

TRANSFORMING
AN ELEMENTARY
SCHOOL INTO A
LIVING LEARNING
LABORATORY



GREENLIGHT GREENPAPER

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GreenLight Solutions partnered with Augustus H. Shaw Montessori School to create educational landscaping strategies to enhance teaching of sustainable principles via pollinator gardens, composting, water harvesting, native plants, and more.



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Augustus H. Shaw Montessori School is located just outside the Garfield District in Central Phoenix, in a section of the city highly affected by the Urban Heat Island effect. In its current state, the Shaw campus is largely devoid of proper shading, vegetation, and non-human life; few trees, plants, or even bugs exist in the environment. The campus is institutional, flat, and a concrete heat sink in which water runs into sewers and children learn how to avoid the outdoors rather than experience it. The school campus has no outdoor amphitheater or landscaped seating. All sitting areas for lunch or group public spaces for events only occur indoors, due to seasonal high heat experienced outside.

Our vision for Shaw Montessori is to create the outdoor environment as a living-learning laboratory where students and members of the Garfield Community alike will be invited to learn. The learning environment will include desert adapted vegetation which will serve to mitigate the urban heat island effect currently experienced on campus, and provide natural shading. The vegetation will draw upon the Shaw campus water supply in terms of both grey water and rainfall.

Teachers will support the work of the children, who will learn from participating in planning and building experimental, low water use school gardens, a sustainable composting system and landscape utilizing native plantings. The low water use plan will include investigating ways to use grey water from hand washing stations and air-conditioning condensation run-off. Currently when it does rain the campus is engineered so that all water either runs into the sewer or collects at inopportune low-points on campus. We will re-engineer areas where rainwater can be captured and diverted to the landscape and to the gardens.

This project consisted of laying the foundation for multiple semesters of projects to come. The beginning phase for this project included the construction of bug boxes, succulent walls, and a cricket habitat. Installing these systems on campus will begin to build native habitats for pioneer pollinating species. A sample moss wall was tested on a north-facing campus wall--the wall is still waiting for the winter rainy season to produce. The team applied for three grants, for a combined total of \$31,250. As of now, the Woodside Grant has been awarded for a total of \$1,250 in grant money. Including a grant received prior to this project team's formation, we have amassed \$6,250 in award money to be used for the Shaw Montessori project.

Solutioneers built two pollinator gardens in the school's courtyards. One consisted of an interactive space that integrated ecology learning pieces and the other provided a beautiful scenery on the campus for people to sit and enjoy. They included native and easily upkept plant species, provided lesson plans for the teachers to utilize, designed and built the pollinator gardens, and created a maintenance plan for the school to follow going forward.

BENEFITS TO PROJECT PARTNER

This project will provide small and large group gathering locations, creating destination hubs for both students and faculty. Re-development of the outdoor space will include dining space for children to eat in a comfortably shaded environment, an amphitheater for events and classes to take place, and a redesign of spaces meant for pedestrians with a focus on pedestrian flow. Outdoor gathering areas will encourage children to experience the environment and learn how to live safely within the heat of the desert rather than avoiding it.

BENEFITS TO SOLUTIONEERS

Solutioneers learned many valuable skills, including but not limited to grant writing, project development, construction, implementation, and research compilation. They also pre-designed the site's makeover by creating sketches, undergoing research, compiling necessary materials, and taking measurements of the area. Many programs were used in order to plan out the site transformation which the students all learned about, including Photoshop, Sketch-Up, and AutoCAD. Lastly, students learned how to engage with multiple types of stakeholders, including children, the school principal, and the teachers at the school.

BENEFITS TO THE COMMUNITY

The families within the community will have access to a school that furthers the education of their students and provides them with opportunities that other schools may not provide. In addition, the children will learn valuable skills that they will be able to utilize throughout their lives.