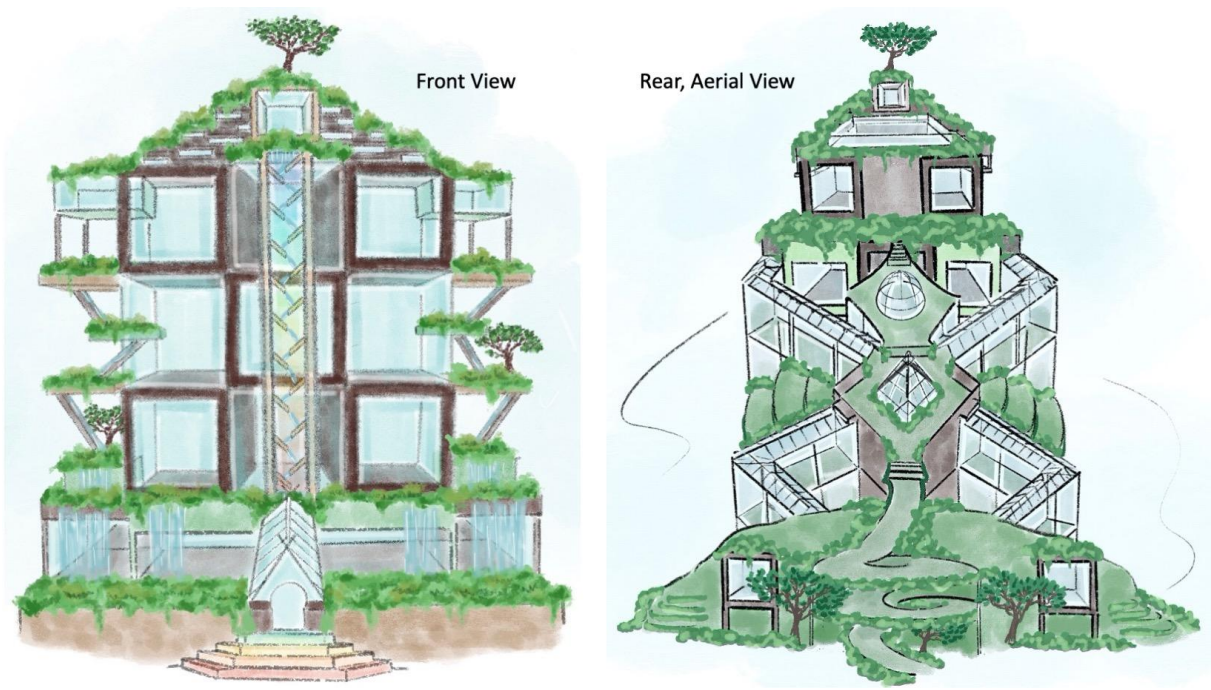


SEMESTER PAPER: ENVIRONMENTAL ART DESIGN

“PROJECT SYNERGY”



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The issue of environmental conservation is deeply intricate *and* interdisciplinary, and it demands an integrated approach informed by artistic, ethnic, and socio-economic insights to formulate productive and enduring solutions. I am exploring how a compelling, cross-disciplinary combination of green architecture, education, and conservation can combat problems of environmental degradation, food insecurity, and urban decay within an area. This triad of influences guides my design of *Project Synergy*, a proposed environmental education, cultural, and community center that would be built on an urban site in the state of Wyoming. This proposal is further inspired by architect Moshe Safdie's two works, *Habitat '67* and his design of the Crystal Bridges Museum of American Art in Bentonville, Arkansas. The mission of *Project Synergy* is to address the site-specific social and environmental challenges and cultural barriers that exist within Wyoming, by serving as a constructive and inclusive local hub that promotes sustainable habits and fosters community collaboration.

Architecture, specifically green architecture, retains a crucial role in the development and functioning of *Project Synergy*. Erecting a building that is energy conscious *and* compatible with its surroundings are two major points of consideration for my design proposal. In addition to these concerns, when constructing a 'green' building, there are, according to scholar Fatima Ghani, a total of five fundamental areas of an "environmentally oriented design": healthy interior environment (maintaining quality ventilation); energy efficiency (minimizing energy consumption); ecological building materials (using renewable sources of production); building form (responsiveness to site, region, and climate); and, good design (aesthetic and structural integrity).¹ Green architecture blends technical knowledge with an appreciation of local culture to create spaces that are not only built to last, but also built to serve.

¹ Ghani, Fatima. *Issues in Sustainable Architecture and Possible Solutions*, vol. 12, no. 1, Feb. 2012, 21

I particularly admire award-winning architect Moshe Safdie's thoughtful consideration of form and function in his past and present projects. His work is a wonderful example of how an architect is able to effect positive change in landscape and living. In Safdie's 1967 exhibition *Habitat '67*, he aimed to reimagine urban housing by leveraging the technology of pre-fabricated construction, a welcome departure from the crowded, squalid conditions of tenement housing commonplace in cities [figure 1]. *Habitat '67* was an astounding aggregation of 365 individually-manufactured concrete modules that were assembled to create a towering collection of 158 residences.² The stepped units were carefully arranged so that each dwelling had access to sun, air, and a private garden terrace.³ The simplicity of this model allowed for constant iteration and improvement, and, over the course of half a century, residents of *Habitat '67* continue to modify their dwellings to suit their evolving needs.⁴ *Habitat '67* gracefully adapted the coveted luxuries of freestanding homes for high-density places, transforming conceptions of what retreat and refuge look like while challenging the longstanding "pristine myth."

Another Safdie-designed space that served as an inspiration for *Project Synergy* is the Crystal Bridges Museum of American Art in Bentonville, Arkansas [figure 2]. The museum is submerged in the lush Ozark forest, and Safdie used the natural beauty of Arkansas's forest to invigorate his design. Safdie's careful construction of the museum is a testament to the powerful interaction that can take place between art, architecture, and nature: "... The Museum's muscular gray concrete walls rise up from the bedrock, banded in rough cedar and curved to echo the shape of the hillside. The roofs of the Museum's bridges, covered in deep brown copper, rise like mounds of earth across the still ponds."⁵ While the majestic Crystal Bridges Museum is situated

² "Habitat '67." *Safdie Architects*, www.safdiearchitects.com/projects/habitat-67.

³ "Habitat '67." *Safdie Architects*.

⁴ "Habitat '67." *Safdie Architects*.

⁵ "Architecture." *Crystal Bridges Museum of American Art*, crystalbridges.org/architecture/.

in an entirely different realm than the metropolitan *Habitat '67*, Safdie's consistently returned to the same architectural precepts of material and locality to enhance his work (regardless of their function).

I am keen to capture the urban, utilitarian efficiency of Safdie's *Habitat '67* and the rustic, elegant vitality of the Crystal Bridges Museum in the architecture of *Project Synergy* [figure 4]. I selected the state of Wyoming to serve as the site of this proposal because of its stunning natural landscape, sparse population, indigenous history, and presence of food deserts (defined as areas that have limited access to affordable and nutritious food) -- an eclectic mix of natural, ethnic, social, and economic factors that *Project Synergy* is eager to incorporate. The cubic facade of *Project Synergy* mimics *Project '67*'s pre-fabricated, squarish stack of units and also resembles the geometric patterns found on Shoshone- and Cheyenne-woven baskets (two prominent tribes that are native to Wyoming).⁶ The building will be constructed using wood and concrete -- two sturdy, renewable, and energy efficient materials that also have a contemporary, minimalistic aesthetic appeal.⁷ Since Wyoming's climate is typically semi-arid and continental, lining the glass walkways with transparent solar panels and installing small wind turbines will ensure that most (if not all) of the energy the building consumes comes from eco-friendly sources that are suitable for the state's weather conditions. The narrow, rainbow-tinted waterfall that bisects the front facade of the building attempts to accentuate the 'woven basket' theme, as water passing from alternating panels looks as if it is 'braiding' or 'threading' through the building. The building is flanked by staggered terraces that are overflowing with plants, and the waterfall

⁶ "Wyoming History." *State of Wyoming*, www.wyo.gov/about-wyoming/wyoming-history#:~:text=The historic Indians in Wyoming,Sioux, Shoshone and Ute tribes.

⁷ Gutiérrez Rosa Urbano, and Laura De la Plaza Hidalgo. *Elements of Sustainable Architecture*. Routledge, 2020, 122.

system that circulates through the entire building through channels and panels acts as a built-in irrigation system.

The rear of the building is formed by a network of interlocking glass walkways that connect to a main, rooftop courtyard. These structures form a lizard-like shape, with the glass walkways as the “limbs” and the diamond-shaped courtyards in the middle and front as the “body” and “head” of the reptile. The bridge that leads straight from the main courtyard is the “tail,” and connects to an elevated, terraced hill that will be used as a farming space to grow vegetables and fruits. There are two units embedded in the hill (that can be accessed from the lower level of the glass walkways or the rear, spiral entrance of the building) that are designated as the water storage, maintenance, and sewage facilities for the entire building. Wastewater that is collected in these two units will be reclaimed and reused to nourish plantlife.

In addition to serving as an ambassador for agriculture and aquaculture, *Project Synergy* strives to reframe the concept of sustainability. According to a paper written by David Grierson and Salama M. Ashraf, the term sustainability “is often used interchangeably with the term 'sustainable development', defined by the World Commission on Environment and Development in 1987 as, ‘development which meets the needs of the present without compromising the ability of future generations to meet their own needs’. This description underlines sustainability's ethical dimension where a normative view implies treating sustainability as a form of intergenerational equity and fairness.”⁸ Simply put, the objective of *Project Synergy* is not to be an art museum or arboretum; it aims to be a dynamic, collaborative center where visitors (regardless of socio economic status) come together to learn the rich artistic, environmental, and indigenous histories of Wyoming. In addition to helping visitors

⁸ Grierson, D., & Salama, A. M. (2016). “FORGING ADVANCES IN SUSTAINABLE ARCHITECTURE AND URBANISM.” *Open House International*, 41(4), 4.

cultivate a profound sense of environmental stewardship, *Project Synergy* aspires to improve local economies and elevate marginalized communities by providing an accessible space for research, experimentation, and environmental exploration.

Part of this aspiration to enrich the surrounding communities of *Project Synergy* is to respect and recognize the experiences of the Native American groups of Wyoming. In *Decolonizing Museums: Representing Native America in National and Tribal Museums*, a book written by Amy Lonetree, institutions like *Project Synergy* must honor the heritage and history of indigenous populations in a way that is authentic rather than performative: “For generations and in countless museums even today, tribal origin stories have not been privileged, and if they are mentioned, museums present them as quaint myths of primitive peoples. They are not taken seriously or treated as having profound and real meaning.”⁹ Part of decolonizing the way museums convey the culture and customs of Native Americans is by restructuring the focus of their programming and exhibitions to prioritize “healing, revitalization, and nation building for Indigenous peoples.”¹⁰ By sharing the “hard truths” of America’s complicated history and seeking input from Native American artists and educators, it is possible for *Project Synergy* to curate a sincere, immersive experience that honors the presence and preservation of Native American traditions.¹¹

Food deserts are a pervasive problem in Wyoming. Physical barriers (such as transportation) and economic barriers (such as income level) restrict access to healthy, nutritious food, causing low income populations to resort to purchasing and consuming cheap, processed

⁹ Lonetree, Amy. 2012. *Decolonizing Museums : Representing Native America in National and Tribal Museums*. Chapel Hill: University of North Carolina Press, 163.

¹⁰ Lonetree, *Decolonizing Museums*, 164.

¹¹ Lonetree, *Decolonizing Museums*, 167.

foods (that increase risk of obesity, diabetes, and other diet-related diseases).¹² However, classicism and racism can also affect the distribution of healthy food as a result of systemic, spatial inequality.¹³ In a 2017 study, researchers found that food insecurity has “increased across all racial and ethnic groups nationally,” and American Indians and Alaska Natives (AI/ANs) were more likely to experience food insecurity compared to whites.¹⁴ These researchers also identified another negative trend: “Urban AI/ANs represent a relatively small proportion of the population in large cities, are geographically dispersed and often socially isolated, and experience high rates of poverty coupled with very limited access to culturally appropriate health and social services. The cultural and social resources that exist in rural and reservation-based communities, including extensive food sharing that happens in these communities, may be a factor in the higher food insecurity rates among urban AI/ANs.”¹⁵

Furthermore, social capital and social integration, according to a study done by Sarah Whitley, are two major determinants of affordability and accessibility of nourishing food (especially in rural, low-density populations).¹⁶ Establishing a *Project Synergy* food sustenance program, where foods grown on site can be transported to and sold at the peripheries of towns, and farmer’s markets are held weekly at the center to encourage camaraderie between residents and retailers, is one viable option to reducing food insecurity in marginalized communities.

¹² Klamann, Seth. “Grocery Options in a Wyoming Town: a Gas Station, a Food Bank and a Post Office Bench.” *U.S. News & World Report*, U.S. News & World Report, www.usnews.com/news/healthiest-communities/articles/2018-08-08/central-wyoming-residents-struggle-with-lack-of-groceries.

¹³ Whitley, Sarah. “Changing Times in Rural America: Food Assistance and Food Insecurity in Food Deserts.” *Journal of Family Social Work* 16, no. 1 (January 2013), 37.

¹⁴ Jernigan, Valarie Blue Bird, Kimberly R. Huyser, Jimmy Valdes, and Vanessa Watts Simonds. “Food Insecurity Among American Indians and Alaska Natives: A National Profile Using the Current Population Survey–Food Security Supplement.” *Journal of Hunger & Environmental Nutrition* 12, no. 1 (January 2017), 4.

¹⁵ Jernigan, Blue Bird, Huyser, Valdes, and Simonds, “Food Insecurity,” 6.

¹⁶ Whitley, “Changing Times in Rural America,” 36.

Implementation of community-organized assistance programs that not only deliver resources but forge a relationship with their clients by instilling in them a comprehensive knowledge of nutrition and sustainability aids in transforming vicious cycles into virtuous ones.¹⁷

In conclusion, *Project Synergy* is a celebration of the harmonious synergy that can exist between interdisciplinary areas to achieve positive, community outcomes. Sustainability and environmental conservation are not just about respecting the delicate balance of ecosystems -- they are also about respecting the people who live within those ecosystems. *Project Synergy*, of course, is a work *in progress*, but its mission to establish symbiotic relationships among the environment, its people, and art and architecture, indicates that it is also a work *of progress*. In this day and age, innovation and interaction flourish, and it is high time that we harness these two forces to continually reimagine, then re-render the world that we live in for the better.

¹⁷ Cortright, Joe. "Where Are the Food Deserts?" *City Observatory*, 15 July 2015, cityobservatory.org/food-deserts/#:~:text=The bleakest food deserts are,have the best food access.



Fig. 1. Brittain, James. *Habitat '67*. <https://images.app.goo.gl/RQsiBdjNFvsqtHnB6>.



Fig. 2. *Crystal Bridges Museum of American Art*.

<https://images.app.goo.gl/4K9sRnBqfziB3yqz8>.

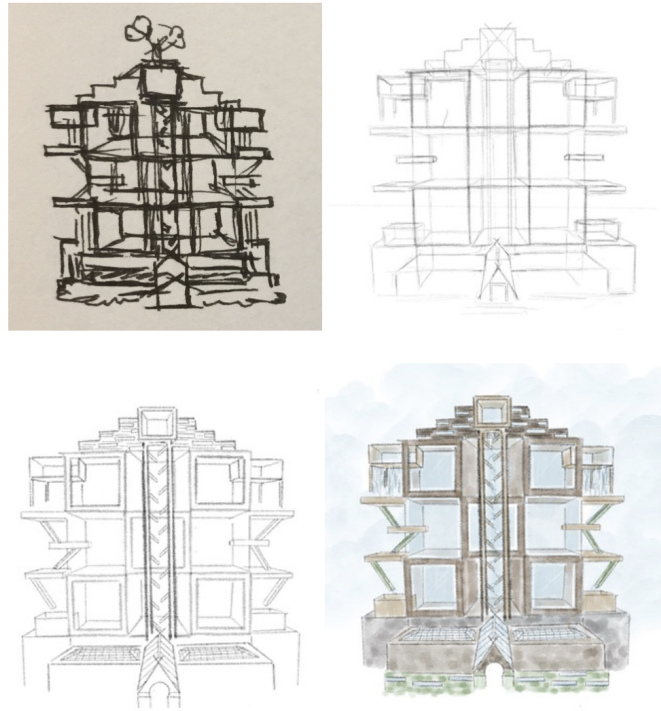


Fig. 3. *Rough Sketches of Project Synergy*, College of William & Mary. Personal photograph by author. October 2020.

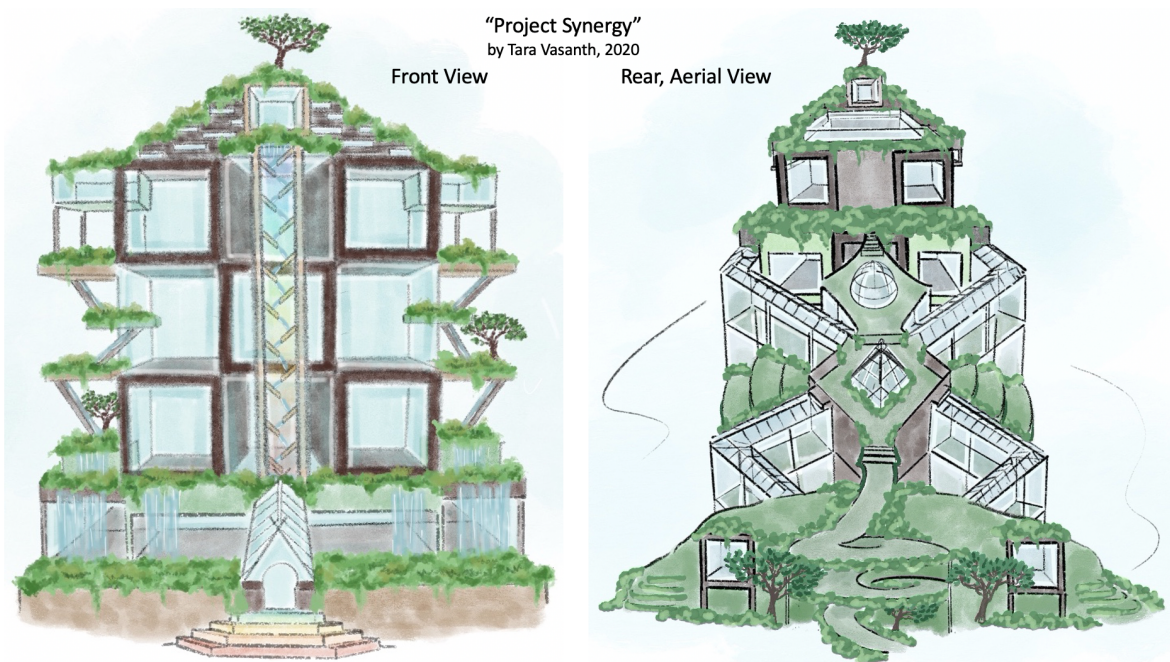


Fig. 4. *Project Synergy, Front & Rear View*, College of William & Mary. Personal photograph by author. October 2020.

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