OFFICE OF SUSTAINABILITY
CAMPUS SUSTAINABILITY FUND

Buffelgrass Adobe

Grant Type
Annual Grant

Application Type
Final Application

Project Manager 1 Name
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Project Manager 1 Status
Student

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College of Fine Arts

Project Manager 2 Name
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Project Manager 2 Status
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Project Manager 2 Role
Back-up

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Fiscal Officer Department
College of Architecture, Planning, and Landscape Architecture

Requested Funding Amount

Enter numbers only. Only enter this number after completing the budget sheet, as the budget template will round up your request.
Annual Grants may request $10,000 up to $50,000.

Year 1:
$36900

Project Name
Buffelgrass Adobe

Primary Project Category
Sustainability Literacy

Secondary Project Category
Social Sustainability

Background and Context

This section can be used to share information about the team and the context for the project, while the questions below provide space to go into detail about the proposal.
Your response should include:
- Relevant background about your organization or team, including its mission and expertise.
- An explanation of how the project is new, or how it complements, builds upon, or scales existing initiatives.

Response:

Our project proposes to build a buffelgrass adobe structure at Tucson Village Farms (TVF), helping foster social sustainability through community based workshops, and grow sustainability literacy related to energy efficient buildings and landscape stewardship.

40% of carbon emissions are associated with the built environment, a major contribution to climate

change. About half of this is operational energy from heating, cooling, etc., and half is embodied energy from manufacture, construction, and demolition. Both sides of this can be addressed by advancing forms of natural building, adobe being one that is appropriate for our climate,with deep historical ties to this place. Adobe can be locally sourced, infinitely recycled, and creates healthy, energy efficient buildings.

Buffelgrass was introduced in the 1930s as cattle forage and erosion control, and has since been recognized as a highly invasive species, posing a major threat to ecosystems by out-competing native species, and creating destructive wildfires. This has led to the loss of significant populations of saguaro and creosote, two keystone species. This project utilizes buffelgrass as reinforcing for adobe block, reframing scourge as resource and providing an incentive to manage buffelgrass across both natural and urban landscapes.

The use of buffelgrass as fiber reinforcing in adobe and cob construction has been developed and refined by David Walker, a Tucson resident, over the past 25 years. Over that time he has done extensive testing and produced numerous earthen structures with buffelgrass, some that are now over 20 years old.

Alexander Scherotter is a student in ART 404/504. He is a fourth year student in the design arts and practices programs. He is working to develop alternative sustainable material use through his work.

Sheehan Wachter is an architect and faculty member of the college of architecture, planning, and landscape architecture. His work focuses on the use of alternative materials and environmental ethics. He has experience producing both buildings and public art and has taught courses in fabrication.

This project would continue work begun in ART 404/504: Buffelgrass Adobe this spring (2026) led by artist and activist Jacques Servin. We have established a brickyard at mission garden and begun producing blocks. Buffelgrass is being collected in organized pulls in partnership with ward 1. The brickyard facilitates the drying and fabrication of bricks and hosts community events.

We believe that community building should be key to addressing these challenges. People from diverse backgrounds taking part in shared experiences helps foster trust and belonging. While many feel the urgency of addressing climate change, we may not know how. We believe that providing these skills and knowledge for free empowers people to become an active partner in bettering their community and natural environment.

Project Description, Alignment, and Metrics

Please describe your project, explain how it supports the university's sustainability goals, and identify the metrics you will use to demonstrate its impact. In a later section, you will have the opportunity to provide more narrative on environmental and social sustainability impacts.
The proposal must align with at least one goal from the university's draft Sustainability and Climate Action Plan. The proposal must also include output- and/or outcome-focused metrics, along with the Campus Sustainability Fund's required standardized metrics, and context on how metrics will be tracked. Review standardized metrics, Action Plan goals, and output/outcome metrics to inform this response.
Your response must include:
- A thorough, clear, and compelling project description.

- Identification of one or more specific Action Plan goals to which the project is directly aligned.
- Strong output- or outcome-focused metrics that demonstrate tangible impact, along with the Campus Sustainability Fund's required standardized metrics.
- An explanation of what will change as a result of the project.

Response:

The primary metric we propose to address in this project is sustainability literacy. We would track participants of workshops, gathering names and email addresses, sending out surveys over the course of the project. We propose to use the Assessment of Sustainability Knowledge (ASK) (Zwickle et al. 2014) as a framework for formulating survey questions, and collating and assessing data collected, in order to advance sustainability knowledge at the University of Arizona. We propose to send out several surveys tracking literacy metrics over time, including increases in knowledge about sustainable natural building materials or invasive species and local biodiversity. We would also track adoption of further sustainability action by workshop participants, evaluating to what extent this form of education can help spur further action.

The second metric we propose to address is social sustainability. Our project will be student led and organized, fostering student leadership skills and experience in the area of sustainable action. Our current group involves students from across units (art, architecture, landscape architecture, sustainability built environments, design arts and practices, history, etc.) We hope our recruitment plan will broaden our reach even further to bring together diverse student groups through our workshops. We plan to track impacts by gathering data on key performance indicators, including in surveys questions regarding a sense of belonging or well-being associated with our activities or sustainability action in general.

We propose to provide opportunities for both student populations and the community at large to learn how to build with buffelgrass adobe while supporting the community outreach mission of campus organizations. We would offer a range of free workshops including:

1. Adobe brick making: understanding mix, moisture, mold making and drying techniques, and fiber reinforcing using buffelgrass.

2. Responsible harvest of buffelgrass to reduce potential of further spread, and impacts on the landscape, both through appropriate timing and careful extraction techniques.

3. Building with buffelgrass adobe: proper foundations, bricklaying, window/door integration and roofing -- offering an opportunity for skills development to anyone who wants.

Along the way we would incorporate background knowledge about the impacts of buffelgrass, an invasive species that has imperiled local biodiversity, and the environmental credentials of adobe, a carbon sequestering high performance building material -- all while building community through positive, cooperative environmental action.

We propose a number of community partnerships as venues for these activities. The Tucson Village Farms (TVF), a cooperative extension of the University of Arizona, would serve as the site for a

buffelgrass adobe project. We have identified a children's play structure as an ideal project to demonstrate the potential of buffelgrass adobe, while creating a needed space that supports TVF's outreach mission. An educational experience for visitors and introduction to sustainable materials can help educate and reassure both students and parents about renewable materials. Finally we have already established a partnership with Mission Garden to run a brickyard on their property, serving as a workshop venue and base of operations.

We believe this project offers great potential for disseminating not just sustainability knowledge but sustainability practices, actionable methods and means that bring about social and environmental justice. We believe this project can help give participants the knowledge, skill, and confidence to create more environmentally sustainable structures using local materials, and the initiative to take help care for and steward local biodiversity. Through our community based and workshop structure we also hope to demonstrate the power of collective action to create positive change toward a shared good.

Timeline

Please provide a timeline that outlines the key steps of your project. The timeline may be provided in list or narrative format. Your response must include:
- Anticipated timeframes for when major activities will begin and be completed.
- Identification of critical deadlines or milestones that must be met.

Response:

Design and Development (July-August 2026): Beginning over the summer we would hope to hire student workers and begin developing our project, working with TVF to refine specifics that serve the interests of all project stakeholders.

Outreach Campaign (August-March 2026): In addition our core student group would begin developing our outreach campaign over the summer to be launched at the start of the fall semester continuing into the spring. The outreach campaign would be focused on our colleges, student organizations and clubs, as well as social media and other grassroots efforts.

Buffelgrass pulling Workshops (August-November 2026). We expect to hold 3-5 (depending on need) buffelgrass pulling workshops in the fall primarily focused on sentinel peak park, after the summer rains and before the buffelgrass goes to seed. These workshops would be led by our core student worker group and David Walker, who has decades of experience with buffelgrass removal. We have also been able to source buffelgrass from the "beat back buffelgrass" events in the past organized by the Southern Arizona Buffelgrass Coordination Center and its partners. We would hope to be able to source buffelgrass this way again if possible, but it is not essential to our success. These workshops/sourcing would provide material for all the block reinforcing needed. Grass is then dried and processed to remove non-essential parts of the plant at our brickyard near mission garden.

Adobe Block Workshops (September-December 2026): Simultaneously we would begin holding buffelgrass adobe block making workshops at our brickyard space at Mission Garden, accessible by streetcar. We would produce approximately 400 blocks to provide the walls of our proposed

structure

Earthwork/Foundations (October/November 2026): We would propose to prepare the building site, excavation, earthwork and foundations in anticipation of adobe construction

Masonry Construction Workshops (January-March 2026): 3-5 Workshops laying buffelgrass adobe brick, masonry techniques, blocking for windows and doors, integration of structural elements for future framing. Our core student group would be responsible for transporting tools and materials to and from TVF and setting up and organizing workshops.

Plastering Workshops (March-April 2026): 1-2 Workshops of earthen finish plaster techniques.

Roofing Workshop (April-May 2026): 2 Workshops incorporating framing, waterproofing and roofing.

Project Feasibility and Logistics

Please describe the steps you have taken to ensure your project is feasible, including work completed to date, and any necessary approvals that have been obtained or partnerships that have been formalized.
If relevant partners have been coordinated with, please identify them in your response. If you have received authorization to complete your project, such as from Facilities Management/ Parking and Transportation, please indicate those collaborators. If the proposed project will make modifications to campus, please address if you have written authorization or official quotes from Facilities Management to accurately identify the cost of labor and supplies.
Your response must include:
- The steps that have been taken to ensure the proposal can be successfully completed.
- Any necessary approvals, authorizations, or partnerships that have been secured.

Response:

A brick making yard has already been established at Mission Garden, and brick production has begun this semester as part of Jacques Servin's class: ART 404/504 Buffelgrass Adobe in partnership with David Walker. We are unsure if this class will be held next academic year. Buffelgrass adobe blocks are currently being produced as part of this class which could be used in the TVF structure. This grant funding will allow our group to continue to rent space at Mission Garden over the next year and continue producing blocks.

We intend for this project to be student led, with support from David Walker and Sheehan Wachter. We have much interest from students currently enrolled in ART 404/504: Buffelgrass adobe to continue work, and Alex Scherotter would be project manager. We plan to hire 3 additional students from those interested to serve as a core group developing the project and supporting operations.

David Walker has graciously agreed to be very involved in this project. His expertise in buffelgrass adobe will be invaluable, we will lean on his decades of experience in working with a broad variety of sites, project types, and other constraints.

We believe that by offering workshops and focusing on recruitment of student volunteers we can

comfortably complete the project within the timeframe while providing a beneficial educational experience to the University community. We have estimated production and hours, along with costs for additional materials and supplies based on past experience with similar projects and current market rates. In addition some tools required for construction can come from the College of Architecture Materials Laboratory which runs a design build program.

Our team is committed to safety, as it is our goal is to reassure people of the credentials of this material. David Walker has produced several houses of buffelgrass adobe that have lasted decades and understands how to ensure their safety and durability. David has led brickmaking workshops involving high school students and understands how to ensure safety in these settings. Sheehan Wachter has taught numerous fabrication based courses to undergrad students, and has experience ensuring safe environments for many people working together with potentially dangerous tools in hazardous environments. Sheehan Wachter has experience building public art projects in contexts easily accessible to the public, and understands the important factors in designing structures that minimize risk of injury to anyone, including and especially children.

We have attached letters of support from our partners. While we have been unable to get a response from Risk Management after multiple attempts, Elizabeth Sparks, program manager at TVF, ensures us that she has a productive working relationship with members of Risk Management. We are eager to involve them at each stage to ensure the safety of both our structure and our workshops.

Budget Narrative

Provide justification of the funds (personnel and operational) requested in your budget sheet and how they support your project's goals. If requesting personnel funding, describe the position, responsibilities, and timeline. If your team has matching or supporting funds, identify the source, amount, and their purpose. Your response must include:
- A reasonable, clear budget that is aligned with project goals.
- Sufficient justification for all requested expenses.
- Identification of any matching or supporting funds, including their amount and purpose.

Response:

We have budgeted time for four paid student workers both in management and administrative roles, to organize, document, survey, track metrics, market, and participate in order to help realize the project. We believe the creation of leadership opportunities for students to run the project supports our vision of advancing sustainability literacy and social sustainability.

David Walker as previously mentioned is an invaluable resource and we believe a key to ensuring this project's success. We have budgeted several hours for his time to participate in both development and workshop activities.

Much of our funding will go towards materials, supplies, and construction. We want to ensure that components like sitework, foundations, and roofing are not neglected so as to ensure the long term durability and minimal maintenance needs of our project. We have included funding for the rental of

vehicles on occasion to either move dirt, or to transport blocks and other equipment between our brickyard and project site. Unsurprisingly these materials can be heavy and the use of substantial transportation equipment will really help our efficiency. Further specifics related to materials and construction can be found in our budget.

The location of the brickyard at Mission Garden is valuable to us because it is ideally located at the edge of Sentinel Peak Park, where many buffelgrass adobe pulls will take place, near public transit which makes it accessible, and at a community-oriented venue. Brickmaking has already begun at Mission Garden and it will be natural to continue there, in part because of the venue and in part to keep buffelgrass from spreading to where it isn't already a problem.

Environmental and Social Sustainability Impact

Please provide a narrative description as to how your project will advance environmental and social sustainability on campus. Environmental impact can take many forms, such as reducing greenhouse gas emissions, conserving water, improving energy efficiency, managing waste responsibly, or enhancing biodiversity and ecological health. Social sustainability can include strengthening food security, improving health and well-being, addressing disproportionate burdens on frontline communities, building community resilience, or fostering a sense of belonging. Please review how the CSF defines both environmental and social sustainability on its Guides and Tips webpage.
Your response must include:
- Clear identification of environmental and social sustainability benefits.

Response:

Outcomes of this project might include improved acceptance and awareness of adobe as an environmentally sustainable material, improved ecological stewardship action amongst a broader population, and improved social sustainability through community building workshops and connection to place.
Our instructional workshops will be free and open to the University of Arizona and larger community. These workshops will teach practical skills, provide background knowledge on how this project addresses social and environmental challenges, and foster connection amongst individuals through their activity based nature.
We believe teaching people for free how to harvest buffelgrass, make adobe block, and build adobe structures will help participants feel they have access to alternative building materials.

Buffelgrass Scourge: We hope that showing people how/when to responsibly harvest/remove buffelgrass will enable them to take initiative to recognize and remove it from other areas, even if it's just their own backyard or neighborhood streets and sidewalks, helping spread ecological stewardship across our community.

Access to Sustainable Building Materials: If we can demonstrate the relative ease of use associated with adobe materials by giving people the skills to work with them, perhaps we can encourage them to use these materials when faced with other building projects or opportunities, spreading adoption of an environmentally sustainable material.

Community Action: We believe this project can help demonstrate the power of communal action to participants, giving people a confidence that they can help address pressing social and environmental challenges even with little means, by cooperating and taking initiative.

Awareness/Confidence in Adobe Structures: We believe this project will help people feel confident that adobe structures can be safe, long lasting, comfortable, and beautiful by giving them first hand experience with just how substantial adobe blocks and structures are. We also believe this structure situated at an important interface between the university and the broader community (TVF) will continue to serve as a demonstration of the beauty and durability of this material for years to come.

Social/Cultural connections: We believe this project will help foster connections between people and the cultural heritage of this place, given that adobe is a common historic vernacular, perhaps reinforcing an understanding of Tucson throughout time.

Student Relevance and Involvement

Please describe how your project will demonstrate relevance to students and provide broad benefit to the student body. This benefit may come through direct involvement in project activities, indirect outcomes that improve the student experience, or opportunities for education and engagement. If students will participate in planning, implementation, or leadership, include details on their roles and responsibilities, as well as how you will recruit, solicit, or market these opportunities.
Your response must include:
- An explanation of how the project will benefit or involve students.
- A description of meaningful opportunities for student leadership or professional development, if applicable.

Response:

We think this project is relevant by virtue of it offering alternatives to our currently unsustainable models of building development and because it teaches our community to be a part of grass roots action. We also see it as an opportunity to demonstrate how accessible and rewarding working with these materials can be and how energy efficient and durable adobe can be.
Our project will be student-led; we plan to hire 4 student workers to help organize and run our operations. Our project manager is Alexander Scherotter, a student, in charge of organizing work, managing logistics, communication and coordination, and organizing. The 3 other students will be hired student workers providing support by helping develop and implement marketing plans and materials, document and planning and implementing workshops, and administrating and gathering survey data. These students will be paid via the grant, funds have been allocated for each employee in our funding documentation.
We will offer numerous educational experiences to the student body through our workshops. We intend to hold events pulling buffelgrass, demonstrating techniques related to responsible harvest, and we will hold workshops on making and building with adobe, allowing anyone to develop the skills to work with these materials on their own. We also hope this project will educate students and the community at large about how they might organize and take action around sustainable initiatives, and find alternatives to conventional methods and means.
We plan to work with existing student organizations and groups at the university to recruit students

to participate in these workshops, and also to help shape their contents. While this may be something most appealing to students interested in building or the environment, we think it has potential to reach community- and social-justice-oriented students, as well as students interested in the cultural heritage of this place, being a traditional material used in a rather traditional way. We also plan to offer food and drink and music as an incentive to join workshops, creating a fun and inviting atmosphere.
The project itself will serve as a demonstration of the potential of this building material for years to come, located at TVF -- a great point of contact between the university and the community, offering an educational experience to any visitor, including the children for whom the tentatively-planned structure there is intended. Signage surrounding the project will ensure the concepts and principles are carried forward far water we have concluded our project.

Education, Outreach, and Behavior Change

Please describe how your project will provide opportunities for the campus community to learn about sustainability. Explain how the project will educate or engage individuals, including those not currently involved in sustainability efforts, and how it will incorporate outreach or behavior change strategies. Include how you plan to communicate the project's impacts to the wider campus community.
Your response must include:
- How you will educate the campus community about sustainability.
- An explanation of how you will communicate the project's impacts to the wider campus community.

Response:

We hope this project can help students develop skills they may be interested in, like building with natural materials or landscape stewardship with buffelgrass pulling. We also see it as a unique opportunity to educate students about the crucial social and environmental issues we face as a community, and the causes of those issues, as well as to provide clear and accessible solutions.
Buffelgrass pulling workshops will be primarily focused on Sentinel Peak park, an area where active buffelgrass management is already ongoing. As part of these workshops we intend to educate participants about the buffelgrass scourge more broadly, as well as specifically how to identify, when to pull, how to reduce risk of further spread, and how to remove without causing unnecessary impact to surrounding landscape.
Our brick making workshops take place at our brickyard at mission garden. These help demonstrate to participants the composition, mixing and forming processes, grass reinforcing, drying and storage of the blocks, illustrating both durability and ease of production.
Our construction workshops will take place at TVF, illustrating to participants what is important to ensure durability of adobe structures, bricklaying/masonry practices, integration of non-adobe structural elements like windows, doors, and roof framing, and finishing/plastering.
Through our survey program, which we would propose to continue after the building project is complete, we would be interested in tracking further involvement in sustainability efforts by participants.
We intend for workshops to be open to the public at large, allowing anyone to participate -- and hope that this will help fulfill the commitment of the university as a land grant and R1 institution to disseminate valuable knowledge to the community.

We intend to publicize our project through a media strategy aimed at local news organizations, as well as on social media (our own and others'). We see this as part of a larger initiative of building with buffelgrass adobe, and hope this will help educate the public at large about its sustainability, affordability, energy efficiency and durability, driving further adoption and creating a groundswell of support for more projects.

As previously mentioned, the project itself will serve as an example of a sustainable community-built structure in a public location. This location offers a venue where visitors will be able to learn about the potential of this material and the environmental and social conditions it responds to for years to come.