DE-STRESSING UC DAVIS

Restorative Landscapes on a College Campus

Nicole Limesand

Senior Capstone Project 2017

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De-Stressing UC Davis:
Restorative Landscapes on a College Campus
By Nicole Limesand

Submitted in partial satisfaction of the requirements for the degree of
BACHELOR OF SCIENCE IN LANDSCAPE ARCHITECTURE
In the Department of Human Ecology
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Approved by Elizabeth Boults, Senior Project Chair

Approved by David de la Peña, Senior Project Advisor

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ABSTRACT

College is a stressful stage in life, and student stress is on the rise. Stress – as well as anxiety, depression, and other mental disorders that plague college students – have been shown to be psychologically and physiologically alleviated via restorative, therapeutic landscapes, yet most existing restorative landscapes are attached to healthcare facilities. Few restorative landscapes have been designed for the collegiate campus. This project looks at how aspects of healing landscapes can be adapted into a network throughout a college campus, with UC Davis as the focus site. The research includes literature review; interviews with landscape architects contracted to work for the campus, the campus planner, the campus landscape architect, and the mental health services department; and site analysis of existing sites that have the characteristics of restorative landscapes. Mental well-being in the landscape is examined from a student, planner, and designer perspective. The resulting final design of the project includes a master plan detailing existing and proposed restorative landscapes to create an easily accessible network from anywhere on campus, and an example design of the Wellman Well. This project aims to reveal the opportunities and obstacles to campus mental health landscapes and create a framework to help promote mental well-being not just at UC Davis, but at any university.

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Master, BudgetPlants.com, Yerba Buena Nursery, PalmenKaufen.de, Select Tree (calpoly.edu), Monrovia, Wikimedia, SFgate.com).

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Title page — Japanese zen garden (Sonoma Magazine).

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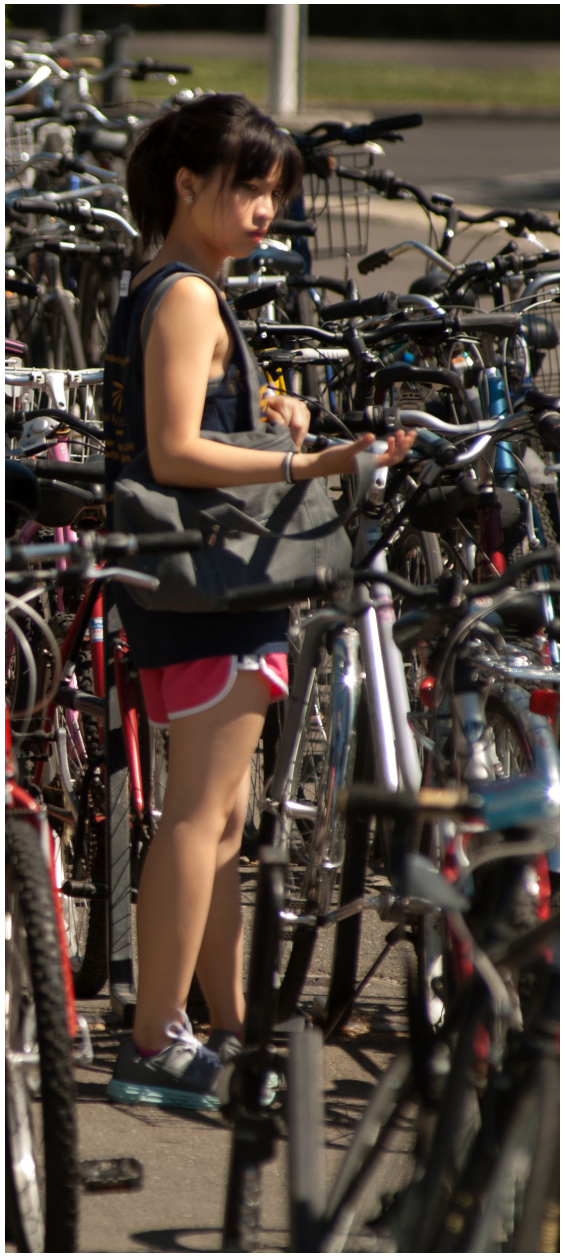
Lastly, and most importantly, I would like to express my appreciation to those in my life that have supported me along my journey and throughout this project. Above all, my family has always been a supportive phone call away when the stress has been too great or my mind too entrenched in the work. Thank you to my classmate Roberto for your help as a sounding board and as a person with which to commiserate. Finally, thank you, Monica, for being the best roommate ever, always checking in, and providing a layman's perspective.

INTRODUCTION

Restorative landscape – a space that provides mental and emotional respite, and therefore physiological reprieve as well. Therapeutic, wellness, and healing landscapes or gardens are nearly interchangeable terms, as they require the same basic requirements and produce similar benefits.



1.1 UC Davis bike parking.

THE STRESS LANDSCAPE

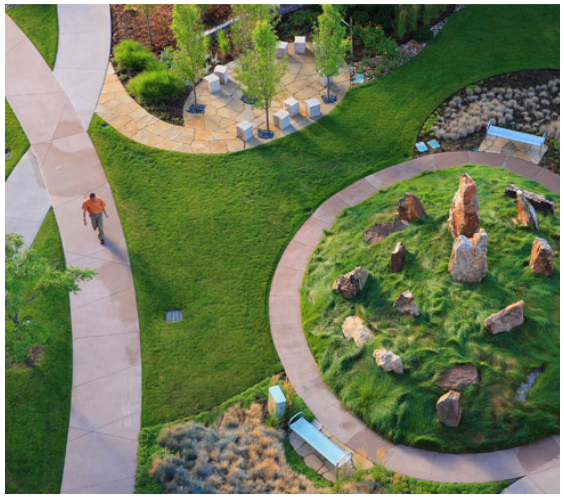
The college campus is often stage to one of the most stressful times in a person's life. Students are engaged in deep concentration, cramming for exams, and zipping from one class to another, all on top of which they are expected to earn high scores, join and lead clubs, volunteer, and do internships to be competitive future applicants in the workforce. It is a 24/7 job that hardly leaves time for basic things like mental health and a social life.

Psychologically and physiologically, it takes its toll. College students are seeking professional counseling more often to deal with stress-induced thoughts of self-harm and suicide (ACHA, 2015). Stress from university life is real, and campus design has done little to combat the epidemic occurring.

Current campus landscapes are at best able to maintain some open space for students to enjoy. A main consideration is often the circulation of a site or campus design, which does not create a collectively restorative landscape, as spaces is usually allocated to the masses of students rushing to class.
It usually means hordes of cars, bikes, skateboards, or packs of pedestrian students rushing to class. A student who was holed up all night in the library studying, who spent the last 8 hours finishing a project, or who just exited a two-hour exam should be able to step into a restorative landscape immediately or within a mere couple-minute walk.

THERAPEUTIC DESIGN

The healthcare industry has come to recognize the healing capacity of restorative landscapes. A continually-expanding breadth of research is leading to evidence-based design that holistically targets different audiences for their specific ailments. Therapeutic landscapes have the power to alleviate the severity of stress, anxiety, depression, and a myriad of mental disorders from ADD to schizophrenia (Cooper Marcus and Sachs, 2014). Therefore, incorporating the defining characteristics of therapeutic design into the college campus has the potential to help students with a multitude of issues but predominantly, stress.



1.2 Hewit Foundation healing garden.

OBJECTIVES

Current research on restorative, therapeutic landscapes is related mostly to healthcare facility design. In this healthcare context, our understanding of how design can help heal patients faster and with fewer complications has advanced greatly in the past few decades through research. Such research has backed up theoretical literature spanning a millenia. However, little has been done when looking at mental health on university campuses beyond theoretical graduate research projects and removing cars from campus cores.

This project's main objective is to fill this information gap by answering the question:

What characteristics of therapeutic landscape design are most applicable on college campuses to alleviate students' stress?

In answering this, the goal of this project is to create a comprehensive network of restorative landscapes that are as accessible to stressed students as possible from anywhere on campus and a set of restorative landscape characteristics to guide the Campus Planning Department when going through the planning and design processes.

There are a few underlying objectives to achieve this:

1 Establish restorative landscape characteristics with which to analyze the project's context and design the project's sites.

2 Establish where restorative landscapes exist on campus, where most students are on-campus, and where there is a lack and therefore opportunity for more restorative landscapes.

3 Create a masterplan of a restorative landscape network, composed of nodes and corridors of increased accessibility.

4 Create a site design that exemplifies the defined restorative landscape characteristics.

5 Reflect on the applicability and challenges in designing a restorative landscape on a college campus.

BACKGROUND

Nature **itself is the best physician.**

Hippocrates, 5th century BCE
Ancient greek physician and father of medicine

2.1 Japanese meditation garden.

HISTORY

While therapeutic and mentally restorative landscape design concepts have yet to really penetrate the world of university campus design, the history of therapeutic landscapes is ancient. The first was perhaps in Greece as a network of therapeutic landscapes, evidence of which is at the Aesclipion at Epidaurus, where spring water rituals and dream-healing took place for a thousand years until the sixth century CE. Later, Roman military hospitals – the first to resemble modern ones – were open and cross-ventilated to facilitate healing, and figures like twelfth-century Hildegard von Bingen promoted nature as beneficial to the soul (Cooper Marcus and Sachs, 2014).

The setting of the first gardens intended for healing in the West was the monastery and took the form of the arcaded cloister garden. This reflected the role of monasticism and charity as providers of healthcare, which shifted onto the shoulders of the Church and clergy with the decline of monasticism in the fourteenth and fifteenth centuries. With this shift, there was also a shift in healing methods and design, as the church focused more on spiritual healing than the sensory healing of the cloister garden. The view out of patients' windows went from garden to sky as windows were raised to focus the attention on the priest, around which the wards were oriented (Gerlach-Spriggs, Kaufman, and Warner, 1998).

At the same time in Japan, traditional and zen gardens provided natural, sensory experiences intended to promote contemplation using simplicity, natural forms, paths and seating, and sometimes refreshments, in the case of traditional Japanese gardens. Commissioned by rulers, the traditional gardens were designed for palaces and temples starting in the Heian Period in the late eighth century CE. Gardening as an art form progressed and zen garden popularity rose with the rise of Zen Buddhist priests to aristocracy in medieval times, around the fourteenth to fifteenth century CE. Zen gardens were often associated with Zen temples, were designed as a naturalistic "scene" to be appreciated from a specific vantage point, often the temple, and began to include ponds and rock compositions influenced by Chinese tradition and art (Keitert, 2002). These gardens mostly focused on the psychological and experiential benefits of the garden.

For physical healing gardens in Western civilization, the seventeenth century CE saw more focus on landscape as a part of healing again. In England, there remained

some attention on the cloister garden, and it became popular for landowners to will their grand estates and sprawling land to become hospitals, which also influenced hospital architectural design. In Western Europe, the pavilion hospital was popularized to combat miasmas, the incorrect belief of the time that vapors in the air were the cause of disease, but it led to better ventilation and hygiene (Cooper Marcus and Sachs, 2014). Patients were again given better access to nature.

Just a century later in the 1700s, Christian Cay Lorenz, a German horticulturist, outlined healing garden recommendations, which closely mirrored recent research findings (see Literature section).

Another century later, Romanticism caused another wave of nature incorporation into all aspects of design as it was seen as beneficial again. During this time, the concept of a new asylum was brought to America from abroad, where kind treatment of the mentally ill and infusion of natural landscapes had been done as early as 1409 at a hospital in Zaragosa, Spain. In America, Dr. Thomas Kirkbride championed this cause and formulated the "Kirkbride Plan", on which asylums in twenty eight states had adopted by the turn of the century (Cooper Marcus and Sachs, 2014). However, at the same time, science disproved miasmas as fiction and discovered germs, which immediately impacted hospital design for the worse, experientially. As a result of this knowledge, the previous models were forgone for "highly functional compact 'monoblock' and high-rise hospitals" with a lack of access to naturalistic landscapes in all areas except in hospice and nursing homes because they focus "on care rather than a cure" (Cooper Marcus and Sachs, 2014).

Another subset of healthcare that survived this industrialization of medicine was physical and occupational therapy, which looked to horticulture as therapy for veterans after World War II and set the stage for the rediscovery of nature in healthcare that rose at the end of the 1900s. With popularization of science and the spread of ideas, the public grew interested in health, working out, eating better, and alternative medicines. Simultaneous to this cultural trend was the rise of patient-friendly healthcare, which was spurred by Angelica Thieriot forming the Planetree nonprofit after a healthcare experience that neglected her emotionally, socially, and spiritually. The Planetree model reconceptualized hospitals and favored the creation of healing spaces,

2.2 Royce E. Pollard Japanese Friendship Garden.

2.3 Randall Children's Hospital garden.

homelike décor, and natural elements (ibid.). Other large initiatives have revolutionized healthcare design, including the Eden Alternative for nursing homes in the 1990s and anthroposophy in Western Europe to bring spirituality into healthcare design as well.

Recently – since the mid-1990s – there has been even more inclusion of healing gardens in hospitals and other healthcare facilities like hospices with the rise of evidence based design (EBD). Scientific evidence produced by solid academic research methods has backed what people have theorized for millennia – nature heals. EBD took that research and created better, health-promoting designs that compliment modern medical treatment (for more information, see the Literature section) and saved money and people in the process.

With these scientific discoveries, books began to be published by therapeutic design pioneers like Clare Cooper Marcus, Naomi Sachs, Daniel Winterbottom and Marni Barnes, the influence of which has led to the establishment of guidelines by official agencies including LEED and SITES (Cooper Marcus and Sachs, 2014). The story of therapeutic landscapes has finally come back to become a recognized, fundamental aspect of healthcare design, but has yet to be interpreted and incorporated into other types of landscape architecture, which is the problem this project aims to solve.

LITERATURE

Contemporary literature on healing, restorative landscapes was initiated by a study called "View Through a Window May Influence Recovery from Surgery", conducted by environmental psychologist Ulrich in 1984. Comparing the post-surgery medical needs, nurse comments, complications, and length of recovery for twenty three gall bladder surgery patients, he found that, when all other variables were controlled for, patients in rooms with a naturalistic view out their window requested less pain medication, received more positive feedback from nurse comments, had fewer post-surgery complications, and were released earlier from the hospital by an average of 0.74 days than the patients given a room with a view of a brick wall (Ulrich, 1984). He was the first to empirically show nature's healing benefits in a valid, scientific study, which also revolutionized the way healthcare was conceptualized as it provided an economic argument for providing patients with access to nature (Cooper Marcus and Sachs, 2014).

While the previous study was tested and proved many times across many studies, another ground-breaking book, written by Kaplan and Kaplan, was released in 1989 and introduced to environmental psychology and design the concept of Attention Restoration Theory – that "directed attention fatigue" results from concentrating on one task for too long and that nature requires less taxing psychological effort to process, making it restorative to the mind (Kaplan & Kaplan, 1989; Kaplan, 1995). It provided little evidence for its claims, but became inspiration for many studies to test, prove, and build upon ART.

Several studies, spanning 1995 to 2005 and more recently, have tested the theory on college students and their view out their dorm window, participants on a nature reserve, and even participants merely viewing images of restorative or naturalistic landscapes. The results unanimously showed that after directing their attention to the point of mental fatigue, even just viewing nature helps reduce blood pressure, reduce stress, and increase concentration and performance on subsequent tests (Tennessen and Cimprich, 1995; Hartig et al., 2003; Berto, 2005). A recent study went further in testing our response to natural environments and found that, when comparing slides of "urban natural landscape" and "urban built landscape", not only do people find naturalistic landscapes more restorative but they actually intrinsically prefer them (Abkar et al., 2011). Furthermore, efforts are being made to quantify these often qualitative responses and build upon the Perceived Restorativeness Scale theorized by Ulrich and others in the mid-1990s (Pasini et al., 2014; Hartig, Kaiser, & Bowler, 1997).

Other studies have theorized what design characteristics actually help restore the mind. The Perceived Restorativeness Scale was used to measure college students' favored spaces and found the common characteristics of these spaces to be "Being Away, Fascination, Coherence, and Compatibility" (Korpela and Hartig, 1996; Hartig and Staats, 2003).

As stated before, the applications of research have been mostly confined to healthcare facilities, as there has been a rise in the practice of evidence based design (EBD), which is to design on the basis of academic research, since it was found in 2000 that 98,000 hospital deaths per year were directly linked to medical errors and cost the healthcare system $5 billion per year (Cooper Marcus and Sachs, 2014). EBD helps alleviate this and aim for optimal outcomes through use of empirical evidence when designing.

2.4 Diagrams of the restorative landscape design characteristics.

RESTORATIVE LANDSCAPE DEFINITION

Restorative landscape – a space that provides mental and emotional respite, and therefore physiological reprieve as well. Therapeutic, wellness, and healing landscapes or gardens are nearly interchangeable terms, as they require the same basic requirements and produce similar benefits.

Defining characteristics of a restorative landscape:

1. Reduce stimuli, particularly negative stimuli
2. Include pleasing, naturalistic stimuli
3. Intimate, protected spaces
4. Light, programmed activity
5. Element of wonder


UCDAVIS

CONTEXT

If you have a ***garden*** and a library, you have everything you need.

Marcus Tillius Cicero, 1st century BCE
Ancient roman politician, lawyer, scholar


CENTRAL
VALLEY
FOLSOM
LAKE
LAKE
BERRYESSA
SACRAMENTO
SIERRA
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DAVIS
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0 mi
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CENTRAL
VALLEY
SAN FRANCISCO
BAY DELTA

SPATIAL CONTEXT

The city of Davis, to which UC Davis is connected, is a small town in the fertile Central Valley of California. The valley, once an inland sea, comprises a third of California's land area, Davis is located close to the geographical center of the Central Valley and is just 20 miles southwest of Sacramento, the capitol of Sacramento. It is also in the former floodplain of the Sacramento River, which makes the soil fertile. Being in such a central location makes Sacramento, the Sierras (where Yosemite and Tahoe are located), and the San Francisco Bay Area relatively short drives and popular destinations for the residents of Davis.

Davis' location also determines its climate. Due to its expansiveness, the valley floor has little topographical variation. The town's proximity to the Bay Area means that Davis experiences strong Delta breezes in the summertime, although Davis summers are known for their scorching heat. Because it is an inland town, its climate is more continental than the coastal maritime climate, meaning hot summers and cooler winters, but is still mild due to the Mediterranean climate of California.

3.1 (Right) diagram of UC Davis within the context of California.
3.2 (Left) regional context map.

3.3 The UC Davis cows.

3.4 Bike culture at UC Davis.

3.5 West Village housing.

HISTORICAL AND CULTURAL CONTEXT

The city of Davis, originally Davisville (1868-1907), sprung up around the university, which started as the agricultural branch of the what is now UC Berkeley (Lofland, n.d.). Officially its own agricultural university in 1908, UC Davis continued to grow as a research university, becoming world-renown for its agricultural and animal sciences but also diversifying in its majors offered. Despite offering "104 undergraduate majors and 99 graduate programs" and being the geographically largest of all UCs, much of the city of Davis' spirit – friendly, laid-back, progressive, and a bit quirky – comes from its roots as a small, agricultural community and intertwined relationship with the university (Academics, 2016).

The university and city of Davis have pushed this progressive identity through policy and planning since the 1950s. Creating bike paths and lanes throughout the city and a car-free campus core starting in the late 60s, the idea of localism and sustainability became the citywide norm. With such a long history of bicycle-oriented planning, biking is a huge part of Davis's culture and charm. It is fondly referred to as the Bike Capital of the U.S. by residents, and with a quarter of the short trips in the city being made on bicycle and bicycle ownership registering in at 2.1 bicycles per capita, this title is not unrealistic (Buehler and Handy, 2007).

Other sustainable efforts include sustainable housing projects like Village Homes, the Domes, and most recently West Village, as well as programs on campus to reduce and eliminate waste, all of which have earned UC Davis the title of No. 1 Cool School (for sustainability) (UC Davis Staff, 2012).

Davis is also known for its impressive academic programs. Its veterinary school has been ranked No. 1 in the entire world. Other programs like agricultural, engineering, nursing, and environmental sciences are also high-ranking programs in their prospective fields (Academic Rankings, 2017). Such high-ranking programs of course mean students with drive to achieve such status, which often results in the compromise of mental health for schoolwork.

CAMPUS CONTEXT

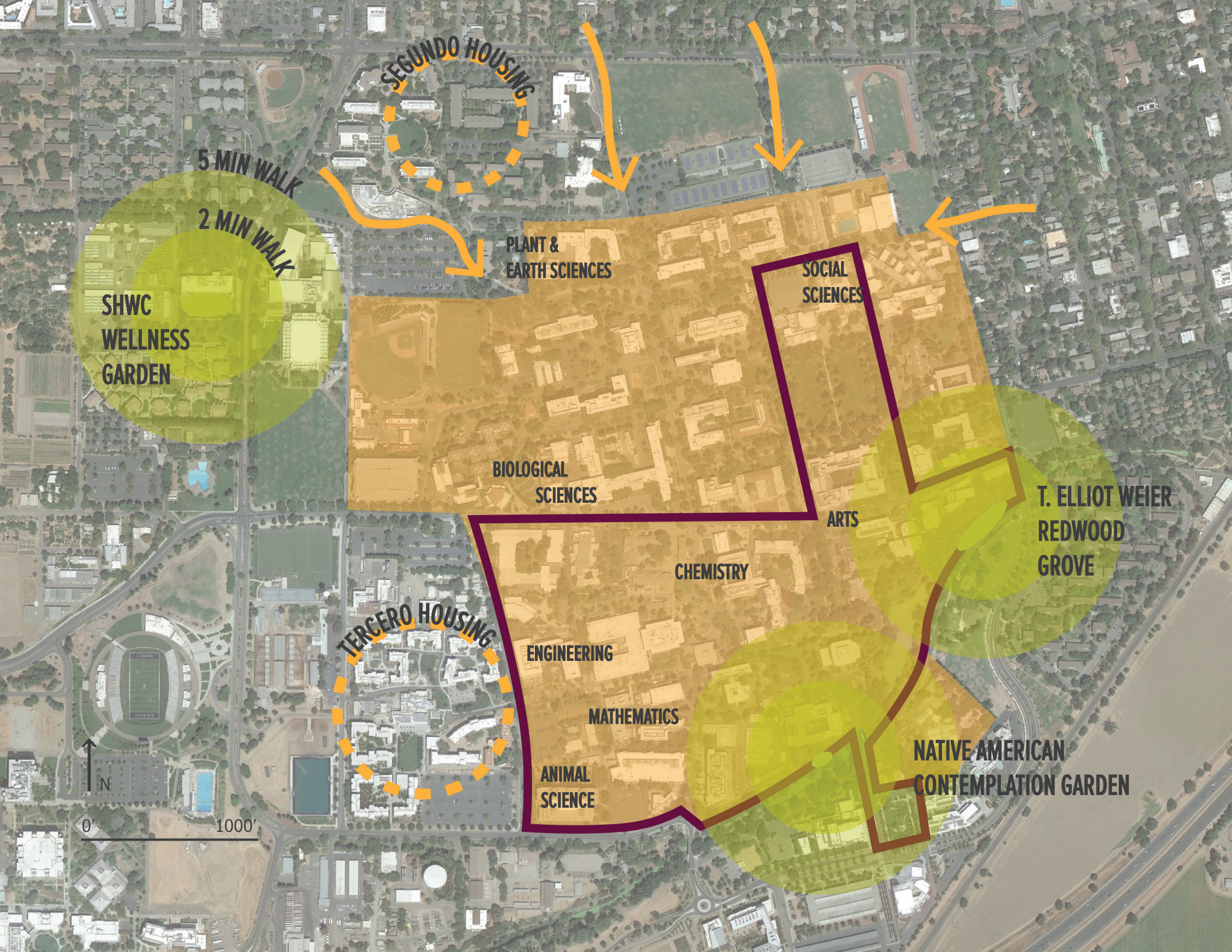
The boundaries of this project are along the edge of UC Davis' core campus (it does not include all the extensive land owned by the university), the north, northwest, and east of which abuts the city of Davis.

The north perimeter of the site is Russell Blvd, a main road of Davis that divides the university from the city. North Central and North Davis are primarily residential, both single family homes, in which faculty and their families, groups of students, and other Davis residents live; and apartment complexes, mostly dominated by students.

To the east, the boundary is A St, the beginning of Downtown Davis. This is the quaint social hub of the town and the area with many amenities, including retail, commercial, restaurant, recreation, and other services.

West of the campus core is UC Davis-owned land beyond the California Highway 113 and is mostly agricultural land designated for research but is also the location of West Village.

To the south is the Interstate 80, beyond which is also agricultural land.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PLANT &
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T. ELLIOT WEIER
REDWOOD
GROVE
TERCERO HOUSING
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SCIENCE
NATIVE AMERICAN
CONTEMPLATION GARDEN
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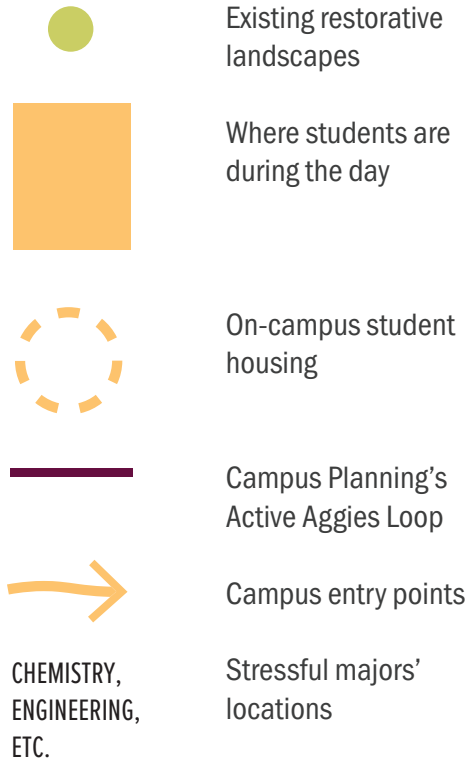
Site Inventory Key



3.6 Site inventory.

SITE INVENTORY

Looking at the campus core requires looking also at the city of Davis, for most students live off-campus. The main entries onto the core are Hutchison Blvd, Sprocket Bikeway, California Ave, Howard Way, and 3rd Street. Once on campus, there is an even smaller core where students are during the day as a result of where the halls are located that host classes. I also noted where noteworthy – and more stressful – majors are housed to garner where the most stressed students are. Also noted are the two major on-campus dormitory areas – Primero and Segundo to the north and Tercero to the southwest (the fourth dormitory is Cuarto, just northwest of campus, which is part of the student body that uses Sprocket Bikeway as an entrance to campus).

During meetings with the Campus Planner, Lucas Griffith, and Wellness Health Educator, Shantille Connolly, I was informed of a project to make a loop on campus called Active Aggies Loop, which was noted as well and indicated on the site inventory. The Active Aggies Loop was designed to promote "activeness, accessibility, and awareness", all while highlighting key feature of campus and bring faculty, staff, and students to different parts of the sprawling campus core (Griffith, 2017; Connolly, 2017).

Probably most important is the inventory of existing restorative landscapes on campus. The Wellness Garden to the west of the campus core and T. Eliot Weier Redwood Grove in the Arboretum to the southeast are apparent restorative landscapes, but the Native American Contemplative Garden was recommended to me. I completed initial site analyses to confirm that all these matched the 5 previously defined characters common to all restorative gardens. I also measured how quickly it took to access these sites, measuring the 2 minute and 5 minute radii. The radii are shown to display how peripheral these existing landscapes are to where the student population is.

INITIAL SITE ANALYSIS | CAMPUS AS A WHOLE

Based on the site inventory, a quick analysis showed that the best opportunity to to fill in the gaps between existing restorative landscapes and the Active Aggies Loop while providing a 2 minute accessibility coverage to the more intense majors on campus was throughout the west side of the campus core.

SITE ANALYSIS

The art of ***healing comes from nature***, not from the physician. Therefore the physician must start from nature, with an open mind.

Paracelsus, German Renaissance
Founder of toxicology, follower of philosophy, botany, astrology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SITE ANALYSIS | CAMPUS OPEN SPACE

Once this area of west campus core was established, the author biked the entirety of it, focusing on open space and spaces that had room or need for redesign. This led to Figure 4.1, which depicts all the spaces I identified as possible sites for this project.

Blue sites mark the locations of the three existing restorative landscapes.

The green represents green open spaces, either well-used or not (usually dependent on location). Green open space got its own category because, according to Skip Mezger, Campus Planner Emeritus, green open spaces are not just important but valued by the community (Mezger, 2017).

Purple represents open spaces that were characteristically underutilized based on the design, but sometimes were vegetated or had lawn. These underutilized spaces were often designed in a manner that mismanaged the space. For example, the Site #42 in Figure 4.2 is a blank canvas of decomposed granite in the heart of campus in the between Shields Library, the Student Community Center, and the Silo and Silo bus circle, yet there is not even a path for all the students that cut across this space.

Yellow spaces were those that were both green and used quite often but lacked restorative qualities. For example, Storer Mall is a hectic thoroughfare that funnels hundreds of people from north central and west campus to the biology buildings and southeast campus in between classes, but a lack of pedestrian ways meant cyclists and pedestrians shared a third of the corridor's width, with barely-enjoyed lawn taking up the other two thirds.

Campus Open Space Qualitative Analysis Key

4.1 Open space qualitative analysis.


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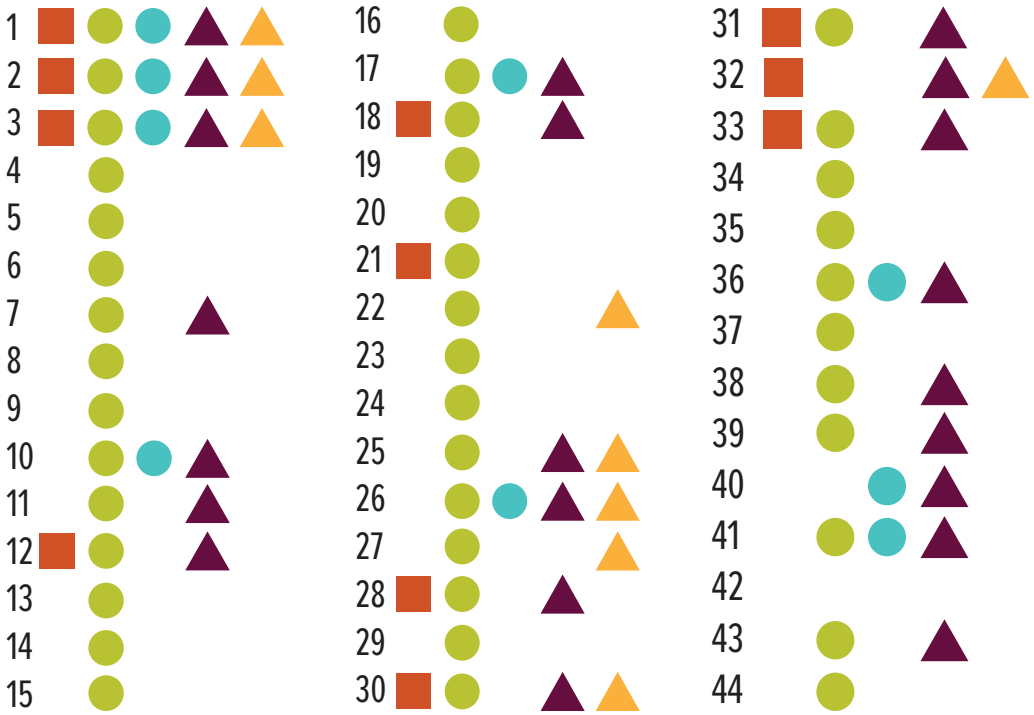
Campus Possible Sites Analysis Key

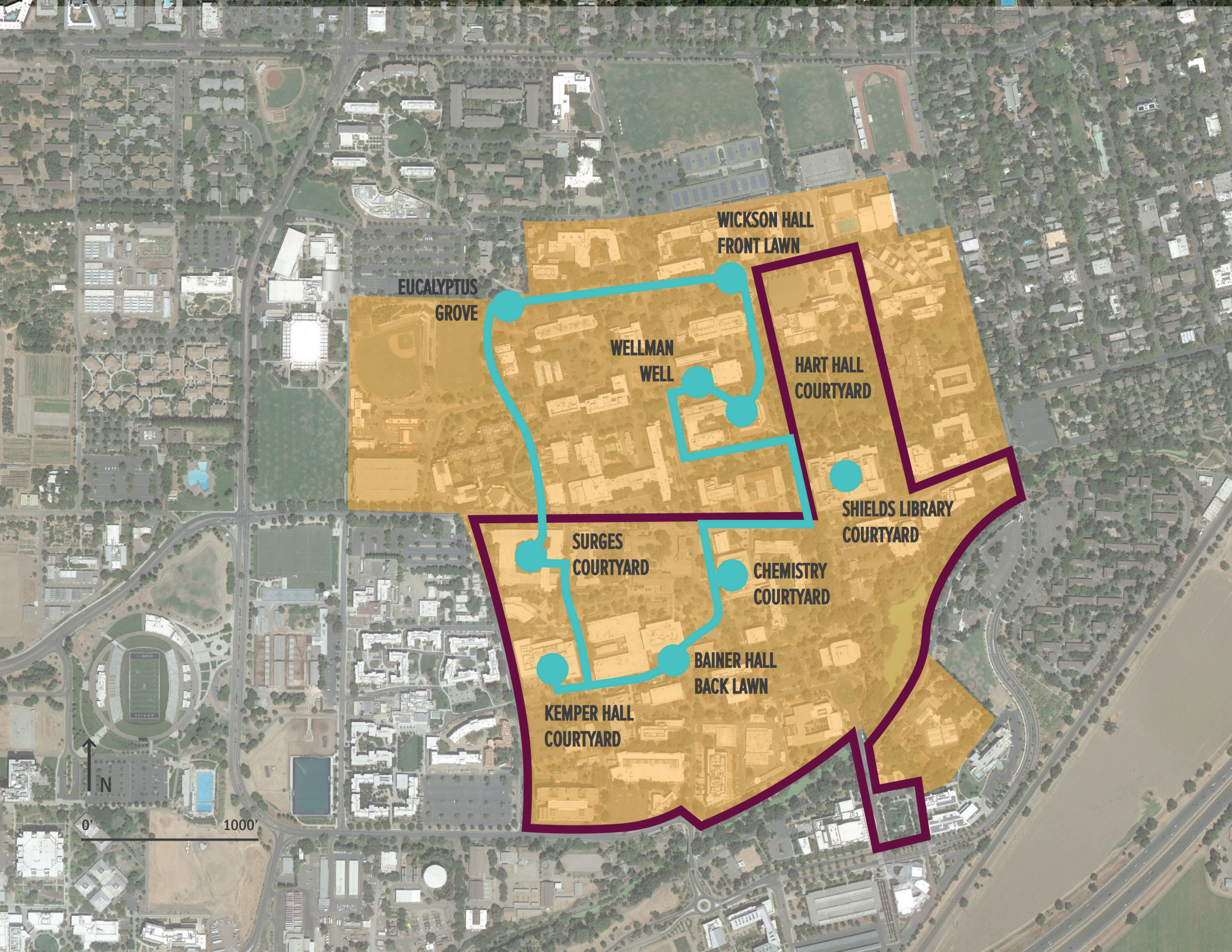
- REDUCES NEGATIVE STIMULI (buffers, screens, simplifies, separates bikes & pedestrians)
- ADDS PLEASING, NATURALISTIC STIMULI (texture, form, naturalness)
- INTIMATE SPACES (small, circular, spiral, pocket spaces)
- LIGHT, PROGRAMMED ACTIVITY (wandering paths, loops, seating, etc.)
- ELEMENT OF WONDER



4.2 Open space restorative quality analysis.

SITE ANALYSIS | CAMPUS POSSIBLE SITES

Having analyzed the overall function of these open spaces across campus, the author then returned to each and checked all against the previously established 5 restorative landscape characteristics, the results of which are presented in Figure 4.2. Aside from the three existing restorative gardens, it was shocking to realize that most did not possess even 3 of the qualities required of restorative landscapes. In fact, 28 of 44 analyzed landscapes had 2 or fewer of the characteristics, with greenery and vegetation being the most common.


WICKSON HALL
FRONT LAWN
EUCALYPTUS
GROVE
WELLMAN
WELL
HART HALL
COURTYARD
SHIELDS LIBRARY
COURTYARD
SURGES
COURTYARD
CHEMISTRY
COURTYARD
BAINER HALL
BACK LAWN
KEMPER HALL
COURTYARD
N
0'
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CAMPUS MASTERPLAN OF PROPOSED SITES

With all this analysis in mind, the final set of sites across campus were identified and checked against the site inventory and analyses. The accessibility and campus coverage were also checked, and are depicted in Figure 4.4, showing the radii of a 2 minute walk to each of the sites. Overall, they help fill in the gaps of the existing restorative gardens and the Active Aggies Loop.

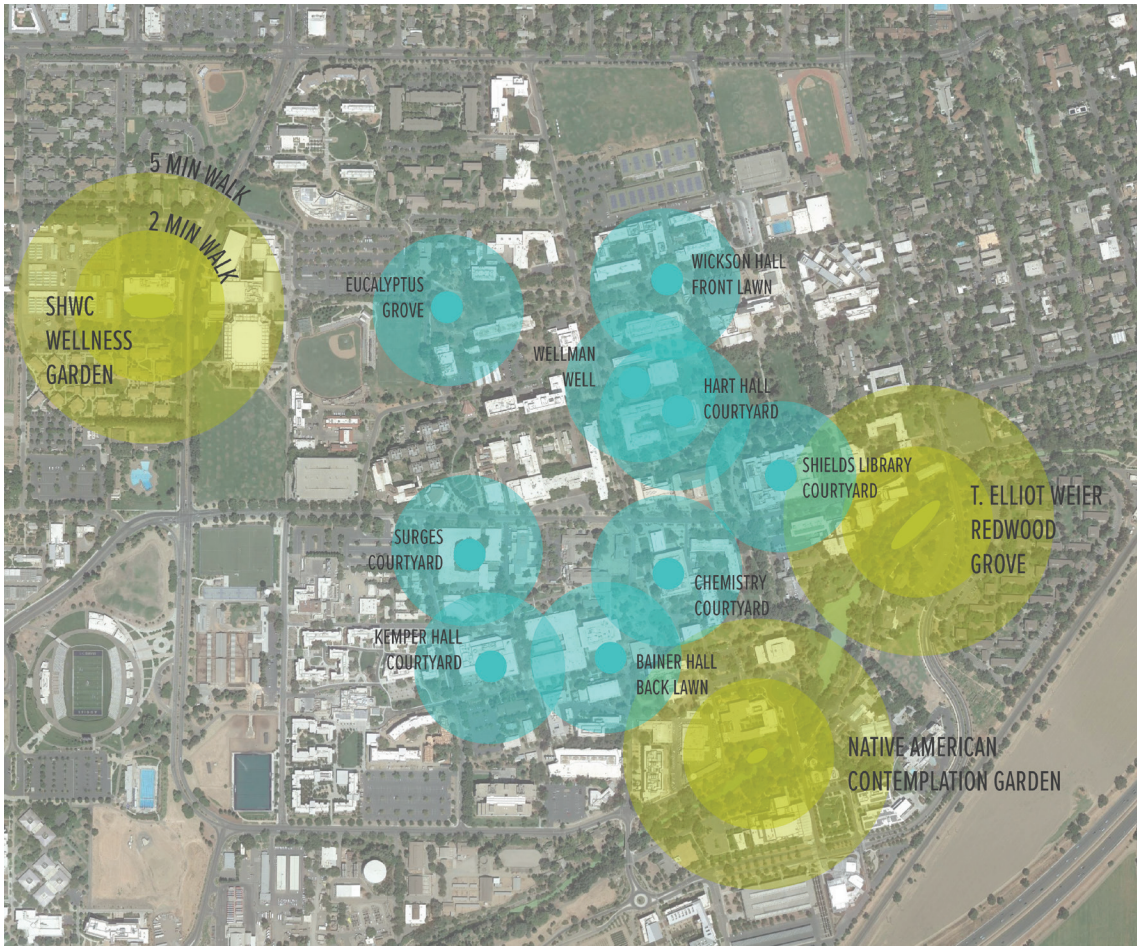
Masterplan Key

Proposed restorative landscape

Proposed node connections

Where students are most during the school day

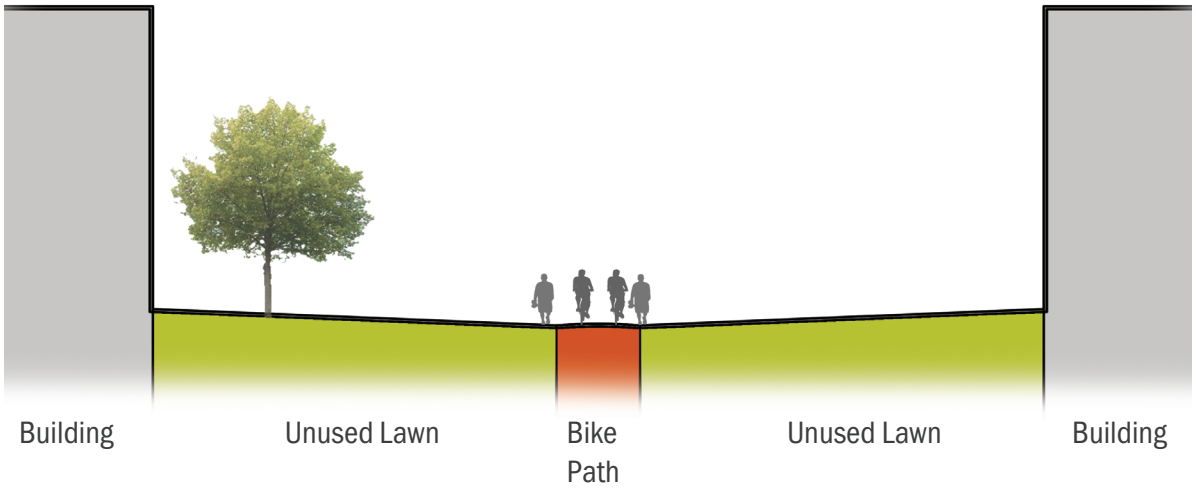
Campus Planning's Active Aggies Loop



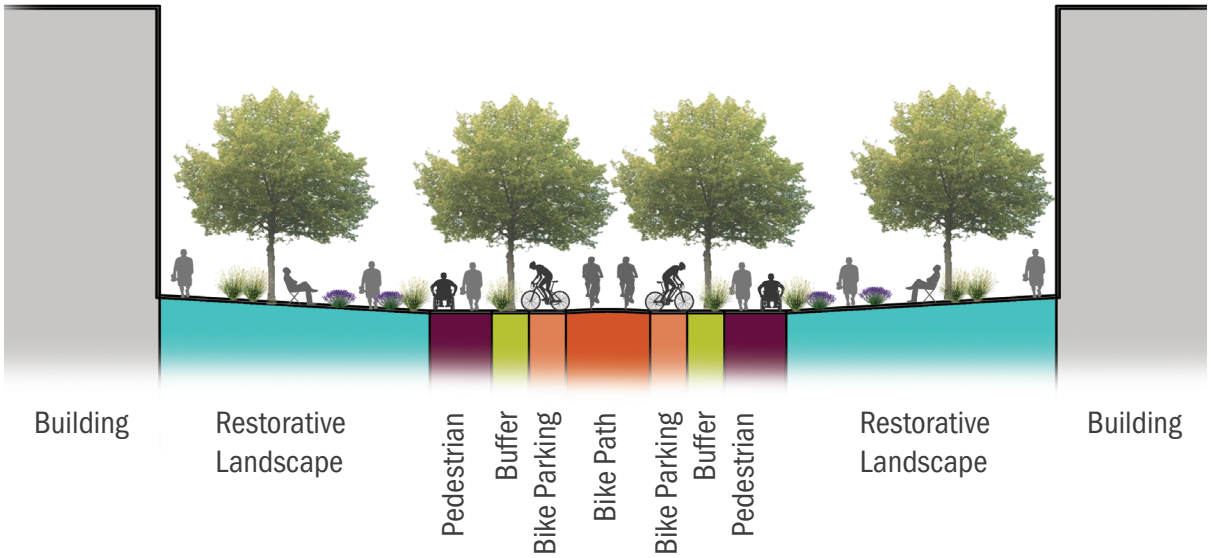
Green sites and radii represent existing restorative landscapes on campus; blue indicates my proposed sites and their coverage.

4.3 (Left) masterplan of proposed sites.
4.4 (Right) walking radii of proposed sites.

4.5 Existing conditions of connection routes.



4.6 Proposed design of connection routes between restorative landscapes.



ACCESSIBILITY

Accessibility of the proposed restorative landscapes is key to the project, so despite proposing several sites, the connection routes between were considered. A rehaul of the way the streets are designed is recommended, part of which is the separation of pedestrians from cyclists. Anyone who attends or works at UC Davis will testify to the dominating bike culture – so dominating that despite legally having the right-of-way, pedestrians are marginalized. Part of this stems from the ease of being able to stop much more quickly on foot than on bike, but there is also the factor of speed and momentum that give bicycles the upper hand. What this means to the student pedestrians is a constant psychological taxation of gauging whether they can get across a road without getting hit, or if there is enough walking space for them to not be hit if there is no sidewalk. Overall, there is also the factor of the negative audial and visual stimuli that accompanies hundreds of bicycles zipping past, the stress for both cyclist and pedestrian being reduced via separation of modes.

For these reasons, the “loop” identified in Figure 4.3 connecting the proposed sites, are routes with a redesign of the streetscape to buffer pedestrians from cyclists. For a before and after comparison, please see Figures 4.5 and 4.6.

SITE ANALYSIS | EXAMPLE SITE: WELLMAN WELL

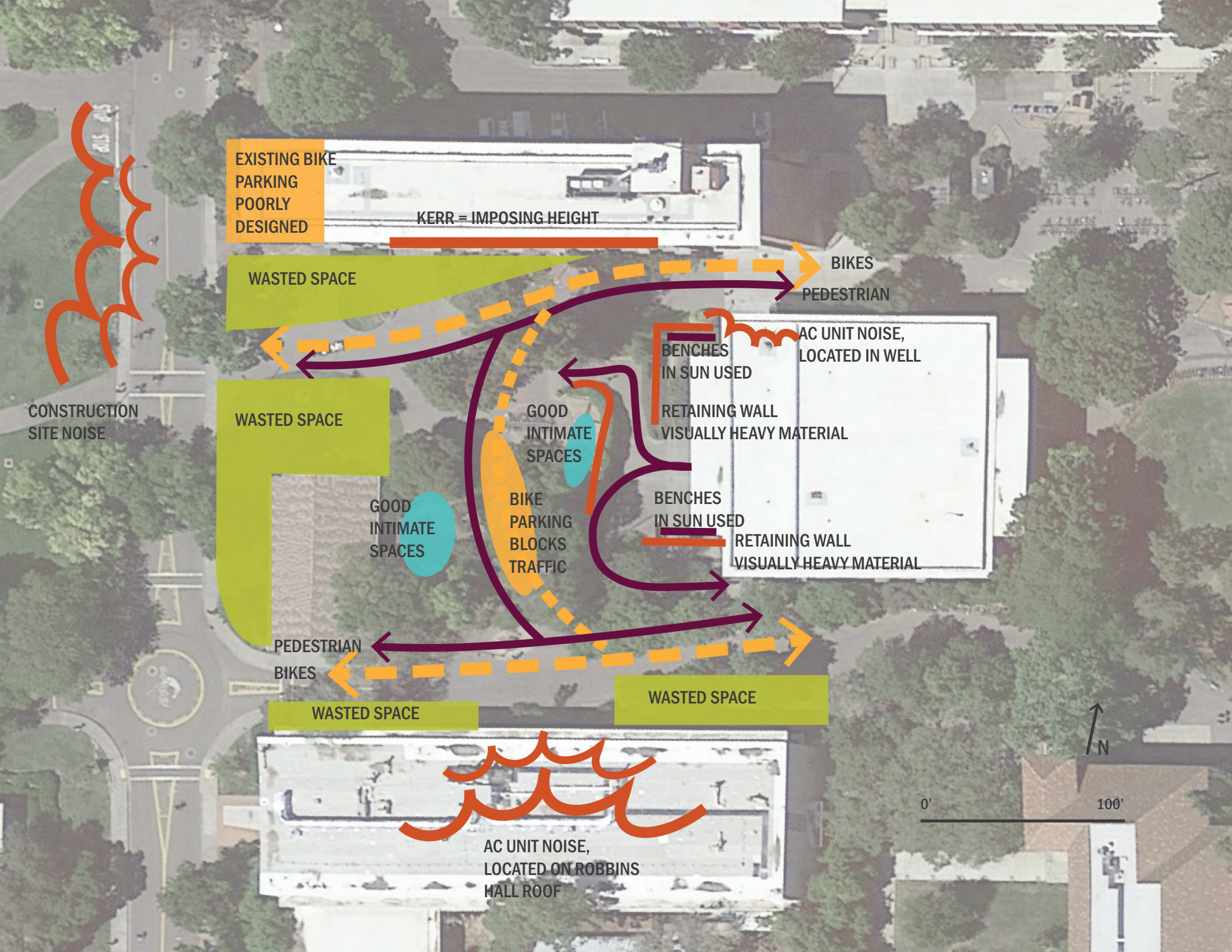
As part of the project, I chose to redesign the Wellman Well (see Figure 4.7), the landscape sunken a story down into the earth to the west of Wellman Hall, to test how the 5 restorative landscape characteristics could be implemented on a college campus. The following analysis is for this site alone, to better inform my prototypical design.

Most and immediately apparent when visiting the site at noon on a school day, is the sheer number of students that pass through the site between classes. The number is in the hundreds in a mere 15 minutes. Wellman Hall has 40-foot-wide throughways on each side of it that and its location makes it a massively popular shortcut on students' commutes to class as it is nestled in the approximate middle of the campus block on which it is located. With no delineation of pedestrian and bike space, it is a chaotic experience to behold. This existing condition is a challenge, but the need is apparent and the space is available to reconceptualize the way these modes of transportation interact and affect the site.

Considering the initial site analysis completed when cataloging all the site across campus, the Wellman Well does design for intimate spaces and programming well. Small pockets are squirreled away in the design for seating, which students and friends occupy often to chat or study before class. The depressed Well itself also buffers some noise due to its topography. These successful aspects are opportunities to build upon when designing for mental well-being.

However, there are a lot of aesthetic and stimulus issues that are problematic to it becoming a restorative landscape. Aesthetically, Kerr Hall's six-story height, unusually tall for Davis, is exaggerated and imposing to a person viewing it from inside the sunken Well. The Well is also built of dark exposed aggregate concrete, which is excessive in conjunction with the Brutalist architecture of Wellman Hall. This materiality is an challenge without a total rehaul to balance out the architecture and site experience. There are also several negative audial stimuli. Construction on the new Hutchison Lecture Hall across California Ave to the West is audible from the site. To the south, Robbins Hall's air conditioning system creates the most noise hear on-site from its roof outlet. Both of these could use better vegetative screening to screen and buffer these negative stimuli. A subtle negative auditory stimulus is the air conditioning outlet that is located within the well. However, this is a much quieter hum than the other two noises and is infrequent, making it less of a concern but still a consideration moving forward into design.

4.7 The Wellman Well.
4.8 Wellman site analysis.


EXISTING BIKE PARKING POORLY DESIGNED
KERR = IMPOSING HEIGHT
WASTED SPACE
BIKES
PEDESTRIAN
AC UNIT NOISE, LOCATED IN WELL
BENCHES IN SUN USED
RETAINING WALL VISUALLY HEAVY MATERIAL
CONSTRUCTION SITE NOISE
WASTED SPACE
GOOD INTIMATE SPACES
BIKE PARKING BLOCKS TRAFFIC
GOOD INTIMATE SPACES
BENCHES IN SUN USED
RETAINING WALL VISUALLY HEAVY MATERIAL
PEDESTRIAN
BIKES
WASTED SPACE
WASTED SPACE
N
0'
100'
AC UNIT NOISE, LOCATED ON ROBBINS HALL ROOF

THE TAKEAWAY

The Wellman Well is a challenge and opportunity all in one. Limiting the scope to screening and working with the existing retaining wall structure might result in failure to create a restorative space. My concluding statements during my site analysis were to think outside the current structure of the Well when designing.

Reduce negative stimuli.

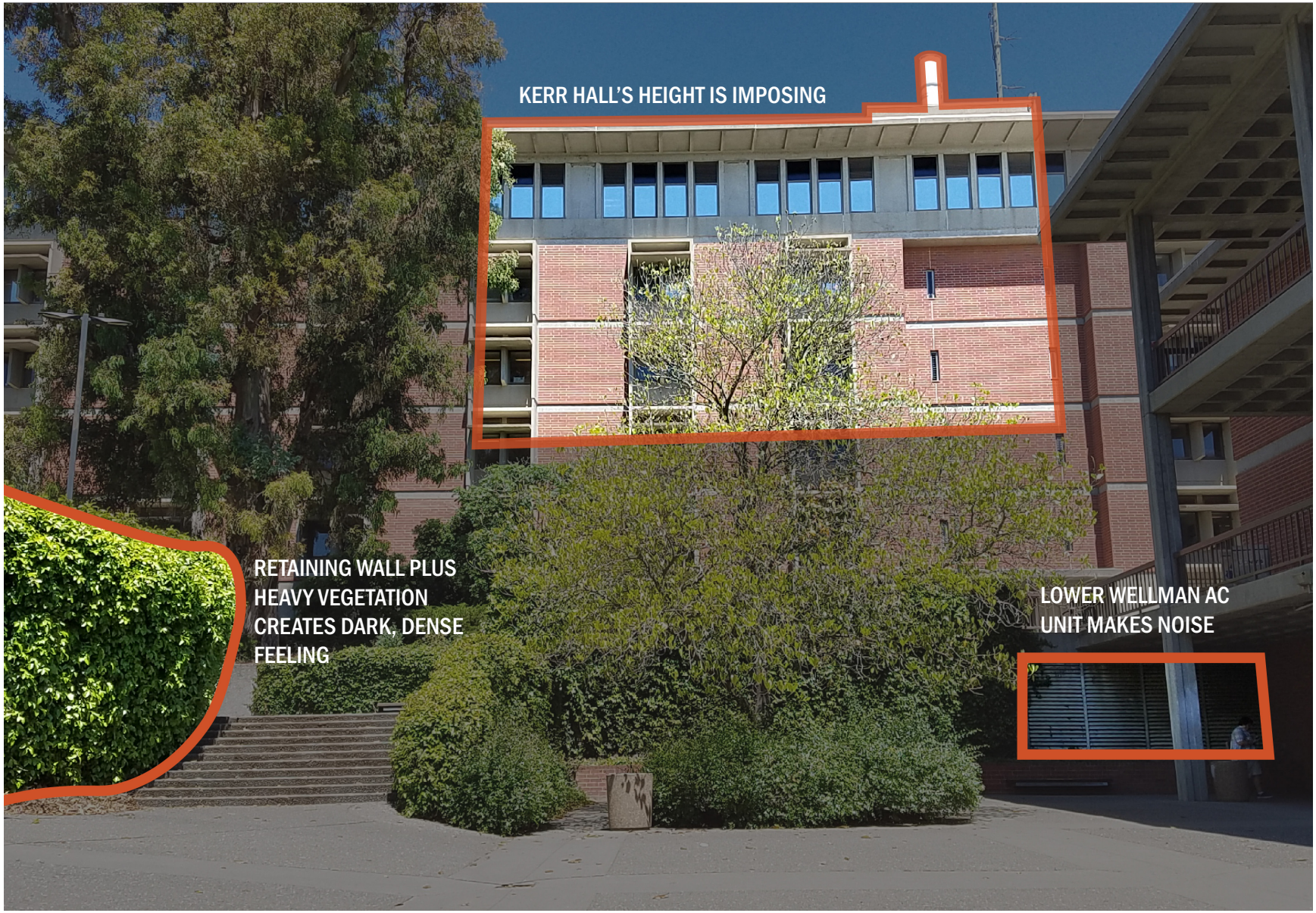
Add pleasing, natural stimuli.

Intimate, protected spaces.

Light, programmed activity.

Element of wonder.

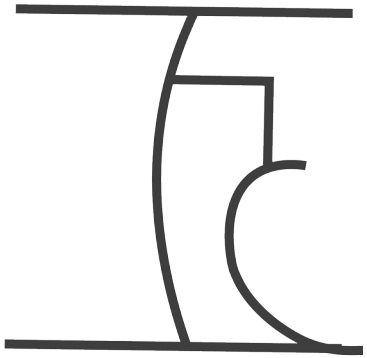
4.9 Existing conditions diagrams.


KERR HALL'S HEIGHT IS IMPOSING
RETAINING WALL PLUS HEAVY VEGETATION CREATES DARK, DENSE FEELING
LOWER WELLMAN AC UNIT MAKES NOISE

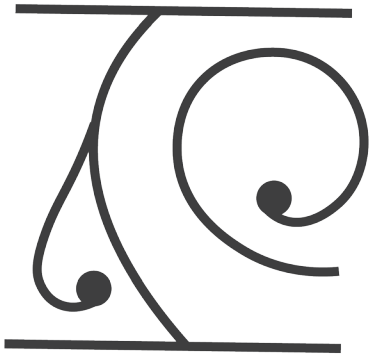
DESIGN PROCESS

Give me odorous at sunrise ***a garden*** of beautiful flowers where I can ***walk undisturbed***.

Walt Whitman, 19th century CE
American poet and humanist



Parti of existing site conditions.



Parti of design scenario, but lacked circulation from lower Wellman Hall despite having intimate spaces.

Parti of design scenario, but lacked looping circulation, despite having intimate spaces.

Parti of design scenario with more wandering paths but no direct routes, and less opportunity for intimate spaces.

Parti of final design, which best allowed for looping and direct circulation, buffering, vegetation, and intimate spaces.

DESIGN PROCESS

The design process is reiterative and circular. For example, researching the history and current literature contributed to my formulation of the design characteristics that make mentally restorative landscapes therapeutic, which then led me to identify the existing restorative landscapes on the UC Davis campus. However, the analyses I then conducted on these existing sites then further molded my concept of these types of gardens. Likewise, the information I gathered from interviewing several relevant and helpful UC Davis designers, planners, and employees informed the masterplan as I performed an independent inventory and analysis of the campus' open spaces, the results of which were often confirmed by the interviews.

This project's process can be generalized as beginning with identification of what the restorative aspects of mental health gardens are and then the identification of sites on the UC Davis campus that fit this and mapping their radii. From here, I also did a campus-wide survey on open spaces and categorized them based on how they compared to these five characteristics. Following this was an inventory of certain aspects of campus, including campus entry points, where students were most concentrated during the week days, on-campus housing, major locations, and the proposed Active Aggie Loop (provided during the interview with Shantille Connolly, Wellness Health Educator).

From this inventory, I chose sites that could be redesigned and that would help cover the campus to capture students when they need to relax the most – at their most stressed. One of these sites is the Wellman Well, which I chose to design as an example and test the question of this project – what aspects and forms of restorative landscape design, most often associated with healthcare facilities, are applicable to a college campus to combat the stresses felt by undergraduate students?

Going into the design of the Wellman Well, I looked at reducing negative stimuli. In the analysis stage, I identified several visual and auditory nuisances, including tall buildings and AC unit noises. In looking to the literature, it seemed that vegetation was the best option, and it would also contribute to the second guideline: adding pleasing, natural stimuli.

For the natural stimuli, I considered John Suesens' recommendation of using soft textures and visual interest (Suesens, 2017). I also drew upon the plants seen across campus for cohesion, as Lucas Griffith, the campus planner stated is a strong consideration in the campus' process (Griffith, 2017).

For the intimate spaces criteria, I decided to add these last in the form of spirals and pockets to make sure these felt protected from the circulation.

Circulation was one of my first considerations, as the site's function requires it. A basic element of creating light, programmed activity for a wellness landscape often comes in the form of looping or wandering paths, so I worked with the concepts of directness and circuity for this characteristic of restorative landscapes.

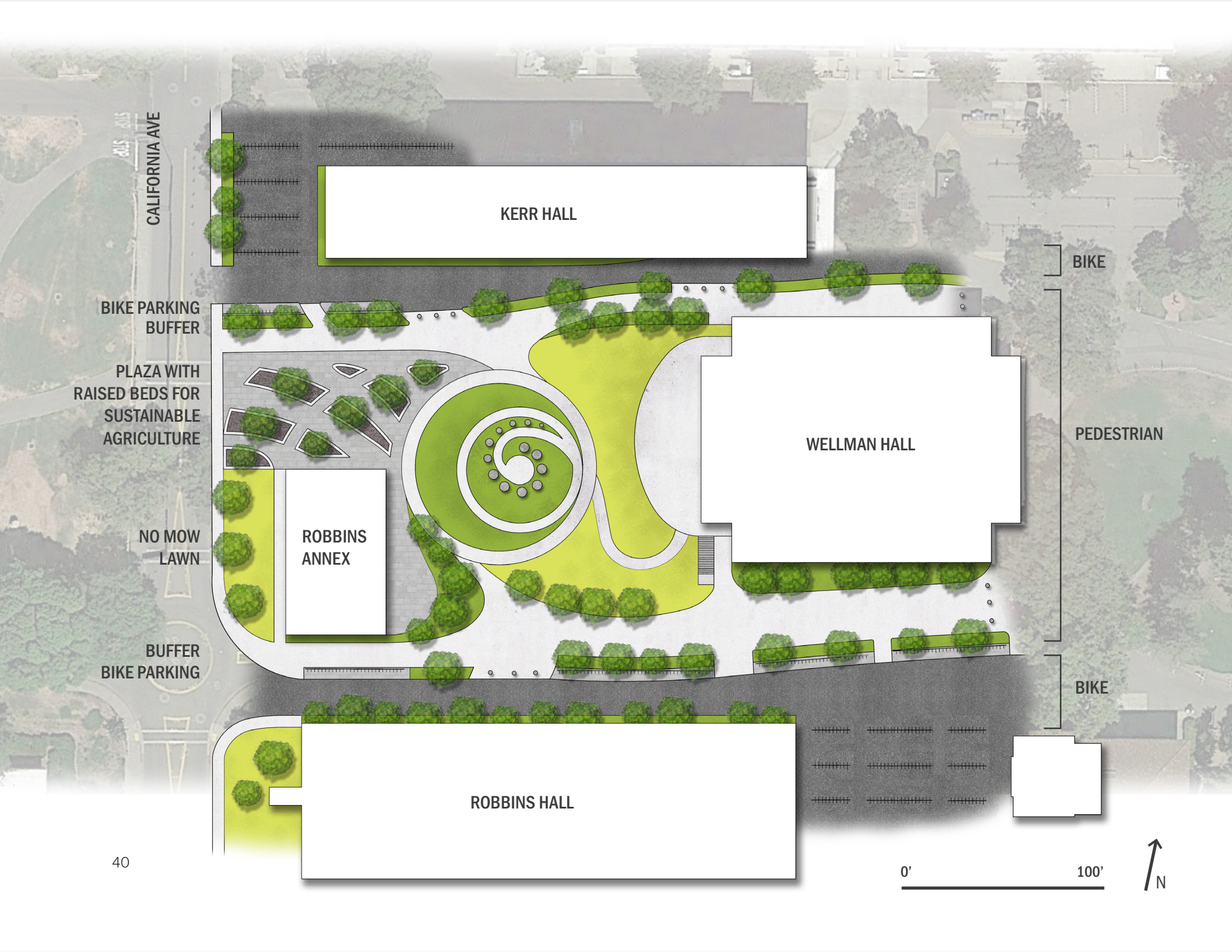
A sense of wonder is hard to purposefully designed for, but my takeaway from a review of the literature suggested old and naturalistic forms, textures, and materials. These concepts guided my design for the element of wonder characteristic of restorative landscapes.

5.1 Process diagrams.

THE FINAL DESIGN

There is no better designer than nature.

Alexander McQueen, late 20th century CE
British fashion designer


CALIFORNIA AVE
KERR HALL
BIKE
BIKE PARKING
BUFFER
PLAZA WITH
RAISED BEDS FOR
SUSTAINABLE
AGRICULTURE
WELLMAN HALL
PEDESTRIAN
NO MOW
LAWN
ROBBINS
ANNEX
BUFFER
BIKE PARKING
BIKE
ROBBINS HALL
0’
100’
N

SITE DESIGN

The Wellman Well, the space to the East of Wellman Hall wherein my site design would be installed, has many unique challenges. Perhaps one of the most threatening to a restorative landscape concept is the current circulation conditions, with bikes and pedestrians in the same space, crossing each other's spaces. Because it still needs to function as a thoroughfare that funnels hundreds of students in between classes, I started looking first at circulation. I created a gradient of fastest-moving bikes and skateboards at the edges to slower pedestrians in the center of the space, with bike parking and vegetation in between the two for as much buffer and least cross-traffic as possible. These spaces would further be delineated via different paving (asphalt for bikes, as is standard on campus, and concrete sidewalk and plaza pavers for the pedestrian-only zone). The pedestrian-only center would also be protected from bikes via bollards at entry areas.

Another huge challenge to the site becoming a therapeutic, restorative landscape is the current topography and materiality. The current Well is sunken twelve feet to meet the doors of the lowest level of Wellman Hall, which has required huge retaining walls of unfortunately dark, exposed aggregate concrete. Kerr Hall to the North is also quite tall, but looks even more imposing from within the Well. All the materials are dark and heavy and along with the Brutalist-style architecture of Wellman Hall, the space is dark and not very inviting. My design tears out the entire "well" and its materials, and replaces it with a sloped hill that is intended to open up the space and soften the materiality with no mow lawn and soft vegetation.

Likewise, the current vegetation in the Well is not very well selected. The imposing, exposed aggregate retaining walls are covered in heavy ivy, and the planters are filled with thick, dark shrubs and low, dense tree-like shrubs. In my design, I remove all these and pull plants from across campus for consistency that fit the textural, formal characteristics necessary of a wellness garden. I have specified soft-looking no mow (and low water) lawn, soft grasses and shrubs like deer grass, pink muhly, and lavender. The tallest shrubs would be in the buffer planters and along the rim of the outer circle to create an intimate space within the circle area; however, these shrubs would be no higher than waist-high and would utilize the proposed topography for creating a volumetric quality of space. Tall trees would also be in buffer areas to screen the buildings, which seem taller from within the Well.

Overall, the goals of the site are to simplify and open up the space. One area I also did this was in the plaza space just north of the Robbins Annex. Since the annex houses the sustainable agriculture group, I designed the plaza to have raised planters with seatwall sides in which sustainable agriculture practices could be demonstrated while keeping the space open. The plan-view forms were chosen to allow pedestrian traffic to flow through.

The final element is the sense of wonder in the design. To pull on the forms of the monolithic rocks in the Mounds south of the Silo social hub in south campus and the waist-high monoliths in the Native American Contemplative garden in the Arboretum, I chose to use rock monolith that increase in size to follow the innermost spiral path. In addition to looking cohesive with other parts of campus, rough-hewn rock is a naturalistic texture conducive to restorative landscapes, and that also references ancient structures like Stonehenge that have captured the human imagination for ages.

6.1 Wellman site plan.

6.2 Wellman Well Section Elevation

0’ 15’

6.3 Wellman annotated perspective.

COMPARISON TO RESTORATIVE LANDSCAPE CHARACTERISTICS

Characteristic 1: Reducing Negative Stimuli

- Vegetative buffering of bike traffic.
- Bollards to separate traffic.
- Delineation of traffic via different paving.
- Vegetative buffering of droning noises from air conditioning units on Robbins Hall.
- Vegetative screening of eye sores like Kerr Hall.
- Visually simpler and cleaner in materials and composition.
- Removal of retaining walls.
- Removal of exposed aggregate concrete.

Reflection on Applicability to Campuses

The main challenge associated with reducing negative stimuli on a campus is the space available. The more urban the campus, the more compact design needs to be, and less space can be afforded to buffering. However, any campus can keep in mind materiality when designing and can replace dark, heavy, non-naturalistic materials fairly easily for existing sites.

Characteristic 2: Pleasing, Naturalistic Stimuli

- Soft textures of vegetation.
- Vegetation with visual interest year-round, whether in bloom or otherwise.
- Materials like stone and wood that are closer to materials found in nature.

Reflection on Applicability to Campuses

There are not many challenges to this restorative landscape characteristic. Even with limited space, vegetation can be injected into the design. The challenge is more in selecting materials and plants that serve a restorative function while still lasting the intense wear of campus life.

Characteristic 3: Intimate Spaces

- Tiered slope design.
- Ring of shrubbery around middle intimate area.
- Swirl pattern ends in center with small seating space.
- Volumetric outdoor seating space, east of Robbins Annex.

Reflection on Applicability to Campuses

The main challenge to providing protected, intimate spaces to socialize or be alone is in prioritizing. The more hectic the site is, the harder it is to include intimate spaces that still allow for direct paths of circulation for students on the way to class.

Materiality

Wood.

Boulders.

Decomposed granite.

Stone.

Plant Palette

Light texture & movement.

Soft texture.

Visual interest.

Form without sharp features.

Pleasing form.

Visual interest.

Seasonal interest.

Low water & maintenance.

6.4 Materiality & Plant Palette.

Characteristic 4: Light Programmed Activities

- Paths are direct enough for circulation while still being circuitous for wandering.
- Change in elevation for light exercise.
- Mixture of sloped and stepped paths for variety.
- All paths other than the stairs southwest of Wellman Hall are ADA accessible.
- Seating throughout site, some moveable.
- Sustainable agriculture plots in plaza.
- Open spaces for programming like morning yoga.

Reflection on Applicability to Campuses

Light, programmed activity can be challenging, depending on the type. Seating and viewing points are easy to incorporate and are usual parts of campus design. However, the circuitous paths often beneficial in restorative wellness landscapes are a challenge in campus design, as it is necessary to allow direct routes through any site, as students will often make their own desire path if not provided one.

Other programmed activities like yoga or meditation spots are difficult from the coordination end. While space can be provided for such activities, it won't be used as such unless successfully partnered with campus programs.

Characteristic 5: Element of Wonder

- Spiral monoliths in center of swirl.
- Hanging plants in honeycomb-like recesses underneath Wellman Hall balconies.

Reflection on Applicability to Campuses

Designing the element of wonder was one of the most difficult of the characteristics to include. Engendering a sense of wonder is challenging to purposefully create. For example, the sense of wonder someone in the Redwood Grove at UC Davis feels is dependent on the redwoods' size and age. This particular case, the redwoods, would not be applicable to a university in a more urban setting with limited space. Another challenge beyond space and size is that a sense of wonder often comes from age and materials not found or appropriate to a campus. That is, a new college would not have historical elements already existing that could be highlighted through design, and something like a DG path (to mimic an old sylvan trail for example) is not ADA compliant.

CONCLUSION

Plants talk to us at all levels, molecule to molecule and spirit to spirit. They ***facilitate healing that is potent, profound, and life-affirming.***

Marlene Adelmann, present day
Founder and director of the Herbal Academy

CONCLUSION

While it should be noted that landscape is complementary to mental health programs, our surroundings have a great impact on our psychology, and the environment is an opportunity to help combat stress on college campuses. Many aspects of therapeutic landscapes apply to campus design, while others are more challenging to incorporate.

What Was Learned

Design strategies like excluding poisonous plants, including seating, having variety of space, creating intimate spaces, and selecting vegetation and materials that have naturalistic and pleasing textures are most applicable. Creating wandering paths and viewing points are slight challenges depending on the specific location on a college campus (with more central sites like the Wellman Well being more difficult). Simple, clean forms and design can also be challenging depending on centrality and usage of the site selected for design. Community building activities like yoga, gardening, tai chi, etc. can be challenging to coordinate depending on the individual campus' ability to coordinate programs. Finally, creating a sense of wonder can be a challenge depending on what is appropriate to the local climate. For instance, incorporating a water element is very psychologically beneficial to the mind and yet is inappropriate to the Mediterranean climate of most of California. The element of wonder could be an opportunity to coordinate with any art or design programs on the specific campus.

Where We Could Expand From Here

This project concludes with a call not for more theorization but implementation and experimentation on college campuses. Ultimately, this depends on funding, as this is a large constraining factor to campus design and development (Mezger, 2017). Many proposed projects also have little connection to other mental health programs on campus, the tackling of which could be the next step in the field.

APPENDIX

APPENDIX

Interview 1

Christina de Martini Reyes, Campus Landscape Architect

A set of questions was sent to Christina de Martini Reyes before interviewing via phone call. The following questions were sent in the email:

1. What do you mostly work on as a Campus Landscape Architect?
2. What types of projects do you work on?
3. What is the focus of UC Davis when designing the campus? / What are the biggest considerations?
4. Have you been involved with any projects or programs dealing with mental well-being for students?
5. How much emphasis does UC Davis put on mental health during the design process? Does it have any policies on this front?
6. How much does the Campus Planning Dept consider mental health?"

During the interview the following questions were also asked:

What opportunities or obstacles would there be to implementing a proposed checklist or guidelines to the campus planning process that considered mental health and well-being?

Have you ever coordinated with on-campus programs like those run out of North Hall to program outdoor spaces?

INTERVIEW ANSWERS (paraphrased notes written while interviewing)

Question 1 Answer:

Part of the Campus Planning.

Report to Bob Segar

Campus Landscape Architect does more site-specific design

But does tie into planning

Some work with the long range plan

Duties include plan review, any project that touches the landscape

she just consults because it's a small office, so no CDs (construction documents)

Works closely with Grounds and representing their needs

Making sure Campus standards are up to date

Construction visits

Question 2 Answer:

Work to site buildings, when it gets to development what sites; sustainability; bike and pedestrian circulation' CONTEXT around it, relates to it

Context was greatly emphasized

Sense of consistency and thoughtfulness

Make feel whole, not necessarily noticeable on-site

Question asked: How do you choose sites?

Choosing sites considerations:

Funding is a HUGE driver

Some get put on the back-burner with lack of funds

Some projects just pop up because suddenly funding comes in for it

Question 3 Answer:

Safe and engaging space (one of the biggest considerations)

Otherwise, the answer to Question 2 covered the rest of the considerations

Questions 4-6 Answer:

While mental health is in the background, it is not a huge, formal part of the process.

Question 8 Answer (asked out of order):

Have not partnered with North Hall but definitely would but have not with mental health (yet implied)

Recommendation to interviewer: look into the Legacy Loop and contact Shantille Connelly, who is the health educator and might know about any policy or document guidelines.

They do the medical center nursing school, where they focused on mental well-being for the nursing students and not the patients because the patients don't go there.

Question 7 Answer:

Policy is a negative term to designers, so maybe frame as guidelines for considerations while designing.

But the idea of guidelines does sound helpful to better incorporate mental health into the campus design.

Would create intentionality and help organize the thought behind it.

The obstacles would be:

Viability of available effort varies depending on funding
Energy behind designs, think context
Christina is willing to help guide - a general question right now, but if it gets narrowed down, she can set up a meeting to talk and discuss specific sites to choose based on her contextual knowledge – knows where people are, where there's traffic, etc.

Interview 2

Skip Mezger, Campus Landscape Architect Emeritus

A set of questions were formulated ahead of time, and asked as needed (the questions not asked were because they had been answered to satisfaction as part of the dialog of another question).
Question 1:
The job deals with everything outside in terms of looks and function
Coordinate with Grounds
Rehab problem areas
How it works
Funding is a major issue
Vice Chancellor of Campus Planning, Bob Segar is a trained Landscape Architect, so the dept has become more landscape-oriented
Focuses on gathering spaces for students
Great at looking at the picture from big to small perspective
Working with the Arboretum
Questions 2 & 3:
Everything outside of the buildings – sprinkler head to master plan
Coordinate with DCM (Design Construction Management)
How does it work?
Planting
Circulation
It is classic landscape architecture, but SUPER fast-paced to the extreme, can have up to 60 projects at a time
It is more management than anything, but Christina is managing to do more design.
Question asked by interviewer: Do you normally contract the work then?
Yes, not often breaking into the design the way the project is broken up, because of time.
Conceptual still, contracted Landscape Architects do the schematic design
Mental illness?
Underlying but no formal part of the process.
Consider lighting (safety), flow of traffic, etc., which relates.
Make sure to correct hazardous situations (e.g., Kleiber Hall drive had accidents with cell phone usage increase, so had to update)
Checklist addressing mental health and well-being?
Would be very beneficial
Could implement that and formalize mental health into the process. Important but haven't had time to write out a document.
Recommended by Skip Mezger to the interviewer:
Native American Garden
Garden Walk, beginning at the Math bldg. & Arboretum, and running West – designed to keep out bikes
UC Davis sign field area at the intersection of A St and 2nd St was potentially going to be developed but recognized the restorative value

of open space, so Skip argued against.
Hutchison field was once going to be developed into dorms, but significant push-back from both the Davis and UC Davis community stopped that
Community involvement is very important to mental health
Again, open space's restorative value can't be forgotten.
Could there be an opportunity for community feedback? (could take a master plan and design to the quad or CoHo for feedback?)

Interview 3

Lucas Griffith, Campus Planner

Actually currently working on the Healthy Campus Network council
Recommends Clare Cooper Marcus for the subject
Some history: public health and planning used to go hand in hand, but were separated around the turn of the century. Now they are trying to relink the two.
Looking at mental health on campus: walkability and safety are main issues.
Recommends defining restorative gardens and who they're geared towards.
Schizophrenia comes out in this age, and schizophrenia can lead to danger to others and self (active shooter scenario)
Define what the threats are to mental health on campuses.
Currently working on a council for mental health: Healthy Campus Network (NOT the Healthy Campus Initiative).
The differences: HCN is recent and from the UC President order to make the UCs the "healthiest (I think he actually said happiest??) places to work, learn, and live in the world"
Report due June 16th, so overly ambitious
Only have had two meetings, so not much to be said yet
Looked at all active programs and compared to the World Health Organization's criteria for health
Report will tell plan to make happiest place to work, learn, and live
Some funding for OP
HCN goals: 3 A's:
Accessibility to all
Awareness (currently have 40 different programs and not one solution to health on campus, plus people hardly know of any of them)
Active – advocacy, physical activity, choices
For the Healthy Campus Initiative, talk to Shantille Connolly, employee of Student Health and worked on the guidelines (Pick ____ of 10 choice programs, and implement).
Working on Active Aggies Loop (2 mi loop through campus)
Marked with Disc epoxied to pavement
Discussed how to maintain interest over time/ keep people coming back to the loop.
Solution: themes (art, spring bloom, autumn).
This will go where people go.
Currently updating the public/open space plan
Physical Design Framework
Open space plan in masterplan.
Typology – e.g. wildland, rural ag land, core campus with utilities, etc.
Goal of PDF is to have "neighborhoods" centered around a new "quad" all across campus for those not right by the quad.
Silo area is getting a total rehaul.
Recommendation for my project:
Need to admit the physical environment is

incredibly important but must also have programs and incentives that promote mental well-being.
E.g. Norway: on Fridays, employees are allowed to leave 30 min earlier, if with colleague – and it actually increases productivity throughout the week.
Your project should give a physical framework for programs to be implemented in.
Create an armature plan for design to be implemented upon if you just want to focus on the planning end.
Living Landscape Adaptive Plan
Plan looking at resilience to climate change.
Pines and Redwoods aren't going to be staying.
Sustainable for people, too.
Wellness – innate in humans to respond to nature.
Biophilia Hypothesis is a book on how we're hardwired for nature.
There's an article on redefining beauty by the author of Granite Garden about beauty being the ecology of it
Remember: mental well-being gardens need to be diverse for all cultures because different cultures find different things calming.
Great Streets book by Allan Jacobs wherein he did a reduction of buildings and people's reaction to Modernist buildings. People didn't actually like.
Using outdoor environment to celebrate.
Recommendation: gear your project towards the job you want after school.
Analytical on planning if you want to do planning
Toolkit for designing outdoor spaces.
Sounds like you want these microgardens
Design small intimate spaces across campus and focusing on courtayrds
Maybe look at Shields Library courtyard.

Interview 4

Shantille Connolly, Wellness Health Educator

You work with the Healthy Campus Initiative and are working on the Active Aggies Loop?
Healthy Campus Initiative focuses on physical activity, food, etc.
Installation of marked loop 2 miles in length.
Markers every half mile.
ADA accessible.
Repaving certain parts for tripping hazards.
In addition to the markers, there is also an online story map – identify spots
Can virtually walk or pull up on your phone [and walk]
Is there a design for the connections in between highlights – beyond the markers?
No, the connections are accessible routes.
[see the previous comment about repaving and accessibility for all]
Looking for no altercation between bikers and pedestrians
Safer routes
What are the circles (that look like nodes)?
They are the attractions.
The loop highlights buildings, markers, art installations along the way.
The main goal of the loop:
Connect people to different parts of the campus
Social connectivity.
What do the markers look like?
They look like storm drain markers (shows

them), but will say “Active Aggie Loop” at the top.
Do you have any programs to help draw people into the space? I was considering how to activate the space.
Could consider faculty walking hours.
It’s a difficult challenge – how do you get someone to do that?
After showing her my site analysis materials:
There’s a lot of resources already you could look at:
Hydration map
Nap map
Physical activity map
There’s currently talk of a zen zone map
You have a lot of data, should take this to ISG.
They will use data for their maps.
Should talk to Camilia, I will send you her information.
For the Healthy Campus Network, looking to make peaceful locations for studying or holding meetings.
Should also look in to Nature Rx on campus.
Started at Cornell
Stacy Parker helped set up the one here.

Interview 5

John Suesens, Quadriga Inc.

UC DAVIS WELLNESS GARDEN
Was there an RFP/proposal process? How did they pitch the project?
There was an RFP, teamed with the architect.
Debbie Arnez
Focused on programmingin the design.
The original concept was to support health center programs - a park course with outdoor equipment in back, which was removed over process (value engineering).
Plus, garden for wellness (no bees, non-threatening, soft materials, no thorns, etc.)
Instead of removed equipment, included edible garden - fruit trees along East added at the last, dwarf pomegranate, persimmon, sage, plum, dwarf orange.
Also included loop system in final design - prescribed laps for patients, stairs for variety.
What were Quadriga’s considerations when designing? Were there special considerations?
No bees, no thorns, no threatening aspects, soft materials, looping paths, mild exercise and seating.
Layer plant material for color and interest year-round, helps feel relaxed, subconsciously, no strong aromas, or other senses.
Included traditionally medicinal plants and signage identifying.
What part of wellness were you designing for?
Relaxation.

UC DAVIS NATIVE AMERICAN CONTEMPLATIVE GARDEN
This is more geared towards reflection than mental health, but restorative landscapes facilitate contemplation.
The circular form is often used in mental health landscapes that are restorative - why?
Loops are good because don’t need to make decisions, dead ends = bad.
Special sequence of events.
Guiding in and out of a space.
Bring in.

WORKS CITED

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Abkar, M., Kamal, M., Maulan, S., Mariapan, M., & Davoodi, S. (2011). Relationship between the Preference and Perceived Restorative Potential of Urban Landscapes. HortTechnology, 21(5).

Academics. (2016, January 09). Retrieved from https://www.ucdavis.edu/academics/

Academic Rankings. (2017, March 24). Retrieved from https://www.ucdavis.edu/about/rankings/

American College Health Association. (2015). [University of California Davis Undergraduate Executive Summary Spring 2015 | American College Health Association National College Health Assessment II]. Raw data.

The American Horticultural Therapy Association. (2003.) http://www.ahta.org/

Berto, R. (2005). Exposure to restorative environments helps restore attentional capacity. Journal of Environmental Psychology,25(3), 249-259. doi:10.1016/j.jenvp.2005.07.001

Bhargava, K., & Bhargava, D. (2007). Evidence Based Health Care A scientific approach to health care. SULTAN QABOOS UNIVERSITY MEDICAL JOURNAL,7(2), 105-107.

Buehler, T., & Handy, S. (2007). Fifty Years of Bicycle Policy in Davis, California. Transportation Research Record: Journal of the Transportation Research Board. doi:10.3141/2074-07

Connolly, S. (2017). [Interview 5]. Unpublished raw data.

Cooper Marcus, Clare, and Barnes, Marni. (1999). Healing Gardens: Therapeutic Benefits and Design Recommendations. New York: John Wiley & Sons.

Cooper Marcus, C., & Sachs, N. A. (2014). Therapeutic Landscapes: An Evidence-Based Approach to Designing Healing Gardens and Restorative Outdoor Spaces. Hoboken, NJ: John Wiley & Sons, Inc.

De Martini Reyes, C. (2017). [Interview 2]. Unpublished raw data.

Furgeson, M. (n.d.). Healing gardens. Retrieved May 08, 2017, from http://www.extension.umn.edu/garden/landscaping/design/healinggardens.html

Gerlach-Spriggs, Nancy, Richard Enoch Kaufman and Sam Bass Warner, Jr. (1998). Restorative Gardens: The Healing Landscape. New Haven, CT: Yale University Press.

Griffith, L. (2017). [Interview 4]. Unpublished raw data.

Hartig, T., Evans, G. W., Jamner, L. D., Davis, D. S., & Gärling, T. (2003). Tracking restoration in natural and urban field settings. Journal of Environmental Psychology,23(2), 109-123. doi:10.1016/s0272-4944(02)00109-3

Hartig, T., & Staats, H. (2003). Guest Editors' Introduction: Restorative environments. Journal of Environmental Psychology,23, 103-107.

Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. Journal of Environmental Psychology,15(3), 169-182. doi:10.1016/0272-4944(95)90001-2

Kaplan, R., & Kaplan, S. (1989). The Experience of Nature: A Psychological Perspective. CAMBRIDGE UNIVERSITY PRESS.

Kuitert, W. (2002). Themes in the history of Japanese garden art. Honolulu: University of Hawaii Press.

Lofland, J. (n.d.). Davis History. Retrieved from http://www.davishistoricalsociety.org/1-2-nine-periods-of-davis-history

Mezger, S. (2017). [Interview 3]. Unpublished raw data.

Pasini, M., Berto, R., Brondino, M., Hall, R., & Ortner, C. (2014). How to Measure the Restorative Quality of Environments: The PRS-11. Procedia - Social and Behavioral Sciences,159, 293-297. doi:10.1016/j.sbspro.2014.12.375

Suesens, J. (2017). [Interview 1]. Unpublished raw data.

Tennessen, C. M., & Cimprich, B. (1995). Views to Nature: Effects on Attention. Journal of Environmental Psychology,15, 77-85.

UC Davis Staff. (2012, August 14). UC Davis is Recognized as America's 'Coolest School' Retrieved from https://www.ucdavis.edu/news/uc-davis-recognized-america%E2%80%99s-%E2%80%98coolest-school%E2%80%99/

Ulrich, R. (1984). View through a window may influence recovery from surgery. Science,224(4647), 420-421. doi:10.1126/science.6143402