Reinstatement of the Poly Canyon Caretaker Program through the Development of a Tiny Home Community

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The Poly Canyon Experimental Structures Laboratory, through its Design/Build program, is unique in the educational opportunity it provides Cal Poly College of Architecture and Environmental Design (CAED) students. However, since the conclusion of the Caretaker Program in 2011, the facility’s structures have deteriorated due to vandalism, purposeful destruction, and weathering. This study examines the perspectives of CAED students, the interim CAED Dean, Kevin Dong, and Cal Poly Risk Manager, Mike Morgan, on the effectiveness in reinstating the Caretaker Program through the development of a tiny home community. Results indicated educational value in this facility, so addressing these issues must occur to ensure the preservation and maintenance of the structures. Due to its undeveloped location, the reinstatement of this program poses liability to the University regarding the safety and wellbeing of the caretakers. For such a proposal to be approved, risks must be identified, and controls must be designed and developed. There is support from all surveyed and interviewed parties to revitalize the space so that it can be used as it's intended purpose of further impacting interdisciplinary collaboration. This study’s findings serve as a foundation in the proposal of such a development in the future.

Key Words: Poly Canyon, Caretaker Program, tiny home community, Design/Build, risk

Introduction

The founding dean of Cal Poly’s College of Architecture and Environmental Design, George Hasslein, envisioned a playground of student-built structures. These structures are nestled in a plot of nine-acre hills in Poly Canyon, located northeast of the University’s main campus. It is under his leadership that the CAED Experimental Structures Laboratory was created in 1963, empowering students with industry-connected educational experiences through the opportunity to erect their ideas first-hand. For over four decades, generations of mostly CAED students have left their mark in these hills with projects like the Shell House, the oldest structure still existing in the canyon. However, with the discontinuation of the Poly Canyon Caretaker Program in 2011, the structures that set both the University and the College apart from other educational institutions in the nation now sit as a “graveyard” of deteriorated structures.

There is a mutual understanding that a new procedure must be proposed to revitalize and preserve the laboratory’s structures. This is not the first capstone project completed regarding the standing of the site. In 2017 Cal Poly Construction Management alumni Trevor Houghton conducted preconstruction services to remove all non-structural components of the Modular House that had faced years of vandalism and weathering. In 2019 Cal Poly Construction Management alumni Cameron Tilmont set out to demolish the interior of the Shell House. While the project was not able to be completed due to safety issues, Tilmont proposed the demolition of the entire project due to the discovery of asbestos in the surrounding floor and the overall state of the structure. The hypothesis for this study is if the Poly Canyon Caretaker Program is reinstated through the construction of a tiny home community, then ongoing deterioration of the structures in Poly Canyon will be mitigated. However, this program’s reinstatement poses a liability to the University regarding the safety of the student groundskeepers living in the undeveloped area of Cal Poly’s campus.

Research Goals

The purpose of this research paper is to study the feasibility of establishing a tiny home community within the Experimental Structures Laboratory. Specifically, this paper aims to analyze if this project proposal is effective in mitigating the ongoing deterioration of the student-made structures. This proposal is twofold: the first being the construction of a tiny home community, the second being that the tiny home community is utilized to reinstate the Poly Canyon Caretaker Program to house two to three students. By reintroducing student groundskeepers to oversee
the area, this project aims to end the root causes of the site’s deterioration. The main objective is to explore whether the proposed solution can effectively deter, minimize, or limit the continued vandalism, weathering, and destruction of these one-of-a-kind structures. The goals this research intends to accomplish include:

- Collecting the perspectives of CAED students, interim CAED Dean, and University Risk Manager on if they believe the Caretaker Program should be reinstated.
- Evaluating the effectiveness of the project proposal in addressing the deterioration issues, particularly focusing on vandalism, weathering, and intentional destruction.

**Literature Review**

The purpose of this literature review is to learn about the environmental and communal impact of tiny homes, and why it is the proposed building structure for the site. This literature review also looks at the importance of the preservation of the structures in this laboratory and the history of the Caretaker Program.

**Tiny Home Review**

Tiny homes have garnered significant attention in recent years as alternative housing solutions to various societal challenges, including affordable housing shortages, environmental sustainability, and community development. In this review, the focus will be on how tiny homes positively impact their surrounding environment and community, making them a compelling housing proposal for this project.

Tiny home living is a challenge, as it embodies something vastly different from the traditional American lifestyle: minimalism. While the definition of a tiny house widely varies between sources, for the purposes of this proposal a tiny house is defined as “a dwelling unit containing less than 300 sq. ft. of interior space” (Kilman 1). While 300 sq. ft. may seem limited, residing in such a compact space fosters a conscious relationship with the surrounding environment. Charlie Kilman writes in “Small House, Big Impact: The Effect of Tiny Houses on Community and Environment”, how this sustainable impact is due to the smaller footprint this housing development offers. To put it simply, a smaller surface area equals efficiency in a multitude of facets. Kilman expands, discussing how “the lack of spaces means lower energy use because there are fewer lights, less space to heat, and fewer appliances than in an average American home” (Kilman 4). Additionally, the smaller footprint of tiny homes translates to fewer maintenance requirements, addressing concerns that have previously impacted the Caretaker Program. This efficiency in resource usage and reduced maintenance needs underscores the environmentally conscious and practical nature of tiny home living.

Kilman also notes that along with the efficiency of tiny homes, comes a more engaged relationship with consumption, particularly consumption driven by the pursuit of social status. As stated above, one of the core principles of such a development is minimalism. This greatly restricts the amount of consumption and waste dwellers of tiny homes can consume and produce. Kilman writes, “I have observed that tiny house owners must constantly pay attention to the quantity of goods and excess in their lifestyles, simply to keep the house uncluttered” (Kilman 5). Kilman continues by pointing out that while there isn’t an “inherent ethical relationship with consumption” the limited space given to tiny home dwellers causes a greater consciousness of one’s consumption rate (Kilman 5). To this point, less consumption leads to less production of waste.

In addition to promoting minimalism and reducing consumption and waste production, a tiny home community would also contribute to the site’s preservation. By constructing smaller dwellings with a smaller footprint, the community would minimize the disturbance to the natural environment. This close interaction with nature facilitated by tiny home living aligns with the concept of a “land ethic,” as proposed by Aldo Leopold, which advocates for an expanded community that includes the natural world. By integrating nature into the daily lives of its inhabitants, tiny houses promote a holistic understanding of the environment as an integral part of one’s community rather than a separate entity. As Leopold states in *A Sand County Almanac and Sketches Here and There*, “the land ethic simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively: the land” (Leopold 204).
To the point of community, unlike traditional neighborhoods where residents find themselves with what Kilman describes as “home theater syndrome” (where they insulate themselves into their homes from the environment because they can do so comfortably), tiny home communities encourage collaboration, and foster a sense of social connection. The main reason, necessity. In being efficient and made of a small footprint, tiny home dwellers must lean on each other or venture into the nearby community for appliances like washing machines. Additionally, with being surrounded by nature, common spaces are no longer theaters or dens but rather community gardens, recreation areas, and gathering spots, so that residents can come together and share experiences. Kilman ends with a strong statement, “Culturally, what the tiny house does is simple: it creates an opportunity outside the norms of society where people can understand that the value of the environment and human interaction is much greater than the value of material goods” (Kilman 8).

The Importance of the Preservation of the Structures

There is an educational effectiveness in seeing the successes and failures of the structures created and built through the collaboration of your peers and predecessors. Stephanie Zappelli’s article “Cal Poly Canyon Hides a Village of Curious Structures: The Architecture Graveyard” touches on the educational opportunities this 1:1 scale project facility offers CAED students. Craig Park, Cal Poly Architecture alumni and the Director of Digital Experience Design for Clark & Enersen, tells Zappelli, “It’s all very inspirational for a young student to see that your peers and other students actually constructed infrastructure” (Zappelli). To the remarks of Park, the collaborative construction of these structures showcases the tangible outcomes of teamwork and innovation for future generations of designers and builders.

To continue the point of the educational opportunities this laboratory offers, Janet Eastman’s Los Angeles Times article “Lessons Grounded in Reality,” highlights how the laboratory provides student builders with “the practical approach of bringing together everyone involved in an architectural project from the conceptual stage through construction” (Eastman). This process is now known as the project delivery method of Design/Build, and the Experimental Structures Laboratory serves as one of the few Design/Build programs offered by educational institutions. This real-world application provides students with significant value in hands-on experience. As Assistant professor, George Elvin, in the School of Architecture at the University of Illinois at Urbana-Champaign shares with Eastman, “You can talk to students about the value of a nail, but it doesn’t mean much ... but when [students] pound two pieces of wood together and see how hard it is to take it apart, they understand the sheer strength of the nail” (Eastman). Elvin’s observation emphasizes the transformative power of practice learning applications, particularly in the context of Design/Build programs for students interested in joining the industry. It is through direct engagement with materials and the construction process that students gain a deeper understanding of the importance of all components within a building system and how they come together to create a functional infrastructure.

The History of the Caretaker Program

The history of the Caretaker Program is limited in sources and often feels like an oral story that has been passed among generations of students and admirers of the laboratory. There is no clear documentation, only quotes of stories in a handful of articles that pass along the purpose and effect the program had on the structures, site, and students.

In Zappelli’s article, readers are introduced to Lucas Hogan, a past Cal Poly caretaker who attended the University during the early 2000s. During his time in the program, he lived in the Modular House where the structure was inhabitable with a living room, functional kitchen and bathroom, and designated sleeping area. While there is no explicit description of the roles and responsibilities of the caretakers, Hogan described the role to Zappelli as keeping the area tidy through the removal of vegetation, painting over graffiti, assisting fellow students with their senior project structures, and most importantly acting as a security guard at night. In lieu of rent, Hogan fulfilled his responsibility in taking care of the site and structures for 10 hours per week, stating “A lot of my job was shining a big flashlight on people and saying, like, ‘You gotta go’... [to] mostly just keep people from graffit-ing or breaking stuff” (Zappelli). During this period, there was not a maintenance budget, forcing the caretakers to use what materials they could stumble across to keep the canyon clean. On this note, Cal Poly ended the program with the graduation of their last caretaker because “it was too expensive to update the water and electrical systems out in the canyon” (Zappelli). The Caretaker Program was not managed by the University or College and fell through the cracks due to a lack of budget planning. While this of course echoes the requirements of the proposed inhabited space of the
caretakers to have access to proper utilities, waste management, and fire safety measures, it highlights a disconnect between the last caretaker, the College, and the University. The continuation of the program may have been aided through the proper maintenance of the structures while inhabited by the caretakers and the incorporation of a budget plan from a year-to-year basis.

David Middlecamp’s article “Caretakers Once Lived at Cal Poly’s Site for Experimental Architecture: ‘Real Hands-On,’” provides insight into the learning opportunities presented to the caretakers. Phil Johnson, an Architecture alumnus of Cal Poly, lived in the Shell House during his time as a caretaker. He reflected that this program presented him with many learning opportunities, stating how he “has built a hot tub, sunk a well, repaired a broken water heater, buried one house and painted another” (Middlecamp). While the program offered free housing, worked hours per week could quickly escalate with Johnson saying “Sometimes you put in five hours, sometimes 60. If a wall in your house falls out, you can’t say ‘I’ve already put in 15 hours’” (Middlecamp). To this point, the quantity of student involvement isn’t necessary for the Caretaker Program to be reinstated. Rather, this article sheds light on the quality of student involvement is necessary as there is significance in having a well-defined selection process and responsible residents. Clear criteria will need to be developed and put in place to select at least three residents committed to maintaining the community.

Upon research, the Caretaker Program emerges as the necessary component to revitalize the laboratory. Without it, structures are not maintained, the purpose of the facility is not achieved, and what is left are abandoned structures defaced with graffiti artwork hidden in the hills behind the developed portion of Cal Poly’s campus. The cost of the eradication of the Caretaker Program is the misuse of an educational facility due to deterioration by vandalism, weathering, and purposeful destruction of the structures within the site.

**Methodology**

The objective of this study is to gain a comprehensive understanding of the challenges and potential solutions associated with the proposed project within the experimental laboratory. The effectiveness of this proposal was determined by a survey distributed to all disciplines of CAED students, and interviews with the interim CAED Dean, Kevin Dong; and Cal Poly Risk Manager, Mike Morgan.

Survey questions for CAED students are as listed:

- Have you visited Cal Poly’s Experimental Structure Laboratory in Poly Canyon?
- Are you aware of the history of student caretakers who lived in the student-built structures of Poly Canyon?
- Are you aware of the current deterioration and vandalism occurring to these student-built structures?
- On a scale of 1-10 (1 being low, 10 being high) how would you say the deterioration and vandalism has impacted these structures?
- Would you support the idea of reinstating the Caretaker Program?
- How would you rate the effectiveness of reintroducing caretakers on a scale of 1 to 10 (1 being not effective, 10 being effective) in deterring vandalism and preventing damage to student structures?
- Do you think there are safety concerns in reinstating caretakers to the site?
- Would you be interested in being a student caretaker in Poly Canyon?

Interview questions for CAED Dean, Kevin Dong, are as listed:

- Can you share your perspective on the significance of the laboratory and its contribution to CAED?
- In addition to Poly Days, what is the University and CAED department doing to combat the destruction and vandalism to the structures in Poly Canyon?

Interview questions for Cal Poly Risk Manager, Mike Morgan, are as listed:
What are the main risk management practices that should be implemented to ensure the safety of the students?

Are there training programs or workshops you would recommend for interested students involved in this proposal?

What emergency response plans should be in place to address any unforeseen incidents or challenges within the tiny home community?

The results of this study were then analyzed, and the qualitative responses were used to further investigate if this proposal offers a solution to mitigate the current damage to the Poly Canyon structures.

Results

CAED Student Survey

The survey was open for approximately one month and received 118 responses. A survey link and brief project description were sent through each major emailing list, except Architecture. To gather the perspective of Architecture majors, the survey was distributed to a senior wide group chat. Of the 118 respondents; 29 identified themselves as Architecture majors (24.6%); 26 identified themselves as Architectural Engineering majors (22%); 11 identified themselves as City and Regional Planning majors (9.3%); 29 identified themselves as Construction Management majors (24.6%); and 23 identified themselves as Landscape Architecture majors (19.5%).

![Major Participation Among Participants](image1)

Figure 1. Distribution of major participation

When asked what year in school the respondents were in; 18 identified themselves as Freshman (15.3%); 13 identified themselves as Sophomores (11%); 10 identified themselves as Juniors (8.5%); 59 identified themselves as Seniors (50%); 16 identified themselves as 5th years (13.6%); and 2 identified themselves as “Other” (1.7%). The skew of Senior participation can be attributed to the survey only being distributed to senior Architecture students, not the entire program of students of all grade levels like the other disciplines from CAED.

![Grade Participation Among Participants](image2)

Figure 2. Distribution of grade participation
When asked if they have visited Cal Poly’s Experimental Structural Laboratory, 110 respondents (93%) selected “Yes” and 8 respondents (7%) selected “No”.

When asked if they are aware of the history of student caretakers who lived in the student-built structures of the laboratory, 53 respondents (45%) selected “Yes” and 65 respondents (55%) selected “No”.

When asked if they were aware of the current deterioration and vandalism occurring to the student-built structures in Poly Canyon, 106 respondents (90%) selected “Yes” and 12 (10%) selected “No”. The survey ended with this question for the 12 respondents who cited that they were unaware of the destruction of the structures.

![Figure 3. Percentage distribution of student awareness on destruction](image)

When asked how severe they believed the deterioration and vandalism has impacted the structures; 3 respondents (2.8%) selected a score of 1; 3 respondents (2.8%) selected a score of 2; 4 respondents (3.8%) selected a score of 3; 9 respondents (8.5%) selected a score of 4; 6 respondents (5.7%) selected a score of 5; 11 respondents (10.4%) selected a score of 6; 31 respondents (29.2%) selected a score of 7; 22 respondents (20.8%) selected a score of 8; 8 respondents (7.5%) selected a score of 9; and 9 respondents (8.5%) selected a score of 10.

![Figure 4. Rating distribution of impact of destruction](image)

When asked if they would support the reinstatement of the caretaker program, 98 respondents (92.5%) selected “Yes” and 8 respondents (7.5%) selected “No”.

![Figure 3. Percentage distribution of student awareness on destruction](image)

![Figure 4. Rating distribution of impact of destruction](image)
When asked how effective they believed the reintroduction of the Caretaker Program would be in deterring and preventing vandalism and damage to the structures with “10” being the most severe; 3 respondents (2.8%) selected a score of 1; 3 respondents (2.8%) selected a score of 2; 2 respondents (1.9%) selected a score of 3; 6 respondents (5.7%) selected a score of 4; 8 respondents (7.5%) selected a score of 5; 17 respondents (16%) selected a score of 6; 14 respondents (13.2%) selected a score of 7; 26 respondents (24.5%) selected a score of 8; 13 respondents (12.3%) selected a score of 9; and 14 respondents (13.2%) selected a score of 10.

When asked if they believed that there are safety concerns in reinstating caretakers to live in Poly Canyon, 68 respondents (64.2%) selected “Yes” and 38 respondents (38.5%) selected “No”.

When asked if they would be interested in being a student caretaker, 28 respondents selected (23.7%) selected “Yes” and 90 respondents (76.3%) selected “No”.

**CAED Dean**

In meeting with Kevin Dong, interim CAED Dean, he reiterated the points of Craig Park and Janet Eastman: this laboratory promises students a unique educational opportunity that is unlike anything in the nation. Dong stated how through the Design/Build process, this living lab offers students “everything in between. The procurement of materials, fundraising, and permitting are required before [their design] can become a reality” (Dong). He continued in emphasizing the importance of 1:1 scale building, echoing the point of George Elvin in how impactful this real-life approach is in the development of building knowledge. Regarding the current mitigation efforts set in place to combat the vandalism and destruction of the structures in the facility, he highlighted how the University has set aside funding for the maintenance of the structures and vegetation. While the program is no longer in place, Dong shared how effective the Canyon Days Club, an offshoot from the Architectural Engineering club SEAOC, was in deterring vandalism due to their “clean as you go” mentality. The Club held biannual cleaning days to provide landscaping to the area including clearing foliage from walking trails, completing minor repairs like replacing damaged wood, and painting over vandalism on the structures. Dong noticed an effectiveness in the program citing “because we were going back and continually painting that the amount of graffiti and damage decreased over time” (Dong).

**Risk Manager**

In meeting with Mike Morgan, Risk Manager for the University, it was clear how many potential risks come with this project proposal. While in agreement of the education opportunities this facility offers students, given his background, Morgan was stern on how these opportunities would be limited without a thorough risk assessment. His greatest concerns are the safety of the students, fire hazards, emergency response times, natural disasters, a lack of life cycle analysis created for each structure, and a lack of a financial/maintenance plan. Below, Figure 6 shows a risk assessment sheet provided by Morgan. It has been completed to begin the process of addressing what are the identified risks, who/what is affected, existing controls, additional controls, and an overall risk rating. This resource allows for the planning of risk management practices such as required training for the caretakers in a multitude of
categories (wildfire, emergency response, wild animal encounters, etc.), the development of plans for cases of emergencies and erosion control and having fire extinguishers and first aid kits as housing requirements.

Discussion

CAED Student Survey

The survey results provide valuable insights into the perspectives of students within CAED regarding the Experimental Structural Laboratory and the reinstatement of the Caretaker Program. Notably, most of the respondents (93%) reported visiting the laboratory, highlighting the interest this facility garners from students within the College. However, a significant portion (55%) stated they were unaware of the historical context of student caretakers residing in the student-built structures within Poly Canyon, indicating a lack of knowledge regarding the history of the facility and the past protection method for the structures.

Regarding the deterioration and vandalism occurring at the structures, most of the respondents (90%) cited that they are aware of these issues. While the severity of this impact perceived by the respondents varied, 66% selected an impact of 7 or higher. This data reinforces a strong awareness and acknowledgement among CAED students regarding the destruction of the structures.

The survey results provide substantial support for the reinstatement of the Caretaker Program, with a majority of respondents (92.5%) expressing support for its reintroduction. The effectiveness of the program in addressing the
deterioration and vandalism remains subject to interpretation, as opinions on its efficiency varied among respondents. 63.2%, however, selected an efficiency rating of 7 or higher. Respondents who selected a rating of less than 6 can be attributed to safety implications the Caretaker Program may pose in its reinstatement. To this point, concerns regarding safety concerns in this proposal are high, with most respondents (64.2%) selecting “Yes” regarding that they believe there are safety risks in the reinstatement of the program. Concerns regarding safety implications highlight the need for further examination and mitigation strategies to address potential risks associated with the program’s reinstatement.

Lastly, as expected, most students would not be interested in becoming a student caretaker, with 76.3% of respondents selecting “No”. As discussed previously, this proposal requires participants to accept a major lifestyle change. This further emphasizes the importance of setting up a proper selection process to ensure both parties are fulfilled: the site is being taken care of and the selected students are comfortable in their dwelling unit.

CAED Dean

In agreement with the fundamental belief behind this project, Kevin Dong sees value in the restoration of this facility. However, his interview shows an alternative solution if the tiny home community proposal is not initiated: the reinstatement of the Canyon Days Club. While he agrees in the value of there being a permeant presence in the facility, the club provided Poly Canyon with a “clean as you go” mentality, effectively combating vandalism and maintaining the integrity of the structures and surrounding environment. Kevin Dong’s interview highlights the dual approach to preserving and enhancing the educational value of the facility: either through the implementation of the tiny home community proposal or through the reinstatement and support of student-led initiatives like the Canyon Days Club. Both options align with the overarching goal of providing students with a unique educational experience that combines hands-on learning with real-world challenges, ultimately fostering their growth and development in the field of architecture and environmental design.

Risk Manager

Such a proposal requires the preparation of solutions to anticipated questions. For this proposal to even be brought to the attention of the University, a thorough risk assessment must be completed. In the brief assessment, seen in Figure 4 provided in this research paper, identified risks include the safety of the student caretakers, emergency response timing, fire safety, financial risks, operational risks, wild animal encounters, poison ivy/minor cuts, visitor injuries, erosion/sediment issues from weathering, and displacement from housing. These risks hold great impact to not only the caretakers of the site, but also visitors, the structures, CAED, and the University. Because of this, controls such as required training regarding wildfires, emergency evacuations, wildlife encounters, and self-defense must be created and implemented. With that, the development of emergency response plans, erosion control plans, and waste management must be defined. This is just the tip of the iceberg but represents the importance in risk analysis. By addressing potential risks upfront and developing robust mitigation measures, the proposed project can proceed with greater confidence and ensure the safety, sustainability, and success of the educational endeavor. Morgan’s insights serve as a reminder of the importance of diligent risk assessment and management in navigating complex projects like this.

Conclusions & Future Research

There is a reason to protect this facility, with an understanding in the uniqueness and success it provides students with real-life educational opportunity. The analysis of the CAED student survey, combined with insights from Dean Kevin Dong and Risk Manager Mike Morgan, underscores the multifaceted considerations inherent in the proposed project. The survey results reveal a strong student interest in preserving the Experimental Structural Laboratory and reinstating the Caretaker Program, albeit with notable concerns regarding safety implications. Dong’s interview highlights the potential for both the tiny home community proposal and the reinstatement of initiatives like the Canyon Days Club to enhance the educational value of the facility while addressing vandalism and maintenance challenges. Risk Manager Mike Morgan emphasizes the critical need for a thorough risk assessment to address various risks such as student safety, emergency response, financial implications, and environmental concerns. Morgan's risk assessment framework provides a structured approach to identifying and mitigating potential risks,
ensuring the safety, sustainability, and success of the proposed project. These insights underscore support for the reinstatement of the program.

In furthering the development of this proposal, future research is necessary. As previously outlined, the identified risk controls will need to be developed and implemented. An environmental study analyzing the impact of student residency on the site is also an area not identified in this research. Lastly, the design and planning for the tiny home community will need to be completed. This primarily includes detailed consideration of how and where the development will connect with existing water and sewage systems.

References

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