues to generate revenue when necessary.

4.7 Geotechnical Analysis

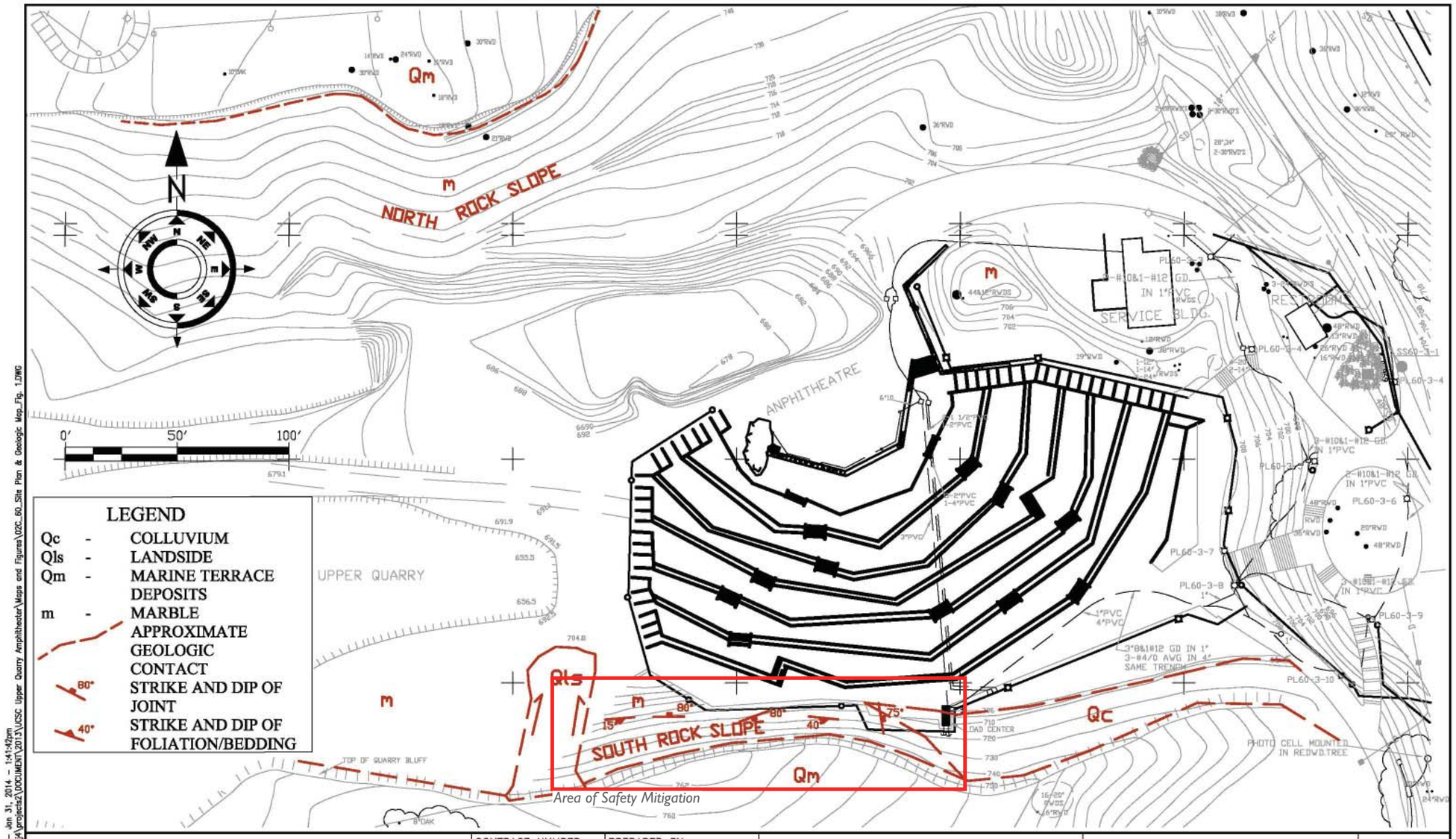
A Geotechnical Report was prepared to assist the project team in identifying the site geologic conditions specifically related to potentially unstable slopes, rockfall hazards and soil conditions in the marble rocks found at the site. The report uses previous studies and in-field investigation to observe the rock slope conditions adjacent to the amphitheater and in the surrounding former quarry area. Preliminary mitigation measures and order-of magnitude construction costs have been provided for mitigation of the unstable slope directly behind the upper row of amphitheater seating in the area noted on the plan and geologic site map.

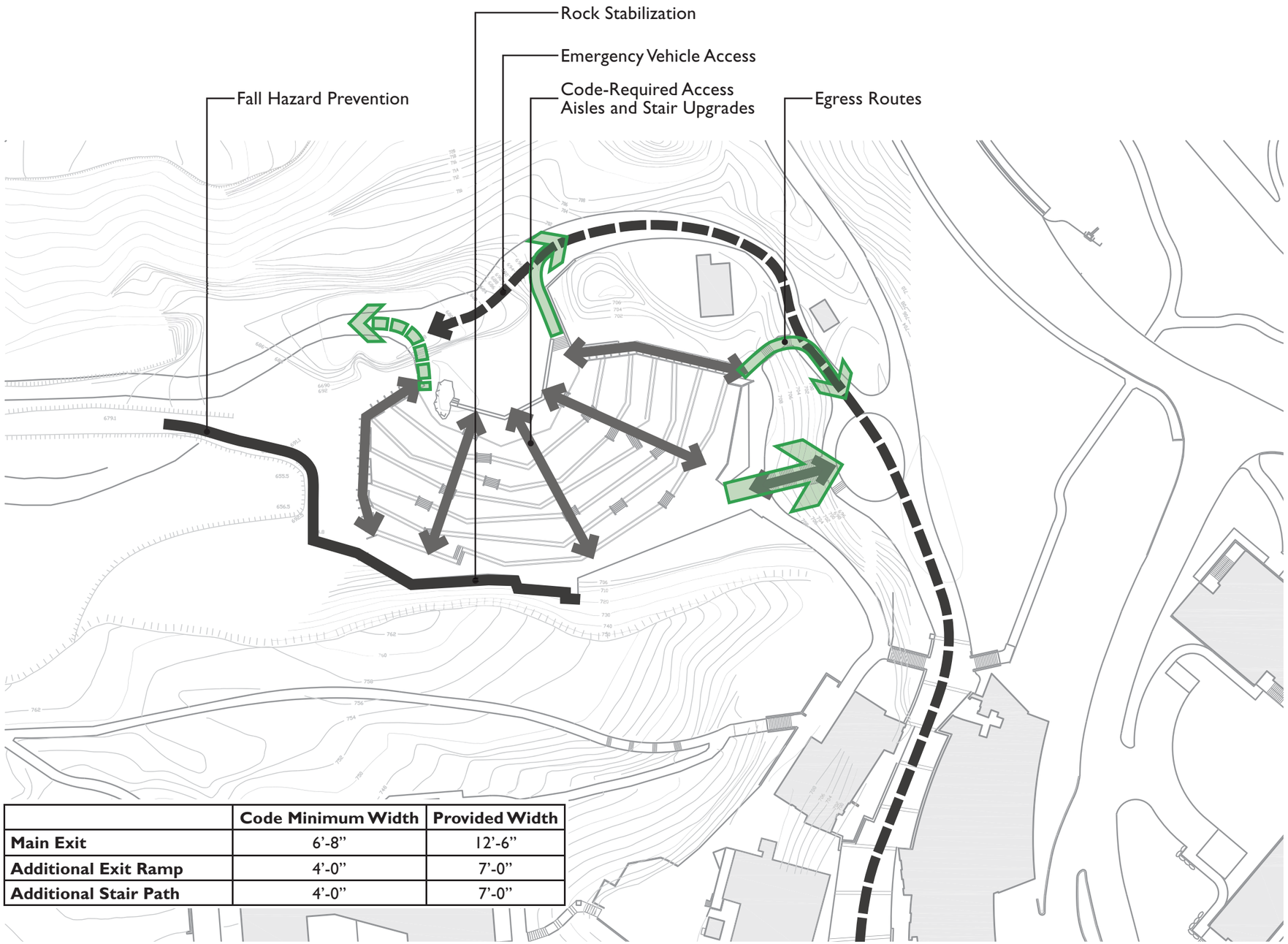
It is reccomended that the terrace deposits along the upper 10 to 15 feet of the slope, which are currently at a near-vertical inclination and subject to sloughing and soil falls, be graded to improve stability and allow for establishment of vegetation ground cover. Any leaning trees along the top of the slope subject to falling should be evaluated by an arborist and be removed if necessary. All surface drainage should be directed away from the top of the slope to prevent water from eroding the terrace deposits and potentially destabilizing the rock slope. The rock portion of the slope should also be scaled to remove any loose blocks. Following scaling of the slope, the existing chain link fence should be replaced with a more robust rockfall barrier. A rockfall barrier will be designed with the quality and aesthetic of the amphitheater setting that meets the structural and functional needs required.

A complete Geotechnical analysis and report is included in the Appendices of this report.



Geotechnical Engineer recommendations


Qm
m
NORTH ROCK SLOPE
N
0'
50'
100'
ANPHITHEATRE
SERVICE BLDG.
UPPER QUARRY
Qls
m
SOUTH ROCK SLOPE
Qc
Qm
TOP OF QUARRY BLUFF
PHOTO CELL MOUNTED IN REDWD.TREE
LEGEND
Qc - COLLUVIUM
Qls - LANDSIDE
Qm - MARINE TERRACE DEPOSITS
m - MARBLE
APPROXIMATE GEOLOGIC CONTACT
STRIKE AND DIP OF JOINT
STRIKE AND DIP OF FOLIATION/BEDDING
Area of Safety Mitigation
URS
CONTRACT NUMBER
TASK ORDER
DATE
JANUARY, 2014
PREPARED BY
M. SCHMOLL, CEG
CHECKED BY
P. BODDIE, GE
UCSC UPPER QUARRY AMPHITHEATER
SITE PLAN AND GEOLOGIC MAP
FIGURE
1



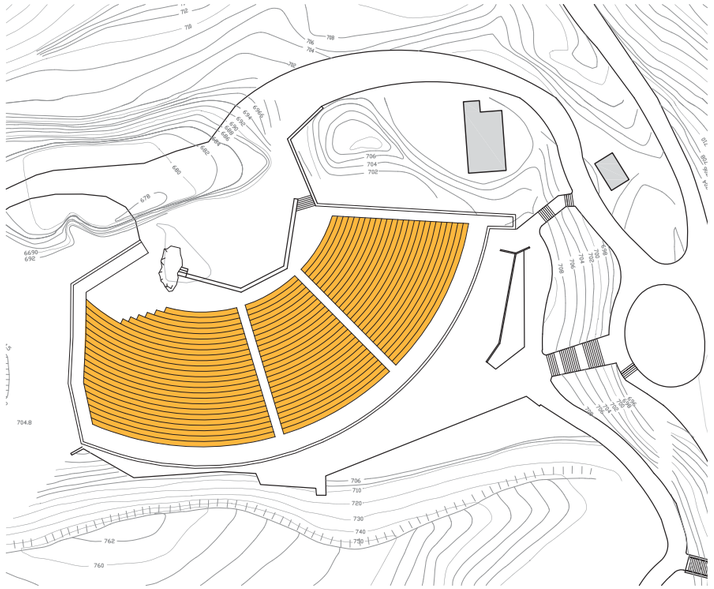
	Code Minimum Width	Provided Width
Main Exit	6’-8”	12’-6”
Additional Exit Ramp	4’-0”	7’-0”
Additional Stair Path	4’-0”	7’-0”

4.8 Code and Life Safety Requirements

- The existing emergency vehicle access route and turnaround at the stage is acceptable as long as the route is paved with all-weather surfacing such as gravel and / or asphalt. An alternate turnaround must be provided for circumstances when stage equipment or structures block vehicle turnaround.
- All site stairs, pathways and aisles must be upgraded to meet California building code standards, including: handrails at all stairs, and aisles within the amphitheater located no more than 50 linear feet from any seat.
- Accessible pathways must be regraded and repaved to meet federal ADA guidelines.
- Four points of egress have been identified per code requirements. Three egress paths exit to a public way and provide more than adequate path width to handle the entire audience capacity. The fourth NW egress route leads to a safe refuge area within the quarry,
- The slope directly behind the upper west row of seating requires mitigative safety measures per the geotechnical engineer’s recommendations.
- Barrier fencing must be provided to secure the perimeter of an existing sink hole to the west of the amphitheater.
- Pathway lighting must be provided to meet minimum campus standards.
- Additional ways to improve safety and security for patrons and the campus community will be discussed with campus police and security early in the design phase.

5.0
PRELIMINARY CONCEPT

Existing Capacity: 1576 seats along terrace walls with unobstructed view



3000 seat capacity achieved through stadium style layout

2000 seats achieved by adding terrace walls

2000 seats achieved by adding picnic seating lawn or wood deck areas

5.1 Seating Capacity

Analysis of existing seating reveals that, based on the seating provided by the wood terrace edges alone, the amphitheater has a capacity of 1665 seats, with 89 seats having a view which is obstructed by 'The Rock,' the boulder outcrop at the stage. A newspaper article announcing the amphitheater in 1967, claimed that with the addition of folding chairs along the terraces the capacity could be expanded to 3500.

Studying ways to increase the permanent capacity of seats that comply with current code and safety standards for outdoor assembly areas, involved an in-depth discussion about 'Program Priorities' with the Core Advisory Group and UCSC staff; outlined in section 4.4. It became clear that an effort to expand capacity to 3,000, which had been suggested as a target by previous studies, would require regularized stadium-style seating that would completely eliminate the informal seating areas of the existing amphitheater, and compromise the distinct natural character of the venue.

It was suggested that a minimum capacity target of 2,000 would be needed to provide an attractive venue to concert promoters. The actual means of achieving this capacity will need to be studied closely in the subsequent design phase for this project. However, analysis reveals that through a combination of additional terrace walls, platform-style areas of lawn, stone paving and/or wood decking for 'picnic blanket-style' seating, and cafe table seating on the Upper Terrace, the capacity target of 2,000 can be easily achieved within the current plan 'footprint'.

5.2 Building Program Scenarios

Support facilities needed for the amphitheater venue include rest rooms, concessions, food prep, storage, dressing rooms, green room, and flexible meeting space. The first of a series of design studies included an analysis of different approaches to locate these facilities and analyze their implications on site circulation and patron experience.

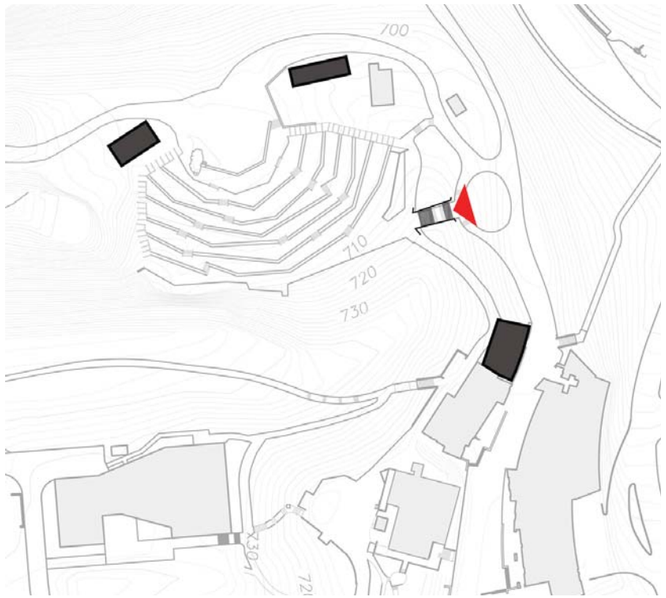
Scenario 4, or the 'Redwood Lobby' scheme, was preferred for it's minimal impact on the amphitheater experience, it's efficiency in both constructibility and serviceability, it's ability to promote a stronger place identity at the main entrance, and its establishment of the Redwood Grove as a place for gathering and events — becoming a 'Lobby' for the amphitheater.

Choosing by Advantage Analysis

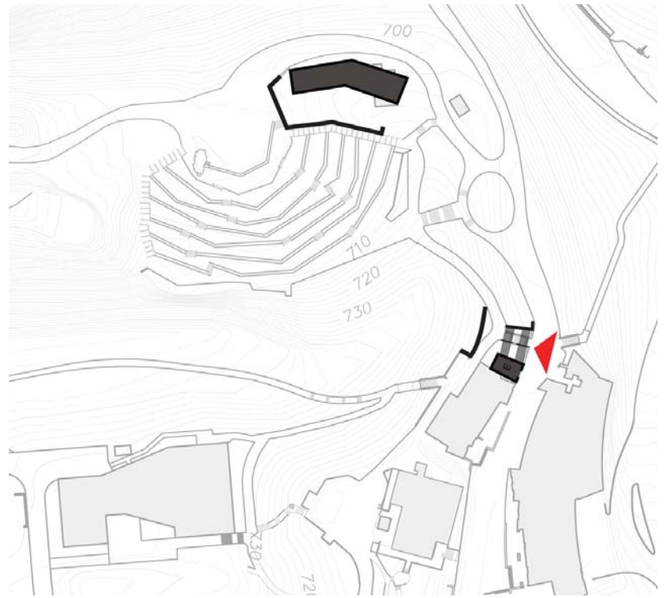
RATING:

○	–	✳	▭
poor negative impact	**neutral** no impact	**good** enhances / improves	**best** ideal option

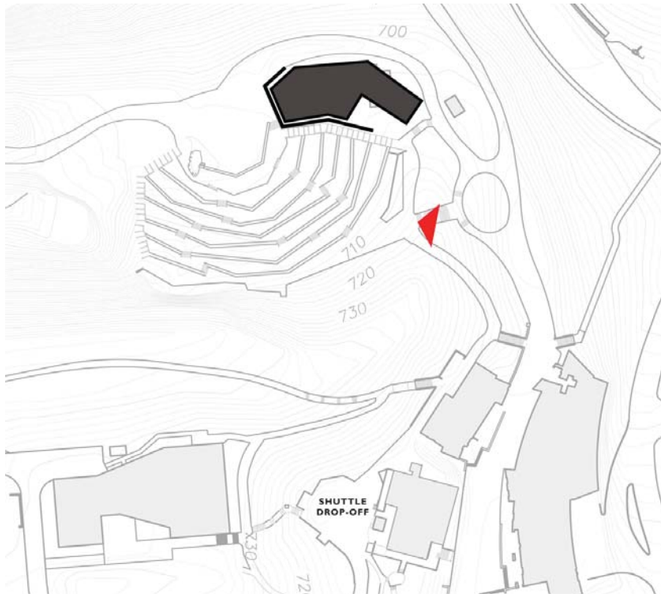
	SCENARIO	1	2	3	4
	NAME	*'Distributed'*	*'Expanded Existing'*	*'Amphitheater Terrace'*	*'Redwood Lobby'*
ENVIRONMENT					
	Impact to existing trees	○	✳	○	–
CULTURE					
	Place identity at entrance	✳	✳	○	✳
	Impact to 'park-like' serenity, calm, quiet	–	✳	○	✳
	Acoustic impact	–	–	○	✳
	Wheelchair user experience: equality of access	✳	✳	○	✳
	Wheelchair user experience: seating options	–	✳	–	–
	Wheelchair user experience: distance to restrooms	✳	✳	✳	✳
PROGRAM FLEXIBILITY					
	Non-performance event space options	–	–	✳	✳
	Serviceability of concessions	○	○	○	✳
	Daily student use	✳	✳	○	✳



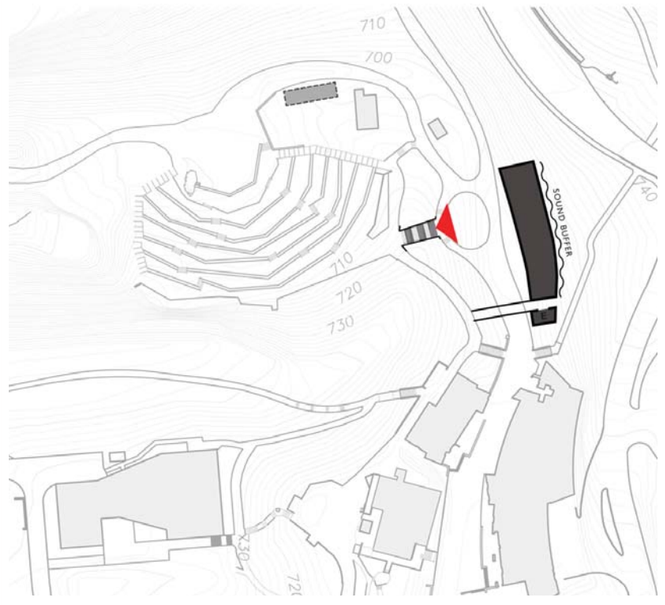
1. 'Distributed'



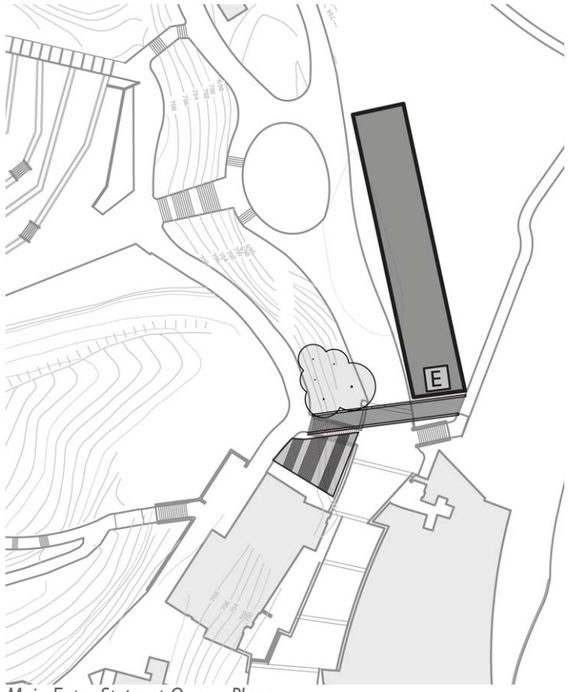
2. 'Expanded Existing'



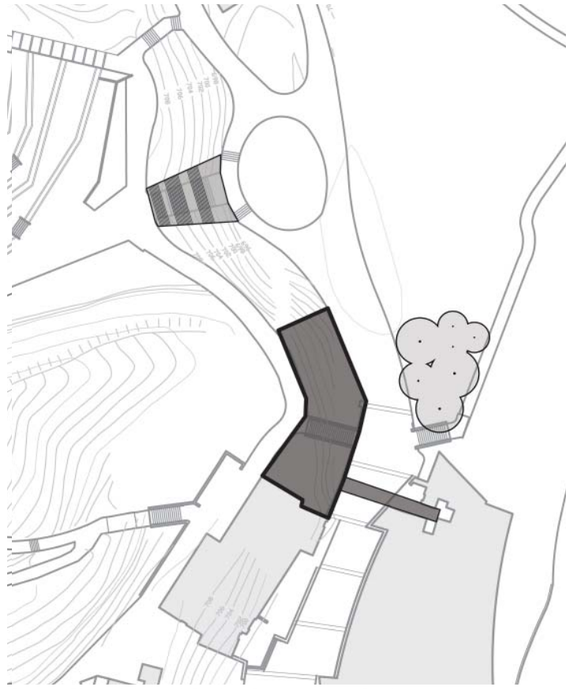
3. 'Amphitheater Terrace'



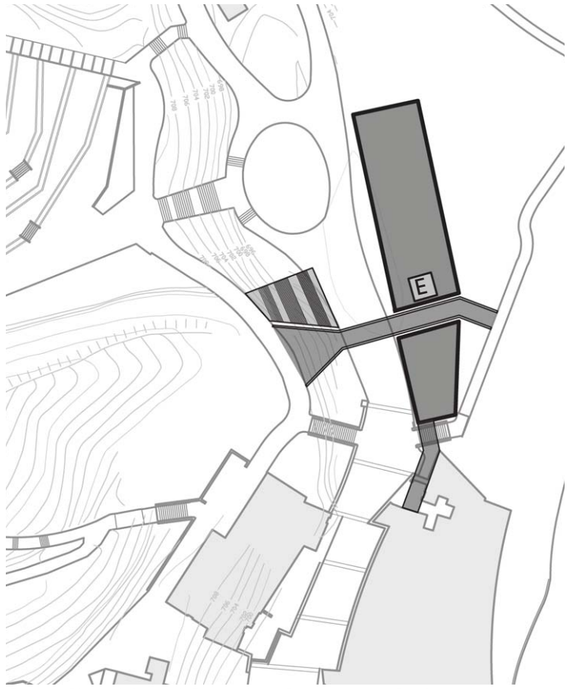
4. 'Redwood Lobby'



Main Entry Steps at Quarry Plaza

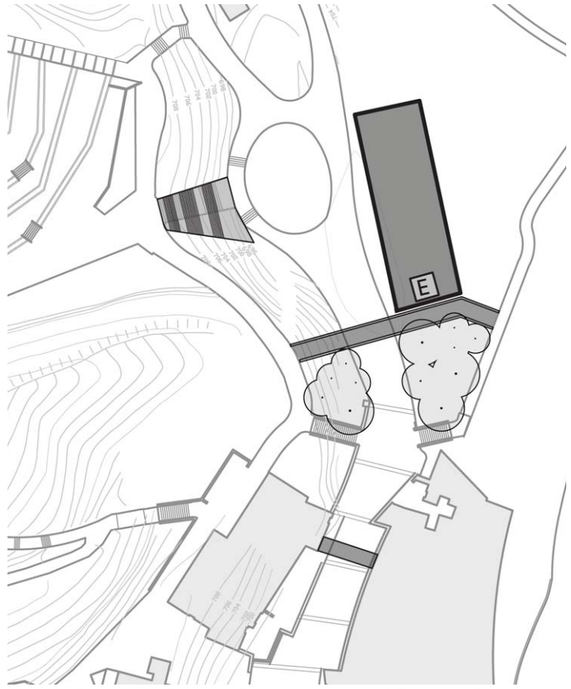


Quarry Plaza Adjoined, Bridge Connection to Bookstore



Quarry Plaza Adjoined, Strengthen Connection to Bookstore

Preferred Scheme



Physical Separation, Preserve Redwood trees and Enhance Grove

5.3 Redwood Lobby Scheme Development

The 'Redwood Lobby' scheme utilizes a pedestrian bridge and elevator to connect the upper level of the amphitheater with the second floor rest rooms and concessions of the Support Building, and provide direct access for disabled patrons to the Upper Terrace of the amphitheater. This allows all patrons to arrive and enter the Amphitheater via the Quarry Plaza approach.

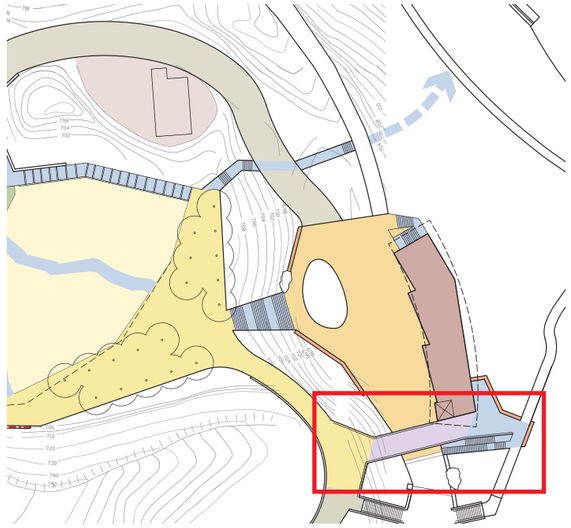
Further analysis of the Redwood Lobby scheme looked at alternative configurations for the building and bridge and means of engaging or disengaging with the existing buildings of Quarry Plaza.

The preferred scheme preserves the existing redwood trees at the north end of Quarry Plaza, to frame the entry to the Redwood Grove beyond. This physical separation allows the Redwood Lobby experience to be distinct and buffered from the activity of the Plaza. The new pedestrian bridge and flanking redwood trees form a gateway to the Amphitheater and an opportunity for place identification.

Maintaining the location of the main entry steps, and widening them to better engage with the space and circulation of the lobby, preserves the powerful threshold entry experience upon arriving at the Amphitheater. The steps engage with the Redwood Lobby and become an opportunity for small scale performances and informal gathering.

1. Bridge
2. Redwood Lobby
3. Support Building
4. Upper Terrace
5. Amphitheater
6. ‘Smart’ Stage
7. Performance Staging Area
8. Service Area

- Vehicular paving
- Smart Stage - Concrete pavement, see additional document from APF
- Upgraded building and staging area
- Building by Fernau + Hartman, see arch. drawings
- Bridge for pedestrians and light service vehicles, 14’ width
- New steps with handrails, both sides
- Upper terrace vehicular pavement, some fill required
- Amphitheatre paving material
- Plaza vehicular paving
- Lawn
- Concrete walls
- Guardrail fence
- Rockfall barrier (200 LF)

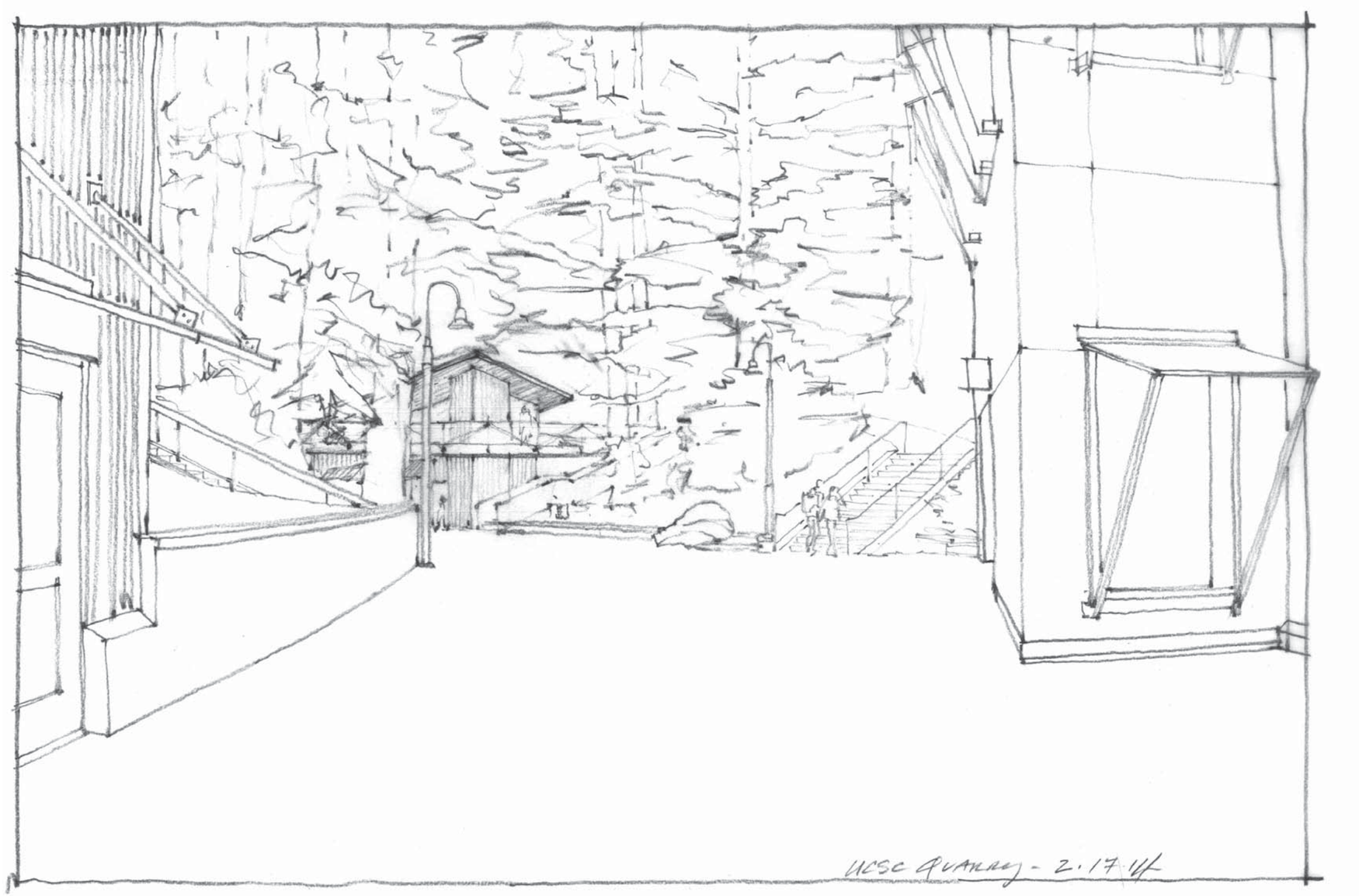


5.4 Bridge

A new pedestrian and light vehicular bridge at the main entrance of the amphitheater serves as gateway to the Quarry Amphitheater, and provides a place for monumental entry signage and event banners that is visible from Quarry Plaza. With an adjacent elevator, the bridge provides accessible entry to the upper level of the Amphitheater, and concessions and rest rooms of the Support Building.

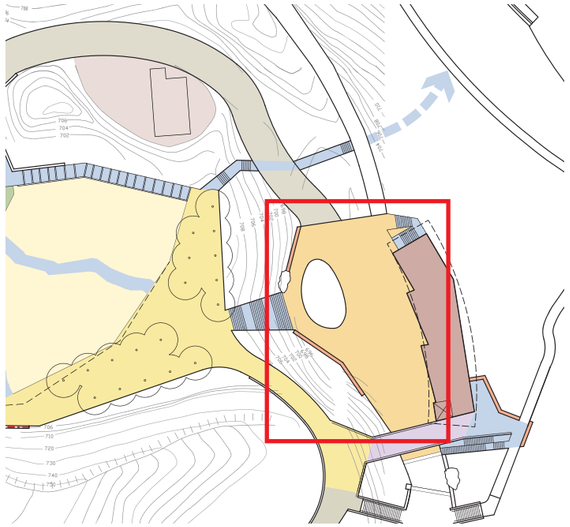
'The Bridge' is a great place in itself - with space for concessions as well as integrated seating to perch on and watch the action below.

The bridge will also enhance the east-west campus connection from Crown and Merrill Colleges through Quarry Plaza and the Amphitheater Lobby to the Classroom Unit and Sciences and Engineering campus to the west. This link builds on the 'Triangle of Student Serving Areas' called for in the Physical Design Framework Plan. The means to provide a safe and direct crossing for pedestrians at McLaughlin Drive will need to be addressed.



View from Quarry Plaza

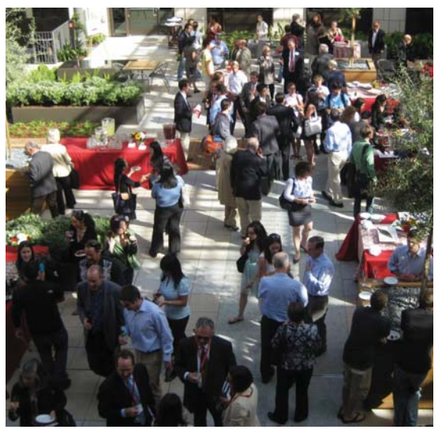
View from Redwood Lobby

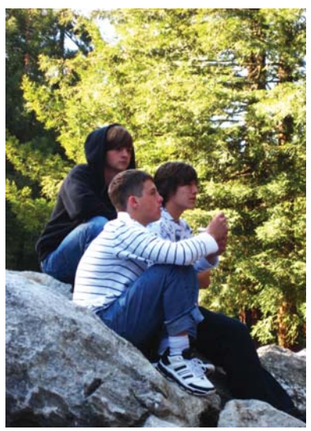


5.5 Redwood Lobby

As entry to the Amphitheater and forecourt to the new Support Building, the Redwood Lobby orients and enhances the visitor experience. It provides a place for pre-performance events and intermission gathering; and is an attractive venue for conferences, retreats, meetings, as well as small- scale concerts and performances.

A floor of pavers unifies the space beneath the towering canopy of the existing redwood grove, making it accessible and amenable to a wide array of gathering and event opportunities. A new monumental entry stair, generous low walls and boulder outcroppings provide numerous places to linger in the cool, dappled shade.





5.6 Support Building

The Support Building will be the primary support structure for Quarry Amphitheater productions, a secondary destination for theatergoers, and a place for daily student gatherings, meetings and events. The building is sited against the steep and densely shaded slope east of the main approach from Quarry Plaza. Its compact and efficient building footprint minimizes tree removal – preserving the natural beauty of the existing redwood grove. The slight curvature of the building footprint and an active western façade frame the 'Redwood Lobby', transforming what is currently an underused pedestrian path into a vibrant outdoor room.

A series of horizontal bi-fold doors on the first level open the green room, concessions, and kitchen to the Redwood Lobby when in use. The commercial kitchen allows students to cater their own events or can be rented to outside vendors and caterers. The green room with an adjacent private restroom is designed as a flexible use space for meetings, conferences, events. On the second level a partially covered roof terrace provides outdoor event space overlooking the Redwood Lobby. An elevator provides direct access between the two levels, and stairs at either end of the building provide egress as well as a 'party loop' – an easy and visible circulation loop for seeing and being seen during events.

Examples of buildings or structures of similar scale, function and 'trans-formable', 'active' facades are represented here.

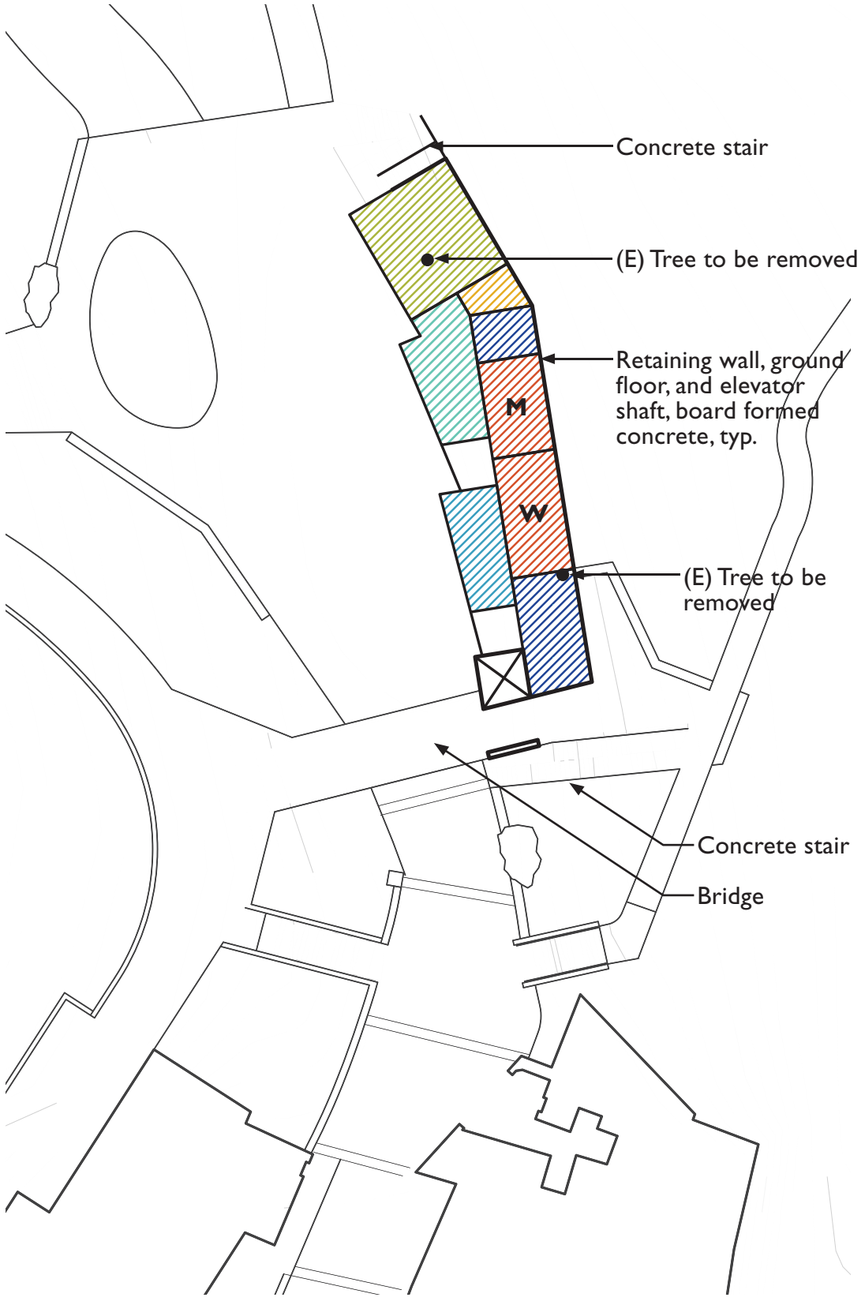
California Shakespeare Theater concessions building, LMS

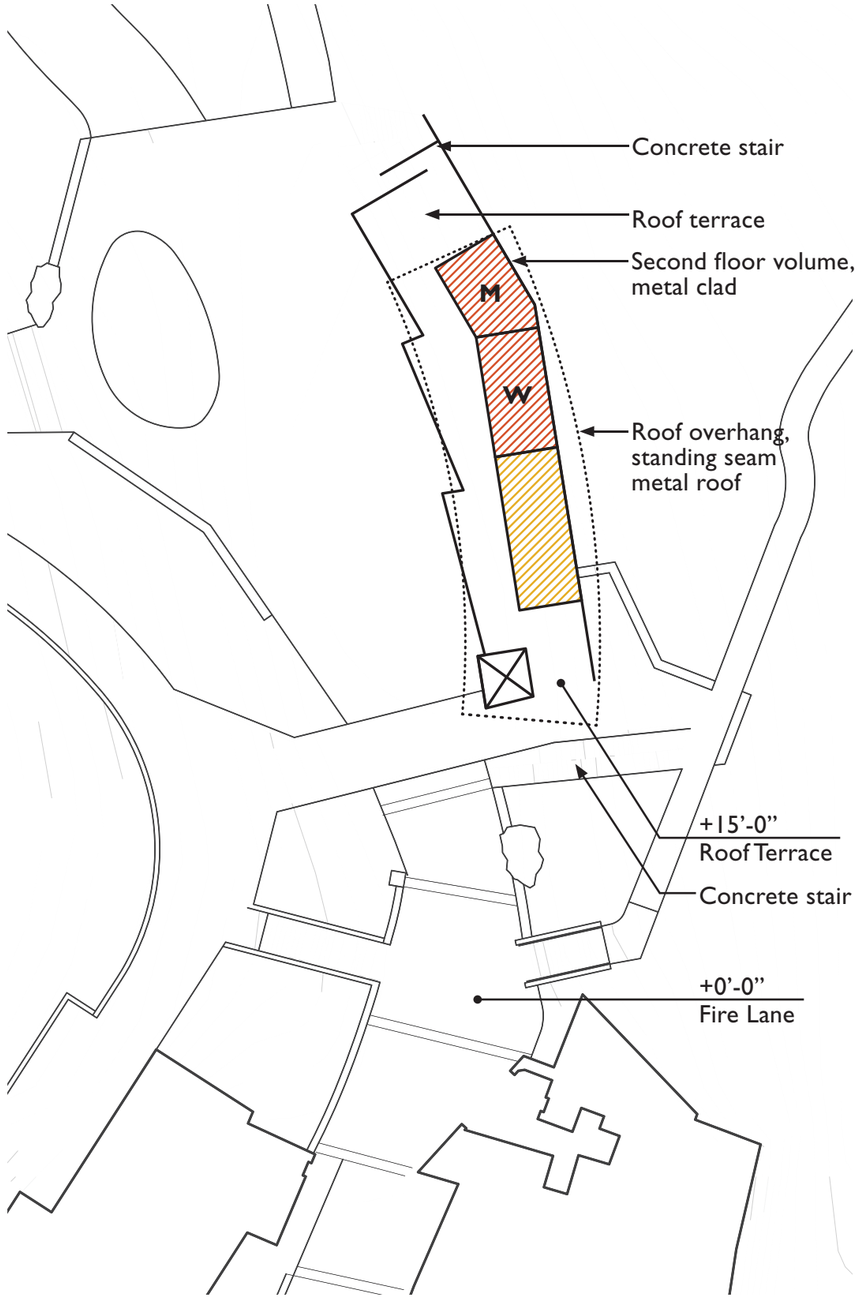
Pavilion, NBBJ

Portland Lovejoy

rendering, Fernau & Hartman

Ramona's Cafe, Fernau & Hartman



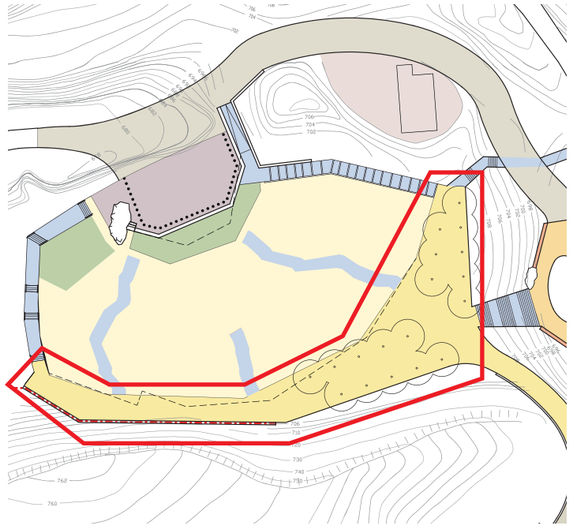


The Roof Terrace and Bridge, in concert with the Redwood Lobby, provide viewing/performance areas for more casual, rough theatre.

Durable and low maintenance materials such as weathering steel, board-formed concrete and wood complement the natural character of the grove.

Upper and lower level restrooms will easily accommodate a crowd of 3,000. Storage and support facilities on both levels provide space for mechanical, electrical, IT, temporary production equipment storage, and basic equipment for students and faculty to host their own small scale events.

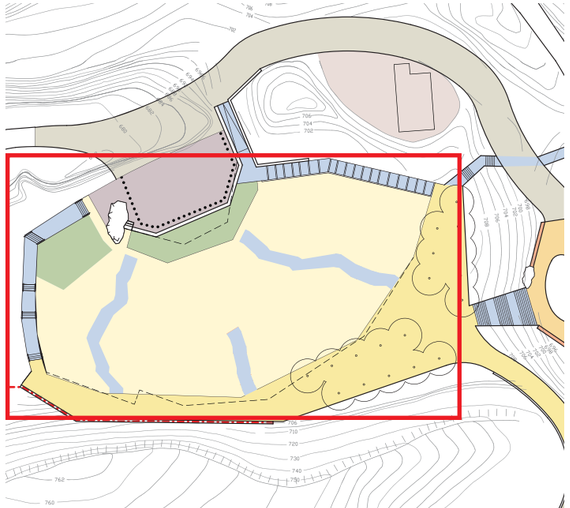
- **GREEN ROOM** – 580 SF
  W/ RESTROOM
- **COMMERCIAL KITCHEN** – 350 SF
- **NON-PREP CONCESSIONS** – 270 SF
- **SUPPORT & SERVICE** – 444 SF
  MECHANICAL, ELECTRICAL, IT, & JANITOR ROOMS
- **RESTROOMS** – 1,170 SF
  ASSUME 15 WC, 5 URINALS, & 9 LAVATORIES TOTAL
- **STORAGE** – 509 SF
- **ELEVATOR SHAFT** – 10' x 10'



5.7 Upper Terrace

A grove of deciduous canopy trees frames a stunning view of the amphitheater and quarry rock walls upon arrival at the Upper Terrace, and provides shade for cafe-style seating and circulation. The Upper Terrace is an attractive venue for non-performance related events, such as banquets, fairs, and retreats.

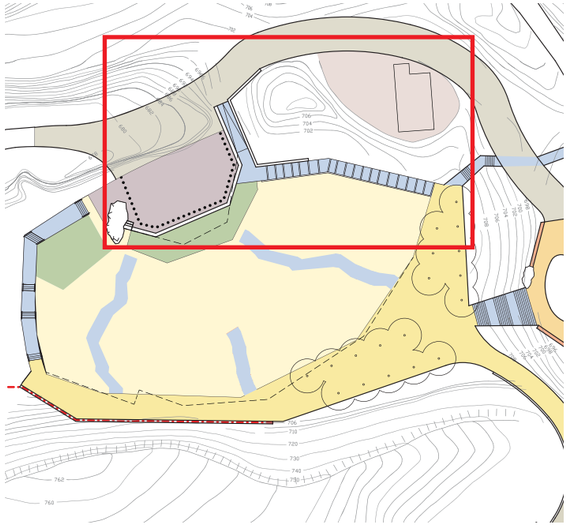
Use of the Upper Terrace area is currently challenged by uneven pavement and inadequate space. Expanding the area of the Upper Terrace promotes easier circulation and flexible use for gathering, event concessions and dining. Paving is vehicular-rated concrete allowing for easy service and maintenance access.



5.8 Amphitheater

The Amphitheater is more than a place for performances and lectures. It has a park-like character and beautiful setting that draws students, faculty, staff and visitors to relax, bask in the sun, read, meet with friends, or have lunch. Replacement of the existing crushed stone and splintering wood of the terraces, paving, with lawn terraces and comfortable lounging decks encourages more of this activity, and enhances the experience for performance-goers. Careful and sensitive integration of infrastructure for wifi, electrical, sound and assistive listening devices provides a state of the art venue for performances, events, conferences, classes, and a host of other possible uses, while maintaining the natural setting that is so beloved.

Reuse of material from the site would add a significant component of history to the renovated Amphitheater, and provide a compelling story of sustainability. The existing redwood bench material that forms the amphitheater terraces may be suitable for reuse. Material Reuse investigation would be required to determine its suitability and a means of re-milling the material on-site.



American Players Theater, Wisconsin

Stern Grove

Union Square SF movie screening

5.9 'Smart' Stage and Performance Staging Area

The 'Smart' Stage provides infrastructure for a wide variety of potential performance and event uses with an invisible plug-and-play infrastructure of state of the art utilities and below-grade structural footings to support a wide range of temporary structures. Infinitely adaptable for events, when not in use the stage appears as natural and unassuming as the existing stage. A concrete stage platform will be carefully detailed with color and finish to match the existing quarry floor.

An existing stockpile of blasted stone directly west of the Amphitheater has been reserved for reuse, on campus and may be suitable for the stage wall masonry. Material reuse investigation by a skilled mason would be required to determine its suitability for use.

A wide-range of temporary structures can be erected to support sound and lighting or provide shade. The following description of performance infrastructure provides details of the support system for these structures.

The existing dressing room building with an accessible restroom will be retained and upgraded to serve as pre-performance staging and support area during performance.

5.10 Security, Fencing and Ticketing for Events

Installation of permanent fencing around the entire amphitheater perimeter would negatively impact the natural context of the site and views to the surrounding forest, and make the site inaccessible to students for day-to-day use and non-ticketed events. There is campus-wide support for keeping the site open, however some means of securing the venue for ticketed events will be required. Some combination of strategically placed permanent and temporary fencing, together with secure points of access that may be implemented by campus sponsors or outside event promoters, is recommended. Red Rocks and Stern Grove are examples of outdoor performance venues that use manned points of access for perimeter security.

A traditional 'box office' has not been included in the site program; though one could be accomodated within the flexible use space of the Support Building. Ticketing is an evolving area technologically, with many venues transitioning from paper tickets to electronic PDA-based tickets. The means of systemizing the ticketing process will need to evolve as the sponsors, frequency, and logistics of ticketed events becomes more refined.

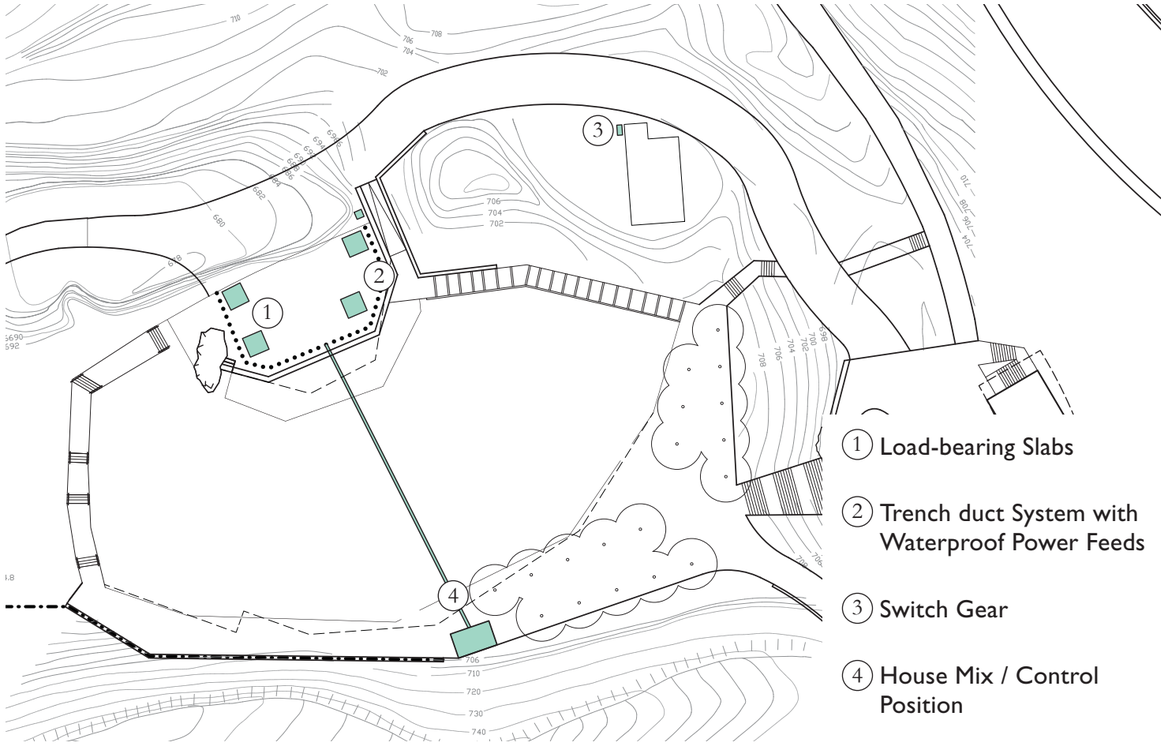
Tenara tensile structure

PS1 installation, nArchitects

Emergency call boxes, or blue phones, will be provided to enhance site security. Additional ways to improve safety and security for patrons and the campus community, and ways to improve circulation conflicts during large events, will be discussed with campus police, security, campus transportation, event planning and operational personnel early in the design phase. Guidelines for event operational procedures will be outlined to address these concerns.

5.11 Performance Infrastructure

The Upper Quarry Amphitheater is considered a 'passive' venue in today's parlance, meaning that as originally designed, the amphitheater is intended for unticketed daytime events. There is no perimeter fencing or security to maintain specific assigned seating for events that are ticketed. Existing infrastructure for stage use, other than basic (remote) line voltage power, is only capable of supporting a modest, portable 'PA' speech grade sound reinforcement system.



It has been recommended that necessary primary upgrades to the stage be included. These improvements would incorporate both permanent and temporary cabling in a robust infrastructure to provide adequate power for evening performance lighting and an appropriate sized sound system for large spoken word events and concerts.

Without a formally defined stage, a concrete slab measuring approximately 40' deep x 70' wide, should be provided with a trench duct system around the perimeter. The duct will have removable covers, providing a means of 'passing' theatrical lighting and audio cable to a series of access points along the stage perimeter, especially at corner pad lighting and audio tower locations. Duct covers would be waterproof and segmented for flexible use. The stage itself must have an engineered slab capable of supporting significant point loads specific to larger events and potential fork lift use. A temporary stage canopy with square truss column supports at each corner of the stage may be implemented, seasonally. Alternately, a fabric shade system may be supported by these columns. The nature of structure and the stage surround will be determined in the design phase. Regardless of direction, these 4'x 4' corner pads, should be able to support a half ton load at each location.

The upstage area, primarily used for truck access and turnaround, will have a gravel surface, allowing users to erect additional towers. Seismic bracing and tie-down options for guying cables may be provide by means of spiking through the holes in this surface so that tensioned cables may be landed in these locations. This is preferable to a series of permanent, engineered guy points, as it is quite likely that the use of the stage may continue to evolve over the coming seasons of enhanced utilization.

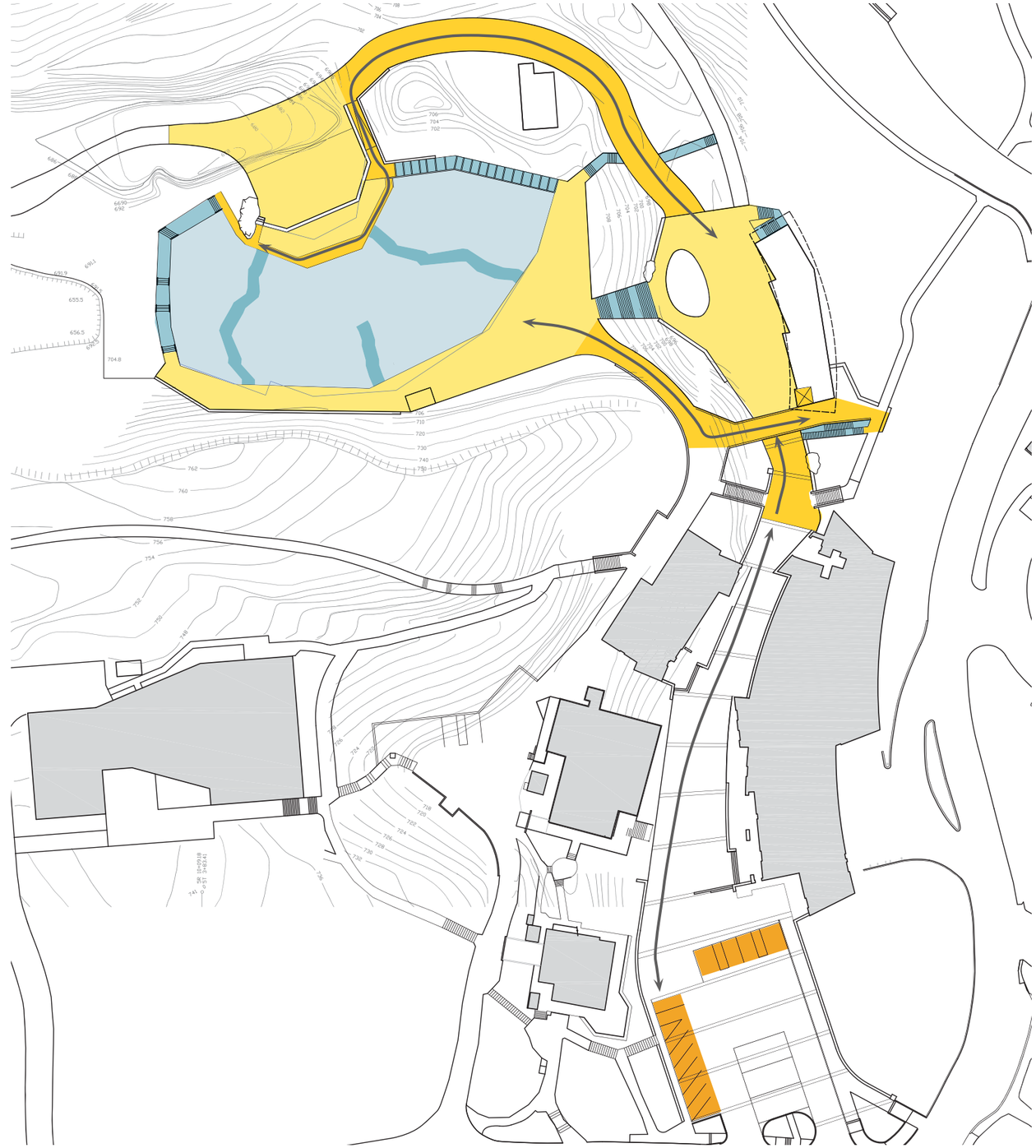
Power for lighting is anticipated to require an 800 amp 3-phase 120/208 service. Audio must be supported by a 200a 3-phase disconnect. Grounding at all locations is critical. Although it is likely that the best location for this switchgear would be at or around the pad for temporary dressing facilities, feeds from the switches to the stage should terminate in a series of water-proof plugs to allow use of 120v dimmable power anywhere in the duct and up above to lighting positions specific to a given use. All dimming would be located at the perimeter of the stage, as necessary to tap into the 800 amp service. Audio racks and amplifiers would be located similarly, in order to provide power and signal to line arrays which would be hung for events, as required. All infrastructure, beyond wiring, cable duct and electrical service/plugging backbone, should be stage-related only. All superstructure is currently anticipated to be temporary and erected as necessary.

Control of both audio and lighting shall be provided at the rear of the amphitheater or in the house in a permanent 'house mix/control' position. Signal from control consoles in this area shall be run over lighting and audio 'snakes'. These seasonal/temporary control cables shall be run in 9"-12" waterproof conduit or beverage tubing from the mix position to the left or right trench duct, where signal to dimmer or relay power racks as well as amplifiers and speakers may be connected. Performance lighting, limited to medium throw follow spot lights should also be provided at or near this location, as well as convenience power and 3-phase, 20a power for these portable fixtures.

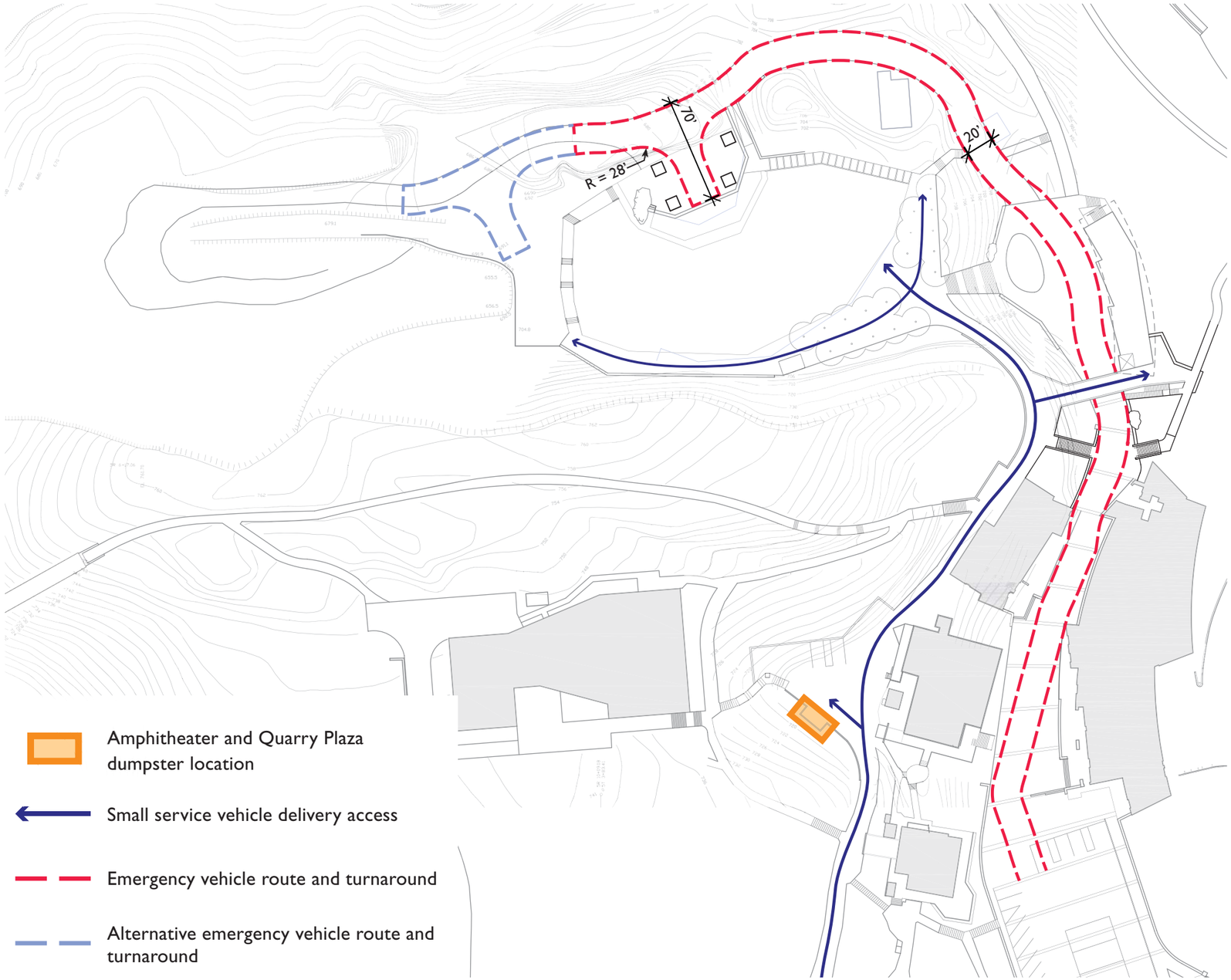
5.12 Accessibility

Providing equal access is an extreme challenge throughout the UCSC campus, including Quarry Amphitheater, due to steep topography and lack of space for parking close to buildings and venues. Able patrons will typically park at the Hahn Lot on non-performance days and walk up the steep road across Steinhart Way and through Quarry Plaza to arrive at the Amphitheater. For events, the campus has historically relied on the East Remote Lot for parking and provide special shuttle service to bring patrons to the venue. A number of accessible and medical permit spaces exist at the southern end of Quarry Plaza. For events, up to eight spaces may be reserved for accessible patron use at Quarry Plaza. Shuttle services can be arranged when the need for additional spaces is required.

The new elevator at the Support Building and pedestrian bridge will provide direct access to the upper level of the Amphitheater. Currently the upper level is accessable via the two parking spaces and pathway behind Student Services. Along the Upper Terrace, 11 horizontally distributed accessible seats with companion seating will be designated, for a 2,000 person capacity venue. The lower level of the amphitheater will be accessed from the Redwood Lobby, via a new ramp at the east edge of the stage to an area of 11 designated seats. The new Redwood Lobby, Support Building and expanded Upper Terrace will provide a broad range of accessible amenities.



- Non-Accessible Amenities
- Non-Accessible Circulation
- Accessible Amenities
- Accessible Circulation
- Accessible Parking



5.13 Vehicular Circulation

The existing emergency vehicle access route and turnaround at the stage is acceptable for fire truck access as long as the route is paved with all-weather surfacing such as stabilized gravel and/or asphalt. An alternate turnaround must be provided for circumstances when stage equipment or structures block vehicle turnaround. The alternate turn-around proposed must be further studied in the Design Phase.

Service vehicle access through Quarry Plaza is restricted to early morning or evening hours, when pedestrian activity in the Plaza is low. The new Bridge and Upper Terrace paving will be designed to support light vehicle traffic, greatly expanding access for concessions and service.

Access for emergency vehicles through Quarry Plaza into the Amphitheater during daytime events will be particularly challenging given the large amount of pedestrian activity in the plaza. The existing conflicts between pedestrian and vehicular traffic along campus roadways, and the difficulty this poses for emergency responders are a campus wide problem. These challenges are factors that must be taken into account by event planners, and should be reduced through strategic scheduling whenever possible.

Trash collection vehicles cannot currently service the existing receptacles for Quarry Plaza. Dumpsters located at the end of the plaza must be rolled out to Steinhart Way for pick up. A new trash enclosure area for dumpsters that can be directly serviced by Grounds Services trucks will be provided at the loading area behind the Student Union to serve both Quarry Plaza businesses and the Amphitheater.

5.14 Stormwater Infrastructure

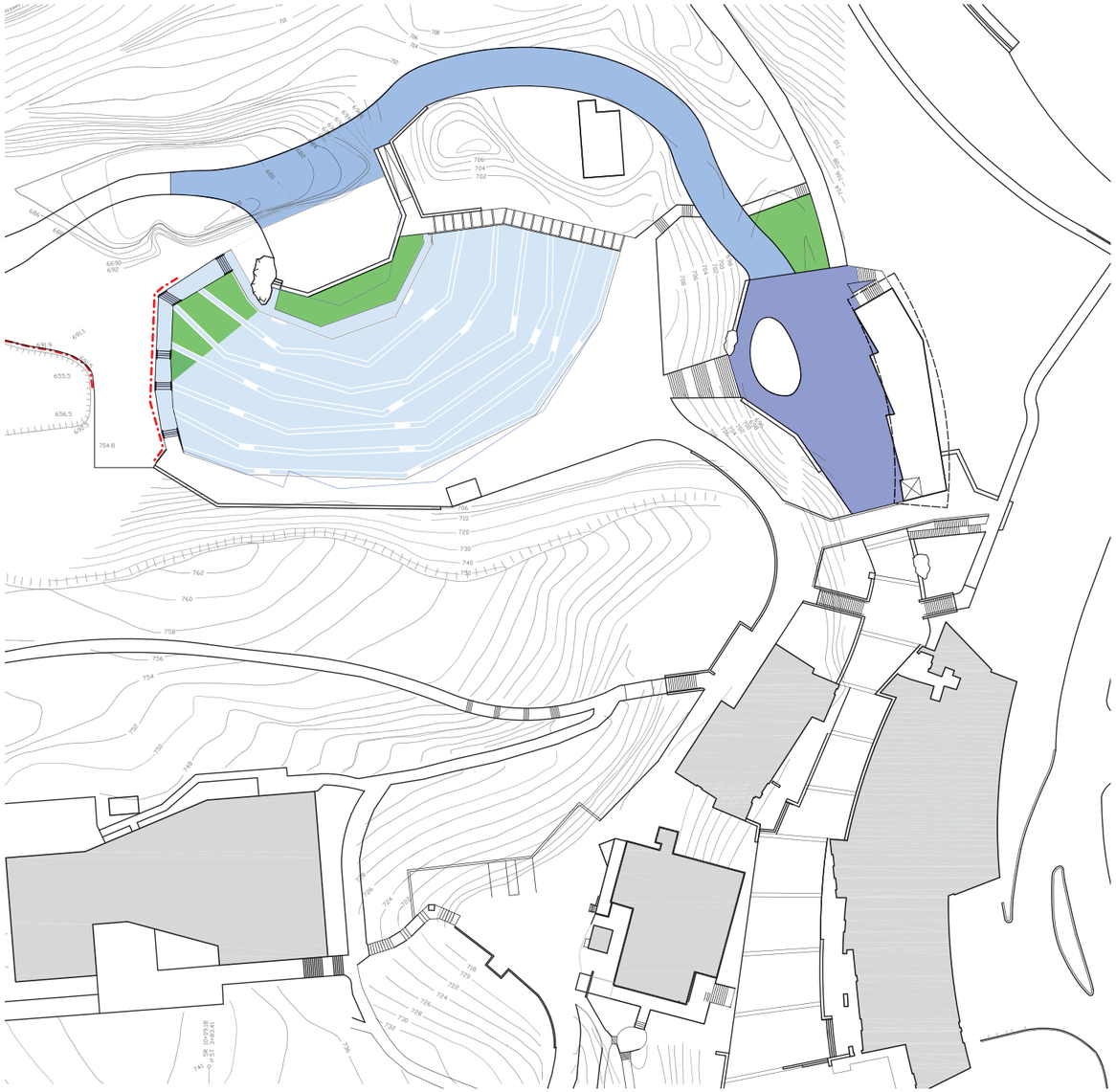
An integrated stormwater management system for the Amphitheater site significantly reduces the need for underground piping and detention infrastructure by minimizing site runoff and utilizing passive treatment measures. Existing watershed-based stormwater management systems, existing and proposed surface conditions, geologic attributes, topography, and existing utility infrastructure all informed the basis for new stormwater infrastructure. The proposed management strategy integrates seamlessly into a tight, environmentally sensitive and geologically complicated site, and minimizes impacts to the underground geologic aquifer.

The following is a summary of the systems proposed for this site.

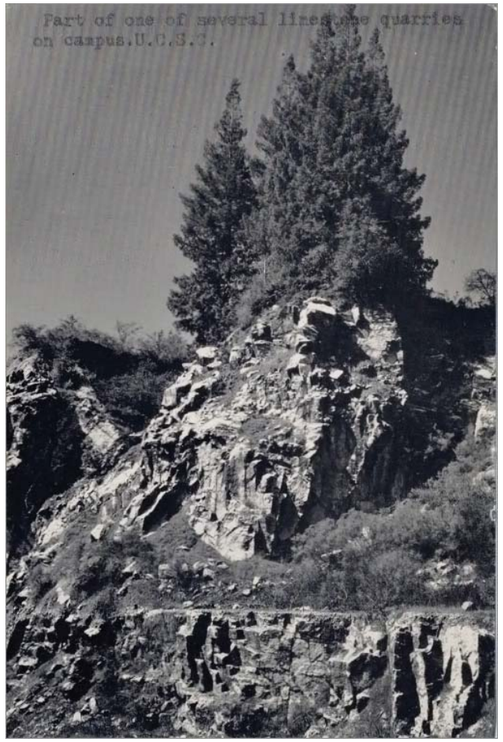
Permeable Paving
The use of permeable surface materials such as sand-set pavers, porous concrete, and gravel paving minimizes site runoff and maximizes retention through stormwater infiltration. This reduces the required treatment and detention area, and the amount of costly underground stormwater infrastructure. The use of impervious paving will be limited, and permeable paving will be used wherever practical. The emergency vehicle access road will be designed to minimize asphalt paving by using porous gravel paving along the edges.

Stormwater Treatment
Integrated passive solutions for stormwater treatment, include bioswales, rain gardens, and site-integrated treatment at the Amphitheater terraces. Treatment zones are strategically placed where runoff may be either directed to surface locations that are non-impactful to existing and proposed elements, or integrated below grade within paving systems. Provision of adequate area for these measures is challenged by steep topography. Additional treatment areas may be considered outside of the current project limits of work in the Design Phase.

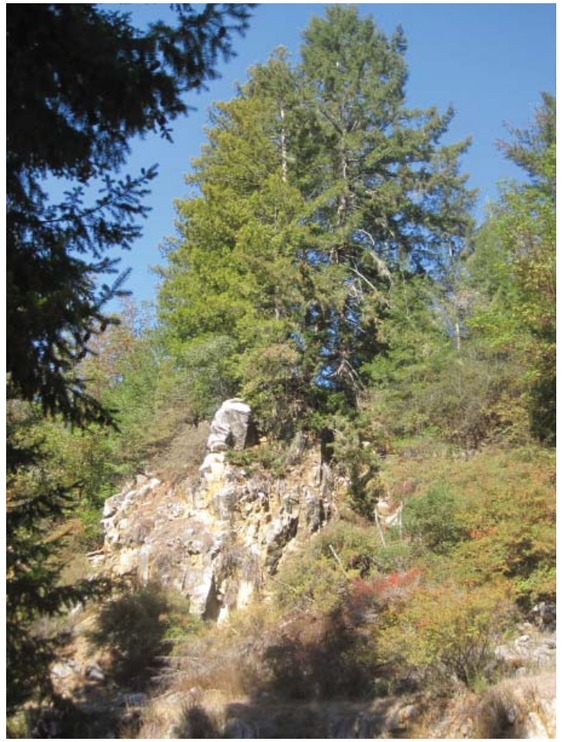
Earthen Swales
Earthen swales will be used for natural overland stormwater conveyance. The location of these swales will depend on final site conditions, but will be integrated along the edges of the built environment, where visual impact is minimal. The swales will be sized to handle larger storm runoff and will address the site specific attributes of duff, plant material and maintenance concerns. There may be crossing points, culverts, trench drains or runnels required where surface flows pass across built elements such as paving and paths. These will be sensitively integrated into the overall design.



- Pervious Concrete
- AG / Gravel Path
- Permeable Pavers
- Bio-Retention Treatment Areas



Ansel Adams photo of a Quarry ledge and stone outcrop



The view today

Photo of the newly completed amphitheater by Robert Brandeis c. 1965

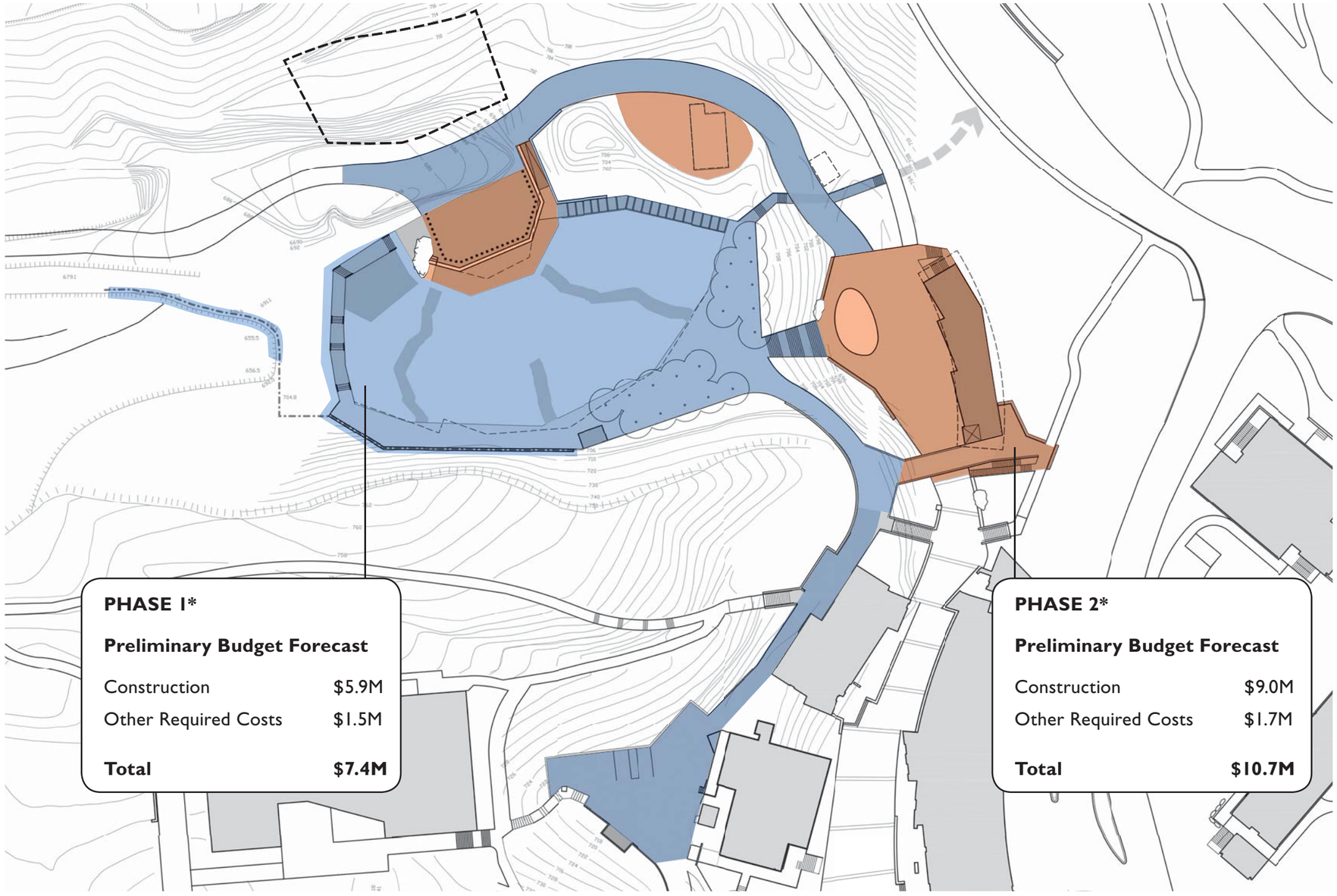
The view today

5.15 Restoring the 'Theatrical Sublime'

Some of the drama of the old quarry setting - the carved walls, ledges and outcroppings - is obscured today by undergrowth and volunteer trees. On the left, a photo by Ansel Adams of the Quarry when it was still in operation shows the dramatic natural stone outcropping rising above a terraced ledge and excavated north wall of the quarry. This outcropping became the backdrop to the amphitheater stage. Below left, a photo of the newly completed amphitheater by Robert Brandeis reveals a stunning view of this outcropping and open view of the raw quarry wall as it extends westward. 'The Rock', an outcropping that pierces through the stage wall and forms a dramatic and poignant counterpoint to the architectural design of the theater, is a far more powerful statement than the one today - which is almost completely obscured by vegetation.

Selective vegetation removal will be necessary to restore the 'theatrical sublime' qualities that inspired Thomas Church, Robert Royston and others to select and develop this site as an amphitheater. Careful clearing of the north quarry wall will reveal the structure and history of the old quarry for a new audience. The redwood tree and understory planting that has sprouted from the stone outcropping at the stage will be removed, greatly improving site lines to the stage. and revealing the former grandeur of 'The Rock', a beloved icon of the Amphitheater. Removing this tree and one or two of the firs that have sprouted up near the northwest base of the amphitheater will re-open the dramatic view to the west of the former quarry pit. The Oregon maples planted along the Upper Terrace provide much needed shade, human scale and seasonal beauty. Additional study will be required to assess the health and longevity of these trees, and determine whether preservation or replacement will be recommended.

6.0
IMPLEMENTATION



6.1 Preliminary Budget Forecast

Early Concept Budget forecasting was used throughout the Feasibility Study process to understand potential costs associated with full Amphitheater Renovation, Redwood Lobby, Support Building and all associated campus and performance infrastructural improvements.

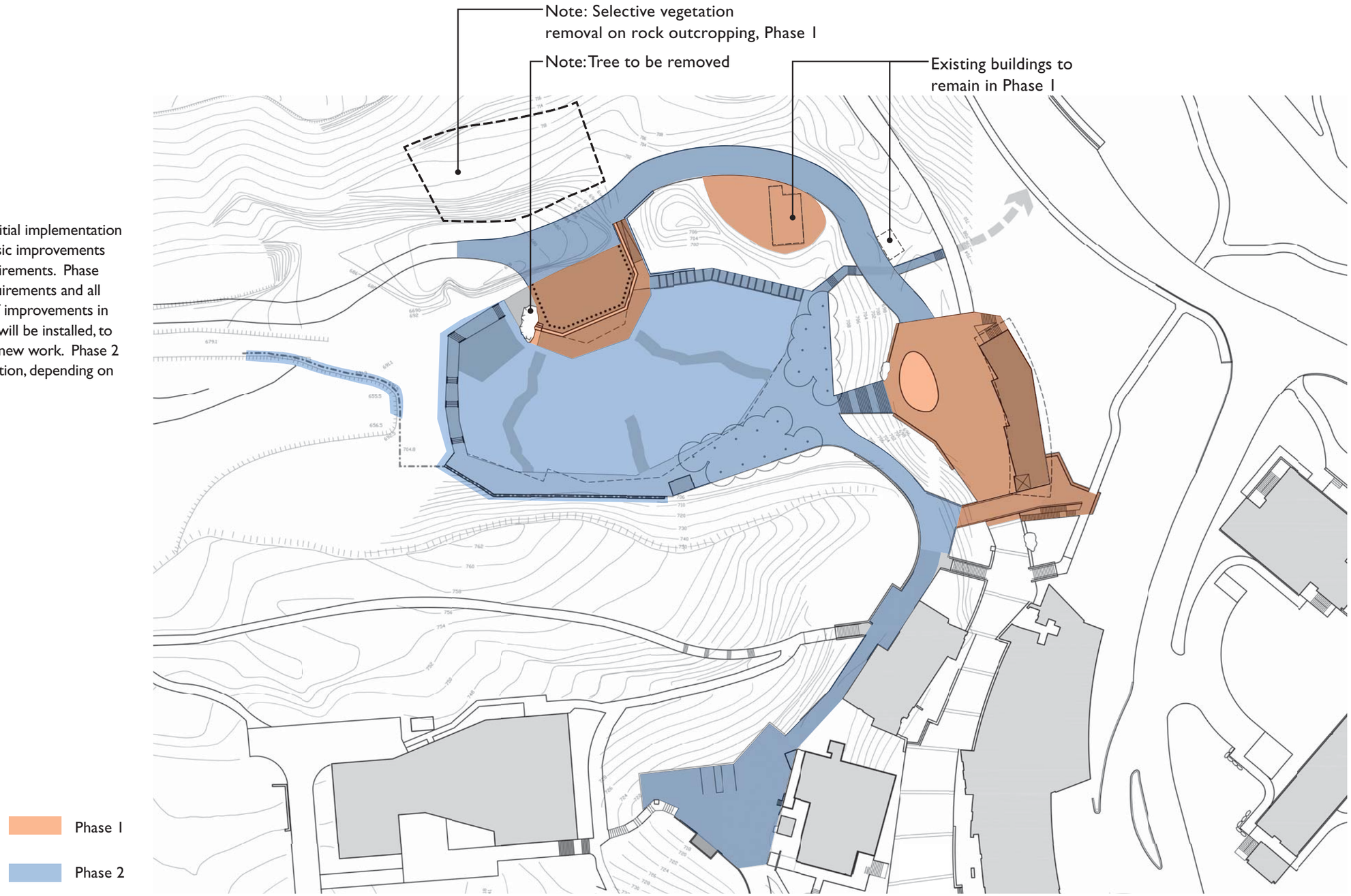
A Preliminary Budget Forecast was prepared mid-way through the Study identifying gross construction costs for major components of the preliminary concept plan. This preliminary forecast informed the refinement of the plan components and phasing strategy.

* Costs assume an anticipated construction start for Phase 1 in 2016 and Phase 2 in 2021.

During the Feasibility Study, a few related projects were identified that will require further definition. These include electrical infrastructure improvements, relocated Grounds Services facilities, stairs and other pedestrian connection to McLaughlin Drive, and parking improvements. These projects will be refined in the early design phase of the Amphitheater project.

6.2 Phasing Analysis

A Phasing Plan was developed to keep initial implementation costs to a minimum, while addressing basic improvements for code, life safety and accessibility requirements. Phase 1 will consist of these minimum site requirements and all associated work. The complete scope of improvements in areas impacted by Phase 1 construction will be installed, to minimize any rework or replacement of new work. Phase 2 may follow directly after Phase 1 completion, depending on funding.



6.3 Phasing Components

Phase 1 will include reconstruction of the entire amphitheater, service roads, site lighting, main steps and paths.

Phase 2 will include the new Support Building, Bridge, Redwood Lobby, and Stage improvements

PHASE 1

- New Terrace Seat walls: board formed concrete or stone, wood seat cap, realigned stair aisles, handrails
- New main entry stair
- Vehicular paving: upper terrace grade and repave as required for accessibility and service road
- Rock stabilization and rockfall barrier
- Safety guardrails / fence
- Lawn terraces
- Lighting: Amphitheater aisles, upper terrace and egress path
- Site signage: ADA / directional only
- Site cleanup: Remove tree at stage (rock to remain), vegetation removal at quarry rock walls behind stage and seating
- Stormwater Management: for Amphitheater area only

PHASE 2

- Support Building + Elevator
- Bridge
- Main Entry Monument Sign
- Redwood Lobby: Paving, seatwalls
- 'Smart Stage'
- Stage Infrastructure and additional power supply
- Accessible Ramp: to lower level seating from stage
- Temporary Building Pad
- Lawn seating in front of stage

6.4 Additional Recommendations

Additional information required prior to advancement of the project to the Design Phase may include the following:

- Full Site Topographic Survey
- Site Tree Inventory and Assessment
- Detailed Geotechnical Study of area for rockfall barrier
- Structural engineering for rockfall barrier
- Geotechnical Percolation Testing for Stormwater System Design
- Horticultural Soils Testing for Planting
- Material reuse investigations for stone and wood

PROJECT CONTRIBUTORS

UCSC Core Advisory Group Committee

Chair:
Alma Sifuentes, Associate Vice Chancellor and Dean of Students

John Barnes, AIA, Campus Architect, Associate Vice Chancellor Physical Planning and Construction
John Hopkins, Sr. Director of Development, University Relations
Max Hufft, Undergraduate Student Representative
Sean Keilen, Associate Professor of Literature and Porter College Provost
Elisse La Barre, Graduate Student Representative
Robert McCampbell, Executive Director, Bookstore
Donna Mekis, Alumni Council Representative
Olga Najera Ramirez, Professor Anthropology/ Los Mejicas Performance Advisor
Linda Navone, Special Assistant, Chancellor's Office/EVC
Jose Reyes -Olivas, Co-Curricular Program Coordinator, College Ten
Jean Marie Scott, Associate Vice Chancellor, Risk and Safety Services
Samme Shaw, Undergraduate Student Representative
Deana Slater, College Administrative Officer, Colleges Nine & Ten
Zaunna Wells, Conference Services
Don Williams, Director, Cultural Arts Diversity

Staff:
Linda Flaherty, Assistant Director, Capital Planning & Space Management
Erin Fitzgibbons, Educational Facilities Planner
Denise Onitsuka, Director, Dean of Students Office

UCSC Physical Planning and Construction

Dean Fitch, Director, Campus Planning
Felix Ang, Director Architectural Services
Diane Lallemand, Executive Assistant to the Campus Architect

UCSC Design Advisory Board

Richard Fernau, FAIA, Architect, Fernau & Hartman Architects
Tito Patri, Landscape Architect, Tito Patri & Associates

Disability Resource Center

Peggy Church, Director
Faris Ateeq, student representative
Ana Chavez, student representative
Anana Rojas, student representative

UCSC Staff, Site Inventory Workshop:

Rick Rodewald, Fire Marshall
Saladin Sale, Risk Services Director
Larry Pageler, Director, Transportation and Parking Services (TAPS)
Susan Willats, Assistant Director, TAPS, and ADA Facilities Access Coordinator
Roger Edberg, Senior Superintendent Grounds Services
Nader Oweis, Chief of Police
Josephine Ortega, Senior Architect

Design Team

O|CB has assembled a diverse team of consultants to aid in understanding this complex site including:

Fernau and Hartman
Architecture

Auerbach Pollock Friedlander
Theater Facilities

Linda Jewell
Historic Theater and Outdoor Facility Programming

TBD
Cost Estimation

URS
Geotechnical Engineers

Sherwood Design Engineers
Civil Engineering

MJMMG
Fundraising and Operations

Preview Group
Code Interpretation

O|CB

O|CB is a nationally recognized design leader in the shift toward a more sustainable future through landscape architecture and green urbanism. Since the firm's inception in 1994, we have been committed to the creation of healthy cities, robust ecologies, and beautiful, habitable spaces; integrating a strong design ethic with the principles of resilient thinking.

O|CB Team:
Cheryl Barton, RLA, FASLA, FAAR, LEED AP, Principal
Christine Reed, RLA, ASLA, Associate Principal
John Pearson, Associate

O|CB OFFICE of CHERYL BARTOI
landscape architecture
green urbanism

146 Eleventh Street San Francisco, CA 94103 www.toocb.com

FEASIBILITY REPORT FOR

QUARRY AMPHITHEATER

VOLUME II

APPENDICES

CONTENTS

Volume II

Appendices

Appendices

Budget Forecast,
tbd consultants, 2014

UNIVERSITY OF CALIFORNIA
SANTA CRUZ

UCSC Upper Quarry Amphitheater

UCSC Campus
Santa Cruz
California

Feasibility Study Cost Estimate

June 2, 2014

Prepared For:

The Office of Cheryl Barton
146 Eleventh Street
San Francisco, CA 94103

By:

tbd consultants
111 Pine Street
Suite 1315
San Francisco
CA, 94111

PROJECT SCOPE

The project involves the demolition of the existing Amphitheater bleachers and stage and construction of new stone bleachers and a open air "smart" stage including power infrastructure for plug and play of rental AV and Lighting Equipment and rigging.

The scope also includes construction of a new building housing concessions, restrooms, a green room and storage on two levels with elevator and bridge access to a large roof deck terrace area.

REFERENCE DOCUMENTATION

This Construction Cost Estimate was produced from the following documentation. Design and engineering changes occurring subsequent to the issue of these documents have not been incorporated in this estimate.

Document	Date
- Pricing Diagram prepared by O|CB	14-Feb-14
- UQA Plan Study prepared by F & H Architects	09-Apr-14
- Perspective view renderings prepared by F & H Architects	17-Feb-14
- Preliminary Geotechnical report prepared by URS	10-Feb-14
- Feasibility Study Preliminary Cost Narrative prepared by O|CB	14-Feb-14
- Conduit and electrical infrastructure prepared by APF Engineers	14-Feb-14
- Site storm water management measured prepared by Sherwood Engineers	10-Mar-14
- Phasing plans prepared by OCB	07-Mar-14
- UCSC UQA Budget Forecast Updates Plan	08-May-14
- Site requirements memo	08-May-14

BASIS FOR PRICING

This estimate reflects the fair construction value for this project and should not be construed as a prediction of low bid. Prices are based on local prevailing wage construction costs at the time the estimate was prepared. Pricing assumes a procurement process with competitive bidding for all sub-trades of the construction work, which is to mean a minimum of 3 bids for all subcontractors and materials/equipment suppliers. If fewer bids are solicited or received, prices can be expected to be higher.

Subcontractor's markups have been included in each line item unit price. Markups cover the cost of field overhead, home office overhead and subcontractor's profit. Subcontractor's markups typically range from 15% to 25% of the unit price depending on market conditions.

General Contractor's/Construction Manager's Site Requirement costs are calculated on a percentage basis. General Contractor's/Construction Manager's Jobsite Management costs are also calculated on a percentage basis.

General Contractor's/Construction Manager's overhead and fees are based on a percentage of the total direct costs plus general conditions, and covers the contractor's bond, insurance, site office overheads and profit.

Insurance and bond is broken down as follows:-

General Liability Insurance + Bonding	*2.0%*

Unless identified otherwise, the cost of such items as overtime, shift premiums and construction phasing are not included in the line item unit price.

This cost estimate is based on standard industry practice, professional experience and knowledge of the local construction market costs. TBD Consultants have no control over the material and labor costs, contractors methods of establishing prices or the market and bidding conditions at the time of bid. Therefore TBD Consultants do not guarantee that the bids received will not vary from this cost estimate.

CONTINGENCY

Design Contingency *15%*

The Design Contingency is carried to cover scope that lacks definition and scope that is anticipated to be added to the Design. As the Design becomes more complete the Design Contingency will reduce.

Construction Contingency *Not included*

The Construction Contingency is carried to cover the unforeseen during construction execution and Risks that do not currently have mitigation plans. As Risks are mitigated, Construction Contingency can be reduced, but should not be eliminated. A Construction Contingency is not included in this estimate.

An owner's contingency has not been included in this construction cost estimate, but it is advised that the owner carry additional contingency to cover scope change, bidding conditions, claims and delays.

ESCALATION

Escalation has been included in this estimate based on starting phase I construction in April 2016 and Phase II in June 2021. The following is our projection on future cost increases related to increases in labor and materials up until the mid point of construction. Escalation is calculated as being compound.

Escalation Per Year

Year	Escalation
2014	5.00%
2015	5.00%
2016	4.50%
2017	4.00%
2018	4.00%
2019	4.00%
2020	4.00%
2021	4.00%
2022	4.00%
2023	4.00%

This calculation does not account for adverse bidding conditions and a separate Bid Contingency should be carried if there are limited qualified bidders or if a market research study indicates.

EXCLUSIONS

- AV and Theatrical Lighting systems and support grids (assumed to be rental equipment)
- Grease trap, exhaust hood and other kitchen infrastructure at concessions (stubs \-outs inlcuded in estimate).
- Land acquisition, feasibility studies, financing costs and all other owner costs
- All professional fees and insurance
- Site surveys, existing condition reports and soils investigation costs
- Items identified in the design as Not In Contract [NIC]
- Hazardous materials investigations and abatement
- Utility company back charges, including work required off-site and utilities rates
- Owner's contingency
- Overtime, 2nd shift and lost productivity premiums
- Escalation
- Construction Contingency
- Kitchen equipment and hood for Commercial Kitchen (estimated cost of commercial kitchen fitout $ 100,000 - $ 150,000)

AREA TABULATION

FLOOR	AREA		HEIGHT	COMMENT
First Floor	2,483		15.00	
Upper Floor	1,007		9.00	
TOTAL ENCLOSED AREA	**3,490**	**GSF**	**24.00**	**LF**
Roof Terrace	1,570	SF		
GROSS FLOOR AREA (INCLUDING 50% OF COVERED)	**4,275**	**GFA**	**24.00**	**LF**

Site

Total Site Area	70,000	SF
Stage	3,350	
Bleachers	18,000	
Paving	23,700	
Stair	2,050	
Concrete Pad	765	
Landscape	22,135	

CONSTRUCTION SCHEDULE

Phase I Construction Start in April 2016 Complet in September 2016	6 Month Duration
Phase II Construction June 2021 and Complete in April 2022 in April 2022	11 Month Duration

June 2, 2014

OWNER: University of California, Santa Cruz
PROJECT: UCSC Upper Quarry Amphitheater
LOCATION: Santa Cruz, CA

ARCHITECT: Office of Cheryl Barton
DURATION: 12 Months

AREA SUMMARY:

Building Area 4,275 GSF

DESCRIPTION	DIRECT COSTS	TOTAL COST WITH MARK-UPS	AREA	COST/SF
Total Construction Costs (including mark-ups):				
Phase I - New Amphitheater				
Site Clearance	$93,770	$153,426	50,000	$3.07
Site Development	$2,589,474	$4,236,897	50,000	$84.74
Site Utilities	$1,537,620	$2,515,854	50,000	$50.32
Classroom modifications	$180,975	$296,111	50,000	$5.92
Phase I - Direct Construction Total	**$ 4,401,839**	**$ 7,202,288**		
Phase II - Building Construction				
Base Building	$1,771,500	$3,349,142	4,275	$783.43
Interior Finishes	$84,706	$160,143	4,275	$37.46
Terrace Deck & Roof	$380,380	$719,135	1,570	$458.05
Site Work & Utilities (related to building construction)	$143,900	$272,053	3,100	$87.76
Phase II - Bridge & Elevator				
Bridge & Stair	$195,400	$369,417	520	$710.42
Elevator	$327,600	$619,350	520	$1,191.06
New Amphitheater				
Stage Structure & Electrical Infrastructure	$788,830	$1,491,362	20,000	$74.57
Redwood Lobby	$834,274	$1,577,278	20,000	$78.86
Phase II - Direct Construction Total	**$ 4,526,590**	**$ 8,557,880**		

OTHER PROJECT COSTS	
DESIGN AND ENGINEERING FEES	EXCLUDED
PROJECT MANAGEMENT AND OVERSIGHT	EXCLUDED
SPECIAL INSPECTIONS AND OTHER CONSULTANTS	EXCLUDED
CONSTRUCTION CONTINGENCY	EXCLUDED
PROJECT CONTINGENCY	EXCLUDED
TOTAL PROJECT COST (PHASE I & PHASE II)	**$ 15,760,168**

ALTERNATE COSTS		
BUILDING		
CMU WALLS IN LIEU OF BOARD FORMED WALLS	$ (42,390)	
STEEL FRAME WITH STUCCO SIDING ILO BOARD FORMED WALLS	$ 9,795	
STANDING SEAM METAL ROOF ILO CORTEN STEEL	$ (60,300)	
IPE DECKING TO TERRACE DECK ILO PRECAST PAVERS	$ 34,540	
REDUCE SIZE OF ELEVATOR CAB	$ (23,200)	
AMPHITHEATER		
CONCRETE ILO STONE WALLS AT SEATING	$ (565,800)	Architectural Concrete

SECTION	%	SUB TOTAL	TOTAL	$ / SF	
A) SHELL (1-5)					
1 FOUNDATIONS (1)					
2 VERTICAL STRUCTURE					
3 FLOOR & ROOF STRUCTURE					
4 EXTERIOR CLADDING					
5 ROOFING & WATERPROOFING					
B) INTERIORS (6-7)					
6 INTERIORS, PARTITIONS & DOORS					
7 FLOOR, WALL & CEILING FINISHES					
C) EQUIPMENT & VERTICAL TRANSPORTATION					
8 FUNCTION EQUIPMENT & SPECIALTIES					
9 STAIRS & VERTICAL TRANSPORTATION					
D) SERVICES					
10 PLUMBING SYSTEMS					
11 HVAC					
12 ELECTRICAL					
13 FIRE PROTECTION					
E) EQUIPMENT + FURNISHINGS					
14 EQUIPMENT					
15 FURNISHINGS					
F) SPECIAL CONSTRUCTION + DEMOLITION					
16 SPECIAL CONSTRUCTION					
17 SELECTIVE BUILDING DEMOLITION					
G) AMPHITHEATER SITEWORK	**100.0%**		**4,401,839**	**88.04**	
18 SITE CLEARANCE (18)	2.1%	93,770		1.88	
19 SITE DEVELOPMENTS (19)	58.8%	2,589,474		51.79	
20 SITE MECHANICAL UTILITIES	4.1%	178,734		3.57	
21 SITE ELECTRICAL UTILITIES	30.9%	1,358,886		27.18	
22 OTHER SITE CONSTRUCTION	4.1%	180,975		3.62	
DIRECT COSTS			**4,401,839**	**88.04**	
SITE REQUIREMENTS	4.2%		184,877	3.70	
JOBSITE MANAGEMENT	7.8%		357,764	7.16	
ESTIMATE SUB-TOTAL			**4,944,480**	**98.89**	
INSURANCE + BONDING	2.0%		98,890	1.98	
FEE	8.0%		403,470	8.07	
ESTIMATE SUB-TOTAL			**5,446,840**	**108.94**	
DESIGN CONTINGENCY	15.0%		817,026	16.34	
ESTIMATE SUB-TOTAL			**6,263,866**	**125.28**	
ESCALATION	14.98%		938,327	18.77	Mid-point of construction June 2016
ESTIMATE TOTAL			**7,202,193**	**144.04**	

tbd consultants

ESTIMATE DETAIL SITE - PHASE I **GSF :** 50,000

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1						
2	**SITE CLEARANCE (18)**					
3						
4	Site Clearing & Grading					
5	Demolish existing wood bleachers	27,000	SF	0.20	5,400	
6	Rough grading	63,000	SF	0.75	47,250	
7	Move existing boulders	1	LS	3,000.00	3,000	
8	Remove existing light poles	1	LS	5,000.00	5,000	
9	Remove existing paving at upper terrace and upper path	5,200	SF	3.35	17,420	
10						
11	Tree Removal					
12	Remove existing trees	6	EA	1,200.00	7,200	
13	Trim trees to remain	1	LS	8,500.00	8,500	
14						
15	Hazardous Components Abatement					
16	Allowance for hazmat abatement		Excluded			
17						
18	**SITE CLEARANCE (18)**				**93,770**	**$1.88 / SF**
19						
20	**SITE DEVELOPMENTS (19)**					
21						
22	Stage Structure					
23	Prepare pad for new stage	3,350	SF	2.50	8,375	
24	Concrete ramps	320	SF	30.00	9,600	
25	Handrail	1	LS	2,800.00	2,800	
26						
27	Terrace Seating					
28	Grading to area	18,000	SF	1.25	22,500	
29	Foundations for new walls	3,500	LF	95.00	332,500	
30	Architectural concrete walls - 20" high X 18" wide	5,833	SF	153.00	892,449	
31	Permeable paving - 22" of AASHTO # 57 crushed rock, 2" of AASHTO # 8 with open joint integral concrete paving	10,000	SF	29.04	290,400	
32	Drainage runnel	3,500	LF	11.00	38,500	
33	Concrete steps	830	SF	30.00	24,900	
34	Handrails - hot dip gal. steel	390	LF	225.00	87,750	
35	Wood seat cap 18" wide with ss supports fixed to top of concrete walls	5,250	SF	76.00	399,000	
36						
37	Other Paving					
38	Vehicle paving	9,800	SF	9.20	90,160	Gravel / ac driveway 12' ac with 4' gravel shoulder each side
39						
40	Main steps					
41	Concrete steps with epoxy nosestrips	2,050	SF	30.00	61,500	
42	Concrete wing walls		Excluded - see Phase II			
43	Handrails - hot dip gal. steel	175	LF	225.00	39,375	
44						
45	Rock Stabilization - estimates provided by URS Corporation					
46	Rock stabilization - barrier option	1	LS	45,000.00	45,000	Add $ 100k if slope net option used
47	Allowanced for upgraded barrier design	1	LS	25,000.00	25,000	allowance
48	Re-grade top of slope and remove hazard trees	1	LS	24,100.00	24,100	
49	Scale slope of loose rock	1	LS	15,300.00	15,300	
50						
51	Fencing					
52	Guardrail fence - ss cable rail 42" high	200	LF	265.00	53,000	

ESTIMATE DETAIL SITE - PHASE I

GSF : 50,000

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
53						
54	Other					
55	Site prep and grading	18,000	SF	1.25	22,500	
56	Lawn area	1,700	SF	4.50	7,650	
57	Planted / landscape area	12,435	SF	1.00	12,435	minor work
58	Bioswale or bio retention-type vegetated treatment	930	SF	6.00	5,580	
59	New trees - 48" box specimen trees	24	EA	1,650.00	39,600	
60	Irrigation	1	LS	6,500.00	6,500	allowance
61	Site signage	1	LS	8,000.00	8,000	ADA & directional signage
62	Renovate existing dressing room building and relocate grounds. Renovate existing restrooms	1	LS	25,000.00	25,000	Allowance
63						
64	**SITE DEVELOPMENTS (19)**				**2,589,474**	**$51.79 / SF**
65						
66	**SITE MECHANICAL UTILITIES (20)**					
67						
68	Drainage					
69	Area drains	1	Allow	10,000.00	10,000	
70	Solid pipe	830	LF	35.00	29,050	
71	Perf pipe	4,157	LF	12.00	49,884	
72	Rock and filter fabric	3,740	LF			Not required if permeable paving
73	Manholes	5	EA	5,000.00	25,000	
74	Connect to existing system	1	LS	3,000.00	3,000	
75						
76	Water					
77	Water lines	800	LF	55.00	44,000	
78	Hose bibbs	4	EA	450.00	1,800	
79	Fire hydrant	2	EA	8,000.00	16,000	Includes valves
80						
81	**SITE MECHANICAL UTILITIES (20)**				**178,734**	**$3.57 / SF**
82						
83	**SITE ELECTRICAL UTILITIES (21)**					
84						
85	Site Electrical					
86	Provide and install two (4) way dead break junction bars in vault 69-1-1 for 12KV circuits B1 and B2.	2	EA	6,500.00	13,000	
87	Provide and install two (2) G&W 12KV solid dielectric four-way vault switches in a new vault near the Classroom Unit service yard.	2	EA	70,000.00	140,000	
88	Provide and install two above grade GE (or equal) 12KV Load Interrupter Switches (Air Disconnects).	2	EA	18,200.00	36,400	
89	Strip out and remove existing 480/208 Volt transformer, primary/secondary protection and feeders located at the amphitheater.	1	LS	19,500.00	19,500	
90						
91	NO ANTICPATED 480 VOLT LOADS IN PHASE 1 OF THE AMPHITHEATRE PROJECT:		Note			
92	Provide and install 75 KVA 12KV to 208 Volt transformer with NEC required primary and secondary protection near the Classroom Unit service yard.	1	EA	48,500.00	48,500	
93	Provide and install 600 Volt 4/0 copper conductors from transformer secondary protection to existing amphitheater load center in existing conduit.	600	LF	80.00	48,000	
94	Provide and install new 225 Amp main breaker to serve existing type NLAB load center a the amphitheater.	1	EA	450.00	450	

ESTIMATE DETAIL SITE - PHASE I **GSF :** 50,000

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
95						
96	Allowance for conduit in trench w/ concrete cover	900	LF	235.00	211,500	cut and patch asphalt paving
97	Allowance for power connection for site lighting	1	LS	4,800.00	4,800	
98	Allowance for electrical and USB outlets at seating	250	EA	925.00	231,250	
99	50 Amp NEMA Plugs at rear of Amphitheater	3	EA	12,350.00	37,050	
100	Testing and termination	1	LS	20,000.00	20,000	
101						
102	Communications / AV Duct Banks					
103	Duct bank, 3-4"	1,200	LF	42.00	50,400	
104	12" Conduit	400	LF	50.00	20,000	
105	Manholes	2	EA	3,500.00	7,000	
106	Underground pullboxes	8	EA	350.00	2,800	
107	Allowance for wifi connections and distribution	1	LS	40,000.00	40,000	
108	Blue Light emergency call box	1	LS	22,500.00	22,500	
109						
110	Site Lighting					
111	Mast lights	5	EA	18,200.00	91,000	
112	Pole fixtures	18	EA	4,200.00	75,600	includes power & USB outlet
113	Handrail lights	40	EA	835.00	33,400	
114	Pole bases	23	EA	450.00	10,350	
115	Misc. boxes	46	EA	250.00	11,500	
116	Conduit, wire	1,240	LF	18.00	22,320	
117	Excavation, backfill	1,240	LF	8.00	9,920	
118	Concrete slurry	1,240	LF	9.19	11,396	
119	Lighting controls	1	LS	50,000.00	50,000	
120	Central inverter for emergency lighting	1	LS	19,500.00	19,500	
121						
122	**SUB-TOTAL AMPHITHEATER ELECTRICAL**				**1,288,136**	
123						
124	Stage					
125	New conduit	350	LF	85.00	29,750	
126	New wiring to existing stage from existing panel	650	LF	40.00	26,000	Allowance - conduit and trench included elsewhere
127	Replace damaged power outlets	12	EA	1,250.00	15,000	Allowance
128						
129	**SITE ELECTRICAL UTILITIES (21)**				**1,358,886**	**$27.18 / SF**
130						
131	**OTHER SITE CONSTRUCTION (22)**					
132						
133	Classroom Expansion Project					
134	New retaining wall, 6' - 8' tall with footing	165	LF	915.00	150,975	Allowance
135	Demolish loading dock, clean up area and prepare for temporary parking	1	LS	30,000.00	30,000	Allowance
136						
137						
138	**OTHER SITE CONSTRUCTION (22)**				**180,975**	**$3.62 / SF**

UNIFORMAT II SUMMARY BUILDING | tbd consultants | **GSF :** 4,275

	SECTION	%	SUB TOTAL	TOTAL	$ / SF	
A)	**SHELL (1-5)**	**54.1%**		**1,287,747**	**301.23**	
1	SUB STRUCTURE	18.5%	439,439		102.79	
2	VERTICAL STRUCTURE	7.8%	186,855		43.71	
3	FLOOR & ROOF STRUCTURE	5.3%	126,366		29.56	
4	EXTERIOR CLADDING	15.8%	376,744		88.13	
5	ROOFING & WATERPROOFING	6.7%	158,343		37.04	
B)	**INTERIORS (6-7)**	**6.7%**		**160,326**	**37.50**	
6	INTERIORS, PARTITIONS & DOORS	3.2%	75,620		17.69	
7	FLOOR, WALL & CEILING FINISHES	3.6%	84,706		19.81	
C)	**EQUIPMENT & VERTICAL TRANSPORTATION (8-9)**	**4.2%**		**100,552**	**23.52**	
8	FUNCTION EQUIPMENT & SPECIALTIES	2.8%	65,552		15.33	
9	STAIRS & VERTICAL TRANSPORTATION	1.5%	35,000		8.19	
D)	**SERVICES (10-13)**	**19.3%**		**459,811**	**107.56**	
10	PLUMBING SYSTEMS	7.7%	183,081		42.83	
11	HVAC	2.1%	50,955		11.92	
12	ELECTRICAL	8.0%	190,905		44.66	
13	FIRE PROTECTION	1.5%	34,870		8.16	
E)	**EQUIPMENT + FURNISHINGS (14-15)**					
14	EQUIPMENT					
15	FURNISHINGS					
F)	**SPECIAL CONSTRUCTION + DEMOLITION (16-17)**					
16	SPECIAL CONSTRUCTION					
17	SELECTIVE BUILDING DEMOLITION					
G)	**BUILDING SITEWORK (18-22)**	**15.6%**		**372,050**	**87.03**	
18	SITE PREPARATION	0.7%	17,700	17,700	4.14	
19	SITE IMPROVEMENTS	7.6%	181,150	181,150	42.37	
20	SITE MECHANICAL UTILITIES	3.6%	86,200	86,200	20.16	
21	SITE ELECTRICAL UTILITIES	3.7%	87,000	87,000	20.35	
22	OTHER SITE CONSTRUCTION					
DIRECT COSTS		84%		**2,380,486**	**556.84**	
	SITE REQUIREMENTS	2.8%		66,654	15.59	
	JOBSITE MANAGEMENT	6.9%		168,853	39.50	
	ESTIMATE SUB-TOTAL			**2,615,993**	**611.93**	
	INSURANCE + BONDING	2.0%		52,320	12.24	
	FEE	8.0%		213,465	49.93	
	ESTIMATE SUB-TOTAL			**2,881,778**	**674.10**	
	DESIGN CONTINGENCY	15.0%		432,267	101.12	
	ESTIMATE SUB-TOTAL			**3,314,045**	**775.22**	
	ESCALATION	35.80%		1,186,428	277.53	Mid-point of construction November 2021
ESTIMATE TOTAL				**4,500,473**	**1,052.74**	

ESTIMATE DETAIL BUILDING **GSF:** 4,275

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1	**SUB STRUCTURE**					
2						
3	Foundations					
4	Excavate to reduce level for building footprint	1,379	CY	65.00	89,635	
5	Dispose of material off site	1,379	CY	25.00	34,475	
6	Temporary shoring	2,130	SF	46.00	97,980	
7	Spread and strip foundations at lower level	2,483	SF	22.00	54,626	
8	Bridge foundations					See separate estimate
9	Retaining wall at rear of building	1,988	SF	48.00	95,424	
10	Waterproofing and drainage at retaining wall	1,988	SF	14.00	27,832	
11						
12	Slab on Grade					
13	Baserock	83	CY	65.00	5,395	
14	Vapor barrier on sand	2,483	SF	3.50	8,691	
15	Concrete slab on grade	2,483	SF	8.50	21,106	
16						
17	Miscellaneous					
18	Elevator pit					See separate estimate
19	Miscellaneous curbs and pads	4,275	SF	1.00	4,275	
20						
21	**SUB STRUCTURE**				**439,439**	**$102.79 / SF**
22						
23	**VERTICAL STRUCTURE (2)**					
24						
25	Structural Frame					
26	Board formed concrete walls	2,355	SF	56.00	131,880	excludes elevator shaft
27	Steel embeds	78	EA	650.00	50,700	
28						
29	Miscellaneous					
30	Miscellaneous metals	4,275	SF	1.00	4,275	
31						
32	**VERTICAL STRUCTURE (2)**				**186,855**	**$43.71 / SF**
33						
34	**FLOOR & ROOF STRUCTURE (3)**					
35						
36	Floor Structure					
37	Second floor framing and decking	1,007	SF	18.00	18,126	
38	Terrace framing and decking	1,570	SF	22.00	34,540	
39						
40	Roof					
41	Roof structure and decking	3,350	SF	22.00	73,700	
42						
43	**FLOOR & ROOF STRUCTURE (3)**				**126,366**	**$29.56 / SF**
44						
45	**EXTERIOR CLADDING (4)**					
46						
47	Exterior Skin					
48	Cladding to second floor area	1,420	SF	65.00	92,300	metal cladding
49	Glazed surface - allowance	600	SF	110.00	66,000	aluminum framed glazing
50	Exterior doors	8	EA	3,500.00	28,000	
51	Vertical bio-fold doors	3	EA	35,000.00	105,000	
52	Guardrail at Terrace Deck	245	LF	290.00	71,050	Painted metal
53	Soffit at underside of Terrace Deck	94	SF	30.00	2,820	
54	Soffit at underside of roof deck	2,343	SF	3.00	7,029	Exposed structure
55						
56	Miscellaneous					
57	Caulking and sealants	2,020	SF	2.25	4,545	
58						
59	**EXTERIOR CLADDING (4)**				**376,744**	**$88.13 / SF**

ESTIMATE DETAIL BUILDING **GSF:** 4,275

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
60						
61	**ROOFING & WATERPROOFING (5)**					
62						
63	Roofing					
64	Insulation	1,007	SF	7.00	7,049	
65	Metal roofing	3,350	SF	38.00	127,300	Corten steel
66	Waterproofing at Terrace Deck	1,570	SF	12.00	18,840	
67	Flashing and sheet metal	2,577	SF	2.00	5,154	
68						
69	Skylights					
70	Allowance					Excluded
71						
72	**ROOFING & WATERPROOFING (5)**				**158,343**	**$37.04 / SF**
73						
74	**INTERIORS, PARTITIONS & DOORS (6)**					
75						
76	Walls					
77	Interior partition walls	3,430	SF	14.00	48,020	
78						
79	Doors, Frames & Hardware					
80	Interior doors, frames and hardware	12	EA	2,300.00	27,600	
81						
82						
83	**INTERIORS, PARTITIONS & DOORS (6)**				**75,620**	**$17.69 / SF**
84						
85	**FLOOR, WALL & CEILING FINISHES (7)**					
86						
87	Wall Finishes					
88	Ceramic tile to restroom walls					Exposed concrete / painted gypboard
89	Allowance for upgrades to Green Room Walls	1,140	SF	10.00	11,400	
90	FRP to concession walls	592	SF	8.50	5,032	
91	Paint to walls	6,548	SF	1.10	7,203	
92	Commercial Kitchen	350	SF	18.00	6,300	
93						
94	Floor Finishes					
95	Sealed concrete floor to restrooms	1,170	SF	3.00	3,510	
96	Epoxy flooring to concessions	570	SF	9.00	5,130	
97	Carpet or low end stain & seal concrete to Green Room	630	SF	6.00	3,780	
98	Sealed concrete to storage / mech rooms	574	SF	2.00	1,148	
99	Commercial Kitchen	350	SF	22.00	7,700	
100						
101	Base Assemblies					
102	Paint grade wood base	630	LF	25.00	15,750	
103						
104	Ceiling Finishes					
105	Gypboard ceiling - green room only	630	SF	13.00	8,190	
106	Paint gypboard ceiling	630	SF	1.10	693	
107	Commercial kitchen	350	SF	15.00	5,250	
108	Paint exposed structure	1,810	SF	2.00	3,620	
109						
110	**FLOOR, WALL & CEILING FINISHES (7)**				**84,706**	**$19.81 / SF**

ESTIMATE DETAIL BUILDING **GSF:** 4,275

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
111						
112	**FUNCTION EQUIPMENT & SPECIALTIES (8)**					
113						
114	Specialties					
115	Signage - code minimum	4,275	SF	0.25	1,069	
116	Miscellaneous interior metals	4,275	SF	0.85	3,634	
117	Allowance for miscellaneous specialties	4,275	SF	0.45	1,924	
118	Wall mounted fire extinguisher	3	EA	200.00	600	
119	Standard toilet partitions	11	EA	1,250.00	13,750	
120	ADA toilet partitions	4	EA	1,550.00	6,200	
121	Urinal screen	5	EA	850.00	4,250	
122	Mirrors	9	EA	450.00	4,050	
123	Paper towel dispenser	8	EA	200.00	1,600	
124	Sanitary napkin dispenser	11	EA	250.00	2,750	
125	Grab bar - side	4	EA	300.00	1,200	
126	Grab bar - back	4	EA	300.00	1,200	
127	Toilet seat cover dispenser	15	EA	300.00	4,500	
128	Tissue paper dispenser	15	EA	200.00	3,000	
129	Robe hooks	15	EA	25.00	375	
130	Soap dispenser	9	EA	50.00	450	
131	Cabinets / counters to kitchen (catering kitchen)	1	LS	15,000.00	15,000	
132						
133	**FUNCTION EQUIPMENT & SPECIALTIES (8)**				**65,552**	**$15.33 / SF**
134						
135	**STAIRS & VERTICAL TRANSPORTATION (9)**					
136						
137	Stairs					
138	Exterior concrete stair	1	EA	35,000.00	35,000	second stair included other estimate
139						
140	Elevator					
141	Large cab, 2 stop hrdro elevator					See separate estimate
142						
143	**STAIRS & VERTICAL TRANSPORTATION (9)**				**35,000**	**$8.19 / SF**
144						
145	**PLUMBING SYSTEMS (10)**					
146						
147	Sanitary fixtures, including local connections					
148	Water closets - wall mounted	15	EA	1,700.00	25,500	
149	Urinal	5	EA	900.00	4,500	
150	Lavatories	9	EA	1,300.00	11,700	
151	Janitors sink	2	EA	3,000.00	6,000	
152	Drinking Fountain	2	EA	4,000.00	8,000	
153	Kitchen sink	2	EA	800.00	1,600	
154	Floor sink	1	EA	1,200.00	1,200	
155	Grease trap	1	LS	6,500.00	6,500	
156						
157	Sanitary and domestic services					
158	Hose bibbs	4	EA	250.00	1,000	
159	Floor drain	6	EA	850.00	5,100	
160	Stub-outs for kitchen equipment	6	EA	900.00	5,400	
161	Sanitary waste, vent piping	560	LF	70.00	39,200	
162						
163	Domestic service piping					
164	Domestic cold water piping	377	LF	38.00	14,326	
165	Domestic hot water piping	320	LF	36.00	11,520	
166	Valves and specialties	1	LS	3,500.00	3,500	
167	Insulation	320	LF	12.00	3,840	

ESTIMATE DETAIL BUILDING **GSF:** 4,275

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
168						
169	Water treatment and storage					
170	Water heater	1	EA	3,800.00	3,800	
171	Gas distribution	200	LF	55.00	11,000	
172	Roof drains	6	EA	900.00	5,400	
173	Terrace drains	7	EA	900.00	6,300	
174						
175	Miscellaneous plumbing	4,275	SF	1.80	7,695	
176						
177	**PLUMBING SYSTEMS (10)**				**183,081**	**$42.83 / SF**
178						
179	**HVAC (11)**					
180						
181	HVAC					
182	Allowance for heating	630	SF	32.00	20,160	Green room only. Forced air system
183	Restroom ventilation	4	EA	3,500.00	14,000	
184	Concession ventilation	2	EA	4,000.00	8,000	
185	Kitchen hood					Excluded - by others
186	Cooling to Green Room					Excluded
187						
188	Controls and instrumentation					
189	DDC Controls	630	SF	4.00	2,520	
190						
191	Testing and balancing	16	HR	125.00	2,000	
192						
193	Miscellaneous HVAC	4,275	SF	1.00	4,275	
194						
195	**HVAC (11)**				**50,955**	**$11.92 / SF**
196						
197	**ELECTRICAL (12)**					
198						
199	Main normal power					
200	Main distribution switchboard	1	EA	11,200.00	11,200	
201	Electric Meter	1	LS	3,500.00	3,500	
202	Panelboards 120/208V, 42ckt	3	EA	6,000.00	18,000	
203	Feeder conduit and wire	225	LF	75.00	16,875	
204						
205	Machine and equipment power					
206	Motor connections	1	LS	2,000.00	2,000	
207						
208	User convenience power					
209	Duplex	26	EA	185.00	4,810	
210	Duplex, wp	4	EA	320.00	1,280	
211	GFI	4	EA	220.00	880	
212						
213	Lighting					
214	Restrooms / concessions / other	3,295	SF	9.50	31,303	
215	Kitchen lighting	350	SF	14.00	4,900	
216	Green Room lighting	630	SF	25.00	15,750	
217	Lighting controls	3,295	SF	1.50	4,943	
218						
219	Telecommunications					
220	Allowance	4,275	SF	6.50	27,788	Connected to bookstore
221						
222	Fire alarm system					
223	Allowance	4,275	SF	4.50	19,238	
224						
225	Security					
226	Allowance	4,275	SF	4.50	19,238	connected to Campus system
227						
228	Miscellaneous Electrical	1	LS	9,200.00	9,200	
229						
230						
231	**ELECTRICAL (12)**				**190,905**	**$44.66 / SF**

ESTIMATE DETAIL BUILDING **GSF:** 4,275

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
232						
233	**FIRE PROTECTION (13)**					
234						
235	Sprinkler Systems					
236	Interior sprinklers	3,490	SF	6.50	22,685	
237	Sprinklers at exterior soffits	2,437	SF	5.00	12,185	
238						
239	**FIRE PROTECTION (13)**				**34,870**	**$8.16 / SF**
240						
241	**EQUIPMENT (14)**					
242						
243	Allowance for kitchen equipment					Excluded - by others
244						
245	**EQUIPMENT (14)**					**$0 / SF**
246						
247	**FURNISHINGS (15)**					
248						
249						
250						
251	**FURNISHINGS (15)**					**$0 / SF**
252						
253	**SPECIAL CONSTRUCTION (16)**					
254						
255						
256	**SPECIAL CONSTRUCTION (16)**					**$0 / SF**
257						
258	**SELECTIVE BUILDING DEMOLITION (17)**					
259						
260	**SELECTIVE BUILDING DEMOLITION (17)**					**$0 / SF**
261						
262	**SITE PREPARATION (18)**					
263						
264	Clear site, remove existing trees	1	LS	5,400.00	5,400	
265						
266	Grading at building	1	LS	12,300.00	12,300	
267						
268	**SITE PREPARATION (18)**				**17,700**	**$4.14 / SF**
269						
270	**SITE IMPROVEMENTS (19)**					
271						
272	Paving					
273	Paving at building	650	SF	25.00	16,250	includes connection to existing paths
274	Terrace Deck - precast pavers on pedestal paving	1,570	SF	35.00	54,950	
275	Paving at Redwood Lobby included in site section		Note			
276						
277	Bridge					
278	Structural bridge					See separate estimate
279	Railings					See separate estimate
280						
281	Landscape & Irrigation					
282	Planting	900	SF	15.00	13,500	
283	Irrigation	900	SF	2.50	2,250	
284	New trees - 36" box	12	EA	1,350.00	16,200	
285						
286	Miscellaneous					
287	Furnishings	1	LS	50,000.00	50,000	
288	Seat / retaining walls	80	LF	350.00	28,000	
289						
290	**SITE IMPROVEMENTS (19)**				**181,150**	**$42.37 / SF**

ESTIMATE DETAIL BUILDING **GSF:** 4,275

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
291						
292	**SITE MECHANICAL UTILITIES (20)**					
293						
294	Building Utility Connections					
295	Water	3	EA	9,000.00	27,000	Fire / Irrigation / Potable
296	Gas	1	LS	12,200.00	12,200	including meter
297	Sewer	1	LS	15,000.00	15,000	
298	Grease trap					Not required
299	Pump station					Not required
300	Storm	1	LS	12,000.00	12,000	
301						
302	Site drainage	1	LS	20,000.00	20,000	
303						
304	**SITE MECHANICAL UTILITIES (20)**				**86,200**	**$20.16 / SF**
305						
306	**SITE ELECTRICAL UTILITIES (21)**					
307						
308	Building Connection					
309	Ductbank and feeder	50	LF	850.00	42,500	
310	Tele/data trenching and conduit	1	LS	4,500.00	4,500	
311						
312	Site Lighting					
313	Building exterior lighting	1	LS	5,000.00	5,000	
314	Terrace Lighting	1	LS	35,000.00	35,000	
315	Bridge Lighting					See separate estimate
316						
317	**SITE ELECTRICAL UTILITIES (21)**				**87,000**	**$20.35 / SF**
318						
319	**OTHER SITE CONSTRUCTION (22)**					
320						
321	**OTHER SITE CONSTRUCTION (22)**					**$0 / SF**

UNIFORMAT II SUMMARY BRIDGE AND ELEVATOR | **GSF :** 3,490

	SECTION	%	SUB TOTAL	TOTAL	$ / SF	
A)	**SHELL (1-5)**	**23.3%**		**122,100**	**34.99**	
1	SUB STRUCTURE	10.1%	53,000		15.19	
2	VERTICAL STRUCTURE	13.2%	69,100		19.80	
3	FLOOR & ROOF STRUCTURE					
4	EXTERIOR CLADDING					
5	ROOFING & WATERPROOFING					
B)	**INTERIORS (6-7)**					
6	INTERIORS, PARTITIONS & DOORS					
7	FLOOR, WALL & CEILING FINISHES					
C)	**EQUIPMENT & VERTICAL TRANSPORTATION (8-9)**	**46.8%**		**245,000**	**70.20**	
8	FUNCTION EQUIPMENT & SPECIALTIES					
9	STAIRS & VERTICAL TRANSPORTATION	46.8%	245,000		70.20	
D)	**SERVICES (10-13)**	**0.7%**		**3,500**	**1.00**	
10	PLUMBING SYSTEMS					
11	HVAC					
12	ELECTRICAL	0.7%	3,500		1.00	
13	FIRE PROTECTION					
E)	**EQUIPMENT + FURNISHINGS (14-15)**					
14	EQUIPMENT					
15	FURNISHINGS					
F)	**SPECIAL CONSTRUCTION + DEMOLITION (16-17)**					
16	SPECIAL CONSTRUCTION					
17	SELECTIVE BUILDING DEMOLITION					
G)	**BUILDING SITEWORK (18-22)**	**29.1%**		**152,400**	**43.67**	
18	SITE PREPARATION					
19	SITE IMPROVEMENTS	24.4%	127,400	127,400	36.50	
20	SITE MECHANICAL UTILITIES					
21	SITE ELECTRICAL UTILITIES	4.8%	25,000	25,000	7.16	
22	OTHER SITE CONSTRUCTION					
DIRECT COSTS		71%		**523,000**	**149.86**	
	SITE REQUIREMENTS	2.8%		14,644	4.20	
	JOBSITE MANAGEMENT	6.9%		37,097	10.63	
	ESTIMATE SUB-TOTAL			**574,741**	**164.68**	
	INSURANCE + BONDING	2.0%		11,495	3.29	
	FEE	8.0%		46,899	13.44	
	ESTIMATE SUB-TOTAL			**633,135**	**181.41**	
	DESIGN CONTINGENCY	15.0%		94,970	27.21	
	ESTIMATE SUB-TOTAL			**728,105**	**208.63**	
	ESCALATION	35.80%		260,662	74.69	Mid-point of construction November 2021
ESTIMATE TOTAL				**988,767**	**283.31**	

ESTIMATE DETAIL BRIDGE AND ELEVATOR **GSF:** 3,490

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1						
2	**SUB STRUCTURE**					
3						
4	Foundations					
5	Bridge foundations	2	EA	16,500.00	33,000	
6						
7	Miscellaneous					
8	Elevator pit	1	LS	20,000.00	20,000	
9						
10	**SUB STRUCTURE**				**53,000**	**$15.19 / SF**
11						
12	**VERTICAL STRUCTURE (2)**					
13						
14	Structural Frame					
15	Board formed concrete walls	900	SF	56.00	50,400	
16	Steel embeds	12	EA	850.00	10,200	
17						
18	Miscellaneous					
19	Miscellaneous metals	1	LS	8,500.00	8,500	
20						
21	**VERTICAL STRUCTURE (2)**				**69,100**	**$19.8 / SF**
22						
23	**FLOOR & ROOF STRUCTURE (3)**					
24						
25						
26	**FLOOR & ROOF STRUCTURE (3)**					**$0 / SF**
27						
28	**EXTERIOR CLADDING (4)**					
29						
30						
31	**EXTERIOR CLADDING (4)**					**$0 / SF**
32						
33	**ROOFING & WATERPROOFING (5)**					
34						
35						
36	**ROOFING & WATERPROOFING (5)**					**$0 / SF**
37						
38	**INTERIORS, PARTITIONS & DOORS (6)**					
39						
40						
41	**INTERIORS, PARTITIONS & DOORS (6)**					**$0 / SF**
42						
43	**FLOOR, WALL & CEILING FINISHES (7)**					
44						
45						
46	**FLOOR, WALL & CEILING FINISHES (7)**					**$0 / SF**
47						
48	**FUNCTION EQUIPMENT & SPECIALTIES (8)**					
49						
50						
51	**FUNCTION EQUIPMENT & SPECIALTIES (8)**					**$0 / SF**
52						
53	**STAIRS & VERTICAL TRANSPORTATION (9)**					
54						
55	Stairs					
56	Exterior concrete stair	1	EA	35,000.00	35,000	includes railings
57						
58	Elevator					
59	Large cab, 2 stop hydro elevator	1	EA	210,000.00	210,000	
60						
61	**STAIRS & VERTICAL TRANSPORTATION (9)**				**245,000**	**$70.2 / SF**

ESTIMATE DETAIL BRIDGE AND ELEVATOR **GSF:** 3,490

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1						
62						
63	**PLUMBING SYSTEMS (10)**					
64						
65						
66	**PLUMBING SYSTEMS (10)**					**$0 / SF**
67						
68	**HVAC (11)**					
69						
70						
71	**HVAC (11)**					**$0 / SF**
72						
73	**ELECTRICAL (12)**					
74						
75	Machine and equipment power					
76	Motor connections	1	LS	3,500.00	3,500	
77						
78						
79	**ELECTRICAL (12)**				**3,500**	**$1 / SF**
80						
81	**FIRE PROTECTION (13)**					
82						
83						
84	**FIRE PROTECTION (13)**					**$0 / SF**
85						
86	**EQUIPMENT (14)**					
87						
88						
89						
90	**EQUIPMENT (14)**					**$0 / SF**
91						
92	**FURNISHINGS (15)**					
93						
94						
95						
96	**FURNISHINGS (15)**					**$0 / SF**
97						
98	**SPECIAL CONSTRUCTION (16)**					
99						
100						
101	**SPECIAL CONSTRUCTION (16)**					**$0 / SF**
102						
103	**SELECTIVE BUILDING DEMOLITION (17)**					
104						
105	**SELECTIVE BUILDING DEMOLITION (17)**					**$0 / SF**
106						
107	**SITE PREPARATION (18)**					
108						
109	Included with site improvements		Note			
110						
111	**SITE PREPARATION (18)**					**$0 / SF**

ESTIMATE DETAIL BRIDGE AND ELEVATOR **GSF:** 3,490

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1						
112						
113	**SITE IMPROVEMENTS (19)**					
114						
115	Bridge					
116	Structural bridge	520	SF	145.00	75,400	
117	Railings	90	LF	300.00	27,000	
118	Site improvements at bridge	1	LS	25,000.00	25,000	
119						
120	**SITE IMPROVEMENTS (19)**				**127,400**	**$36.5 / SF**
121						
122	**SITE MECHANICAL UTILITIES (20)**					
123						
124						
125	**SITE MECHANICAL UTILITIES (20)**					**$0 / SF**
126						
127	**SITE ELECTRICAL UTILITIES (21)**					
128						
129	Site Lighting					
130	Bridge Lighting	1	LS	25,000.00	25,000	
131						
132	**SITE ELECTRICAL UTILITIES (21)**				**25,000**	**$7.16 / SF**
133						
134	**OTHER SITE CONSTRUCTION (22)**					
135						
136	**OTHER SITE CONSTRUCTION (22)**					**$0 / SF**

SECTION	%	SUB TOTAL	TOTAL	$ / SF	
A) SHELL (1-5)					
1 FOUNDATIONS (1)					
2 VERTICAL STRUCTURE					
3 FLOOR & ROOF STRUCTURE					
4 EXTERIOR CLADDING					
5 ROOFING & WATERPROOFING					
B) INTERIORS (6-7)					
6 INTERIORS, PARTITIONS & DOORS					
7 FLOOR, WALL & CEILING FINISHES					
C) EQUIPMENT & VERTICAL TRANSPORTATION					
8 FUNCTION EQUIPMENT & SPECIALTIES					
9 STAIRS & VERTICAL TRANSPORTATION					
D) SERVICES					
10 PLUMBING SYSTEMS					
11 HVAC					
12 ELECTRICAL					
13 FIRE PROTECTION					
E) EQUIPMENT + FURNISHINGS					
14 EQUIPMENT					
15 FURNISHINGS					
F) SPECIAL CONSTRUCTION + DEMOLITION					
16 SPECIAL CONSTRUCTION					
17 SELECTIVE BUILDING DEMOLITION					
G) AMPHITHEATER SITEWORK	**100.0%**		**1,623,104**	**81.16**	
18 SITE CLEARANCE (18)	1.0%	16,700		0.84	
19 SITE DEVELOPMENTS (19)	47.2%	766,799		38.34	
20 SITE MECHANICAL UTILITIES	0.3%	4,500		0.23	
21 SITE ELECTRICAL UTILITIES	32.0%	520,105		26.01	
22 OTHER SITE CONSTRUCTION	19.4%	315,000	315,000	15.75	
DIRECT COSTS			**1,623,104**	**81.16**	
SITE REQUIREMENTS	2.8%		45,447	2.27	
JOBSITE MANAGEMENT	6.9%		115,130	5.76	
ESTIMATE SUB-TOTAL			**1,783,681**	**89.18**	
INSURANCE + BONDING	2.0%		35,674	1.78	
FEE	8.0%		145,548	7.28	
ESTIMATE SUB-TOTAL			**1,964,903**	**98.25**	
DESIGN CONTINGENCY	15.0%		294,735	14.74	
ESTIMATE SUB-TOTAL			**2,259,638**	**112.98**	
ESCALATION	35.80%		808,950	40.45	Mid-point of construction November 2021
ESTIMATE TOTAL			**3,068,588**	**153.43**	

tbd consultants

ESTIMATE DETAIL SITE - PHASE II **GSF :** 20,000

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
1						
2	**SITE CLEARANCE (18)**					
3						
4	Site Clearing & Grading					
5	Demolish existing stage, salvage stone	1	LS	8,200.00	8,200	
6						
7	Protection					
8	Allowance to protect Phase I work during construction	1	LS	8,500.00	8,500	temporary fencing / other
9						
10	Hazardous Components Abatement					
11	Allowance for hazmat abatement		Excluded			
12						
13	**SITE CLEARANCE (18)**				**16,700**	**$0.84 / SF**
14						
15	**SITE DEVELOPMENTS (19)**					
16						
17	Stage Structure					
18	Prepare pad for new stage	3,350	SF	2.50	8,375	
19	Perimeter foundations	240	LF	225.00	54,000	
20	Foundations for future temporary loads	4	EA	3,500.00	14,000	
21	Perimeter walls - 2' 6"	600	SF	38.00	22,800	
22	Stone cladding	528	SF	85.00	44,880	
23	AB Fill at stage	248	CY	50.00	12,400	
24	Drainage	300	LF	22.00	6,600	
25	Trench duct system at stage perimeter	265	LF	165.00	43,725	
26	Concrete slab at stage	3,350	SF	14.00	46,900	
27	Concrete steps	80	SF	30.00	2,400	
28	Handrail	1	LS	1,000.00	1,000	
29						
30	Terrace Seating					
31	Seat wall	150	LF	350.00	52,500	
32	Upper terrace vehicle paving (Integral color concrete with seeded aggregate on imported Agg Base)	7,000	SF	19.20	134,400	
33	Temporary bleacher seating					
34	4- row, 21' long		Excluded			
35	4-row, 9' long		Excluded			
36						
37	Other Paving					
38	Concrete pad for temporary structures	765	SF	13.00	9,945	
39						
40	Main steps / Redwood Lobby					
41	Concrete steps		Phase I			
42	Concrete wing walls	120	LF	250.00	30,000	
43	Railings		Phase I			
44	Concrete steps at NE corner	2	EA	8,500.00	17,000	
45	Permeable paving - 24" of AASHTO # 3, 4" of AASHTO # 57 fine gravel, 2" of AASHTO # 8 with precast concrete paving	5,000	SF	43.80	219,000	precast concrete pavers
46						
47	Other					
48	Site prep and grading	4,435	SF	1.25	5,544	
49	Lawn area	1,300	SF	4.50	5,850	
50	Planted / landscape area	8,000	SF	1.00	8,000	minor work
51	Bioswale or bio retention-type vegetated treatment	930	SF	6.00	5,580	
52	Irrigation	1	LS	1,500.00	1,500	allowance
53	Site signage	1	LS	12,000.00	12,000	Entry sign
54	Place boulders around site	24	EA	350.00	8,400	labor & equipment only
55						
56	**SITE DEVELOPMENTS (19)**				**766,799**	**$38.34 / SF**

ESTIMATE DETAIL SITE - PHASE II

GSF : 20,000

REF	DESCRIPTION	QUANTITY	UoM	UNIT RATE	TOTAL	COMMENTS
57						
58	**SITE MECHANICAL UTILITIES (20)**					
59						
60	Drainage					
61	Miscellaneous phase II drainage	1	Allow	4,500.00	4,500	
62						
63	**SITE MECHANICAL UTILITIES (20)**				**4,500**	**$0.23 / SF**
64						
65	**SITE ELECTRICAL UTILITIES (21)**					
66						
67	Site Electrical					
68	Provide and install 750 KVA 12KV to 480 Volt substation transformer with main switchboard including breakers at the Classroom Unit service yard to serve the new amphitheater and Classroom Unit 2.	1	EA	150,000.00	150,000	
69	Provide and install new concrete ductbank with (3) 4" power conduits and parallel 250MCM copper conductors from the service yard main switchboard to a new 600 Amp 480 Volt distribution panel board located at the amphitheater.	250	LF	255.00	63,750	
70						
71	Provide and install 300 KVA 480 Volt to 208 Volt transformer with NEC required primary and secondary protection at the amphitheater.	1	EA	37,500.00	37,500	
72	Provide and install an 800 Amp 120/208 Volt distribution panel board at the amphitheater.	1	EA	28,000.00	28,000	
73	Transformer and other equipment pads	1	LS	8,500.00	8,500	
74						
75	Communications / AV Duct Banks					
76	Ductbank and conduit terminations at stage	1	LS	3,800.00	3,800	
77						
78	Site Lighting					
79	Allowance for miscellaneous site lights	1	LS	15,000.00	15,000	
80						
81	Stage					
82	Transformer 400kVA, feeder	1	EA	42,000.00	42,000	
83	Transformer 225kVA, feeder	1	EA	17,950.00	17,950	
84	Transformer 225kVA isolation, feeder	1	EA	26,800.00	26,800	Audio
85	Distribution panel, 800A, 120/208V, feeder	1	EA	19,650.00	19,650	
86	Panel TL-B, 400A, 120/208V, feeder	1	EA	11,760.00	11,760	
87	Panel TL-B1, 225A, 120/208V, feeder	1	EA	4,395.00	4,395	
88	Architectural dimming rack	1	EA	25,000.00	25,000	
89	Company switches, 400A	2	EA	8,000.00	16,000	
90	Feeders	1	LS	35,000.00	35,000	
91	Grounding	1	LS	15,000.00	15,000	
92						
93	**SITE ELECTRICAL UTILITIES (21)**				**520,105**	**$26.01 / SF**
94						
95	**OTHER SITE CONSTRUCTION (22)**					
96						
97	Site Structures					
98	New grounds building with electric cart charging. Including new building utilities	900	SF	350.00	315,000	
99						
100	**OTHER SITE CONSTRUCTION (22)**				**315,000**	**$15.75 / SF**

Appendices

Geotechnical Report,
URS Corporation, 2014

URS

February 18, 2014
URS Project 28645522

Ms. Christine Reed, RLA, ASLA
Associate Principal
O|CB
Office of Cheryl Barton
146 Eleventh Street
San Francisco, CA 94103

Re: Preliminary Geologic and Geotechnical Evaluation
Upper Quarry Amphitheater Feasibility Study
University of California Santa Cruz
Santa Cruz, California

Dear Ms. Reed:

URS is pleased to provide this preliminary geologic and geotechnical evaluation for the Upper Quarry Amphitheater Feasibility study at the UCSC campus. Based on discussions with O|CB, we understand the project will include feasibility level planning and design in order to provide conceptual design alternatives for the Upper Quarry Amphitheater development that meet the goals and approval of the University staff and other stakeholders.

This report was prepared to assist the project team in identifying the site geologic conditions, specifically related to potentially unstable slopes, rockfall hazards and soil conditions in the marble rocks found at the site. Preliminary alternative mitigation measures and order-of-magnitude construction costs are also provided.

Scope of Services

The following services have been provided, based on the list of Tasks and Deliverables URS received from O|CB:

Task 2 – Program Development

- As part of Task 2, input to subtask 2.1c – Site Analysis of Site Natural Systems is provided, based on: Review of relevant available geologic and geotechnical information from our files, from available published geologic maps and reports, and photographs from the UCSC Upper Quarry Amphitheater ftp site;
- Review and interpretation of digital aerial photos available from the McHenry Library at the UCSC campus; and
- Field geologic reconnaissance and mapping to document the exposed geologic conditions, identify areas that may be subject to rockfall hazards or other slope instability, and to photo-document the existing conditions of the rock slopes for development of alternative stabilization.

URS Corporation
100 W. San Fernando Street, Suite 200
San Jose, CA 95113
Tel: 408.297.9585
Fax: 408.297.6962
www.urscorp.com

Task 3 – Design Alternatives/Cost Assessment

Based on our subtask 2.1c findings, we then evaluated conceptual rock slope stabilization methods. Order-of-magnitude construction costs are included, along with a discussion of the pros and cons of the alternative stabilization measures.

Task 4 – Feasibility Report

The results of our geologic and geotechnical evaluation are presented for inclusion in the feasibility report.

Site and Subsurface Conditions

The Upper Quarry Amphitheater is located in the central UCSC campus west and south of McLaughlin Drive, south of the Cowell Health Center building and northwest of Hagar Drive. The original amphitheater is located in the eastern end of the quarry pit and was constructed in 1967 following the abandonment of mining activities. A review of a 1948 stereo-paired aerial photograph shows the quarry is still actively being mined in the western portion, but the east end of the quarry appears to be inactive and covered with vegetation. None of the UCSC campus is developed in the 1948 photograph.

The floor of the quarry in the vicinity of the amphitheater ranges from about Elevation 675 to 710 feet. A 40 to 50-foot high rock slope is located along the southwest side of the amphitheater seating area, as shown on Figure 1; it is the main area of concern for future rockfalls and slope instability. A steep rock slope is also located along the north quarry wall, northwest of the seating area. This slope is up to 100 feet in height and is judged to have a high potential for rockfall hazards, but it is located farther from the amphitheater seating area and also has a bench in the lower slope area. The area east of the amphitheater has relatively gentle slopes and does not appear to present a concern for slope stability. A dense growth of redwoods, firs and other deciduous trees and shrubs covers the area east and south of the amphitheater and also on the flat surfaces above the quarry pit.

Regional Geologic Setting

The project lies within the southern end of the Santa Cruz Mountains in the Coast Ranges geomorphic province. Crystalline metamorphic and igneous basement rocks overlain by Tertiary and Quaternary sedimentary deposits characterize the Santa Cruz Mountains in the project area (Clark, 1981). The basement rocks consist of both granitic rocks and metamorphic rocks consisting of quartzite, marble, and schist. The marble, schist and quartzite represent the metamorphosed remnants of limestone, sandstone and siltstone and are probably pre-Cretaceous in age. The granitic rocks intruded these metamorphic formations in the Cretaceous, which were probably further metamorphosed and folded to their current structure. A review of available published geologic maps of the project area (Brabb, 1989; Clark, 1981; Wagner *et al.*, 2002) show the site mapped as marble.

Local Geologic Conditions

A site reconnaissance was completed by Mark Schmoll, C.E.G. on December 19, 2013 to observe the rock slope conditions adjacent to the amphitheater and in the surrounding former

quarry area. The 40 to 50-foot high rock slope is located along the southwest side of the amphitheater seating area and is capped by about 10 feet of Pleistocene marine terrace deposits, as shown on Figure 1. The terrace deposits consist of poorly consolidated silty to clayey sand with interbeds of lean clay and directly overlie the marble. These terrace deposits were encountered in a geotechnical investigation for a classroom building located about 60 to 70 feet south of the quarry rim (Harding-Miller-Lawson & Associates, 1968) to a depth of about 22 feet; they were also encountered in a geotechnical investigation for the Cowell Student Health Center to depths of about 7 feet to 21 feet, located north of the quarry rim (Lennert and Associates, 1969).

Along the top of the slope located along the southwest side of the seating area, the terrace deposits form a near-vertical cliff. Minor surface cracking is present along the top of the slope and within the slope face, indicative of a toppling type failure. Some trees growing along the quarry rim and on the slope are bent in a downslope direction, also indicative of surface creep of the terrace deposits. The photograph in Figure 2 shows the near-vertical cliff formed by the terrace deposits and a bent tree growing out of the slope.

Underlying the terrace deposits and extending to the quarry floor, marble is exposed in the steep rock slope. The rock consists of light gray to dark gray, moderately to highly fractured, moderately strong, coarsely crystalline marble. Occasional lenses of dark gray mica schist are also present within the marble. The primary joint set within the marble is along the relic bedding/foliation, which is oriented about East-West, dipping 40 degrees south into the slope in a favorable direction. A secondary joint set forms the rock slope face and is oriented about East-West and dips 80 degrees to the north. A third joint set is more random, generally striking between 25 degrees west to 65 degrees east and dipping steeply to the east and west. The intersection of these joint sets form various sized blocks ranging from less than 6 inches to about 5 feet in dimension. Figure 4 shows a photograph of the south rock slope. An old landslide scar is present at the west end of this slope as shown on Figure 1. This landslide probably occurred along an old shear zone or highly weathered zone during the original quarry mining; it currently does not appear to present a hazard to the seating area. Some of the well-developed near-vertical joints within the marble show evidence of solution voids and cavities ranging from less than an inch wide to several inches in width. No sink holes were observed in the area around the amphitheater seating area. A figure in a report prepared by Kennedy/Jenks (2004) shows two sinkhole features in the west end of the quarry, which were observed to have been partially filled with rock debris.

A report prepared by Rogers E. Johnson and Associates (1990) was completed after the 1989 Loma Prieta earthquake; it noted some minor rockfalls occurred on the south slope, impacting the amphitheater seating area. This report noted surface cracks at the top and parallel to the south quarry rim in the terrace deposits above the seating area and possible vertical displacement of the underlying marble in the rock slope. Unfortunately, the report figures and cross sections showing the locations of the cracks were not available for review. A few minor surface cracks along the top of the slope were noted during URS' recent site reconnaissance, but the overall marble in the south slope appears relatively intact and stable. The noted surface cracks in the 1990 report may have been since filled or eroded during the last 25 years. Effort should be made to locate the missing report figures and cross section for additional review and field verification.

A steep rock slope is located along the north quarry wall, northwest of the seating area as shown on Figure 1. This slope is up to 100 feet in height and has a 10-foot high bench in the lower slope area. Photographs of this slope are presented on Figures 5 and 6. Although this slope is some distance from the current seating area, rockfalls from the upper slope area could be a hazard to people assembled behind and to the northwest of the stage area. The rock in this slope below the capping terrace deposits is highly fractured and several loose and overhanging blocks are present near the top of the cut. The primary relic bedding/foliation joint set also dips out-of-slope in an unfavorable direction.

Rockfall Conceptual Design Alternatives

The south slope area behind the seating area is subject to rockfall hazards as occurred during the Loma Prieta earthquake. A chain link barrier fence has been constructed along the toe of this slope as shown on Figure 4, but it is a relatively light duty fence and likely would be unable to retain a large rock rolling from the top of the slope. The overall condition of this slope appears to be relatively stable except for the near-vertical slope in the terrace deposits. The primary joint set dips into the slope resulting in a more stable condition; however more random secondary joint sets do create some unstable blocks. URS recommends that the terrace deposits along the upper 10 to 15 feet of the slope, which are currently at a near-vertical inclination and subject to sloughing and soil falls, be graded to a 1.5: 1 (horizontal to vertical) inclination to improve stability and allow for establishment of vegetation ground cover. Any leaning trees subject to falling along the top of the slope should be evaluated by an arborist and be removed if deemed a hazard. All surface drainage should be directed away from the top of the slope to prevent water from eroding the terrace deposits and potentially destabilizing the rock slope. A fence and pedestrian pathway are located about 35 feet south and roughly parallel to top of the south slope. The pathway is underlain by the terrace deposits and is far enough from the slope to be considered outside of any zone of instability.

The rock portion of the slope should also be scaled to remove any loose blocks. Scaling is typically done by hand methods using pry bars and wedges to dislodge loose rock from the slope. Mechanical methods can also assist if equipment access is possible. Following scaling we recommend that the existing chain link fence be replaced with a more robust rockfall barrier. These typically consist of steel I-beam posts supporting ring nets and steel mesh. Figure 7 shows an example of a rockfall barrier. The barrier should be 6 to 8 feet in height and extend westward to the mapped landslide area, a distance of about 140 feet.

An alternative to the rockfall barrier would be a rock drape, which consists of a high-tensile steel mesh anchored to the top of the slope and draped over the rock face. Loose rock is trapped behind the drape and slides down to a catchment area at the base of the slope. The mesh prevents loose falling rock from gaining momentum and causing damage. The mesh is anchored at the top of the slope and also on the face of the slope with rock bolts as needed. Examples of a rock drapes are shown on Figures 8 and 9. Scaling of the slope should also be completed before installation of a rock drape and all trees and shrubs within the area of the drape need to be removed. The near-vertical slope in the terrace deposits at the top of the slope should also be graded to 1.5: 1 before installation of a rock drape. A rock drape mesh would need to be about 120 feet in length and about 50 to 60 feet in width to cover the rock slope area above the seating

area. The chain link mesh can be coated with black PVC to make it less visible and improve the aesthetics.

The advantages of a rock drape over a rockfall barrier fence is that it would have a higher degree of certainty of containing loose falling rocks and preventing them from gaining sufficient momentum to cause injury to persons at the base of the slope. With a rockfall barrier alternative, a rock with enough momentum has the remote possibility to bounce while rolling down the slope and clearing the barrier fence if it is not high enough.

If considered to be a hazard, similar design alternatives can be used for the higher rock slope located on the north side of the stage area, including grading of the terrace deposits to a 1.5:1 slope, directing surface water away from the slope, removal of high hazard trees and scaling the slope. Trim blasting may also be needed on this slope to remove the large overhanging block near the top of the slope (Figure 6) if it cannot be removed during scaling operations. If a barrier fence alternative is used, the barrier should be installed at the top of the lower bench to contain any rock blocks from hitting the bench and bouncing over a barrier installed at the base of the slope. A barrier along this slope should be about 80 feet in length. A rock drape would need to be about 80 feet in length and 80 to 90 feet wide. Alternatively, the toe of this slope area could be fenced off to keep people away from the rockfall hazard area.

Estimated Costs for South Slope Rockfall Hazard Mitigation

Following are preliminary, order-of-magnitude construction cost estimates for the alternatives described above. The estimates are based on unit price data, equipment and typical labor rates obtained from contractors engaged in similar work at other locations in California.

1. Re-grade top of slope to 1.5:1 (H:V) and remove hazard trees - $24,100

- Mobilize small excavator, bobcat and dump truck, 3- man crew = $2,000
- 3 days to remove trees (assume 3 trees), grade slope and off-haul material (150 yd^3)
    - Labor - 3 x 5 days x 8 hr./day @ $100/hr. = $12,000
    - Equipment - 5 days @ $800/day = $4,000
    - Haul Soil - 150 yd^3 @ $30/$yd^3$ = $4,500
    - Dump Truck @ $100/hr. X 16 = $1600

2. Scale slope of loose rock (assume same crew as above) - $15,300

- 120-foot X 60-foot area = 7,200 ft^2
- Mobilize Caterpillar 330 Excavator or equivalent = $1,000
- Assume 3,000 ft^2/shift @ $4,500/shift with Excavator
    - 2 laborers and foreman = 3 days @ $4,500/day = $13,500
    - Off-haul rock (assume 20 yd^3 @ $800/load = $800

3. Install barrier fence - $40,400

- 140-foot long fence, 8 feet high
- Mobilize drill rig = $2,000
- Remove old fence and haul off site with small excavator
    - Excavator = $400/day

  - 3-person crew x 1 day x 8 hrs./day @ $100/hr. = $2,400
- Drill (core) 12-inch diameter post holes 3 feet deep (18 holes)
  - 3 days drilling @ $200/hr. = $4,800
- Install I-beam post and barrier fencing with 2 laborers and foreman
  - 3-person crew x men 3 days x 8 hrs./day @ $100/hr. + small excavator @ $400/day = $8,400
- Material cost @ $20/ft^2 = 140 x 8 x $20/ft^2 = $22,400

4. Install drape mesh instead of barrier fence - $144,000

- 120-foot x 60-foot area = 7,200 ft^2
- Assume $20/ ft^2 installed including materials, labor and equipment (7,200 ft^2 x $20/ ft^2 = $144,000)

Limitations

The opinions and recommendations presented in this letter report are preliminary in nature and intended to assist O|CB and the University in evaluating the general technical feasibility of developing the Upper Quarry Amphitheater site. Our preliminary opinions, guideline recommendations, and preliminary cost data are based on a review of available site and subsurface information, geologic reconnaissance of the site, URS' direct experience at the campus, and engineering judgment. More detailed study and cost estimating for the rockfall hazard mitigation should be done when the project advances to design.

Specific review and investigation for environmental issues and subsurface environmental contamination were beyond the scope of the limited geologic and geotechnical evaluation.

The opinions and recommendations presented in this report were developed with the standard of care commonly used as state of the practice in the profession. No other warranties are included, either express or implied, as to the professional advice provided in this letter report.

Regards,

Paul J. Boddie, G.E. 152
Geotechnical Department Manager

REGISTERED PROFESSIONAL ENGINEER
PAUL J. BODDIE
152
Exp. 3/31/16
GEOTECHNICAL
STATE OF CALIFORNIA

Mark Schmoll, C.E.G. 1361
Senior Project Geologist

CERTIFIED ENGINEERING GEOLOGIST
MARK E. SCHMOLL
No. 1361
Exp. 8-31-14
STATE OF CALIFORNIA

Attachments:

- Figures 1 - Site Plan & Geologic Map
- Figures 2 through 9 – Project Site Photographs

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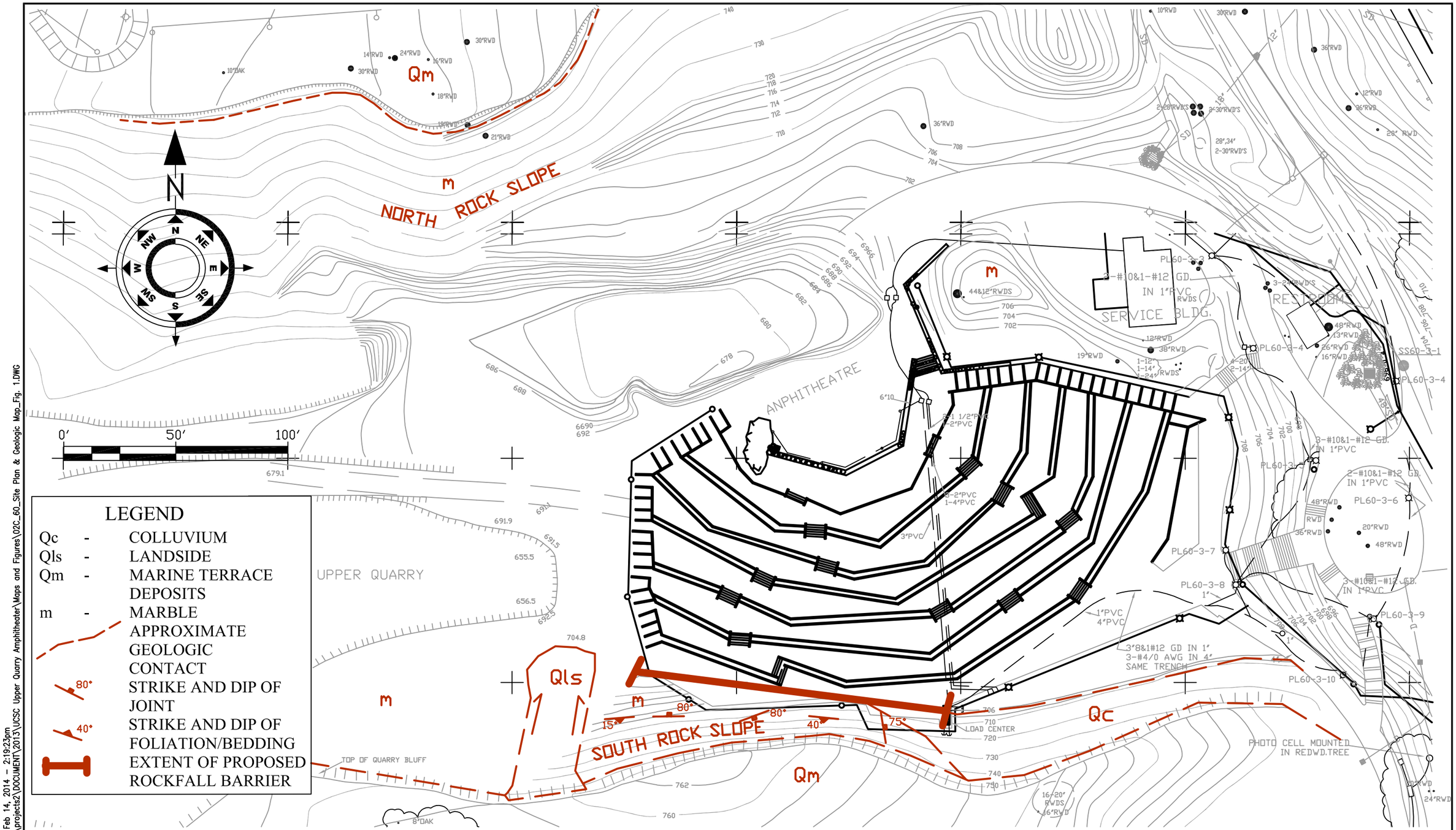


LEGEND

Qc	-	COLLUVIUM
Qls	-	LANDSIDE
Qm	-	MARINE TERRACE DEPOSITS
m	-	MARBLE
		APPROXIMATE GEOLOGIC CONTACT
80°		STRIKE AND DIP OF JOINT
40°		STRIKE AND DIP OF FOLIATION/BEDDING
		EXTENT OF PROPOSED ROCKFALL BARRIER

URS

CONTRACT NUMBER xxxxxx	PREPARED BY M. SCHMOLL, CEG
TASK ORDER xxxxxx	CHECKED BY P. BODDIE, GE
DATE FEBRUARY, 2014	

UCSC UPPER QUARRY AMPHITHEATER

SITE PLAN AND GEOLOGIC MAP

FIGURE 1

PLOT BY: SHERRY_LIU – Feb 14, 2014 – 2:19:23pm
DRAWING: \\1579sr-snj4\projects2\DOCUMENT\2013\UCSC Upper Quarry Amphitheater\Maps and Figures\02C_60_Site Plan & Geologic Map_Fig. 1.DWG

Figure 2. View of cliff formed in terrace deposits at top of south rock slope.

Figure 3. View of relic bedding/foliation dipping 40 degrees into slope at south rock slope

Figure 4. View marble rock slope south of seating area.

Figure 5. View of north rock slope behind stage area.

Figure 6. Close-up view of north rock slope behind stage area.

Figure 7. Example of a rockfall barrier with steel ring nets and mesh.

Figure 8. Example of a rock drape steel mesh.

Figure 9. Example of a rock drape steel cable mesh.

URS

Job UCSC Upper Quarry Amphitheater Project No. 28645522

Description South Slope Section Computed by M. Schmoll

Checked by

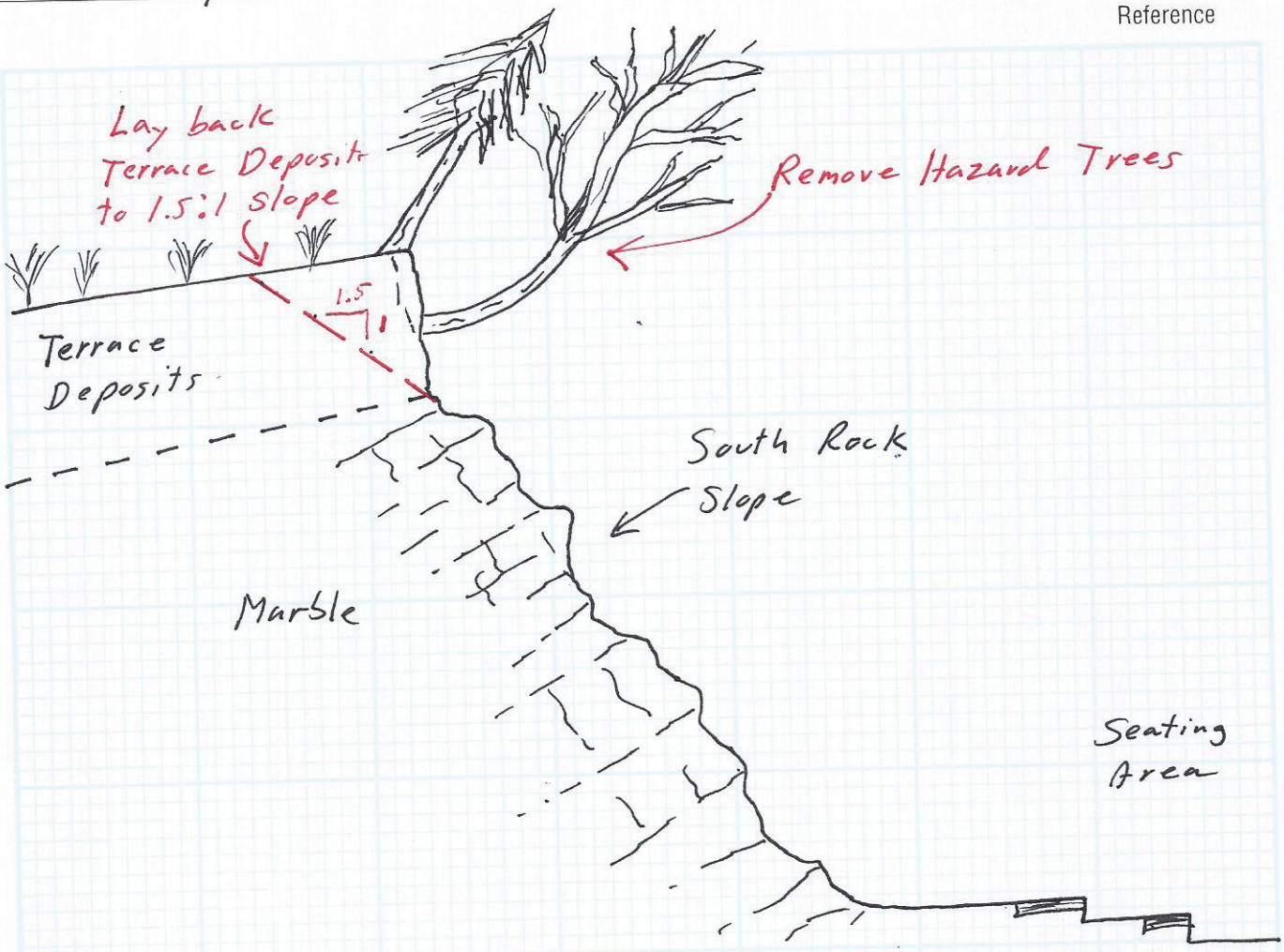
Page ____ of ____

Sheet ____ of ____

Date 2-13-14

Date

Reference



Not to Scale

Appendices

Code Analysis,
Preview Group, 2014

PREVIEW GROUP
ARCHITECTS PROVIDING REGULATORY SOLUTIONS...

February 18, 2014

Christine Reed, RLA, ASLA
Associate Principal
O|CB, Office of Cheryl Barton
146 Eleventh Street
San Francisco, CA 94103

DRAFT **Re: Review of Egress Paths and Accessible Elements**
UCSC Upper Quarry Amphitheater Renovation

Dear Ms. Reed:

Per your request, I have prepared this memo summarizing the requirements in the 2013 California Building Code (CBC) and the 2010 ADA Standards (ADAS) for providing egress paths in the seating area and at the exit discharge for the renovation of the Upper Quarry Amphitheater. This memo also addresses accessible paths of travel for the new seating layout and access to the quarry site itself.

I believe the facility should be conceived of as having an open-air "lobby" at the main entry. This concept allows rational application of egress and access provisions that are written around conventional theaters or open-air sports stadiums to this facility. The lobby will serve as the main exit and as the point of accessible entry for the amphitheater.

Egress (2013 CBC)

Permanent Seating
The facility is classified as an A-5 occupancy, which is called out in CBC Section 303.6 as: "Assembly uses intended for participation in or viewing outdoor activities". Based on the proposed occupant load of more than 1,000 persons the facility is to have four means of egress per CBC Table 1021.1. Special egress provisions for assembly occupancies are contained in CBC Section 1028. The regulations cited below are for an assembly occupancy with more than 300 seats that are applicable for this facility.

The seating area is to have a "main exit" per CBC Section 1028.2. This is to accommodate at least one half of the occupant load of the seating area, or if there are more persons using the main exit the exit capacity is dictated by the actual occupant load. In addition, per CBC Section 1028.3 there are to be three additional exits that together can accommodate one-half the occupant load of the amphitheater. At least one-half of these additional exits must provide egress directly to an "exit" or through a separate "lobby" than the main entry lobby.

The requirement most applicable to this facility is that there will be multiple exits distributed around the amphitheater and the following conditions will apply:

> "In a building used for assembly purposes where there is no well-defined main exit or where multiple main exits are provided; exits for each level shall be permitted to be distributed around the perimeter of the building, provided

The PREVIEW GROUP, Inc.
632 Race Street · Cincinnati, Ohio 45202
Ph 513·621·2109 Fax 513·621·7297

info@preview-group.com
2765 Prince Street · Berkeley, California 94705
Ph/Fax 510·547·7748

that the total width of egress is not less than 100 percent of the required width *and at least one exit shall discharge on a street or an unoccupied space of not less than 20 feet (6096 mm) in width that adjoins a street or public way."*

The UCSC Authorities Having Jurisdiction (AHJ) should be consulted to determine how they treat requirements regarding streets and public ways for a large campus environment. I believe the intent of the code is satisfied if amphitheater occupants can access a street, site path or road, any of which are more than 20 feet in width. In addition, the code make provisions for egress to safe dispersal areas 50 feet ways from the facility, as follows:

"1027.5 Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

Exception: Where access to a public way cannot be provided, a safe dispersal area shall be provided where all of the following are met:
1. The area shall be of a size to accommodate at least 5 square feet (0.46 m_2) for each person.
2. *For other than Group E buildings*, the area shall be located on the same lot at least 50 feet (15 240 mm) away from the building requiring egress. *For Group E buildings, the area shall be located on the same lot at least 50 feet (15 240 mm) away from any building.*
3. The area shall be permanently maintained and identified as a safe dispersal area.
4. The area shall be provided with a safe and unobstructed path of travel from the building."

The outdoor conditions for the amphitheater means that the seating is considered "Smoke protected" by the condition of being outdoors. Thus, egress times and aisle widths are to be per smoke protected criteria. The required widths for outdoor seating are as follows (emphasis added):

"1028.6.2 Smoke-protected seating. The clear width of the means of egress for smoke-protected assembly seating shall not be less than the occupant load served by the egress element multiplied by the appropriate factor in Table 1028.6.2. The total number of seats specified shall be those within the space exposed to the same smoke-protected environment. Interpolation is permitted between the specific values shown. A life safety evaluation, complying with NFPA 101, shall be done for a facility utilizing the reduced width requirements of Table 1028.6.2 for smoke protected assembly seating.

Exception: For an outdoor smoke-protected assembly seating with an occupant load not greater than 18,000, the clear width shall be determined using the factors in Section 1028.6.3."

"1028.6.3 Width of means of egress for outdoor smoke protected assembly seating. The clear width in inches (mm) of aisles and other means of egress shall be not less

than the total occupant load served by the egress element multiplied by 0.08 (2.0 mm) where egress is by aisles and stairs and multiplied by 0.06 (1.52 mm) where egress is by ramps, corridors, tunnels or vomitories.

Exception: The clear width in inches (mm) of aisles and other means of egress shall be permitted to comply with Section 1028.6.2 for the number of seats in the outdoor smoke-protected assembly seating where Section 1028.6.2 permits less width."

The travel distance from each seat in the amphitheater to an "exit" is to be 400 feet per CBC Section 1028.7 since the facility while located on noncombustible earth will have wooden seating. I would consider the "building exterior" to be the outside lobbies or the safe refuge areas. This should be confirmed with the AHJ (emphasis added).

Exceptions:
2. Open-air seating: The travel distance from each seat to the building exterior shall not exceed 400 feet (122 m). The travel distance shall not be limited in facilities of Type I or II construction.

For planning purposes, the common path of egress travel that is the distance a person has to traverse a row before having a choice to go two directions to an exit is per CBC Section 1028.8. The conditions for the amphitheater allow 50 feet of aisle length from a center aisle seat to an aisle (i.e. 100' between aisles assuming one can go either way from the middle seat) (emphasis added):

"1028.8 Common path of egress travel. The common path of egress travel shall not exceed 30 feet (9144 mm) from any seat to a point where an occupant has a choice of two paths of egress travel to two exits.

Exceptions:
1. For areas serving less than 50 occupants, the common path of egress travel shall not exceed 75 feet (22 860 mm).
2. For smoke-protected assembly seating, the common path of egress travel shall not exceed 50 feet (15 240 mm)."

There are conditions where the aisles are offset. When that occurs the conditions must be such that a defined egress with can be identified and shown to be maintained throughout the egress path. The primary condition is in CBC Section 1028.9.6 (emphasis added):

"1028.9.6 Assembly aisle obstructions. There shall be no obstructions in the required width of aisles except for handrails as provided in Section 1028.13."

Aisle slopes are to be per CBC Section 1028.11:

1028.11 Assembly aisle walking surfaces. Aisles with a slope not exceeding one unit vertical in eight units horizontal

> (12.5-percent slope) shall consist of a ramp having a slip resistant walking surface. Aisles with a slope exceeding one unit vertical in eight units horizontal (12.5-percent slope) shall consist of a series of risers and treads that extends across the full width of aisles and complies with Sections 1028.11.1 through 1028.11.3.

Handrails are to be provided per CBC Section 1208.13. I interpret this section to allow handrails in this facility to be located in the center of aisles as long as certain conditions are met. The basic requirements are in CBC Section 1028.13:

> **"1028.13 Handrails.** Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal (6.7-percent slope) and aisle stairs shall be provided with handrails in compliance with Section 1012 located either at one or both sides of the aisle or within the aisle width.:

Where center handrails have seating on both sides of the aisle are to be interrupted every five rows and are to have a lower intermediate handrail (emphasis added):

> **"1028.13.1 Discontinuous handrails.** Where there is seating on both sides of the aisle, the handrails shall be discontinuous with gaps or breaks at intervals not exceeding five rows to facilitate access to seating and to permit crossing from one side of the aisle to the other. These gaps or breaks shall have a clear width of at least 22 inches (559 mm) and not greater than 36 inches (914 mm), measured horizontally, and the handrail shall have rounded terminations or bends.
>
> **1028.13.2 Intermediate handrails.** Where handrails are provided in the middle of aisle stairs, there shall be an additional intermediate handrail located approximately 12 inches (305 mm) below the main handrail."

Temporary Seating

We understand that there will likely be a provision for additional temporary seating in the quarry area. Temporary seating will need to comply with CBC Section 1028, or if they are considered as "bleachers" or more likely "grandstands", they are regulated by a separate standard: "ICC 300". The two temporary seating conditions are defined essentially the same. They are assumed to have independent structures and are regulated by a separate standard: "ICC 300". Since the extent of these structures is unknown at this time we have not analyzed them in detail. Note, however, that accessibility regulations for accessible seating and companion seating will apply to these seats. In addition, the amphitheater egress system must have means of egress sized to accommodate the additional seating in such temporary facilities:

> **"BLEACHERS.** Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Grandstands")."

"GRANDSTAND. Tiered seating supported on a dedicated structural system and two or more rows high and is not a building element (see "Bleachers")."

Accessibility (2013 CBC and 2010 ADAS)

The accessibility provisions of the 20101 ADAS are now included in the 2013 CBC along with more stringent additional provisions in the CBC. Therefore, I have focused my access review on CBC provisions with the assumption that compliance with the CBC will result in ADA compliance. Also, the CBC contains the only access provisions that will be reviewed by the AJHJ as no entity reviews for ADA compliance other than through legal action after the fact.

This is treated as an "alteration" per the CBC The general assumption is that any elements that are altered must comply with accessibility standards for new construction. While this is a venerable facility, we have not attempted to apply the provisions of the California State Historical Building Code to this analysis (emphasis added).

Site Path of Travel

***"11B*-206.2.1 Site arrival points.** At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger loading zones; public streets and sidewalks; and public transportation stops to the accessible building or facility entrance they serve. *Where more than one route is provided, all routes must be accessible.*

Exceptions:

1. *Reserved.*
2. An accessible route shall not be required between site arrival points and the building or facility entrance if the only means of access between them is a vehicular way not providing pedestrian access.
3. *General circulation paths shall be permitted when located in close proximity to an accessible route."*

***11B*-206.2.2 Within a site.** At least one accessible route shall connect accessible buildings, accessible facilities, accessible elements, and accessible spaces that are on the same site.

Exception: An accessible route shall not be required between accessible buildings, accessible facilities, accessible elements, and accessible spaces if the only means of access between them is a vehicular way not providing pedestrian access.

Parking:

The requirement to provide parking can be taken from11B-206.2.1 above, but it can also be construed to apply only when vehicular access from a parking area is part of the site arrival sequence. Accessible parking requirements are based on the number of parking spaces provided that are associated with the amphitheater. The requirements, when parking is provided, are to be per Section 11B-208.1 and Table 11B-208.2 (emphasis added):

> ***11B*-208.1 General.** Where parking spaces are provided, parking spaces shall be provided in accordance with *Section 11B*-208.

TABLE *11B*-208.2
PARKING SPACES

TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY	MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

The first parking space is always a van space, with the access aisle on the passenger side of the van facing into the space. Van spaces are to be provided at the ratio of 1:6 of accessible parking spaces out of the total parking count assignable to the facility (emphasis added).

> ***"11B*-208.3 Location.** Parking facilities shall comply with *Section 11B*-208.3.
>
> ***11B*-208.3.1 General.** Parking spaces complying with *Section 11B*-502 that serve a particular building or facility shall be located on the shortest accessible route from parking to an entrance complying with *Section 11B*-206.4. Where parking serves more than one accessible entrance, parking spaces complying with *Section 11B*-502 shall be dispersed and located on the shortest accessible route to the accessible entrances. In parking facilities that do not serve a particular building or facility, parking spaces complying with *Section 11B*-502 shall be located on the shortest accessible route to an accessible pedestrian entrance of the parking facility.
>
> **Exceptions:**
> 1. All van parking spaces shall be permitted to be grouped on one level within a multi-story parking facility.
> 2. Parking spaces shall be permitted to be located in different parking facilities if substantially equivalent or greater accessibility is provided in terms of distance from an accessible entrance or

entrances, parking fee, and user convenience."

If parking assigned to the amphitheater is provided it must have accessible parking spaces in it.

Toilet Facilities

Accessible toilet facilities are to be provided per the following sections:

> ***11B*-213 Toilet facilities and bathing facilities**
> ***11B*-213.1 General.** Where toilet facilities and bathing facilities are provided, they shall comply with *Section 11B*-213.
>
> **11B-213.2 Toilet rooms and bathing rooms.** Where toilet rooms are provided, each toilet room shall comply with *Section 11B*-603. Where bathing rooms are provided, each bathing room shall comply with *Section 11B*-603.

Assembly Seating

Accessible assembly seating is to be provided per the following sections (emphasis added):

> ***11B*-221 Assembly areas**
> ***11B*-221.1 General.** Assembly areas shall provide wheelchair spaces, companion seats, and designated aisle seats *and semi-ambulant seats* complying with *Sections 11B*-221 and *11B*-802. In addition, lawn seating shall comply with *Section 11B*-221.5.
> ***11B*-221.2.1 Number and location.** Wheelchair spaces shall be provided complying with *Section 11B*-221.2.1.

TABLE *11B*-221.2.1.1
NUMBER OF WHEELCHAIR SPACES IN ASSEMBLY AREAS

NUMBER OF SEATS	MINIMUM NUMBER OF REQUIRED WHEELCHAIR SPACES
4 to 25	1
26 to 50	2
51 to 150	4
151 to 300	5
301 to 500	6
501 to 5000	6, plus 1 for each *100*, or fraction thereof, between 501 through 5000
5001 and over	*46*, plus 1 for each 200, or fraction thereof, over 5000

> ***11B*-221.2.2 Integration.** Wheelchair spaces shall be an integral part of the seating plan.
>
> ***11B*-221.2.3 Lines of sight and dispersion.** Wheelchair spaces shall provide lines of sight complying with *Section 11B*-802.2 and shall comply with *Section 11B*-221.2.3. In providing lines of sight, wheelchair spaces shall be dispersed. Wheelchair spaces shall provide spectators with choices of seating locations and viewing angles that are substantially equivalent to, or better than, the choices of seating locations and viewing angles available to all other spectators. When the number of wheelchair spaces

required by *Section 11B*-221.2.1 has been met, further dispersion shall not be required. *In stadiums, arenas and grandstands, wheelchair spaces shall be dispersed to all levels that include seating served by an accessible route.*

***11B*-221.2.3.1 Horizontal dispersion.** Wheelchair spaces shall be dispersed horizontally. *In assembly areas that have seating encircling, in whole or in part, a field of play or performance, wheelchair spaces shall be dispersed horizontally around the field of play or performance area.*

Exceptions:

1. Horizontal dispersion shall not be required in assembly areas with 300 or fewer seats if the companion seats required by *Section 11B*-221.3 and wheelchair spaces are located within the 2nd or 3rd quartile of the total row length. Intermediate aisles shall be included in determining the total row length. If the row length in the 2nd and 3rd quartile of a row is insufficient to accommodate the required number of companion seats and wheelchair spaces, the additional companion seats and wheelchair spaces shall be permitted to be located in the 1st and 4th quartile of the row.
2. In row seating, two wheelchair spaces shall be permitted to be located side-by-side.

***11B*-221.2.3.2 Vertical dispersion.** Wheelchair spaces shall be dispersed vertically at varying distances from the screen, performance area, or playing field. In addition, wheelchair spaces shall be located in each balcony or mezzanine that is located on an accessible route.

Exceptions:

1. Vertical dispersion shall not be required in assembly areas with 300 or fewer seats if the wheelchair spaces provide viewing angles that are equivalent to, or better than, the average viewing angle provided in the facility.
2. In bleachers, wheelchair spaces shall not be required to be provided in rows other than rows at points of entry to bleacher seating.

11B-221.2.4 Temporary structures. *Wheelchair spaces shall not be located on, or be obstructed by, temporary platforms or other movable structures.*

Exception: *When an entire seating section is placed on temporary platforms or other movable structures in an area where fixed seating is not provided, in order to increase seating for an event, wheelchair spaces may be placed in that section.*

11B-221.2.5 Removable chairs. *When required wheelchair spaces are not occupied by persons eligible for those spaces, individual, removable seats may be placed in those spaces.*

***11B*-221.3 Companion seats.** At least one companion seat complying with *Section 11B*-802.3 shall be provided for each wheelchair space required by *Section 11B*-221.2.1.

***11B*-221.4 Designated aisle seats.** At least 5 percent of the total number of aisle seats provided shall comply with *Section 11B*-802.4 and shall be the aisle seats located closest to accessible routes.

***11B*-221.5 Lawn seating.** Lawn seating areas and exterior overflow seating areas, where fixed seats are not provided, shall connect to an accessible route.

11B-221.6 Semi-ambulant seats. *At least 1 percent of the total number of seats, and no fewer than two, shall be semiambulant seats complying with Section 11B-802.5.*

Pathways

Pathways for access must be "firm, stable and slip resistant" per CBC Section 302:

***11B*-302 Floor or ground surfaces**
***11B*-302.1 General.** Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with *Section 11B*-302.

I construe this to mean that accessible pathways must be paved with materials not subject to erosion or movement, such as asphalt, permeable concrete or concrete. Decomposed Granite, even with stabilizers does not meet this requirement.

Conclusion

See the annotated site plan for notations of how the various elements for egress and access are to be applied to this facility.

Respectfully:

Steven R Winkel, FAIA, PE, CASp
The Preview Group, Inc.

PREVIEW GROUP
ARCHITECTS PROVIDING REGULATORY SOLUTIONS...

March 17, 2014

Christine Reed, RLA, ASLA
Associate Principal
O|CB, Office of Cheryl Barton
146 Eleventh Street
San Francisco, CA 94103

Re: Revised Phase I Requirements for Plumbing Fixtures Without Bookstore
UCSC Upper Quarry Amphitheater Renovation

Dear Ms. Reed:

Per your request, I have updated our previous memo summarizing the requirements in the 2013 California Plumbing Code (CPC) for plumbing fixture counts for the amphitheater for the proposed first phase of renovation. It is my understanding that you would like me to analyze the fixture requirements for two scenarios. The analyses below are based on the requirements contained in CPC Chapter 4 in Table 422.1 and Table A. This outdoor facility is classified as an A-5 occupancy.

1. Scenario one is for the number of occupants that can be accommodated using the existing toilet facilities near the amphitheater, less the bookstore. This is shown on the upper rows of the table below. The occupant load number is determined by "reverse engineering" the occupant loads based on the current plumbing fixture counts.
2. Scenario two is for a projected occupant load of 2,000 persons. I am assuming that occupant loads in excess of those that can be accommodated now would be accommodated by bringing in portable toilets.

Uses	**CBC Egress Occupants = # Seats**	**CPC Fixture Occupants = 1/2 # Seats**	**Men = Plg. Occ./2**	**Women = Plg. Occ./2**	**Men - T 422.1**			**Women –T 422.1**	
					WC	**Urinal**	**Lav**	**WC**	**Lav**
1. Use Existing Building toilets					**(Exist) w/ADA, no unisex**	**(Exist)**	**(Exist)**	**(Exist) w/ADA, & w/unisex)**	**(Exist)**
UQ Restroom					1	1	1	3	1
Dressing Room					-	-	-	1	1
Student Union					1	-	1	1	1
TOTAL	**400**	**200**	**100**	**100**	**2**	**1**	**2**	**5**	**3**
2. Enlarged Assembly A-5 Occ.	2,000	1,000	500	500	4	4	3	9	5
Difference	(1,600)	(800)	(400)	(400)	(2)	(3)	(1)	(4)	(2)

The PREVIEW GROUP, Inc.
632 Race Street · Cincinnati, Ohio 45202
Ph 513·621·2109 Fax 513·621·7297

info@preview-group.com
2765 Prince Street · Berkeley, California 94705
Ph/Fax 510·547·7748

Please contact me if you need further clarification regarding this memo.

Respectfully:

Steven R Winkel, FAIA, PE, CASp
The Preview Group, Inc.

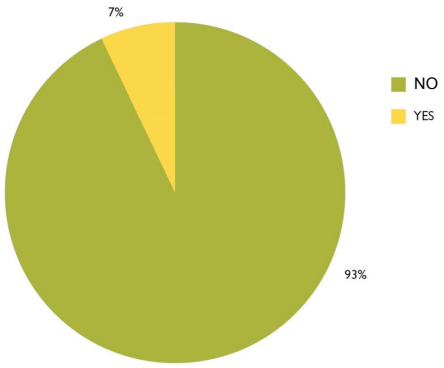
Appendices

Student Survey Reports
University of California, Santa Cruz, 2013

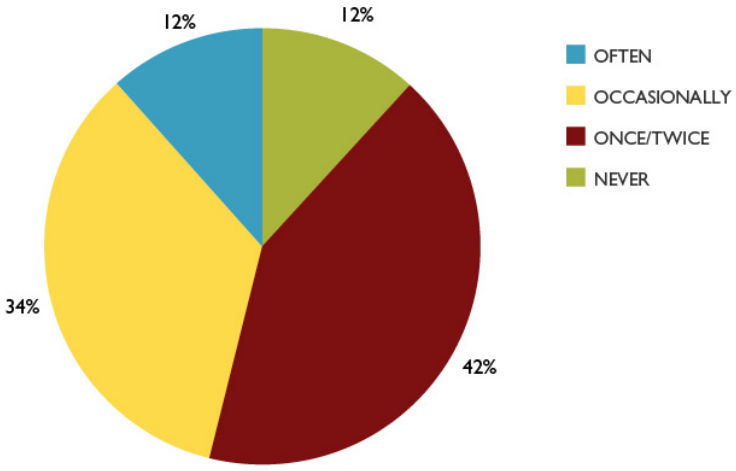
IDENTIFY YOUR AFFILIATION

ANSWER CHOICES	RESPONSES	
Faculty	0.12%	2
Staff	0.81%	13
Student	99.06%	1,589
Total		1,604

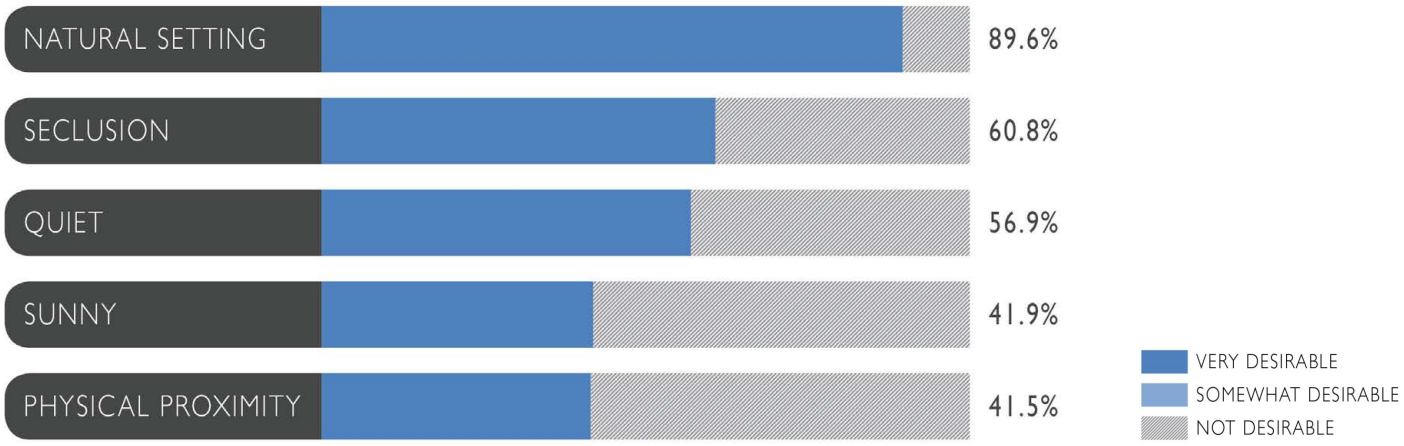
DO YOU KNOW WHERE THE UPPER QUARRY AMPHITHEATER IS?



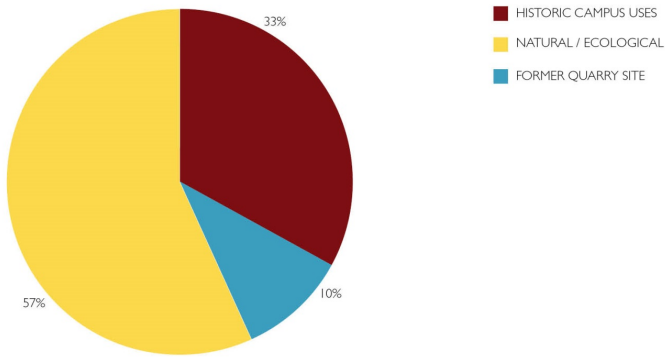
HAVE YOU BEEN THERE? HOW OFTEN?



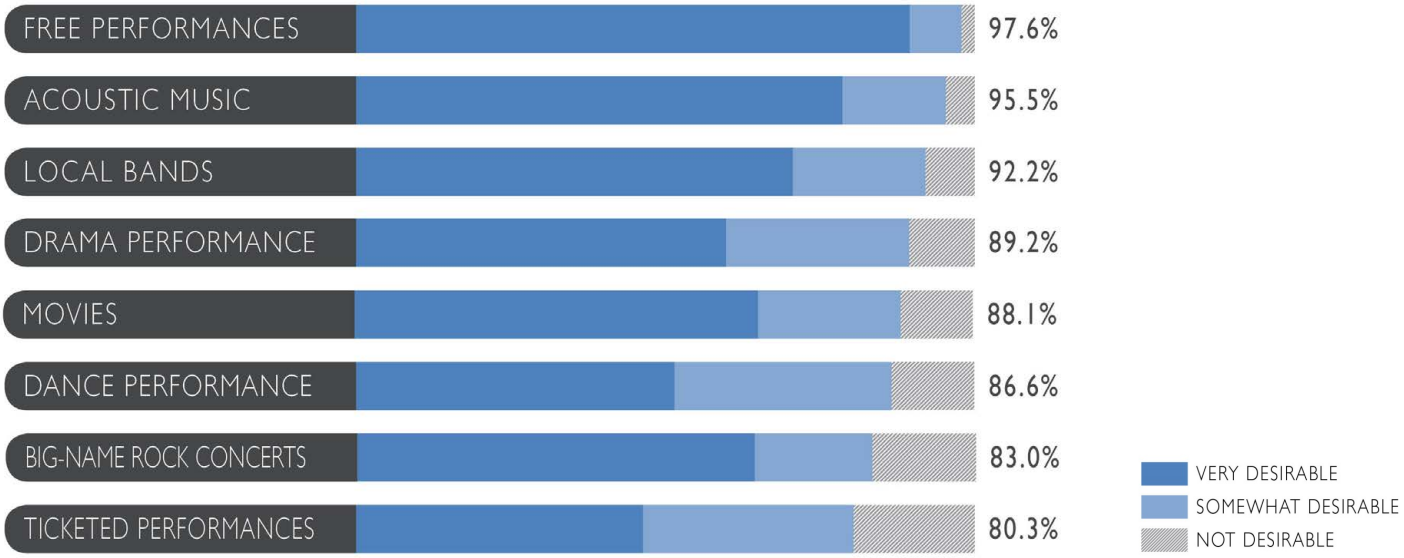
WHAT DO YOU THINK ARE THE MOST IMPORTANT QUALITIES OR FEATURES OF THE SPACE THAT BRING YOU HERE?



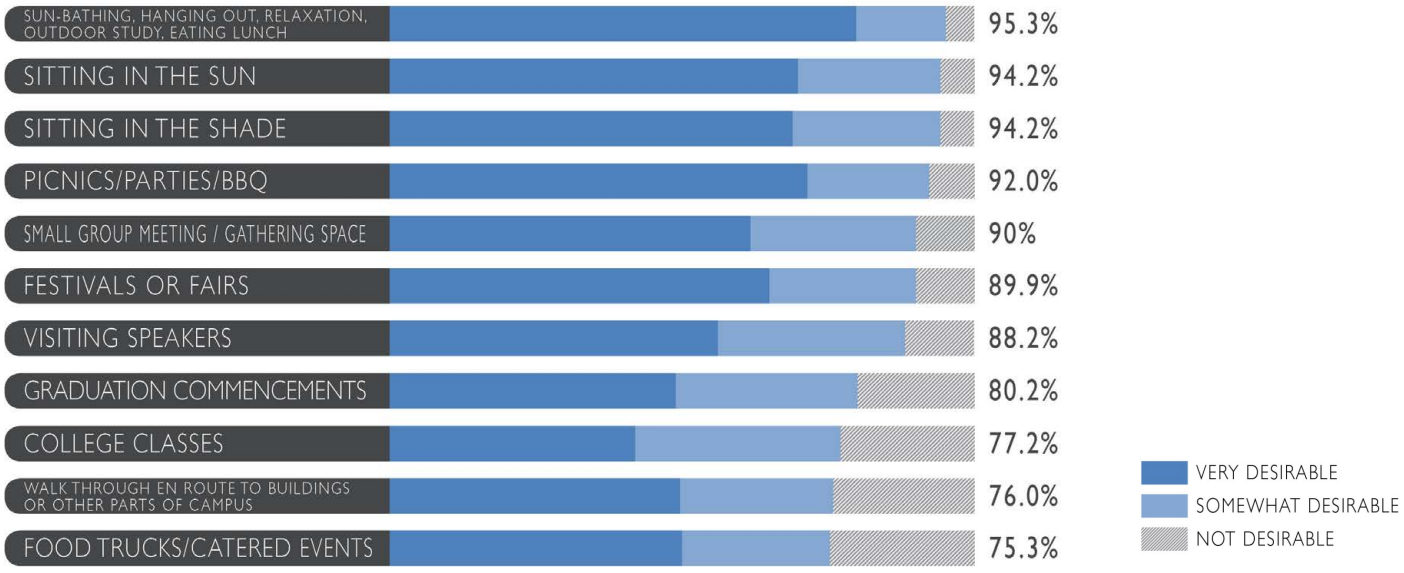
WHAT ASPECT OF AMPHITHEATER HISTORY IS MOST INTERESTING TO YOU?



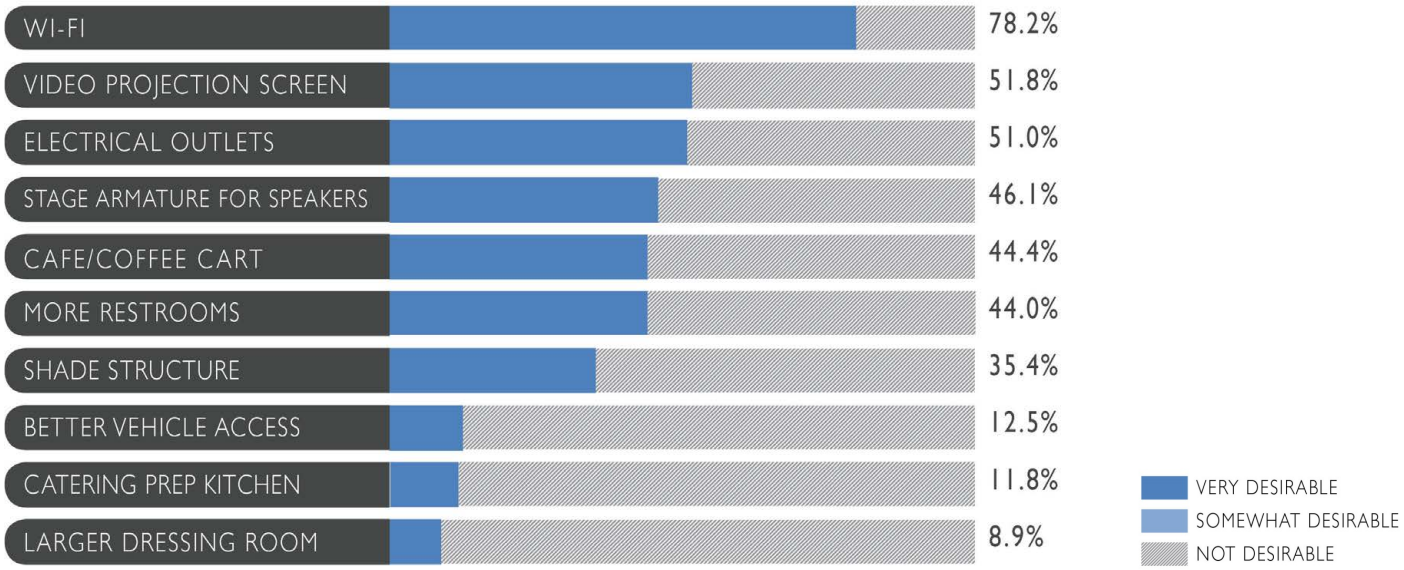
HOW WOULD YOU RATE THE FOLLOWING POTENTIAL PERFORMANCE USES FOR THE AMPHITHEATER?



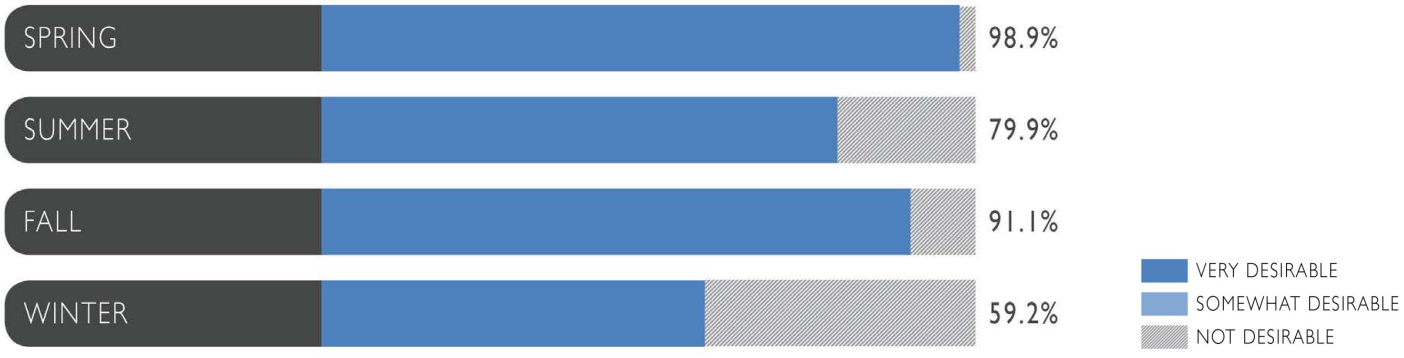
HOW WOULD YOU RATE THE FOLLOWING POTENTIAL NON-PERFORMANCE USES FOR THE AMPHITHEATER?



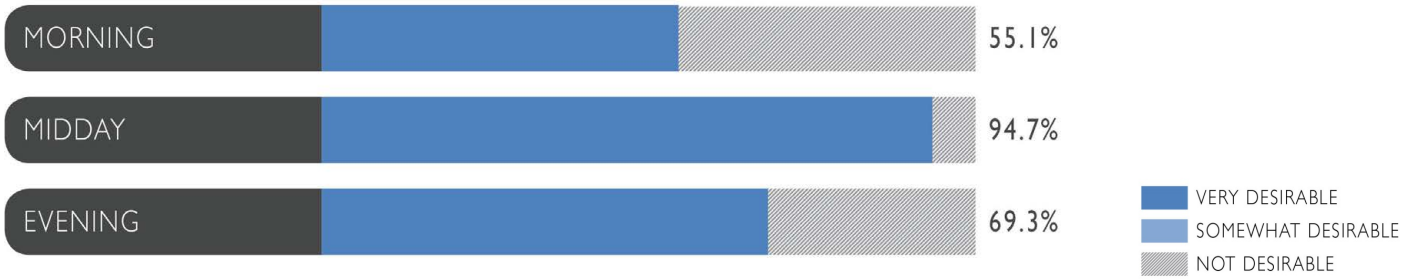
WHICH OF THE FOLLOWING FACILITIES OR INFRASTRUCTURE WOULD ENCOURAGE YOU TO USE THE PLACE?



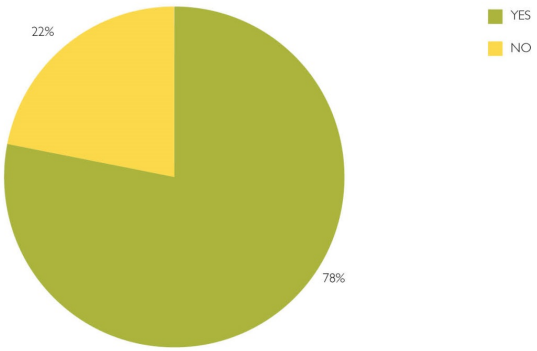
WHAT TIME OF YEAR WOULD YOU USE IT?



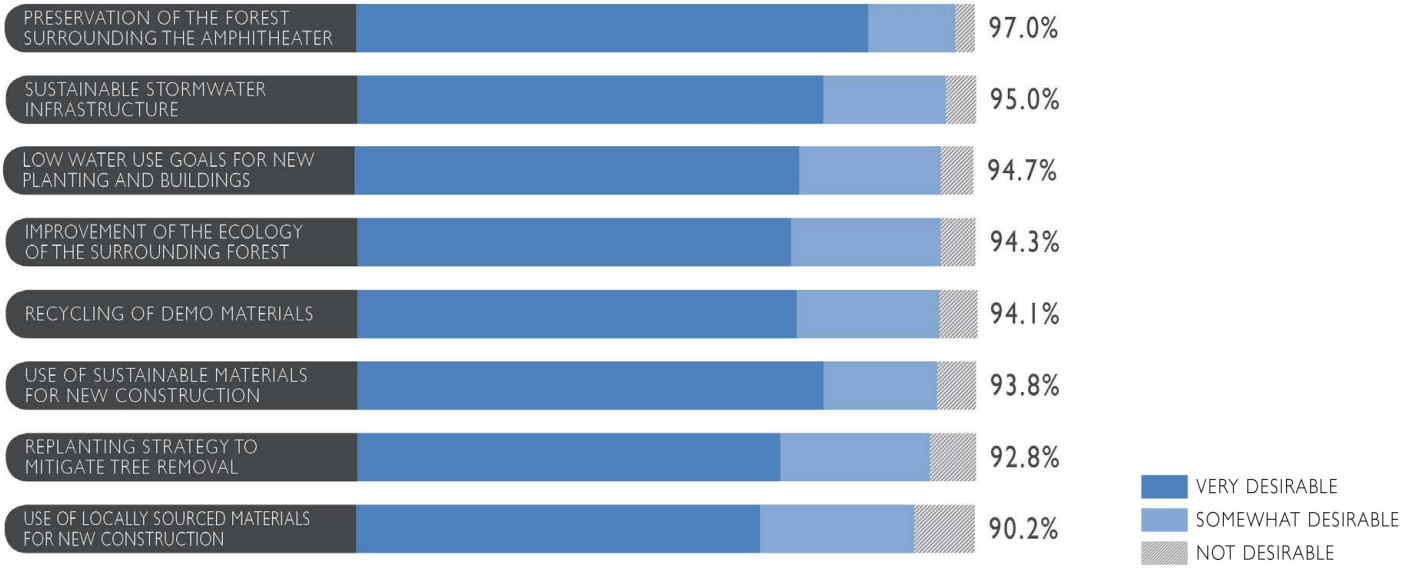
WHAT TIME OF DAY WOULD YOU USE IT?



WOULD YOU USE THE AREA AT NIGHT IF THERE WAS LIGHTING?



HOW WOULD YOU RATE THE FOLLOWING ECOLOGICAL GOALS FOR FUTURE SITE IMPROVEMENTS?



Appendices

UCSC Programming Survey

Program Use Summary: Career Ctr

	Program Sponsor	Program Element	Priority	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions	Accomodations Needed
	Example: Rainbow Theater	Campus Performance programs		Existing	campus	1400 per season	36 per production	once a quarter	M49 funded	$15 per person (non-students),concessions sold	
1	Graduate and Professional School Fair	Career Development Program		Existing	students, academic advisers, professional and graduate school recruiters	600 annually	9 hrs.	annual	self-funded	$300 per table for recruiters	wi-fi access, cover or large tent in case of rain
2	Student Employment Orientation	Career Development Program		Existing - multipile small sessions	students	300 annually	4 hrs.	annual	Registration Fees and revenue	free	wi-fi, projection and screen, cover or large tent in case of rain
3	Multi-cultural Career Conference	Career Development Program		Existing	underrepresented students and alumni	200-300 annually	9 hrs.	annual	Registration Fees and revenue	free	wi-fi, space for tables and chairs for dining, podium, mic and amplificaiton, cover or large tent in case of rain
4	Employer Information Sessions	Career Development Program		Existing - multipile small events	students and recruiters	2000 annually	2 hrs.	several per quarter	self-funded	$100 per employer	Cover or large tent in case of rain
5	Choose a Major Fair	Career Development Program		Proposed	students and academic departmental advisers	600 annually	5 hrs.	annual	shared funding between host units	free	Cover or large tent in case of rain
6	Internship/Volunteer Fair	Career Development Program		Proposed	students and host organizations	600 annually	5 hrs.	annual	self-funded	$25-50 per table for recruiters	Cover or large tent in case of rain

Program Use Summary: Disability Resource Ctr (DRC)

	Program Sponsor	Program Element	Priority	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions
	Example: Rainbow Theater	Campus Performance programs		Existing	campus	1400 per season	36 per production	once a quarter	M49 funded	$15 per person (non-students),concessions sold
1	Disability Resource Center	Guest Speaker re Activism		proposed	campus	500	4	once a year	various sources	concessions sold
2		Live Arts Performance		proposed	campus	500	6	once a year	various sources	$15 non students, concessions sold
3		Stand up Comic		proposed	campus	500	4	once a year	various sources	$15 non students, concessions sold
4		Film Screening		proposed	campus	500	4	once a year	various sources	concessions sold
5		DRC Orientation		existing	incoming students	125	8	once a year	unit	no sales

Program Use Summary: Education Opportunity Programs (EOP)

	Program Sponsor	Program Element	Priority	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions
	Example: Rainbow Theater	Campus Performance programs		Existing	campus	1400 per season	36 per production	once a quarter	M49 funded	$15 per person (non-students),concessions sold
1	EOP	Fall Orientation	High	Existing	1300 incoming	1,100	6 Hours	Fall quarter only	SSF	
2	EOP	Senior Recognition	High	Existing	600		4 Hours	Fall quarter only	SSF	
3	EOP	Regional Family Workshops	High	Existing	500	300	8 Hours	Fall quarter only	SSF	
4	EOP	Bridge Reunion	High	Existing	700	200	6-4-6 Hours	Yearly	SSF	
5	EOP	EOP Reunion	High	New	1500	1000	8 Hours	Yearly	SSF	
6	EOP	Diversity Forum	High	Existing	2500 - Student & Staff	2,500	8-10 Hours	Every 5-6 years	Split funding-Transportation and Food	
7	EOP	Academic Excellence Reception (AER)	High	Existing	350	150-200	3 Hours	Yearly	SSF	

Program Use Summary: SOMeCA/SOAR (Student Orgs)

	Program Sponsor	Program Element	Priority	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions
	Example: Rainbow Theater	Campus Performance programs		Existing	campus	1400 per season	36 per production	once a quarter	M49 funded	$15 per person (non-students),concessions sold
1	Multicultural festival	Live cultural performance and food		Existing	Primarily campus	2-3,000 throughout the day	48 including set up	Annual	Various student fees	Food sold by students
2	Speaker Blowout	National speakers		Existing	Campus	500	8 including set up	Annual	Student fees	No sales
3	Poetry/Spoken word performances	Speakers		Existing	Campus	2-300 per event	6 including set up	5-6 events per year	Student fees	No sales
4	Cultural performances	Dance, music		Existing	Primarily campus	4-500 per event	6 including set up	5-6 events per year	Student fees	Refreshment sales
5	Organization orientations	Speakers		Existing	Campus	2-300 per event	4 including set up	5-6 per year	Student fees	No sales
6	Speaker series	Speakers		Existing	Campus	1-200 per event	4 including set up	5-6 per year	Student fees	No sales
7	Cultural fairs	Live performances		Existing	Campus	2-300 per event	6 including set up	4-5 per year	Student fees	Refreshment sales
8	Lip Sync contest	Live performances		Existing	Campus	3-400	6 including set up	Annual	Student fees	No sales
9	Concerts	Music		Existing	Campus	2-300	6 including set up	1-2 per year	Student fees	No sales

Program Use Summary: STARS (Student Transfers & Re-entry Services)

	Program Sponsor	Program Element	Priority	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions
	Example: Rainbow Theater	Campus Performance programs		Existing	campus	1400 per season	36 per production	once a quarter	M49 funded	$15 per person (non-students),concessions sold
1	STARS Fall Workshops	transfer and re-entry university intro		existing	entering transfer and re-entry students	200	20	once a year	student fees	
2	New Transfer Student Fiesta	transfer and re-entry university intro		existing	entering transfer and re-entry students	100	5	once a year	Kresge College	

Program Use Summary

	Program Sponsor	Program Element	Priority	Existing / Proposed	Target Audience	Annual Attendance	Hrs. of Use	Frequency	Revenue	Ticketed / Concessions
1	Chancellor or President Events				Campus	unknown	unknown	unknown	no	no
2	Academic Departments	Departmental Graduation			Campus	unknown	unknown	EOY?	no	perhaps, depending on size
2	Academic Departments	Courses			Campus					
3	Community Events	Productions, Birth of Word		existing through M49	Campus & Community	1000 per production	16 per production	3 times a year	Measure 49 funding	Tickets Free for all UCSC
3	Community Events	High School graduation			Community	unknown	unknown	?	yes, charge for facility	no/yes
4	Campus Performance Programs (list specific)	Rainbow Theater, AATAT		existing through M49	Campus	1400 per season	36 per production	once a quarter	Measure 49 funding	15 per Person, concessions sold
4	Campus Performance Programs (list specific)	movie nights, drama groups, etc.			Campus	unknown	unknown	2-3/quarter?	some charge?	no/yes
4	Campus Performance Programs (list specific)	Multicultural festival			Campus					
5	Campus Speaker Series	speaker blowout		existing	Campus & Community	750-1000	6	two with partners	N/A	tickets Free for All
5	Campus Speaker Series				Campus & Community	unknown	unknown	quarterly	some charge?	no/yes
6	Outside Performance Sponsors (list specific)				Campus & Community	unknown	week-ends/evenings		yes, charge for facility	yes/yes
7	Other Revenue generating uses	Concerts, Dance Shows		proposed	Campus & Community	1500	15	once a year		Ticketed and confessions
7	Other Revenue generating uses	conference			Campus & Community & Private	unknown	week-ends/evenings	daily during conference season	tbd	yes/yes
7	Other Revenue generating uses	wedding								
8	Colleges	Graduations			Students, faculty, families			annually	no	
9	Arts & Lectures	various performances			campus & community					
10	Rallies, Political Activity	students			campus	unknown	probably noon hour	unknown	no	no

Appendices

Core Advisory Group Charge

November 13, 2013

ALMA SIFUENTES, Chair
Associate Vice Chancellor and Dean of Students

JOHN BARNES
Associate Vice Chancellor and Campus Architect

LINDA BEASTON
Special Assistant, Chancellor's Office/EVC

ROBERT MCCAMPBELL
Executive Director, Bookstore

JOSE REYES-OLIVAS
Co-Curricular Program Coordinator, College Ten

OLGA NÁJERA RAMÍREZ
Professor Anthropology/ Los Mejicas Performance Advisor

JEAN MARIE SCOTT
Associate Vice Chancellor, Risk and Safety Services

DEANA SLATER
College Administrative Officer, Colleges Nine & Ten

DON WILLIAMS
Director, Cultural Arts Diversity

UNDERGRADUATE STUDENT (2)

GRADUATE STUDENT

ALUMNI REPRESENTATIVE (TBD by UR)

UR REPRESENTATIVE (TBD by UR)

Dear Colleagues:

Re: Upper Quarry Amphitheater (Quarry) Core Advisory Group Charge

Thank you for agreeing to serve as a member of the Quarry Core Advisory Group. The Quarry holds the opportunity to become a vibrant focus of student and campus life, while also retaining its value as a natural open space. To effectively execute the *Upper Quarry Amphitheater Renovation and Expansion* project, a feasibility study has been initiated.

As the campus community looks forward to the Quarry upgrade and renewal, a very delicate balance must be achieved in order to strengthen the facility and protect its rich landscape setting, while simultaneously creating a student-focused venue that supports contemporary audiences and operational/fiscal requirements. During the course of the feasibility study, many factors will be

evaluated, including an assessment and understanding of both the cultural landscape value of the site and its symbolic and emotional value for a diverse range of stakeholders. To ensure stakeholder collaboration, a Core Advisory Group is hereby appointed to work in close collaboration with the UCSC/consultant team and report to the Advisory Committee on Campus Planning and Stewardship (CPS). Associate Vice Chancellor and Dean Sifuentes will chair this Advisory Group and lead the team through active engagement in a thoughtful dialogue to explore aspirations, develop fundamental planning and design principles, analyze sustainable operational parameters, and facilitate decision-making within the campus community.

In concert with the design consultant, the charge of the Quarry Core Advisory Group is as follows:

Develop Guiding Principles: These principles will establish the Big Picture poetic and pragmatic guidelines for the amphitheater renovations. They will be a touchstone during the design process to foster the goals and priorities for decision-making.

Structure a Public Outreach Strategy: This will be the conduit for project communications to students and the broader campus community. Define the various stakeholder groups and the appropriate level of interface and engagement with each. Engage the stakeholders as active partners in the design process.

Participate in Site Awareness Walks and Immersion Workshops: These interactive work sessions and engaging design dialogue discussions will simultaneously look to the past and the future to establish the range of values, aspirations, observations, experiential perspectives and attitudes about the Quarry site.

Develop Program Scope: Evaluate opportunities for various programmatic uses as they emerge during public outreach and prioritize based on the Guiding Principles. Assess the response to design alternatives and facilitate decision-making within the campus community.

Evaluate Financial Feasibility: Analyze proposed phasing and cost estimates to assist in the prioritization of necessary and desired improvements. Collaborate with University Relations to develop an approach to fundraising and engage the Student Fee Advisory Committee and students at large regarding the use of the Seismic Life Safety reserves for this project.

Provide Recommendations to Advisory Committee on Campus Planning and Stewardship: Review progress and provide guidance in the development of Upper Quarry Amphitheater Feasibility Study. Report on the progress and provide recommendations on next steps after completion of feasibility study.

The campus Project Manager for the feasibility study is Dean Fitch, who has responsibility for the overall management of the feasibility study; for monitoring the project program, budget, and schedule; for formal direction of the consulting landscape architect; and for representing the University in all of the project's contractual and management matters. In his capacity as the campus planner, he is also responsible for representing the University in all matters regarding

campus compliance with the commitments of the Long Range Development Plan (LRDP) and the Physical Design Framework.

The Advisory Group will be assisted by Educational Facilities Planner Erin Fitzgibbons, Assistant Director Linda Flaherty (Capital Planning & Space Management), Director Denise Onitsuka (Dean of Students Office), and a representative from University Relations. Others will be invited to serve as resources on an as-needed basis.

An operating budget analysis shall be prepared in conjunction with the feasibility study to identify operating costs related to the facility itself and any possible programs that use the facility, as well as preliminary staffing requirements, including but not limited to the magnitude of operations and maintenance costs. The Office of Planning and Budget will take the lead in the development of the financial analysis.

I ask that the Advisory Group have an initial meeting with support staff (Physical Planning & Construction and Capital Planning & Space Management) prior to engaging the consulting team in early December. The timeline for the Advisory Group's work on this project is to complete the final feasibility report June 2014.

Again, thank you for your willingness to serve on the Quarry Core Advisory Group. The advice and input of the group is of critical importance, and essential to the success of the project. We anticipate that the Advisory Group will begin meeting this month, and regularly through the first part of 2014. If you have any questions, please contact Erin Fitzgibbons (ext. 9-2681 or erinF@ucsc.edu) or Linda Flaherty (ext. 9-4538 or llflaher@ucsc.edu).

Sincerely,

Alison Galloway
Campus Provost and
Executive Vice Chancellor

cc: Vice Chancellor Delaney
Director Draper
Dean Kamieniecki
Vice Chancellor Latham
Vice Chancellor Shilling
SFAC Chair Fangon
SUA Chair Umer
GSA President Alston

Core Advisory Group Meetings

Core Advisory Group meetings took place on the following dates:

November 18, 2013

December 9, 2013

January 14, 2014

January 29, 2014

February 21, 2014

March 19, 2014

April 4, 2014

May 2, 2014

May 14, 2014

June 6, 2014