

The Children's Center at Caltech

Pasadena, California

Caltech's new LEED-Gold-certified childcare center cultivates qualities of curiosity and inquiry through the integration of S.T.E.A.M. (Science, Technology, Engineering, Art and Mathematics) into the daily life of each age group. The Center is a microcosm of the surrounding ecology designed to illustrate natural processes and teach students about active and passive systems of environmental conservation. By promoting understanding of site's sustainable systems, the center is itself a central part of the school's curriculum. Through observation and play, the children learn about the preciousness of water in California's arid climate.

At the heart of the center lies an arroyo, a dry streambed carved into the site's sloping contours that acts as a bioswale, filtering and dispersing rainwater collected from rooftops and stored in large cisterns. This water also enables the kinds of experiments that teach children about their environment. Surface runoff and overflow from the cisterns are channeled into the arroyo, which naturally replenishes the water table. Any excess is diverted into a 20,000-gallon tank, which prevents it from entering the storm water system.

The role of the playground in most child care centers is that of an outdoor classroom. It is a critically important aspect of the curriculum. In Southern California the climate allows for year round use of this space. This client pushed the design team to think deeply about the educational opportunities inherent in the landscape. By integrating the aspects of the macro ecology into this space they were able to expose children to much more than they would typically find in their yard. The design and development of the arroyo required the landscape architects to work very closely with the client, civil engineer, architects and contractor to realize. It is the dominant concept that ties the entire project together.

The meandering arroyo divides the center into three distinct areas, each with classrooms and an outdoor play area specifically designed for children of a discrete age. Native and climate-appropriate trees and plants throughout are hardy enough to handle the rigors of a rough-and-tumble playground, but diverse enough to provide a range of textures, shapes and colors in all seasons.

The project draws upon and extends both the natural and constructed conditions of the surrounding area, providing a learning environment that expresses the function of the design. In this fashion, the site itself takes on the role of classroom, laboratory, and teaching tool.