FRANKLIN ELEMENTARY

LEARNING ANNEX AND SITE GREENING



EXECUTIVE SUMMARY & SCOPE OF WORK AND BUDGET

With the Benjamin Franklin Elementary School's transition to a foreign language immersion magnet program, the student population was on the rise. The success of the program was not supported by the condition of the 1950's site and the consolidation of 14 single-story portables into a two-story permanent building was a priority to free up more space on site. Another priority was for site design to transform the asphalt playground from an "urban heat island" into an "urban play oasis." Parents, strong supporters of the program, expressed a desire to see innovative ways to use less energy and for sustainability to be reflected in the design of the new building and site improvements. The District, the parents, and the design team were all on board with the goal: design a Net Zero Energy building, green the outdoor spaces, and do all of that on a very limited budget.

Scope of Work: The consolidation of 14 single-story portables into a 22,976 Sq. Ft. two-story permanent classroom building and a comprehensive greening of the outdoor spaces.

Budget: \$8,700,000



SCHOOL AND COMMUNITY ENGAGEMENT

This project is truly a story of community coming together—parents, students, staff, the District, and the design team—to provide a better learning environment for the kids. The District identified the need for new classroom space. The parents wanted a reduction of asphalt for the kids to play on, and the community advocated for the greening of the campus. The design team worked with the District, parents, and community to make all these goals a reality. It was the strength of the collective efforts that made all of it happen.

Franklin Elementary School Learning Annex exemplifies high performance on a tight (and tightening) budget. Faced with escalating costs across a District-wide bond programs, the district facilities team redefined the project with a modular building budget as a cost benchmark. Simultaneously, the design team worked closely with the school foundation to pursue supplemental funding from the State's Proposition 84 Urban Greening Grant Program.



EDUCATIONAL ENVIRONMENT

Everyone wanted the Franklin Elementary Learning Annex to have a comfortable outdoor learning and activity space and also show students how sustainability can be a choice.

This project introduces a multi-use landscape designed to inspire a range of activities. A grass field (with a specially formulated drought-tolerant seed blend), limited hard court play area, a new running track, amphitheater, gardens, outdoor science area, kindergarten play, and shaded gathering areas are some of the play elements intended to promote an active play time. Outdoor classrooms to the north of the building are shady areas for teachers to bring students outside. With the added shade, it is anticipated that the school will have fewer "scorcher days" where students are not allowed to play and learn outside due to excessive heat on the asphalt.

The building was also considerate in the design choices. Care was taken to ensure an ideal classroom environment through acoustic separation, operable windows, ample northern daylight, connection to the outdoors and adjacent learning gardens, and indoor air quality.





BEFORE





Heat Island Effect 108 Degree Temperatures at Peak Times



Asphalt Reduction – By 45,000 SF Removal Temperature Decrease – From Shade and Planting Collection of Stormwater – By Permeable Surfaces Reduction of Water Consumption – With Plants Building Orientation – Maximum Sun Exposure





Shade Overhangs On South Side of Building



- **1** Classroom
- 2 Preschool
- 3 Kindergarten
- 4 Staff Restroom
- 5 Restroom
- 6 Janitor Closet
- 7 Electrical Room
- 8 Office
- 9 Conference Room
- **10** Elevator
- 11 Closet
- 12 Balcony
- 13 School Sign
- 14 Roof





PHYSICAL ENVIRONMENT

Through adoption of highly regularized building geometries, simple materials, and straightforward detailing coupled with the successful grant, the project met the budget goals and exceeded sustainability goals. The resulting campus additions include a Net Zero Energy classroom building and a landscape overhaul on an existing elementary school site.

We oriented the building for maximum solar exposure and, as a result, it generates more than enough energy on an annual basis to power the new building and further offset the energy demands of the existing campus buildings. This project relies on orientation, overhangs, and passive strategies that maximize energy efficiency and then uses solar to provide the energy. Simultaneously, the building orientation separates kindergarten play from the areas for older children eliminating the need for fencing.



Drought Tolerant Native Plants

Drip Irrigation

Bioswale _____ Stormwater Retention

Heat Island Reduction

True North / South Building Orientation Maximizes Daylight and Solar Collection

Roof Slope Optimized for Solar Panels

Overhangs at South for Shade

Heat Pump Unit in Classrooms Freeing Roof for Solar Panels





Northern Daylit Classroom Cooled with Heat Pumps From Closet

RESULTS OF THE PROCESS

As one of only two successful grant applications to the State's Urban **Greening Grant Program for a public** school, the project is exemplary in its strategies to reduce energy consumption, conserve water, and improve air/water quality. Value to the surrounding community is amplified access to new perimeter landscapes, and 38 new trees, replacing asphalt with softscape and permeable paving, native habitat and rain garden bio-retention zones, outdoor learning areas and a community garden.

- As the 38 newly planted trees and landscape mature, the shade will be significant for the school community as well as the surrounding community with computer models predicting a potential 10 degree Fahrenheit reduction in ambient temperature.
- Just 2,000 ft. from the Los Angeles River, this multi-objective stormwater project includes new permeable surfaces and collection basins, 250 If of bioswale and rain gardens to slow stormwater runoff, and bermed landforms.
- The project removes over 45,000 SF of existing asphalt and impervious surfaces.
- Water consumption is reduced by implementing the drought tolerant plant palette developed by the design team, who chose plants indigenous to the site, and that will be able to thrive with minimal supplemental water after the initial establishment period.

- In the interest of design economy, the project embraces the renewable and ubiquitous materials of LA construction: wood studs, plaster, and cement fiberboard.
- The building is cooled using heat pumps located in closets allocated within the classrooms. This allocation of building space frees the roof for Photovoltaic panels with minimal rooftop equipment.
- This project seizes the opportunity to set an example in a larger district about how maintenance strategies can be adapted to the realities of sustainable and usable landscapes and buildings. This project was given a very narrow bandwidth of design opportunities; the design team was challenged to create a project without additional spending and additional maintenance. The result is a model that can be an example for other schools and agencies.

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Identity Through Selective Material Detailing and Signage



Identity Through Selective Material Detailing and Signage



Reduction of Heat Island Effect Through Strategic Planning