CARDINAL CHILD DEVELOPMENT CENTER

San Bernardino City Unified School District

A nature-based learning oasis for the youngest of learners in the middle of the city



LPA

EXECUTIVE SUMMARY

The Cardinal Child Development Center (CDC) embodies a forward-thinking approach to early childhood education grounded in equity, environmental stewardship, and community connection. Serving 168 prekindergarten students from diverse and underserved backgrounds, the center demonstrates how learning environments can reflect and uplift their communities while nurturing a lifelong relationship with nature.
Both the architecture and curriculum are intentionally designed to foster a strong sense of belonging and connection to place, seamlessly integrating nature into the daily learning experience.

At the heart of the campus vision is the preservation of several mature trees on site, transforming the CDC into a learning ecosystem where students engage directly with the natural environment each day. This approach supports biodiversity and climate resilience while cultivating environmental awareness, personal well-being, and a sense of stewardship. By weaving nature into everyday school life, the CDC reimagines how early learning environments can prepare students for the future socially, academically, and ecologically.



SCOPE OF WORK AND BUDGET

Location: San Bernardino, CA

School District: San Bernardino City USD

Project Completed: July 2025

Grades: Preschool & Transitional Kindergarten

Capacity: 168 students

Acreage of Site: 2.64

Square Footage of Project: 15,300 sf

Building Cost per Square Foot: $1,100



SCHOOL + COMMUNITY - RESEARCH

The facility is located on the old agriculture program land for the nearby high school. The gift of open space and existing mature trees, as if a patch of the San Bernardino forest had been placed in the middle of the city, became **inspiration for the concept: a school as an urban oasis.**
The design team worked with an arborist to assess existing tree health and establish appropriate building standoff distances.

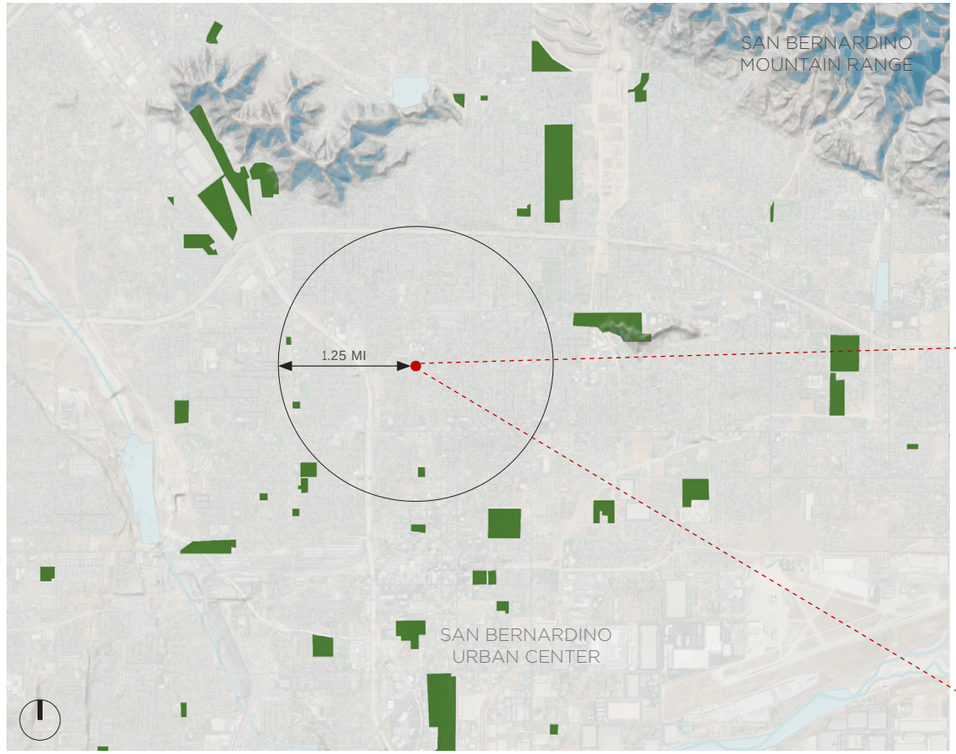
DEMOGRAPHICS



- HISPANIC
- WHITE
- BLACK
- ASIAN
- OTHER

88% OF STUDENTS ARE SOCIO-ECONOMICALLY DISADVANTAGED

LIMITED PUBLIC GREEN OPEN SPACE





SCHOOL + COMMUNITY - CHALLENGES

Inclusion and Sense of Belonging

Over 20% of students are first generation Americans, navigating a new language and complex social dynamics. Without intentional support, these experiences can lead to feelings of isolation within the educational environment.
Cultivating a sense of belonging and identity requires schools to celebrate this cultural diversity while grounding students in the local identity and community of San Bernardino.



Lack of Access to Nature and Safe Green Space

Students have limited access to safe, green spaces within their local community. At the same time, San Bernardino experiences some of the highest temperatures in Southern California, compounded by significant urban heat island conditions.
Addressing these challenges is critical to providing equitable access to natural environments that support student health, well-being, and connection to place.



Inequities A□ecting Early Learning Success

Many families face systemic barriers, including economic hardship, limited access to early childhood resources, and language accessibility challenges. These conditions can impact school readiness and long-term academic outcomes. Building strong educational foundations requires schools to adopt inclusive, nature-integrated, and community-centered learning models that engage young learners through meaningful and supportive experiences.



OPPORTUNITY

FOSTER SENSE OF PLACE AND IDENTITY

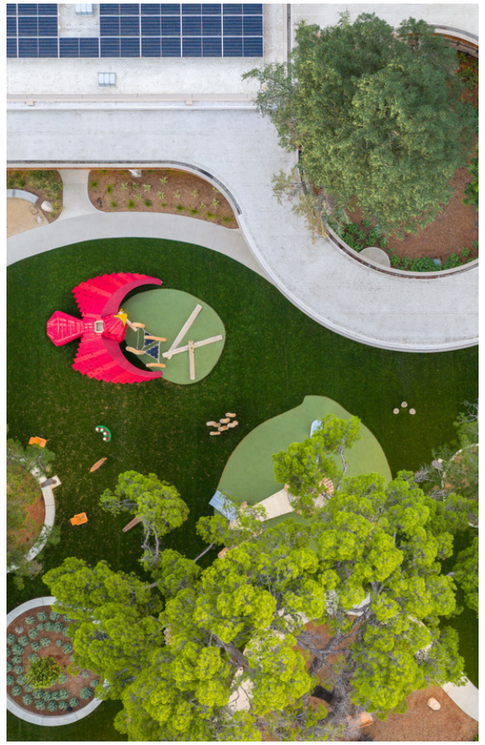
PROVIDE EQUITABLE ACCESS TO NATURE

BUILD STRONG EDUCATIONAL FOUNDATIONS

PHYSICAL ENVIRONMENT - DESIGN STRATEGIES

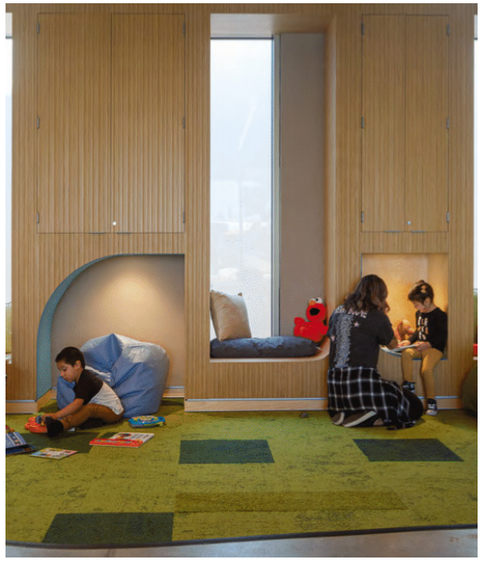
Enhance Learning By Providing Opportunities to Connect to Nature

Outdoor spaces should enhance the student's experience. The courtyard has a variety of active and passive gathering spaces that immerse students in nature. Outdoor play areas are designed with natural materials, local flora and there's even a vegetable garden where children can learn about science and nature through growing their own food.



Support Independence by Considering Scale

A learning environment should be designed to address the size of the children learning in it, and that's especially important for early learners. What a child can reach and have agency over directly impacts their developing sense of independence. When a bookshelf is at eye level, a child can make a choice to grab a book. If there's a comfortable seat near a window with meaningful views, a child can observe nature. Thoughtful, deliberate design can support a child's sense of ownership over their space.



O□er Choices to Support Creativity and Independent Thinking

Even for the youngest learners, it is critical to establish environments that offer choices to foster creativity and support different learning styles. Classroom writable surfaces and tackable materials are thoughtfully arranged to support different activities and provide children agency to engage. Additionally, rainwater collection is left exposed, so children can see how it is funneled from the roof into the ground. Seeing a process like this can spark curiosity and bring awareness to an environment's interaction with its ecology.



Create a Sensory-Rich Environment

At these early developmental stages, research points to the importance of engaging children's senses, not only visually, but through acoustics, touch and smell. The project includes a pavilion nestled in landscape, with tiered seating, where the shade sails above move with the prevailing breezes. Nearby, a pollinator garden provides a variety of native flower fragrances. This can be a simple and effective learning tool as scent usually plays a crucial role in evoking memories.



Design with Flexibility

Spaces that are flexible and accommodating to different uses, improve odds for effective engagement at a young age. This influences major design aspects from building systems, such as structure, electrical and technological features, to organizational elements like movable furniture and storage solutions.
The classrooms are designed with a range of acoustical treatment to control sound to improve focus and reduce stress, optimal daylighting to support mood and alertness and the ability to control temperature with ceiling fans to complement groups of different sizes during collaborative or independent learning. All classrooms account for kindergarten space requirements for maximum futureproofing as demand and demographics may change.



PLANNING PROCESS - CONTINUOUS ENGAGEMENT

During the pandemic, the design team collaborated with the district over the course of a year to outline their needs, vision and goals for how they'd like to serve their community. This involved facility visits to understand their current space utilization, tours of inspirational schools, and identifying key stakeholders, including: teachers, staff, school leaders, child development experts, nutrition and transportation services, and the Facilities and Planning department. The team collaborated virtually to co-author their vision for a natured-based learning environment.



hands-on



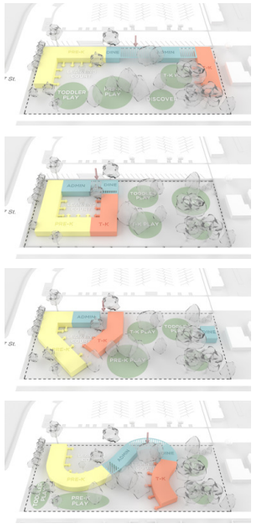
extend learning to outdoors and nature



net zero energy



public access to multi-purpose spaces

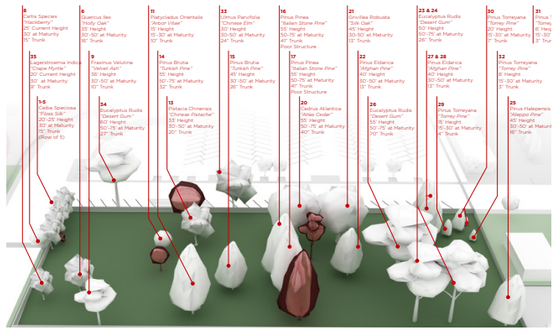






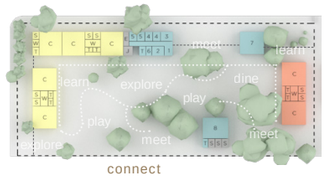
Project Goal Setting

Site Analysis & Tree Protection Plan

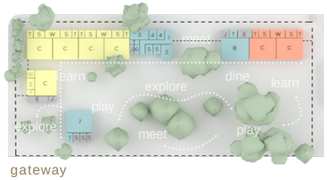


Design Response Exploration

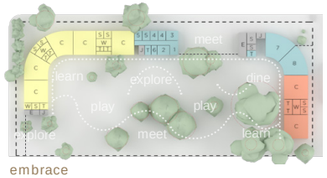
Planning Refinement



connect



gateway



embrace

Energy Analysis

Final Design

Construction

Upcoming POE Fall 2026

Pre-Occupancy gathering with Teachers & Staff

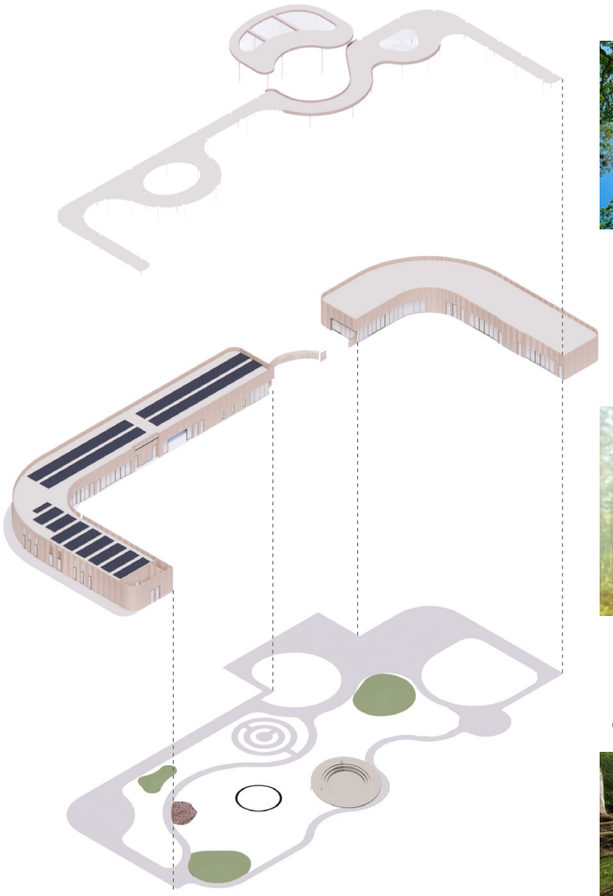


PHYSICAL ENVIRONMENT - DESIGN RESPONSE

The building's form responds to climatic conditions, protecting from the severe Santa Ana winds on the north and opening to prevailing breezes on the south. An outdoor canopy connects across the site, undulating to frame trees and filter sunlight. The building's exterior is wrapped in a varied wood rainscreen system, akin to the bark of trees found on site.

Each classroom has a unique identity, inspired by quintessential local flora, strengthening a sense of place.





canopy
cover / light filter



trunk
enclosure / support



roots
growth / movement



EDUCATIONAL ENVIRONMENT

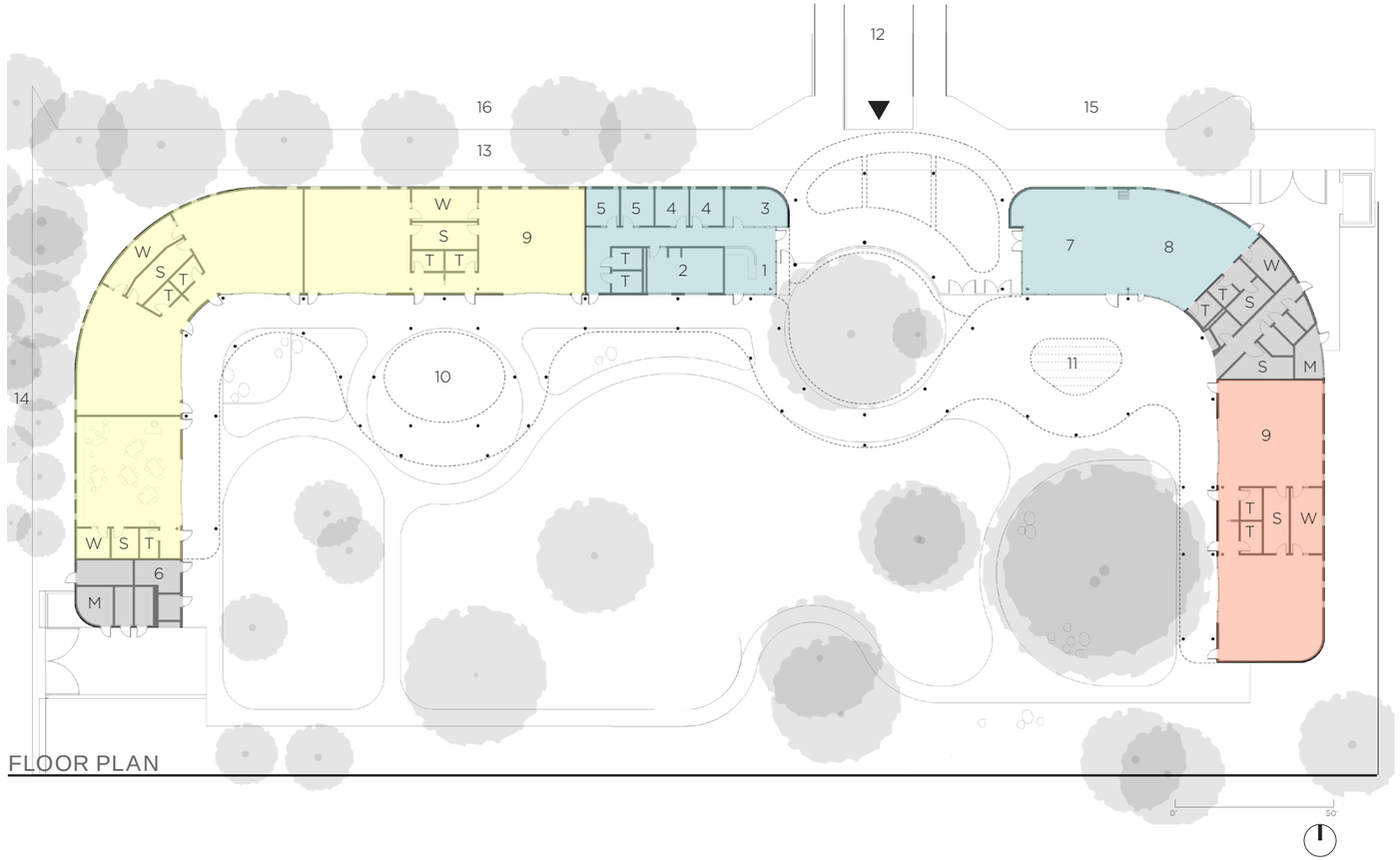
Design with Flexibility

All classrooms account for kindergarten space requirements for maximum futureproofing as demand and demographics may change.

Design for Community

New sidewalks along the west edge of the site and increased sidewalk connections along the north including a new crosswalk provide safe pedestrian access to the school.

1	Lobby	11	Dining Patio	▼	Entry
2	Staff	12	(N) Crosswalk		Preschool
3	Conference	13	Widened Sidewalk		Support
4	Sp. Prog. Office	14	(N) Sidewalk		Admin & Shared
5	TK Office	15	Bus Drop-Off		Transitional Kindergarten
6	Laundry	16	Visitor Parking		
7	Community Room	W	Workroom		
8	Indoor Play	T	Toilet		
9	Classroom	S	Storage		
10	Learning Pavilion	M	Mechanical		



FLOOR PLAN

14



09







01

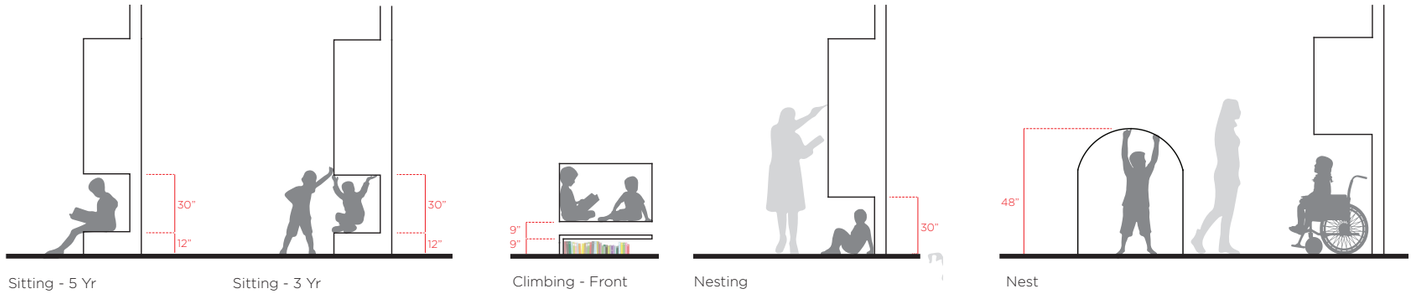


EDUCATIONAL ENVIRONMENT

Support Independence by Considering Scale

The design integrates scaled elements to inspire a sense of discovery for the primary occupants: children, 2-5 years of age. This includes **built-in features in the classrooms that allow for exploration and refuge.**

Natural materials are integral to the experience, from the exposed roof structure to the multi-functional natural wood furniture, all contributing to a lower carbon footprint.









PHYSICAL ENVIRONMENT

Enhance Learning By Providing Opportunities to Connect to Nature

The courtyard has a variety of active and passive gathering spaces that immerse students in nature. Outdoor play structures & equipment are made with natural materials.

PHYSICAL ENVIRONMENT - COMMUNITY

An inclusive stakeholder engagement process facilitated the development of multipurpose spaces available to the surrounding community during after-school hours. These rooms are located at the front of the school with direct access from the entry plaza.



PHYSICAL ENVIRONMENT

Offer Choices to Support Creativity and Independent Thinking

The Northern Cardinal (Cardinalis cardinalis) is native to a tiny, isolated sliver of San Bernardino County, it is celebrated here as a natural wood play structure.
It encourages children to explore, experiment, and make decisions through open-ended play and imaginitive exploration.

In a drought-ridden region, exposed rainwater collection allows children to observe how this precious resource moves from roof to ground, sparking curiosity and awareness of the environment's connection to ecology.



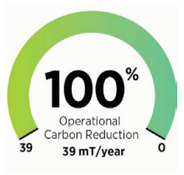
PHYSICAL ENVIRONMENT

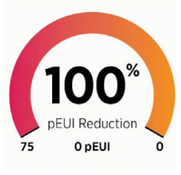
Gift of the Site - an urban oasis



PHYSICAL ENVIRONMENT - SUSTAINABLE STRATEGIES

Meets 2030 AIA Commitment with 100% energy reduction
LEED Platinum Certified





① ENERGY PERFORMANCE
91kw photovoltaic array, offsets 100% of facility's energy use. All electric VRF systems integrated into mechanical closets.

② AIR
All classrooms have mixed mode ventilation with sliding doors and motorized louvers leveraging prevailing breezes.

③ DAYLIGHTING + SUNSHADING
Allows for diffused lighting while protecting from direct sunlight. 90% of regularly occupied areas achieve at least 300 lux for over half the annual occupied hours.

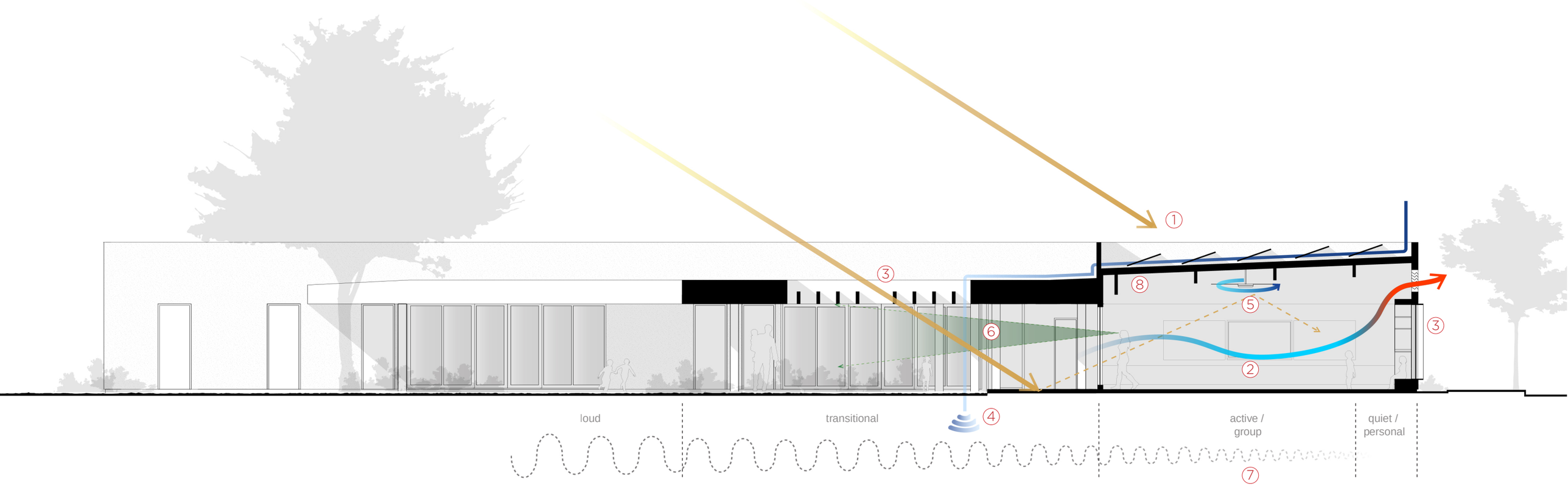
④ WATER
100% of stormwater is captured and directed to bio-detention basins for treatment and recharging the aquifer.

⑤ THERMAL COMFORT
Sliding doors and large fans accessible to students and faculty for operation.

⑥ BIOPHILIA
100% of occupied spaces have direct and meaningful views to outdoors.

⑦ ACOUSTICS
Variety of spaces provide range of acoustical character to fit multiple activities.

⑧ MATERIALS
CLT & glulam beam roof structure lower carbon footprint. Interior finishes reduced to allow building itself to function as educational tool.



EDUCATIONAL ENVIRONMENT

Create a Sensory-Rich Experience

The design preserves all healthy mature trees on site. Artificial turf & cork are used as the playground surface to address universal access and fall mitigation.

1. THE POLLINATOR
   100% native plants that attract pollinators & promote biodiversity
2. THE PATIO
   place to extend dining & play outdoors with movable furniture
3. THE GROVE
   place to study under the eucalyptus trees with tiered seating
4. THE POND
   place to reflect + explore the yard
   sensory garden that uses different textures + scented plant material
5. THE GRASSLANDS
   place to bring learning outdoors adjacent to the classroom + shaded by building canopy
6. THE PAVILION
   place to meet for class activities, under sun filtering canopy, with tiered seating





RESULTS



JOY OF LEARNING


I AM GIFTED FOUNDATION
RESILIENCE CAMP


COMMUNITY CELEBRATION

"What investing in our future looks like for an underserved community"
San Bernardino Mayor Helen Tran