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Redesigning Pitzer's East Mesa Parking Lot

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Abstract

Pitzer College's East Mesa parking lot has been greatly outgrown and hardly adapted in its history. This thesis aims to redesign the lot as something highly usable for the present as well as the future needs of the school. At the core of the design are three design principles: Biophilic design, Human Centered Design, and adaptable architecture. I also pulled conceptual ideas from three precedent buildings from both on and off campus. The on-campus sites are Pomona's "The Hive" and Harvey Mudd's "Makerspace" and the off campus site is JaJa Architects' PARK'N'PLAY. Utilizing each of the three principles in conjunction with the design precedents I created a parking garage that addresses parking needs and utilizes the large footprint of the parking lot to expand Pitzer's Environmental Analysis program to a much larger space in addition to implementing climate resilient design such as solar energy and water retention. This project is an example of applicable forward thinking building as the design world looks to how it must adapt to climate change.

Key Words: Green design, Biophilia, Human Centered Design, Adaptable Architecture

Introduction

Many Pitzer College students who drive on campus know the frustration that comes with getting to class during some of the more popular class times, especially an 11:00 am start. If you are coming from off-campus you are likely to drive around in circles in the East Mesa parking lot, which sits at the entry corner of the campus, waiting for someone to get in their car for an undesignated space to open up. As you drive around you would likely see storage containers in the far east row of parking, blocking off five to ten parking spaces that would otherwise be open to students as well as more than a few empty spaces that are designated as visitor, faculty resident, or van spaces. While there are a few spaces near this lot on campus, the main alternative for when the East Mesa lot is full is parking on Claremont Boulevard, a high traffic, higher speed, four lane road that sits just to the east of the parking lot. The annoyance that may come by passing up the empty spaces designated for other purposes frequently causes students to take these parking spots, despite the chance of receiving a parking ticket. Not only does this affect the student, but also the visitors or resident faculty that would have otherwise parked there.

Imagine instead that as you drove into campus from Claremont Boulevard that you saw a multi-use building boasting nearly twice as many parking spaces topped with an Environmental Analysis common that holds classrooms, social areas, gallery space and a rooftop that generates clean energy and captures water that would otherwise run off of the impervious parking lot surface. There would be no stress about getting to park on campus rather than on a busy road, and the nature of the building means that all parking would be covered, keeping it cool from the sun and dry from the rain. This building is my proposal for what a more effective use of space could look like in the East Mesa parking lot area.

Pitzer College is well known as a prestigious, environmentally focused liberal arts college (U.S. NEWS, 2022). This reputation opens a door for Pitzer to model forward thinking campus development for other institutions around the country. But how does this reputation manifest itself in the school's design? Across Pitzer's campus you can see functional and attractive multi-use in action. Both in the buildings as well as outdoor spaces on campus students can be seen studying, socializing, having meetings, or working on personal projects. These activities happen in spaces designed both for individuals and groups such as the Grove House, study rooms, and coffee shops and outdoor spaces such as the Mounds, the green space at the center of campus. Pitzer students utilize the spaces given to them for all sorts of daily activities, allowing a deeper engagement with the physical spaces around campus.

While much of the campus is brilliantly designed for high usability, the East Mesa parking lot is in stark contrast to this. Not only does it have only a single purpose for most of the people who use it, but students, faculty, and staff often struggle to find parking spaces. Throughout the year, much of the farthest row is taken up by storage or construction containers, leaving parking spaces there entirely unusable. When the parking lot fills, overflow parking is directed to Claremont Boulevard, but the traffic on this road is quite fast and there is no overnight parking on the street.

Clearly use of this space has outgrown its footprint and necessitates redesign to adapt to the current and future needs of the campus. Creating a new build standard parking garage is a huge use of resources that have little value outside of what the lot acts as now, which is singular use. Creating something like a large parking garage certainly goes against Pitzer's core value of environmental sustainability in a period when climate change and air pollution in the region are

also pressing issues. Instead, what is needed is a new structure that will add to the mix of campus spaces already in place, meet the current needs of Pitzer's community, as well as give flexibility to adapt to the future needs of the campus. While there is demand for more parking, the parking lot space should become more usable for people on campus and include some environmental benefits. Each of the other campuses within the consortium have found secondary uses for their parking areas. Pomona and Scripps top their garages with usable green space and Claremont McKenna's underground lot does not take up any of the campus's footprint. Most recently Harvey Mudd installed solar panels over the parking lot, generating clean energy for the college to use and consequently making the parking lot much cooler on hot sunny days. Pitzer has failed to adapt its surface lot at all since its construction (Pitzer College Archives). The installation of six electric vehicle charging stations in 2019 and adding three more recently is, at best, a modest beginning of the conversion to support for electric vehicles that is already needed and will only be in greater demand in the next decade. In addition to creating a multi-use space within the structure itself, thinking about future potential needs of the college is important to creating an impactful design.

Instead of building something that only has the capacity to address present issues, why not build something that can be transformed to meet many different future needs? Using the principles of adaptive architecture and user centered design, even something like adding more parking spaces can be done with an eye toward sustainability. The desire for higher density construction and better public transportation are becoming greater, and it is important for Pitzer, in its position as an environmentally centered liberal arts school, to be ahead of that curve and have a campus that can shift away from most individuals bringing a car to campus. As a school

that promotes environmental sustainability as a core value, the administration and board should be looking into design strategies of the future. Modeling a parking garage that is multi-use and can be easily transformed into something else altogether is an excellent way to highlight adaptable green design innovation.

Literature Review

As sprawl becomes both less desirable and less available, creating more efficient spaces is crucial to the future of design. One way to create a space that is more usable is to combine principles of human focused and high-density design. Utilizing both principles together push the field of architecture and design into the future. In this literature review I will discuss the literature on biophilia, adaptable design, human centered design, and their intersection in order to set the stage for the redesign of the Pitzer East Mesa parking lot.

With climate change becoming a facet of nearly every field, green design has emerged as an avenue to keep design firms at the forefront of development. Much of the literature on green design also discusses biophilia and place-based design (Thomson and Newman, 2021, Cabanek et al., 2020, Kopperoinen et al., 2014). While place-based design is often used to preserve the native ecosystem of a project, biophilia additionally addresses the user's relationship with the space.

Many scholars have dealt with the issue of designing for the future. Much of the literature on forward thinking design is rooted in principles of placemaking, sustainability, and adaptability. In this literature review, I will discuss the work most relevant to the East Mesa parking lot redesign project around green design and user driven spaces through the

aforementioned concepts of biophilia and human-centered design, in addition to principles of adaptable architecture and how they contribute to usable spaces.

Biophilic Design

Biophilia has emerged as a key element of the green design world (Thomson and Newman, 2021, Newman et al., 2020, Reeve et al., 2015). Causing undeniable health benefits such as lowered heart rate and blood pressure is one major reason that the field has taken such an interest in this topic, however, another set of benefits that are slightly less human centric are "hydrological, air quality, and biodiversity" improvements (Reeve et. al, 2015, Browning, 2016). Reeve's article details the Biotope Area Factor (BAF) as a requirement in Berlin of building sites to include a proportion of the new building to be ecologically beneficial. Some examples of this are permeable surfaces, green roofs, and green walls.

This utilization of space bridges the gap between the two paradigms outlined in Thomson and Newman's *Green infrastructure and biophilic urbanism as tools for integrating resource efficient and ecological cities.* As Thomson and Newman discuss, there is a split between resource efficient and green design-based plans. In many ways, these two are at odds with each other. Where resource efficient cities prioritize density, green designs look to decrease density in order to improve green space. By following the BAF, builders can both utilize the density of cities while increasing the quality of green space. This combination effectively addresses the problems of inefficient sprawl and lack of connection to place as it relates to the environment. In a suburb, the BAF can be used to increase the likeness to a city with similar

benefits of density. While suburbs and cities may differ in density, many suburban plans fail to incorporate proper green space in the same way that cities do, meaning biophilia can be equally important to include.

Human Centered Design

Human Centered Design, developed by the Stanford Design School and Herbert Simon, centers around four principles. First, that it is person-centered, which fits with typical design thinking. This would mean creating parking space big enough for what the college may be planning for in terms of enrollment, but not so big that it encroaches on other aspects of Pitzer life. Secondly, Human Centered Design is meant to address the root problem, not a symptom. The problem that this project would address is the changing of needs of the college over time. Instead of addressing the symptoms by building for one need, then building for another we can design for both. Third, this school of thought requires one to think of a whole system. In this case, the system includes the core values of the college, primarily but not limited to social and environmental responsibility. It also includes more concrete aspects such as transportation and construction. Finally, Human Centered Design's fourth principle is about continuous evaluation and testing of the design. While prototyping is not very realistic for something like a parking structure, with an adaptable design the space can be tested for different uses as soon as it is constructed.

Human Centered Design is a principle that is currently used primarily in the user experience of the digital world such as apps, websites, and virtual reality settings. However, the

key principles of this framework are also useful for designing physical spaces. The idea of Human Centered Design, as Joseph Giacomin explains, is to consider the entire user experience, and involve users throughout development of an app (Giacomin, 2014). In many ways, this is similar to principles of community planning. The purpose of the space, which in Giacomin's case is virtual, is to be "physically, perceptually, cognitively, and emotionally intuitive" (Giacomin, 2014, 5). Essentially, the spaces that are designed in conjunction with people are best for continually engaging the people spending time in that space. In a physical setting this would be the people that regularly visit the space or are looking to engage with the space more often.

Battarbee and Koskinen refer to user experience in design as both addressing utility and pleasure, but highly lacking in collaborative experiences (Battarbee and Koskinen, 2005). This seems particularly important to include when using user experience to design a public space, far more than when designing many products that user experience centers around in the online world. Because of this crucial difference in physical experience, leaning into Battarbee and Koskinen's notion of co-experience seems imperative to a successful design. The authors claim that interactionism - meanings are produced through interactions between people - creates a more dynamic design that better achieves the goal of engaging users in the process (Battarbee and Koskinen, 2005). While measurement, empathic, and pragmatist approaches are all approaches that address different aspects of human interaction, they leave out the very human experience of other people changing their experiences.

This project is centered around usability of space. This usability is focused on the current patrons of the space - students, faculty, and staff that spend time at Pitzer College - as well as future versions of these groups. Keeping in mind user experience, a Human Centered Design

approach will be crucial to designing a space that people want to be in. This concept is currently being used heavily in the tech development world but should also be applied to design of physical spaces.

Adaptable Architecture

Scholars debate minimum parking requirements and need for these spaces at great length, but a far fewer number look to what the space could be used for if not for parking (Chester et al., 2015). One article suggests that a parking lot or garage has a service life of 50-75 years (Malysheva, Generalova 2020). That short time period is not long enough for a structure or space that is adaptable to the current needs of the community. Instead, the infrastructure easily becomes obsolete and needs replacement.

Retrofitting can be a key aspect to revitalizing an underused space, and further the idea of retrofitting could be applied to Pitzer's community in a bigger sense than a single design project. While retrofitting is in a slightly different category than adaptable design, the two are linked in a way that cannot be overlooked. *Sprawl Retrofit* author Emily Talin explains some areas where retrofitting parking areas is especially important - parking adjacent to major public transit, parking near high population density areas, places where parking disrupts the connectivity of the space, and where it is affront to the public realm (Talin, 2011). These are all places that would dissuade people from using the space for other, possibly greener, modes of transportation such as walking or biking. Aside from transportation, the space is unusable for any other social or

educational uses. It also forces the space to have an undynamic purpose for a concept that is stuck in the past in terms of sustainability, and out of place on a walkable college campus.

To address the future potential needs of the school, I will be using adaptability architectural principles, deemed by the American Institute of Architects as "design for adaptability, deconstruction, and reuse" (American Institute of Architects, n.d.). The idea allows spaces to serve a purpose until that has been accomplished, then pivot to something else when a new need arises. For example, Pitzer currently has a need for more parking spaces on campus. This issue can be solved by building space for more parking, but perhaps at some point that need will become lessened, and the college will be in need of more classrooms, offices, dorms, or social areas. While a traditionally constructed parking garage would then become obsolete and likely require demolition before a new space could be created, adaptive architecture would allow it to transform from the first need to the second.

Instead of replacement, infrastructure such as parking lots should be designed with the future in mind. Rather than addressing only the current need of more parking spaces, designers should look to the future that is trending towards more accessible public transportation (Malysheva, Generalova, 2020). While somewhere like the Pitzer parking lot is currently undersized with just over 200 undesignated spaces, that number of parking spots may suffice if proper access to public transport is developed in the near future. So, while a larger parking structure may be needed to address the current needs, that structure should also be adaptable to a time when Pitzer students, faculty, and staff no longer have a need for as many personal vehicles.

Balancing adaptability and Human Centered Design is particularly difficult because they fall on different ends of the "loose-tight" fit design spectrum (Schmidt, Austin, 2016). The

authors discuss how both tight fit architecture, designed for specific use of the space, and loose fit architecture, designed for no specific uses, are both results of adaptable design. Further, they discuss how the tight-fit approach is building centric, leaving the occupants to move around the constraints of the building, while loose-fit requires the building to change according to the occupants (Schmidt, Austin, 2016).

While Schmidt and Austin's point has merit, another viewpoint claims that adaptable architecture can easily install temporary features to best meet current needs of the occupants (American Institute of Architects). While this sort of design still involves changes, they can mainly be made superficially rather than needing new construction materials such as steel, concrete, or large amounts of timber. This flexibility is crucial to the redesign of the Pitzer East Mesa parking lot because designing as a parking garage leaves a blank slate for future uses. While converting from a parking garage specifically to a residential, educational, or commercial space may not be as seamless as a transition between similarly designed spaces, the sturdiness and size of the parking garage frame lends itself to high adaptability.

These ideas, Human Centered Design and adaptable architecture along with biophilia, will ensure a longevity and usefulness of the project that many architectural designs lack. Instead of the community fitting to the design, this design will be fit to the community.

Background

The Pitzer East Mesa parking lot lies in the southeast corner of Pitzer College's property. When entering the Claremont College campuses from Claremont Boulevard it is the first part of campus to be seen to the right. Bounded on three sides by roads, this area is a relatively high

trafficked area for the colleges. Claremont Boulevard to the east is the easiest public road to access Pitzer and the eastern side of CMC. Ninth Street to the south of the lot, when not obstructed by construction, provides a through street that runs between CMC and Pitzer then between CMC and Scripps, all the way up to where it bumps into Pomona's campus. The western edge of the lot is bordered by Pitzer's service road where regular deliveries and moving drop offs and pickups take place. The one direction not bounded by a road is the northern edge of the lot. The building to the north houses three floors of first year dorms as well as the admissions office.

The lot itself, positioned in the corner of campus, is a large allotment of space, around 310' by 275'. There are 273 parking spaces with twelve admissions guest spaces, ten faculty resident spaces, nine designated electric vehicle charging stations, ten visitor spaces, ten handicapped spaces, and six spaces for Pitzer vans. In addition to designated spaces, the farthest row of parking is often filled with storage and construction boxes, which currently take up seven spaces. This leaves 209 spaces for students to regularly park in in the East Mesa parking lot.

In the past two years this number of spaces has not been enough for students who bring their cars to campus. Overflow from the designated student lot has spilled into street parking on Claremont Boulevard or parking in spaces that have a designated use such as faculty and staff or admissions. Parking on Claremont Boulevard is undesirable not just because it is at the edge of campus, but because of the high speed of traffic and inability to park overnight. Instead, the designated parking spots are often the secondary choice of students after undesignated spaces in the East Mesa lot. Though this limits other's use of the lot, with the East Mesa lot being the

primary parking location on campus, students are left with little option when the rest of this lot as well as the small Holden lot, which sits immediately east of McConnell dining hall, are filled.

Methods

The design process cannot be linear. It is in an iterative, but reflective flux until the project is ready for implementation. This said, there is a point of beginning, the understanding of the site, from the widest scale to the most detailed.

Site Analysis

Current site from Northern edge, top of grade

Current site entrance - Southern edge, bottom of grade

Drainage area - Southeastern corner of East Mesa parking lot

Site analysis is crucial both to understand the problem that will be addressed - the current size of the lot being too small - as well as understanding the area for the purpose of how it can be developed. Site analysis involved taking measurements of the parking lot, counting the number of spaces and their distinctions such as student parking, faculty parking, resident faculty parking, handicapped parking, or electric vehicle charging stations. Landscape site analysis included identifying drainage patterns and current landscaping. The plants in the lot are mainly drought resistant plants such as cacti, but the site is also home to several tree species including Coast Live Oaks, Yellow Trumpets, and Mesquite. This step also included softer analyses such as what the space is used for on a regular basis aside from parking. This includes storage, shuttle pickup and drop offs, and recreation space.

Design Creation

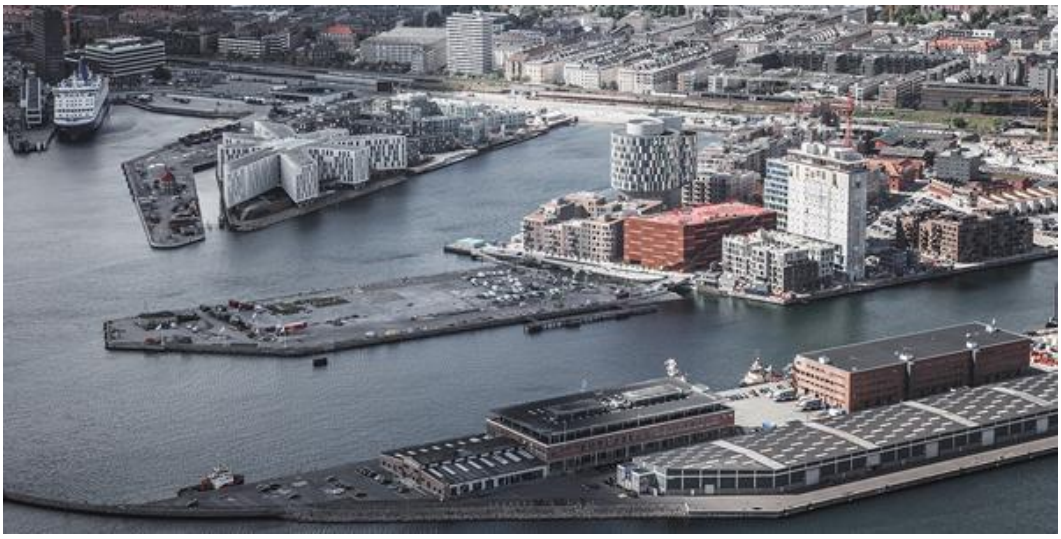
The design phase begins with the broadest design concepts: identifying the core principles of the design. What the design should feel like and what specific goals the design should meet both fall into this category. Programming is the next step. This step entails dividing up the space, allocating how much will be dedicated to studio space, social space, and educational space among others. From here materials can be chosen. These materials must reflect both the programming, what the space is being used for, as well as the core principles of the design. Finally, decisions on the use of materials will be made.

As is made clear from the process laid out above, each phase builds on the phase before. This means that in order to make a change, it must reflect the previous steps and alter the steps that follow.

Design

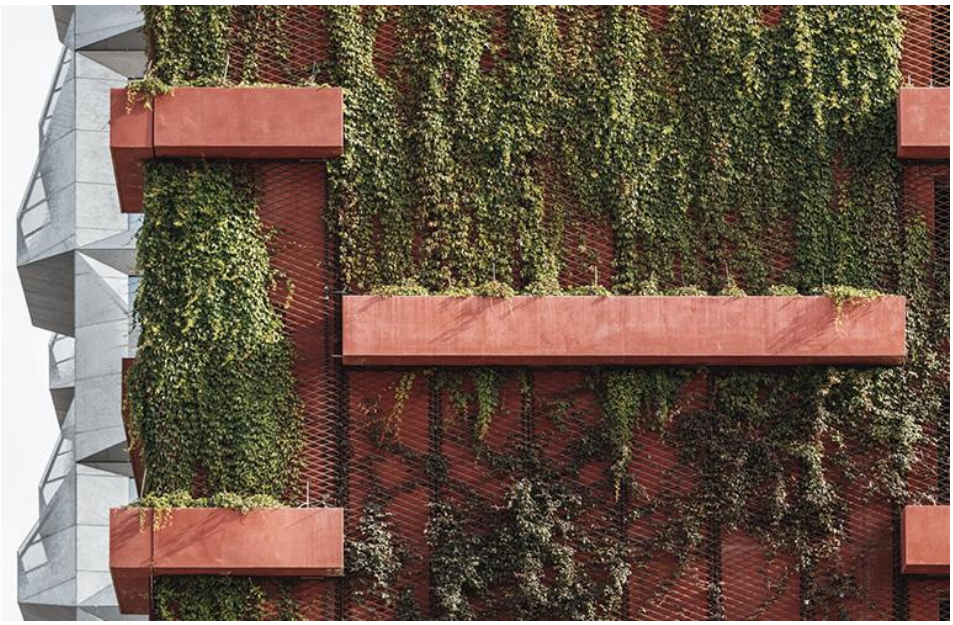
The Precedents

Integral to this project was identifying an example of a multi-use parking structure. After some searching, I came across Konditaget Lüders (PARK'N'PLAY), a parking garage designed by Jaja architects in Copenhagen, Denmark. This parking garage has several aspects that are not typically important for an infrastructural building. First, the design of the exterior is centered in the local environment. The color scheme and art on the side of the building represent the historical and current visuals of the neighborhood that it sits in: the red color is meant to mimic the brick that used to dominate the building materials around this port, and the art on the side depicts "tales from the harbor" over history (Jaja Architects, n.d.). In addition to the art, as shown below, the main side of the building acts as a green wall, with planter boxes spaced around the grid of the structure holding vines that creep across the wall. While there are certainly parking structures with both green wall aspects and place-based art, not many are topped with a community space. This garage's roof is a playground and social space for the public to enjoy. The rooftop play area is designed for people of all ages to come together and enjoy the rooftop and the beautiful views (Jaja Architects).



Surrounding area of the Konditaget Lüders parking garage with Konditaget Lüders in the center

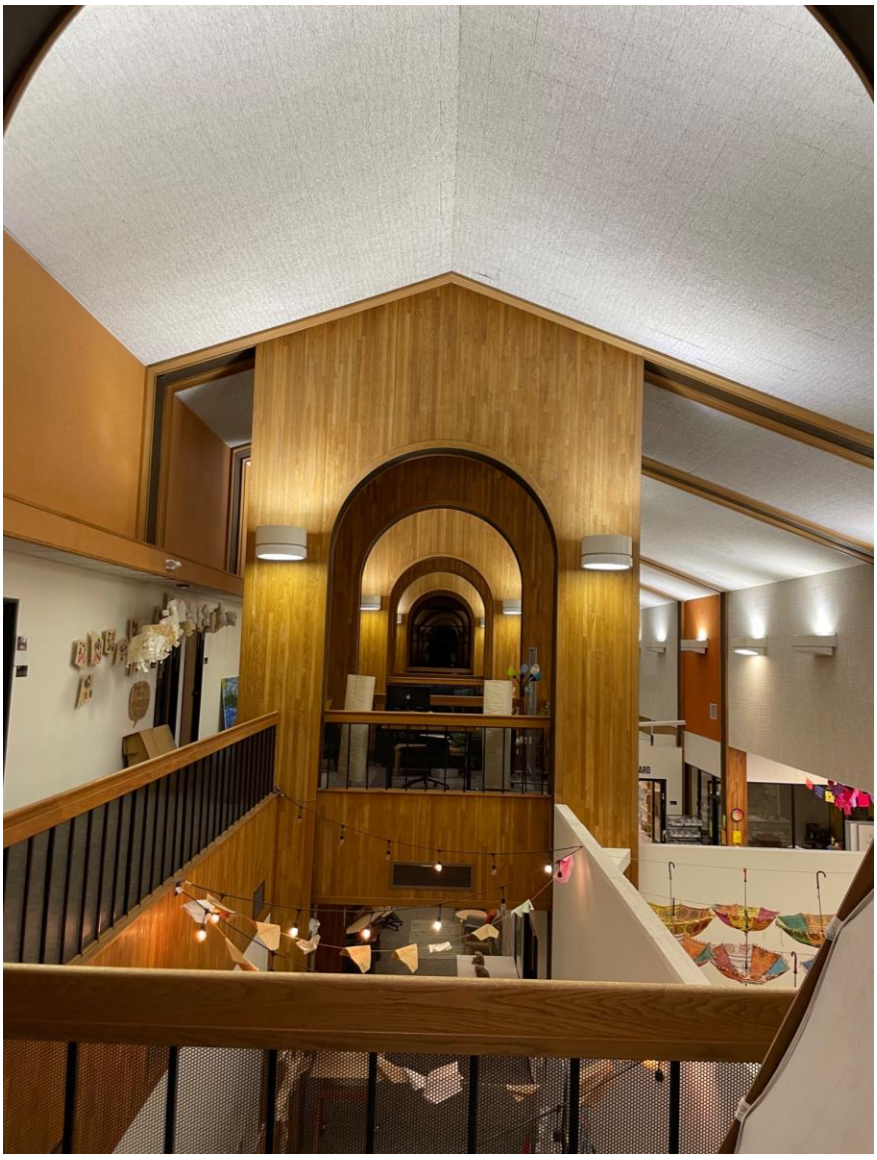
Rooftop view of Konditaget Lüders parking garage



Green wall on Konditaget Lüders parking garage

The design for the environmental analysis commons of the parking structure takes into account both spaces that Pitzer is lacking and dedicated spaces throughout the consortium that are well-used by the community. The buildings that came to the top of mind were Harvey Mudd's "Makerspace" and Pomona's "The Hive." Both buildings have been designed as spaces for hands-on creation. While The Makerspace boasts technical tools that embrace the STEM focus of Harvey Mudd, The Hive is centered around "collaborative creativity" (The Hive).

I took interest particularly in The Hive in part for its adaptable design. As you walk through on the first floor it would be difficult to recognize the temporary nature of the floorplan. There are rooms dedicated to quiet study, hands on crafts, and group projects that are all cut out for their purpose. While some of the areas utilize the original building's structure, if you head to the second floor you will see that many of the spaces have been built as semi-temporary structures rather than permanent ones. (See images).



Second floor of Pomona’s The Hive

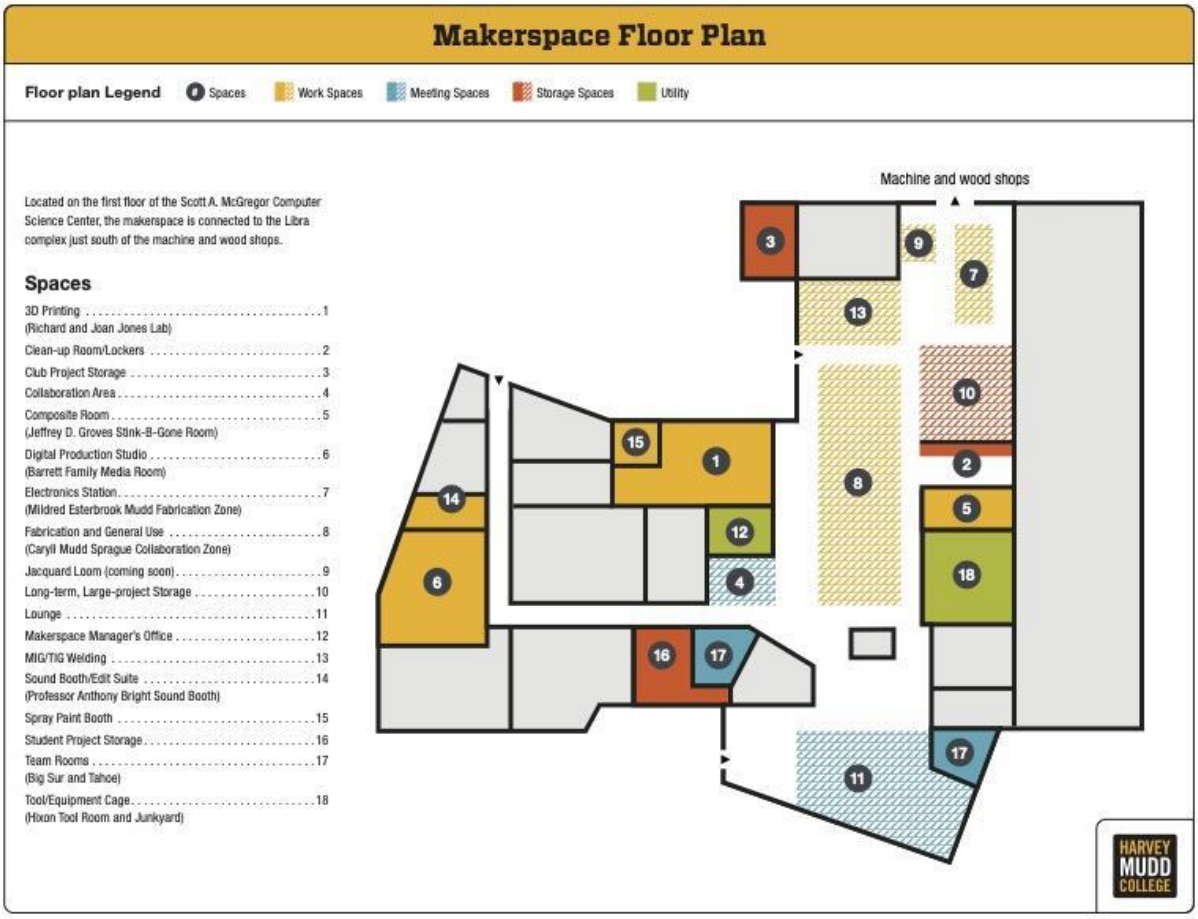
Closed classroom at Pomona’s The Hive

View into temporary classroom at Pomona's The Hive

These more temporary structures break up the large space into smaller sections with designated functions. While the more classroom style spaces are airy and bright from the large windows and open ceilings, some of the study spaces are tucked into corners or in dimly lit rooms which creates a cozier feel. Each section lends itself to what happens inside of it from ability to move around and noise levels to how much empty space is open for students to display work.

Harvey Mudd's "Makerspace" uses a different approach to having many different uses in one building. With just a couple of exceptions, the only closed off rooms are for storage. Most of the floorplan is open allowing students to easily look over at what a peer is working on at the sewing station, for example, while they are doing woodworking. The nature of what is in the building certainly lends itself to a more open floor plan as the space is almost entirely used for hands-on creation rather than the broad spectrum of activities hosted at "The Hive". The lack of divisions invites more collaboration across mediums.

Harvey Mudd's Makerspace



Harvey Mudd's Makerspace Floor Plan

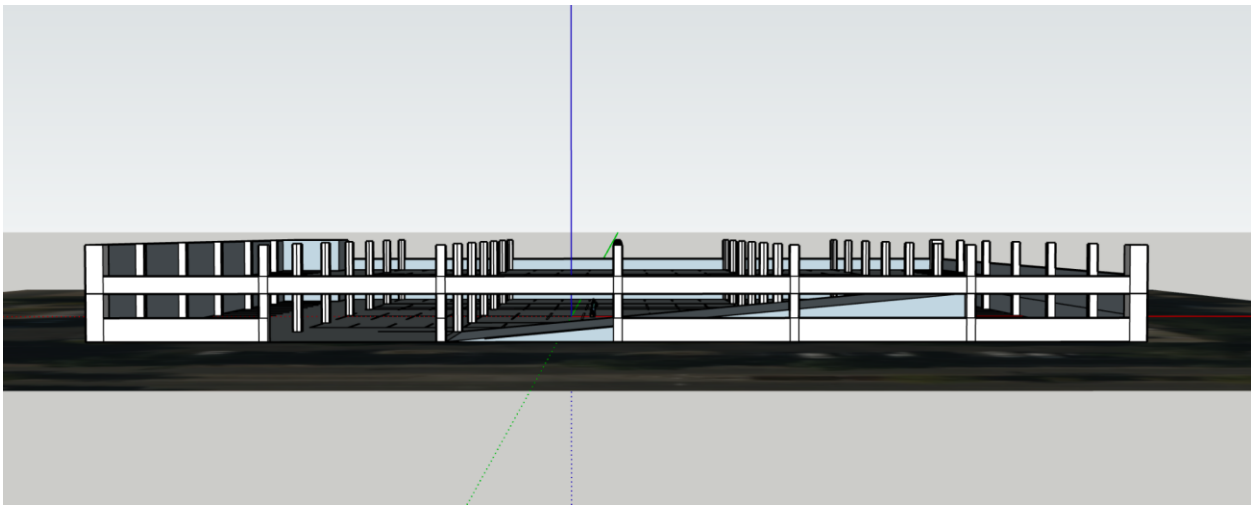
Both designated spaces and collaboration are important to the environmental analysis commons floor of the East Mesa parking garage design, so integration of the two concepts was essential to create a highly flexible space.

The Build

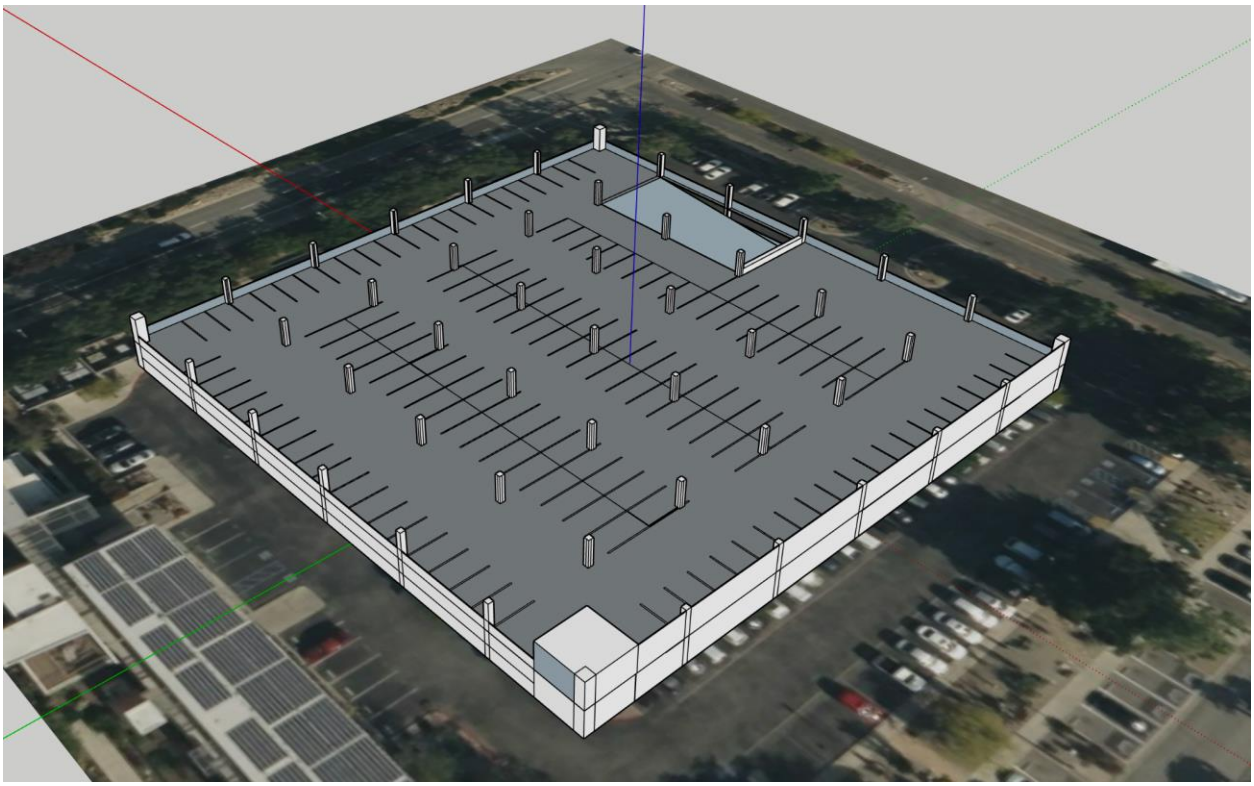
This section discusses the design of the two parking floors briefly before transitioning into the environmental analysis commons and the roof as well as the exterior of the building. The principles of biophilia, human centered design, and adaptable architecture are applied throughout

the plan. These theories heavily inform the objectives of the design and are applied at many scales.

The two goals of developing the parking floors of the building, which are the bottom and second floors, are increasing parking spaces–which addresses the current needs of the Pitzer community–and designing a space that can be easily adapted into a non-parking area–which addresses the future unknown needs of the college.



East elevation view of 2 parking floors

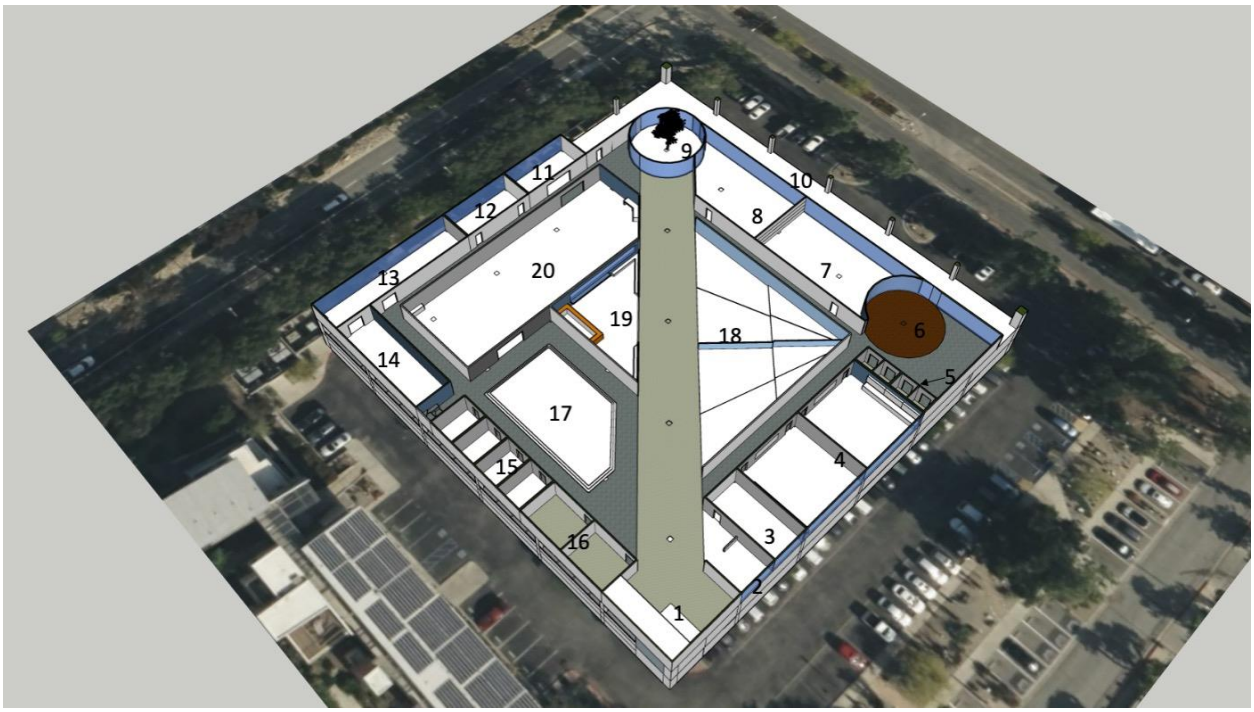


Aerial perspective view of parking floors

Pictured above are the two floors of parking. In total this structure has 280 parking spaces and maintains all previously dedicated spaces in the lot for visitors, Pitzer vans, electric vehicles, and handicapped spaces. Only the parking spots on the eastern edge of the lot have been compromised, but the area could still be used as storage, which is its current unofficial use. This increases spaces for students by nearly 100 and provides all shaded parking.

When designing the third-floor space the core of the design aimed to achieve the most usable space for the Pitzer community, which meant centering Simon's Human Centered Design principles. The layout was intended to create a space where students would not just go to for a specific activity, but instead develop as somewhere where students desire to be. This meant

designing a floor plan with several purposes and formalities ranging from standard classrooms and study spaces to social and outdoor areas.



Environmental Analysis Commons

Pictured above is the design of the Environmental Analysis Commons. Starting in the bottom corner (1) there is a major diagonal hallway that connects the northwest entrance corner to the southeast corner garden. Creating a throughline is important for tying a floorplan of a building this size together. At around 57,600 square feet, the floorplan is about the same square footage as a football field or big-box store. Properly dividing this floor into spaces with corresponding uses, to get the most out of it meant continuously assessing the scale of the individual areas and their adjacencies.

Working counterclockwise from the entrance there are two study spaces, one less formal (2), one more formal (3), followed by two science laboratories (4) and four restrooms (5). In the southwestern corner there is an indoor garden space (6). This area is one of two that brings biophilia into the plan. This space with its semicircular wall houses shorter plants that are classified as coastal sage scrub, the natural ecosystem of Claremont in the current climate. Since this garden is indoors the plantings rely on irrigation rather than natural rainfall, but the skylight above the garden provides natural light to filter in. Continuing along the south edge of the building there are twin classrooms (7,8) designated for the Environmental Policy track and Environment and Society track of the Environmental Analysis major. The wall between these rooms is a movable wall that allows the space to be fully open for large scale events and discussions. The southeast corner is another garden (9), but this acts more as a courtyard. Open to the sky, it is blocked from the indoor space by a glass wall. Both this area and the garden in the southwestern corner would host native plantings suitable for their individual conditions, but since this garden is set up as a courtyard it relies more on natural rainfall. Along with some lower sage scrub plants, this courtyard will feature a coast live oak tree in the center. It is also important to note the outdoor space along the entire southern edge of the building (10). Including outdoor areas in such a large building is crucial for encouraging students to spend many hours in this building at a time. Along the eastern side of the building there are two classroom spaces (11,12) that serve as space for the Sustainable Built Environment track. One space is more of a standard classroom, while the other is set up as a studio space. In the Northeast corner there are two large rooms that would act as library and study areas (13,14). Along the North side there are four small offices to be used for office hours (15), and two restrooms (16). Into the middle of the space, just outside of the small offices there is a gallery space (17) for showcasing any

Environmental Analysis projects. Across the diagonal hallway from the gallery is a tiered social space (18) for students to have space away from study areas and classrooms. Accessible from the social area across the hallway is a small coffee shop (19) with a window that looks into the workshop space (20). Having a coffee shop is another crucial part of designing somewhere that the community wants to spend time. Finally, the workshop space (20) is just east of the coffee shop. Inspired by Harvey Mudd's "Makerspace," the room has several 3D printing and laser cutting stations, a sewing area, project tables, and a project library. Any hands-on projects can be done in this room. With a large garage door leading into the Sustainable Built Environment studio (11) large design projects can easily be moved between the spaces. Overall, this space was designed with flow of movement and connections between spaces in mind.

Roof of parking structure

The rooftop of the parking structure is pictured above. Creating a twenty-foot band around the edges of the building is green space. This area is filled with low-shrubs that are typical of drought-tolerant cover in the coastal sage scrub bioregion and help not only to create a small habitat for avian species, but also help to retain most of the water that would otherwise run off the roof. The roof will have careful elevational control to allow the planting areas to take runoff from impervious surfaces to augment irrigation. The southern edge of the roof has the solar arrays used to provide energy to the structure. The rest of the roof is studded with large skylights providing as much natural light as possible to the Environmental Analysis Commons below. Though this rooftop is accessible for any community members, and would probably acquire furnishings, perhaps equipment, and shading devices, for now the space is mostly left unprogrammed to be used freely.

Conclusion

Through the application of biophilic design, human centered design, and adaptable architecture one can come to see how intentional development of even a parking garage can be innovative and sustainable. Breaking limitations on the typical perception of what can be green design exemplifies the importance of this project. In order to address the urgency set out in documents such as the IPCC 6th report about the climate emergency, designers must be willing to reassess the concept of sustainability (IPCC 2022). Being tied to qualifiers like LEED certification, which sets out specific guidelines for sustainable design of buildings, but does not readdress how they hold up, does not lead to the necessary levels of innovation. In particular, designing with adaptable architecture techniques leaves the future open for easy adaptation.

Where green design is sometimes unattainable or only sustainable on the face, something like this parking structure addresses sustainability while also addressing community needs. When imagining how to engage the most people in a greener future, creating designs that are both beneficial to people and the environment is essential. This project fills a gap in the literature and praxis addressing how to make structures that are not typically thought of as sustainable, such as a parking garage, forward thinking in their adaptive multifunctionality.

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