



Rio School District - Oxnard, CA

RIO DEL SOL STEAM SCHOOL

JAMES D. MACCONNELL AWARD 2022

The Rio del Sol STEAM School is a new 900-student K-8 campus in Oxnard, California that provides a one-of-a-kind educational experience to a largely underserved and migrant population. It is the first K-8 campus for the Rio School District and the first STEAM School for Ventura County.

STUDENT SUCCESS AT THE INTERSECTION OF SPACE & PEDAGOGY

A STEP BEYOND

When it comes to school design, we often celebrate innovative architecture, a flexible curriculum, or partnership with the community. While ‘checking all the boxes’ for these traditional measures of award-worthiness, the new Rio del Sol K-8 STEAM School goes a step beyond. The project merits recognition because of its holistic design approach – where **pedagogy and architecture combine**, to create an unprecedented educational experience that is continuously evolving.

INSPIRING CREATIVITY, CULTURE, & CARING

Realizing a vision set by Rio School District Superintendent Dr. John Puglisi of creating learning experiences that value and inspire creativity, culture, and caring, the architecture of the new Rio del Sol School embraces both progressive teaching methods and contextual influences to promote:

- **Curiosity** – through student-centered, transdisciplinary environments
- **Community** – through elements relating to ancient Chumash culture
- **Soft Skills** – through multi-age-interaction and open-choice settings

THE EDUCATIONAL MEANDER

A meandering path through the campus serves as **a metaphor for the ever-evolving, inquiry-based pedagogical model of the school**, while responding to the site’s context – it’s adjacency to the Santa Clara River – and answering the question, “How can we help the river find its way for the next 100 years?” Just as a “meander” forms when water erodes and widens a river-bank, the educational meander, dubbed the “River of Knowledge,” offers “carved” nodes of activity, fun, and learning, to broaden the students’ educational journey.

FREEDOM-CENTRIC LEARNING

In support of the notion that true learning cannot be prescribed or dictated, but occurs with spontaneity, the new school features immersive, makerspace and STEAM-focused learning environments that encourage freedom of thought, choice, and flexibility. Students have the freedom to learn, play, and teach each other while choosing various tools and settings, regardless of their age.

INDOOR-OUTDOOR MAKERSPACES/STEAM CENTERS

Immersive learning environments at Rio del Sol School are created through strong indoor/outdoor relationships. Each classroom-lab opens up to indoor or outdoor makerspaces, while providing access to the educational meander. The indoor-outdoor integration of focused makerspaces for building, literature, fine arts, performance, science, and nature provides all students with access to specialized, hands-on/minds-on educational tools and settings.

A NEW MODEL FOR LEARNING

Without a doubt, this project is worthy of recognition as a stellar example of supporting a new model for learning within a dynamic and immersive environment. At the Rio del Sol School, students succeed because they are inspired both by the innovative curriculum/pedagogical approach and by the architecture and design. Together, the architecture and pedagogy encourage creativity, culture and caring, while emphasizing freedom of choice and a broad variety of interactive learning spaces. **Students emerge as empowered, engaged, empathetic individuals prepared to succeed in their educational journeys – and in life.**



“Rio del Sol School is about light, openness, air, valuing the outside as much as the inside, and disturbing – or disrupting – the separation between the two...connecting classrooms/ learning labs, STEAM education and makerspaces seamlessly and purposefully, to create a free-flowing learning environment.”

– Dr. John Puglisi, Superintendent, Rio School District



EXECUTIVE SUMMARY: PROJECT DETAILS

OWNER:
RIO SCHOOL DISTRICT

LOCATION:
OXNARD, CALIFORNIA

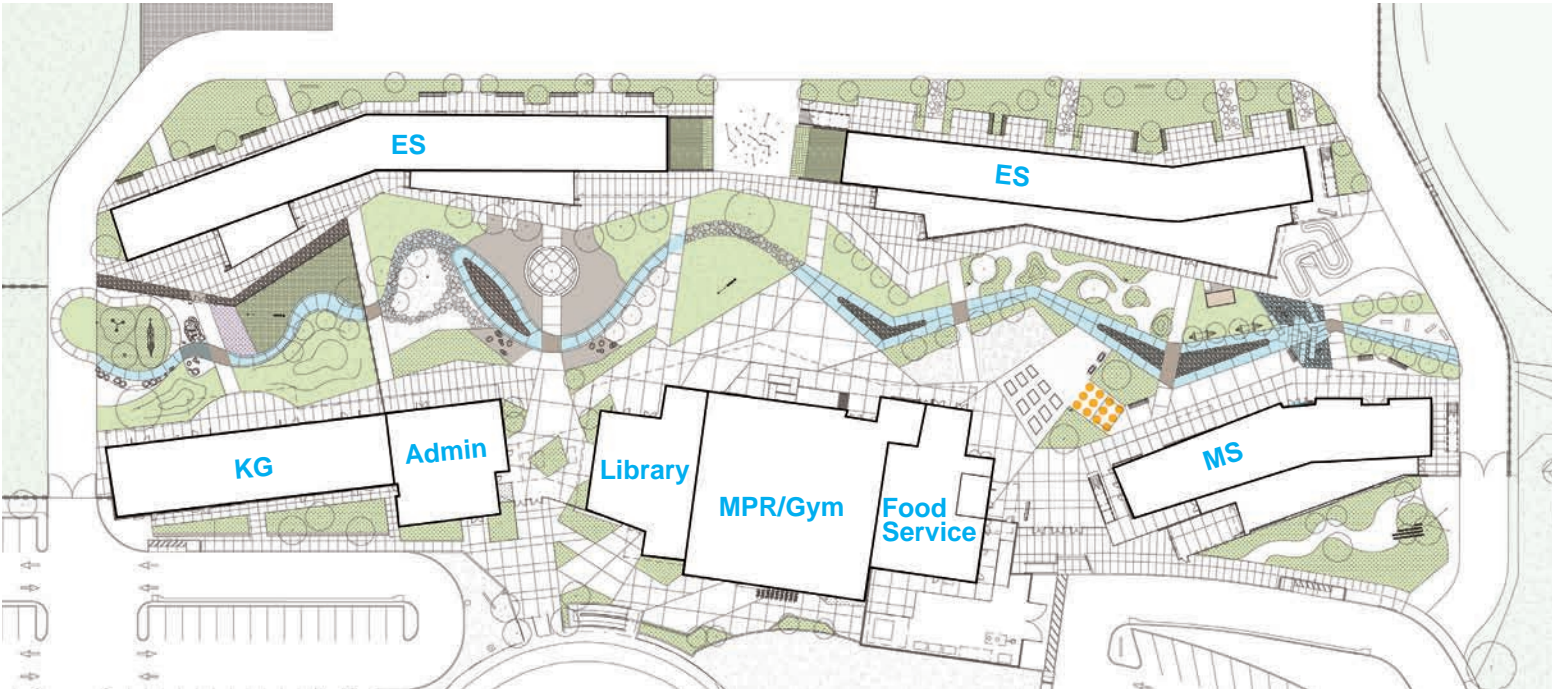
OCCUPANCY DATE:
AUGUST 2018

GRADES:
K - 8

SITE AREA:
12 ACRES

BUILDING AREA:
85,711 SF

STUDENT CAPACITY:
972



EXECUTIVE SUMMARY: SCOPE & BUDGET

SCOPE OF WORK:

Master Planning and Architecture, from Programming through Construction Administration

PROGRAM:

(32) Classrooms

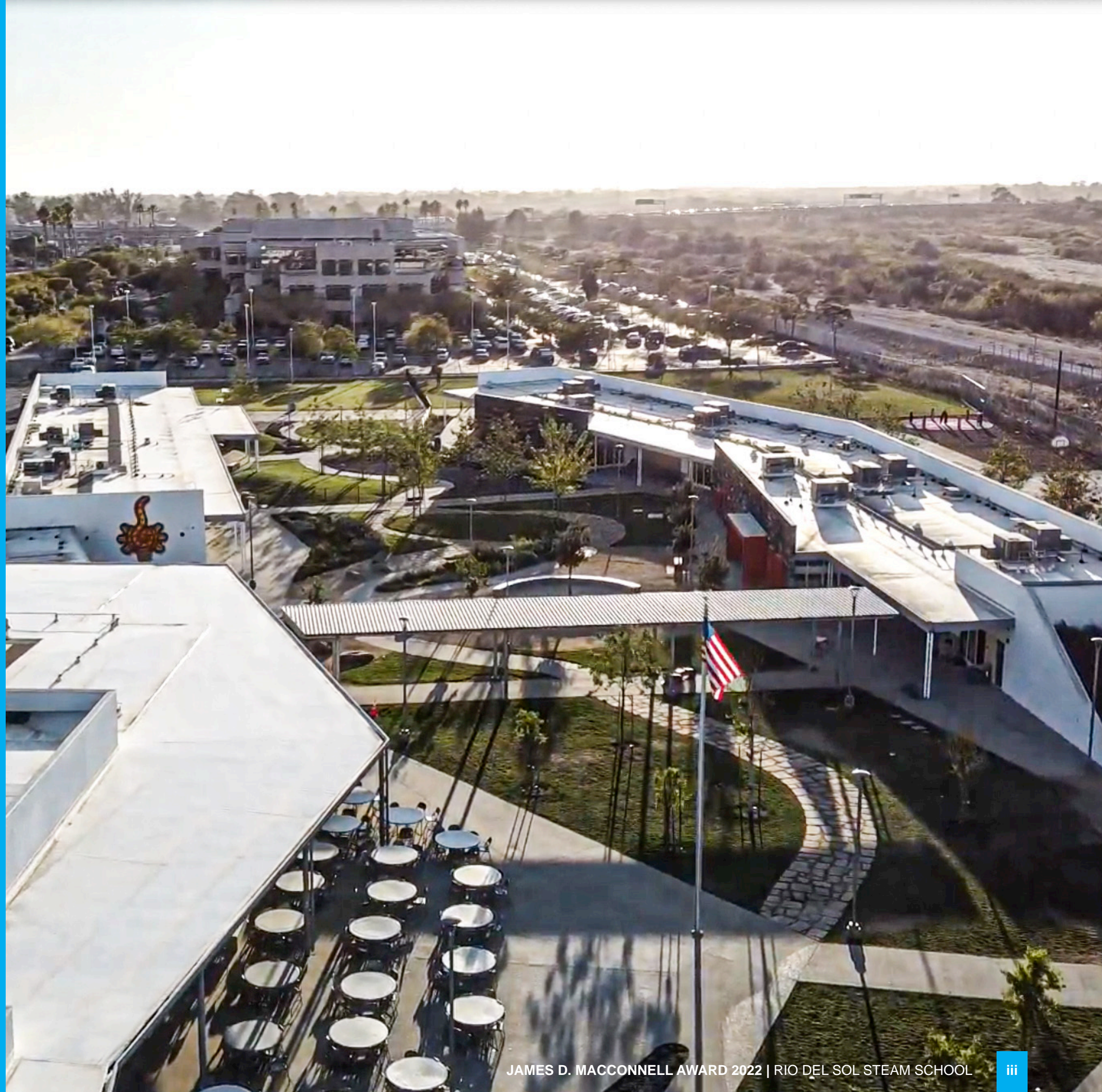
(5) Makerspaces

Support Spaces

- Culinary Center & Kitchen
- Administration Building
- Multi-Purpose Room
- Theater Classroom
- Outdoor Stage
- Media Center
- Welcome Center

CONSTRUCTION COST:

\$36,240,212



01 SCHOOL & COMMUNITY ENGAGEMENT



EMBRACING DIVERSITY & HISTORY

The new Rio del Sol STEAM School serves a diverse local community, largely comprised of an under-served migrant population. The planning process sought to engage both community members and District staff, while also acknowledging, and drawing inspiration from, the site’s history and connections to ancient Chumash culture.

Following referendum approval, the design team engaged community members and District staff to confirm the school’s educational philosophy; inform the building program; and collaboratively envision the types of spaces desired within the new school. Engaging the local community in the planning process, while also developing a solution that would respect the history and culture of the local area was of paramount importance.

“The STEAM school will be designated as an example for the District, County, State, Country, and World.”

- Dr John Puglisi, Superintendent, Rio School District

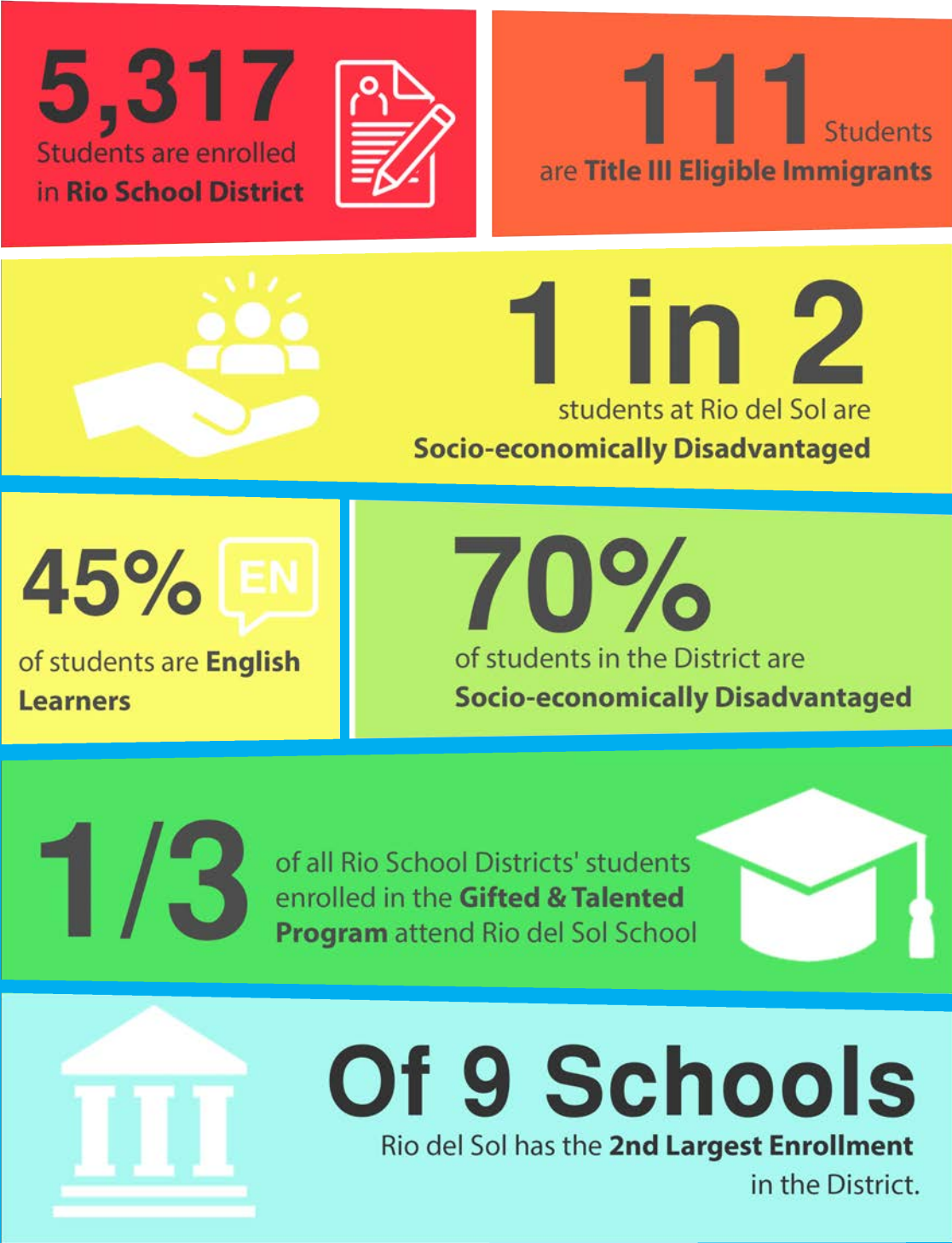
CHUMASH CULTURAL INTEGRATION

In response to the new campus being sited on ancient Chumash lands, the planning approach uniquely embraced community/cultural influence and site history by engaging Native American Chumash Elder Marcus Lopez early in the process. The campus was planned and designed as a means to learn about the past, the here and now, and the future. Reflecting this commitment, Chumash culture and values were explored in detail as part of the overall community engagement effort. The Chumash Elder was specifically engaged for the following key activities:

- Leading and Participating in Teacher Workshops, Site Visits & Key Meetings
- Providing Input on Planning Concepts that Emphasize Connection to the River and Nature
- Developing the Chumash Diagram of Cosmology and Ideas to Integrate it into the Design
- Providing a Formal Chumash Blessing of the Site Prior to the Start of Construction
- On going collaboration with Rio School District



Given the unique demographics of the student population, the community engagement process was critical to gathering valuable input during the early planning process.



VISIONING, WORKSHOPS & TOURS, OH MY!

The design team engaged the Stakeholder / Planning Committee – comprised of teachers, community members, parents and students, and District staff – in a series of collaborative activities. All in all, the Stakeholder / Planning Committee participated in a pre-bond ideation meetings, 5 visioning sessions, a full day of tours, and 5 workshops over a 6-month period.

The continuous involvement of the Stakeholder / Planning Committee throughout the Schematic Design and Design Development phases, as well as during the teacher-based Workshops that were conducted both prior to and during construction, helped to build consensus about decisions made in early phases. An iterative process of evaluation, implementation, and re-evaluation was utilized in order to develop an ever-evolving and constantly improving design process.

Tours of STEAM-Based Campuses

Of note, A4E organized several tours for the Stakeholder / Planning Committee to visit progressive, STEAM-based campuses. Inspirations and key takeaways included:

- Learning Environments **Connected** to Nature
- **Simple** Elements for Play, Such as Tree Stumps, Gardens & Murals
- Classrooms with **Operable Walls** to Encourage Team Teaching
- **Natural Light** and/or Northern Ambient Light
- **Student-Centered** Environments Based on a Child’s Scale of Play and Learning
- Durable, **Maintenance-Free** and Simple ‘Spaces for Making’
- Focused, Multi-Age/Multi-Grade STEAM Centers & **Makerspaces**
- Teachers as **“Equals”** to Their Students



“This school was created through community, teacher, and student input. Envisioned as a ‘school of choice,’ a ‘neighborhood school,’ and a ‘STEAM school,’ it was collaboratively planned to draw kids from anywhere in the district.”

– Dr. John Puglisi, Superintendent,
Rio School District





HOW CAN A SCHOOL HAVE NO BARRIERS?

BUILT ENVIRONMENT

- Diversity in everything: chairs, tables, sizes of rooms, colors
- Bring life to outdoors & indoors
- Ability to adapt: grow, shrink roomspace; movable/transparent walls, open ceilings, flexible furnishings; varying configurations - community driven
- Provide spaces for contemplation

OUTDOOR ENVIRONMENT

- Easily accessible from any location
- Many paths to travel around campus
- “Green” screens
- Large open spaces
- Nowhere for a student to hide
- Feeling of openness
- Make all classrooms inspiring

CURRICULUM

- Promote access to the world & other classrooms
- No curriculum restrictions
- Equitable technology in classrooms
- Access to teachers, work areas, other classes/grade levels
- All cultures/languages valued

GRADE K-2

- Art, music, experiments with multiple media; project-based learning is a must
- Small group activities; together on the floor
- Water & sand play; science experiments
- Building with blocks, legos, puzzles, drawings; eye/motor skills
- Outdoor exploration
- Language development; reading

GRADE 3-5

- Engineering design/thinking
- Designing/building/testing
- Place for independent work; ability to spread out
- Gardening
- Thought process involves multiple layers of thinking
- Challenge activities related to math/science
- Environmental activities
- Activities related to reading; sharing items read

GRADE 6-8

- Design work that tests theories, examples; use computer to design
- Math on the playground; building structure
- Community-based learning; field trip, authentic learning experiments
- Multi-disciplinary activities: history/math/science/English/geography
- Activities that build social interaction/communication



WHAT ESSENTIAL LEARNING ACTIVITIES SHOULD STUDENTS ENGAGE IN AT EACH MAKERSPACE?

BUILT ENVIRONMENT

- Safe, comfortable spaces
- Open, interactive, inviting; light
- Provokes curiosity
- Detailed; hands-on

OUTDOOR ENVIRONMENT

- Fountains/water features; music
- Beautiful; connected with nature & environment
- Sustainable, self-sufficient; create own electricity

CURRICULUM

- Staff works as a team and cares
- Students are valued, respected
- Provokes active & critical thinking



WHAT MAKES A SPACE LIFE CHANGING, INSPIRATIONAL AND MEMORABLE?

ENGAGEMENT OUTCOMES & GOALS

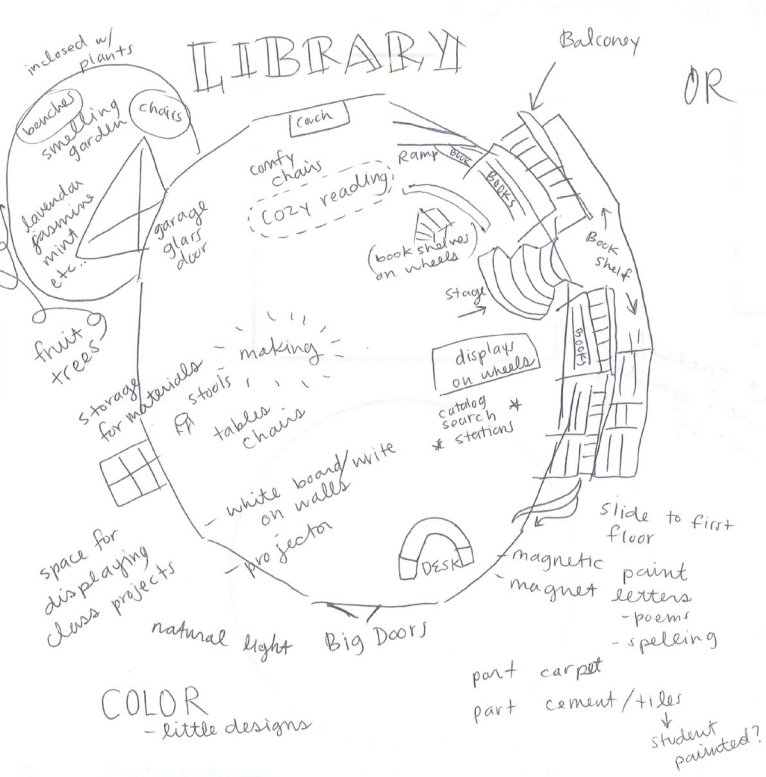
Based on input gathered through the community engagement process, a clear set of goals and priorities for the project emerged. The design team developed planning options based on these goals (shown in the infographic on the right). In addition, the educational curriculum, and both the aesthetic and functional aspects of the physical environment were refined and developed to align with the desires expressed by the community and the Stakeholder / Planning Committee as a whole during the workshop exercises.

“From the beginning, there was a sense that ‘we’re all doing this together’ – equal voices in the planning, creating equal opportunities for students to learn.”

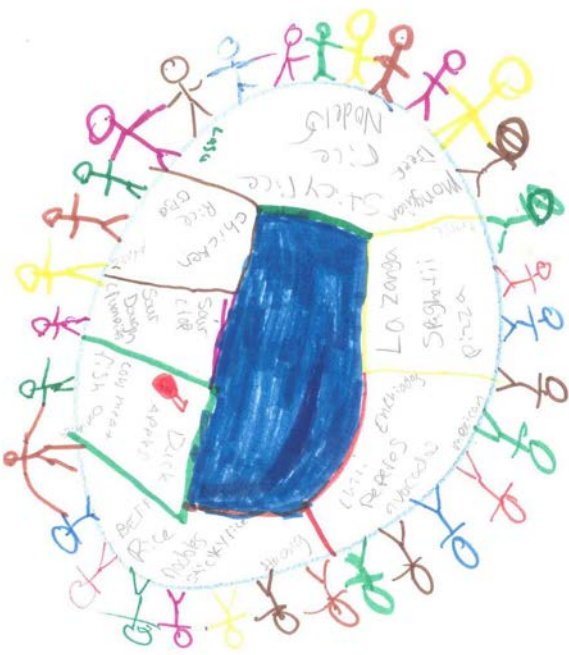
– Dr. John Puglisi, Superintendent, Rio School District

Workshop Activity: Your Ideal Space

Taking the established high-level goals into consideration, both students and teachers were encouraged to participate more meaningfully in the planning process by sketching, and experimenting with, how their perfect learning environment might be physically organized.



TEACHER SKETCH FROM WORKSHOP



STUDENT SKETCH FROM WORKSHOP



FLEXIBILITY

Spaces should promote freedom-centric learning, with a variety of spaces to choose from for individual learning and teaching style



SAFE LEARNING ENVIRONMENT

All spaces shall encourage caring for each other, with broad visibility for supervision, but maintaining intimate feeling



CONNECTION TO NATURE

Seamlessly connect indoor and outdoor learning and teaching, and unite students with themes related to the Santa Clara River



COMMUNITY INTERACTION

Create spaces to provide continued involvement of local community experts in teaching



NATURAL LIGHT

Maximize daylighting with bright spaces and views to the outdoors for every learning environment



CELEBRATING CULTURE

Provide interior and exterior spaces to celebrate history, culture and traditions of the community and the contextual site, including the Chumash



COMMUNITY BEACON

Provide a welcoming environment to parents, siblings, and the community at large



SUSTAINABILITY

Passive sustainability strategies should promote students becoming stewards of the environment



HEALTHY LIFESTYLE

Promote health through natural ventilation, edible gardens, hygiene, open space and varied areas of play



LOW MAINTENANCE

Simple building materials and systems that are easy to maintain



02 EDUCATIONAL ENVIRONMENT



FOSTERING THE FREEDOM TO CARE

Rio del Sol’s educational environment was designed specifically to further Superintendent Dr. John Puglisi’s vision, which emphasized spontaneity and a focus on immersive learning environments that would encourage freedom of thought and choice. Importantly, the school was also designed to emphasize the “5 Cs” of 21st century learning: Collaboration, Communication, Critical thinking, Creativity, and Caring.

FREEDOM FIRST

The architecture of this new campus incorporates freedom of choice through integrated opportunities to learn, play, and teach in almost any way a student or teacher might desire. Teachers – known as “Learning Guides” – are encouraged to make the learning environment their own; so, classrooms – dubbed “Learning Labs” – each take on a different look, layout, and feel, sometimes changing from one hour to the next.

Similarly, students may choose from a broad variety of settings – with the STEAM-focused indoor/outdoor makerspace environments and tools playing a key role in manifesting the school’s freedom-centric approach. Through these unique spaces, students are encouraged to learn, play, relax, or contemplate, and do so in their own way, at their own pace.



A CULTURE OF CARING

Taking freedom-of-choice a step further, the design of the educational environment fosters “caring” and other soft skills by facilitating cross-grade collaboration/mentoring opportunities. Driven by the educational program and philosophy, Rio del Sol implemented “Flowing Fridays” – a day where multiple grade-levels work and learn together, each student choosing the workshop or activity that they are most interested in; and also adopted a campus-wide motto of **“Whose Knowledge Counts?”**, wherein learning and teaching are democratized, allowing students of all ages, as well as parents and community members, to be “educators.”

The educational environment works in tandem with the campus culture, encouraging students to develop soft skills, including caring for each other and taking responsibility for their school. Exemplifying this phenomenon, students, teachers, and administrators have adopted shared community initiatives, such as **“Campus Beautification/Trash Kid”** and **“Save the Steelhead Trout,”** as well as special-interest groups that emphasize empathy and accountability, including a student-driven gender equity group and a “green-thumb” team that cares for the culinary garden.

“True learning cannot be prescribed or dictated, but occurs with spontaneity when students are passionate about the learning activity before them.”

– Dr. John Puglisi, Superintendent,
Rio School District

THE RIVER OF KNOWLEDGE: AN EDUCATIONAL MEANDER

Responding to the question: “How can we help the river find its way for the next 100 years?,” the design team developed the concept of the “River of Knowledge” – a meandering path that provides nodes of activity, fun, and learning throughout the Rio del Sol campus to enhance the students’ educational journey.

Just as a meander forms in nature when moving water in a stream erodes the outer banks and widens its valley, creating new paths, the Educational Meander flows like a stream that contains everything needed for hands-on /

minds-on activities in building, literature, fine art, performance, science, and nature. Supported by a decentralized plan, the Educational Meander provides all students with equal access to these unique learning environments creatively integrated throughout the campus. Today, students might have class at the outdoor stage; tomorrow, students may go barefoot through the mud-walk; the day after, explore the constellation connect-the-dots installation. At the center of the campus is the Wisdom tree, a place for all to come together to share and to learn.

“Rio del Sol STEAM School is really about the river. The meander, both metaphorically and literally, represents the physical environment and our pedagogical philosophy, and that is really valuable. Our culture supports freedom of thought – a meandering thought process, if you will – and the path through our campus actually meanders.”

– Dr. Ralph Cordova, Principal, Rio del Sol STEAM School



THE MEANDER CARVES THE ARCHITECTURE

Meander (n): A bend in a sinuous watercourse or river forms when moving water in a stream erodes the outer banks and widens its valley.

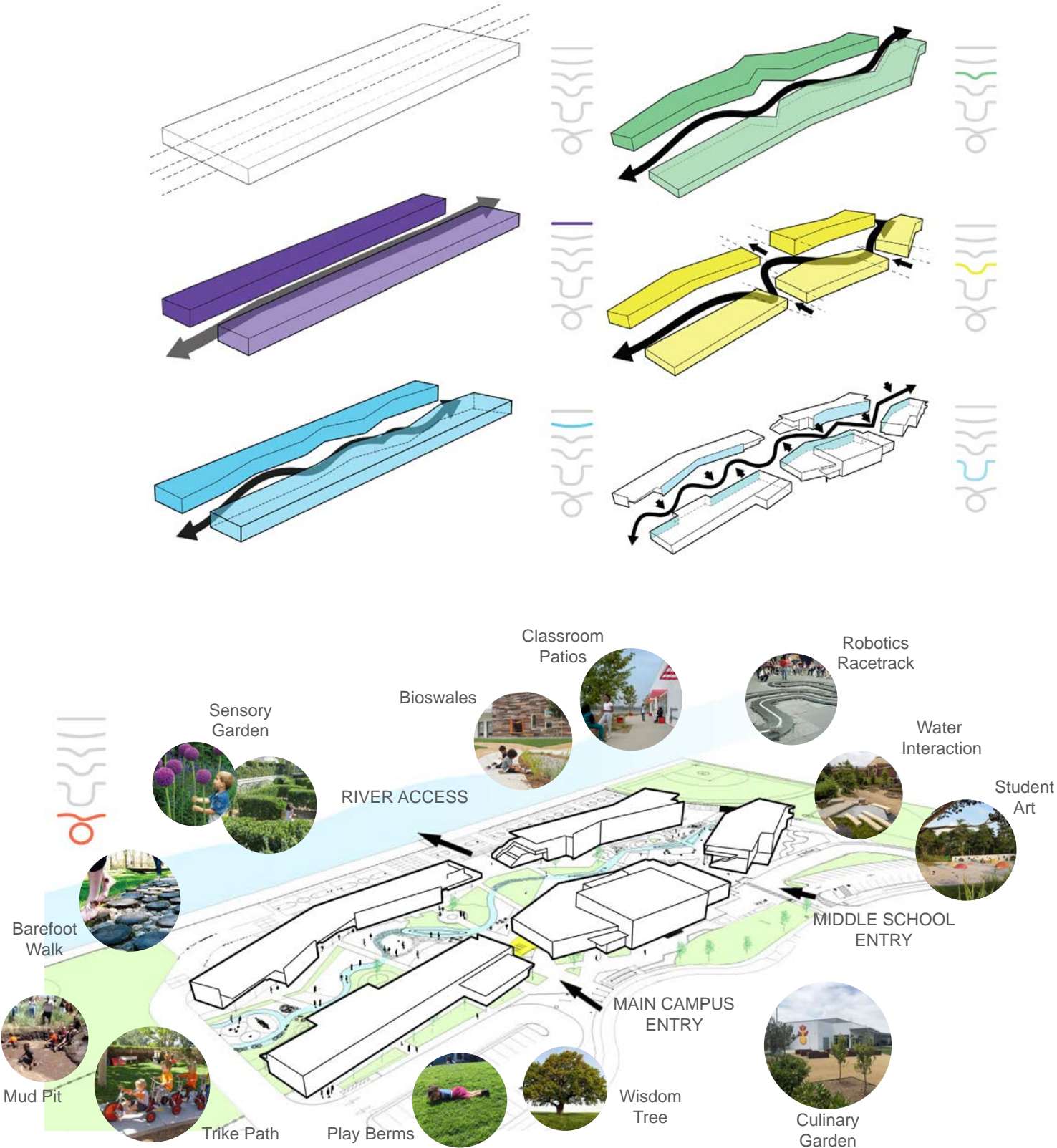
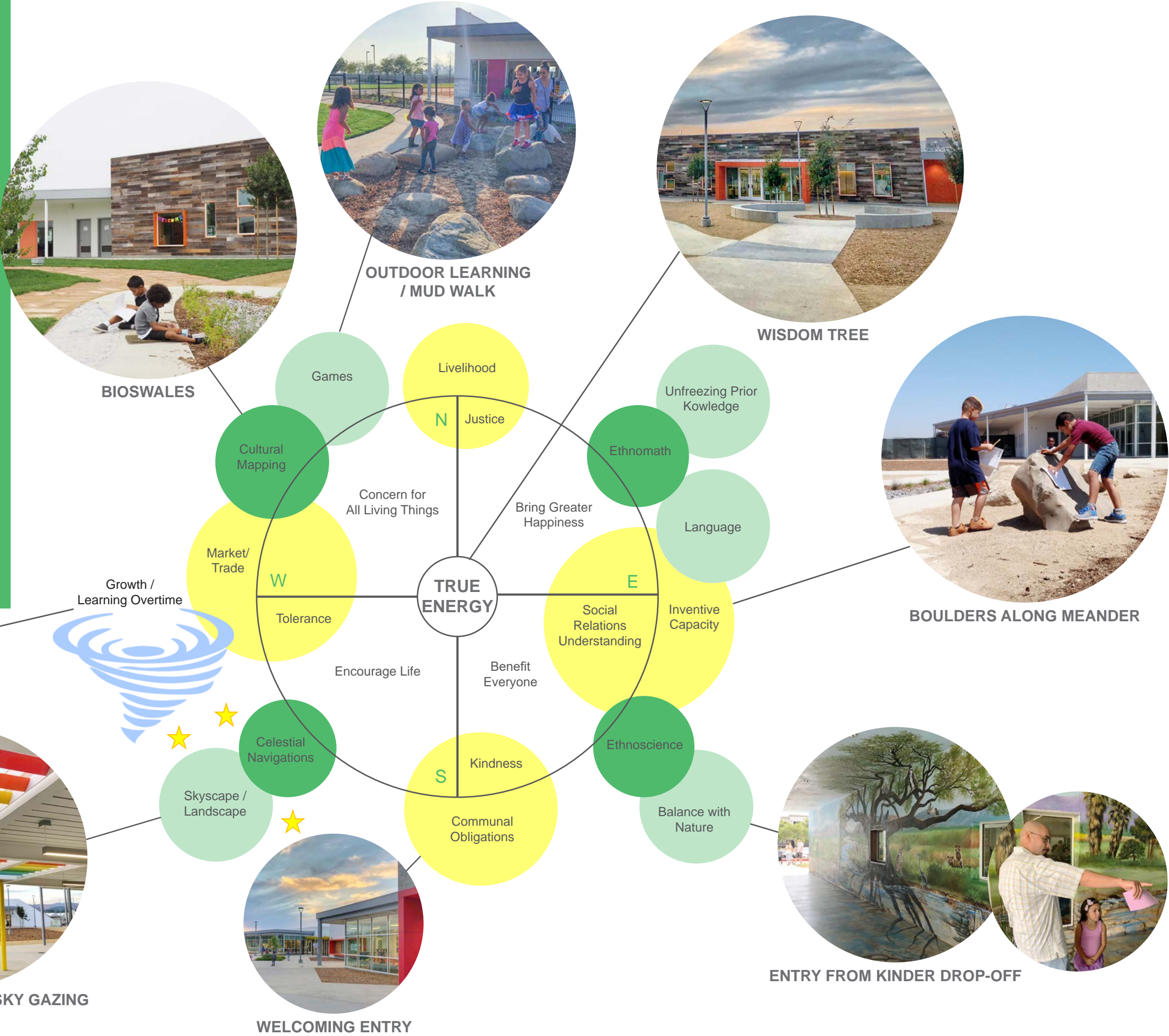


DIAGRAM OF CHUMASH COSMOLOGY

The Diagram of Chumash Cosmology developed during early planning process is integrated throughout the campus. Tapping into these principles, the educational environment incorporates culture- and creativity-inspiring features that have their roots in Chumash Cosmology.

The Skyscape is represented by rainbow-colored louvers at the school entrance; Balance with Nature is depicted by a mural of creatures and plants native to the river; Communal Obligations and concepts of Livelihood are communicated through an herb wall, culinary classroom, vegetable garden, and citrus tree grove; multi-colored lockers that spell out words like “rhythm,” “music,” and “beat” in Morse code, and global numbering systems stamped in concrete, teach Ethno-Mathematics; the “Wisdom Tree” in the center of campus represents Truth & Energy, encouraging students to share discoveries and practice Social Relations; Celestial Navigations are expressed through “constellations” that become visible as dots in the concrete are connected; and Ethno-Science, which combines the study of culture, biology, and nature, is expressed through planting biomes, allowing students to learn why certain plants are critical to society, art, and survival.



FLEXIBLE LEARNING LABS

Rio del Sol’s educational environment was designed to support a variety of learning and teaching styles. As part of the planning process, classrooms were renamed “Learning Labs;” and, teachers named themselves “Learning Guides. The teachers’ training manual includes a guide for setting up their teaching spaces in their own way, capitalizing on the flexibility of the design.

TEACHER-DRIVEN SPACES

The freedom to team-teach and the flexibility to choose how space is used is encouraged through vestibules, or “mudrooms” with shared sinks, designed to foster student interaction, demonstration of experiments, and to teach hygiene habits; Sliding doors that double as dry-erase surfaces, allow teachers to easily combine classrooms. Flexible furniture, mobile AV equipment, and classrooms with writable magnetic surfaces on every wall, allow the space to evolve throughout the day alongside the curriculum, while also encouraging students to choose their dynamic method of learning.

STUDENT-CENTERED ENVIRONMENTS

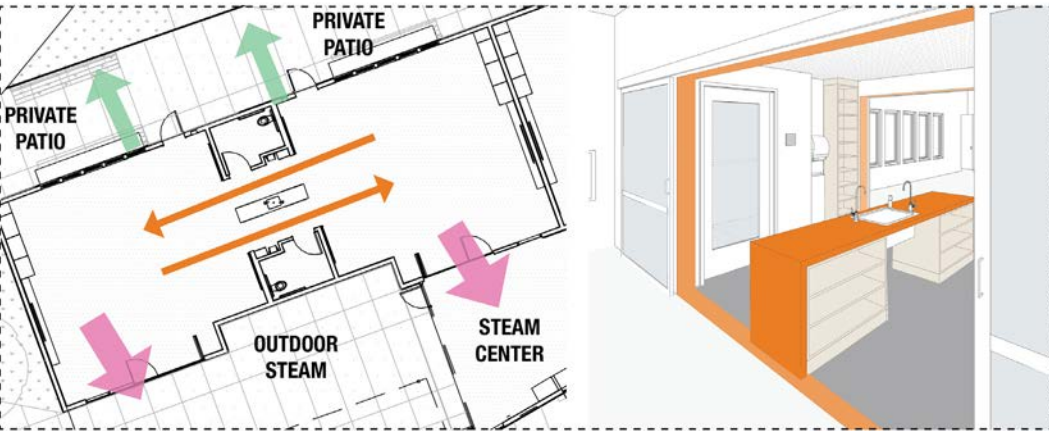
Students are constantly presented with new opportunities in their educational journey through flexible, freedom-centric spaces. Classrooms are designed with writeable and magnetic surfaces, as well as integrated ‘fidget-to-focus’ agile furniture and AV equipment, allowing students to make the space their own.

“Students appreciate the different seating options and non-traditional arrangements. Teachers love the ability and flexibility to easily change the design of their classrooms.”

– Larry Kelman, 4th Grade Learning Guide, Rio del Sol STEAM School



THE MUDROOM



EXPERIMENTATION, TEAM-TEACHING & PRIVATE INSTRUCTION WHEN SLIDING DOORS ARE CLOSED



MAKERSPACES TO PROMOTE CURIOSITY

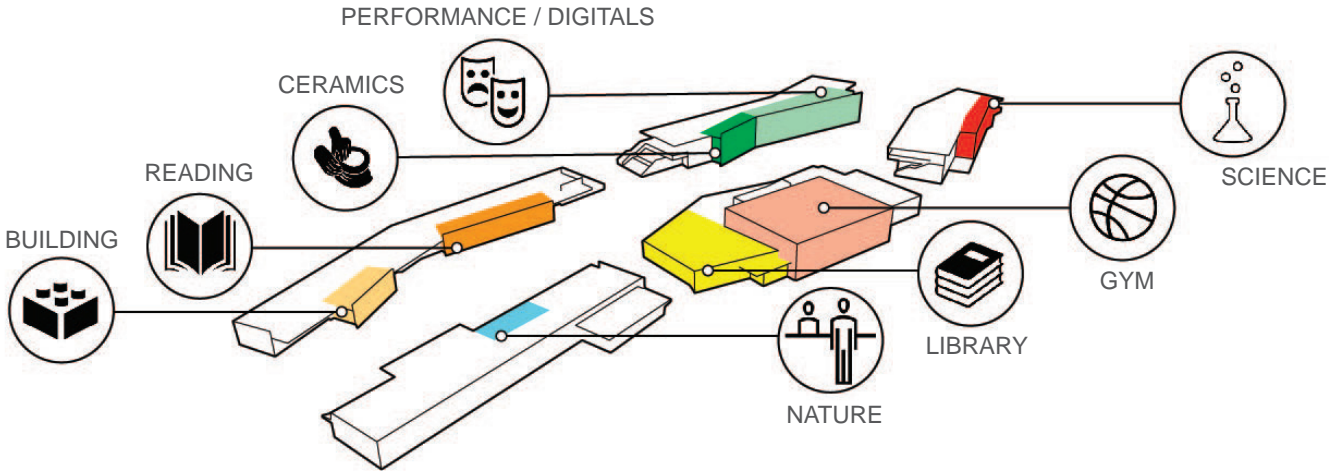
“The architecture and design of Rio del Sol respects the curiosity and exploratory mind of the 21st century learner, as well as the needs of the STEAM educator. My students give themselves permission to research, build, design, create, and experiment freely in the indoor and outdoor learning spaces... the entire campus is their learning playground!”

– Camille Izvarin, M.S., 3rd Grade Learning Guide, Rio del Sol School

HANDS ON / MINDS ON

The indoor-outdoor integration of STEAM-focused makerspaces at Rio del Sol – for building, literature, fine arts, performance, science, and nature – encourage hands-on/ minds-on activities, while supporting transdisciplinary learning, as well as cross-grade-level interaction. Students flow freely and can easily transition between Learning Labs, makerspaces, and outdoor learning nodes, further facilitating immersive learning. In addition, all students have access to specialized educational tools and settings.

Specific makerspaces vary broadly. In the Building Makerspace, the floor is painted with a graphical map, appealing to early learners. Elsewhere, a hammer wall, pegboards for tools, and a Lego wall are provided for elementary-grade-levels; and lockers with power tools are available for use by older middle school students as they assist their fellow younger students in learning new building skills.



CONNECTION TO NATURE & THE RIVER

The “River of Knowledge” reinforces the relationship between the physical environment and the learners / users, with its nature-based settings, such as the natural Kinder-play boulders, butterfly garden, bioswales, and grass berms for students to roll down. Each Learning Lab opens up to a private patio and garden. Users are significantly connected to the physical environment and its context, whether observing how water drains to the bioswales, picking blueberries and avocados to use in culinary class, or viewing the River through binoculars from the outdoor observation balconies.

In addition to the planning concept of the “River of Knowledge,” the campus design also acknowledges the context of the adjacent Santa Clara River. Known in Ventura County as “the River School,” Rio del Sol School has collaborated with the Watershed Protection District to improve the Levee, and leverage the improvements to create “Educational Betterments” – learning opportunities along the river’s edge that help connect the educational environment to nature.

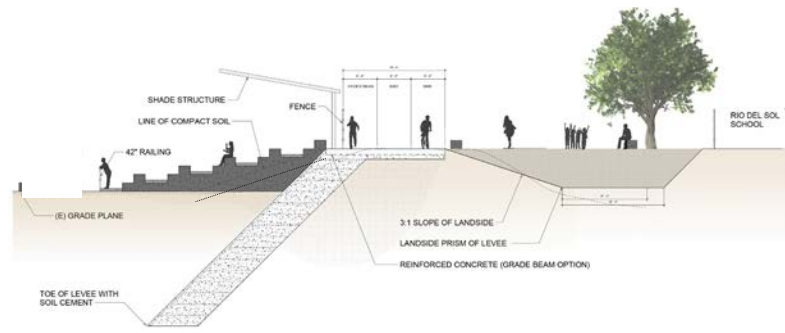
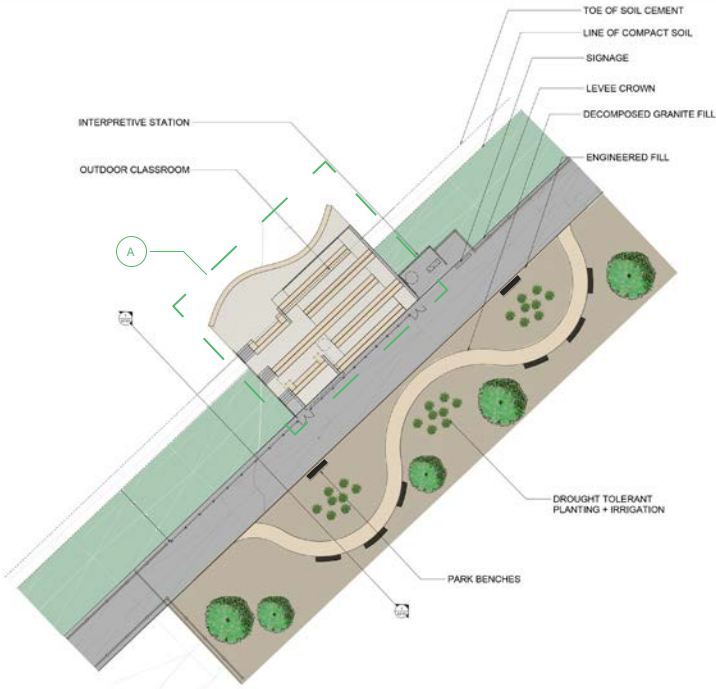
“I love the openness created by so many windows, and the outdoor views of the mountains are breathtaking – easily creating a connection to nature.”

– Larry Kelman, 4th Grade Learning Guide, Rio del Sol STEAM School



SANTA CLARA RIVER EDUCATIONAL BETTERMENTS

Includes Bridge to Levee Crown, Amphitheater & Interpretive Station with learning activities & signage.



PROMOTING WELL-BEING FOR MIND AND BODY



CULINARY CENTER & GARDEN

“The design team successfully worked with Rio’s Child Nutrition Department to assist us in the dynamic design of the K-8 kitchen, where the culinary class is taught.”

– Lacey Piper, MS, RD, Director of Child Nutrition and Wellness Rio del Sol STEAM School



03 PHYSICAL ENVIRONMENT



MANIFESTING LEARNING INTO THE PHYSICAL ENVIRONMENT

ART ON DISPLAY

Art is integrated into the physical environment, including directly in the site design and architecture. Examples of artful touches include the rainbow-colored louvers at the school's entrance; windows into walls, murals; and the colorful fins on the MPR that use light and shadow to spell out the names of the five Channel Islands – a frequent field trip destination for students of Rio del Sol STEAM School – all enhancing the students' experience within the physical environment.

By engaging students with a variety of unexpected physical spaces – such as collaboration window nooks, balcony observation counters, windows into walls, exposed structure, and bi-folding doors – the process of discovery is encouraged. Students are constantly challenged to experiment and evolve.

The new campus was planned and designed to accommodate 900 students in five (5) buildings totaling 85,711 square feet. It includes 32 classrooms, indoor/outdoor STEAM Center and makerspaces, a Welcome Center, a library/media center, multi-purpose space, a culinary center, an outdoor stage/theater classroom, and administrative space.

MAXIMIZING SIGHTLINES & TRANSPARENCY

Rio del Sol STEAM School was designed with no traditional barriers. The physical architecture passively promotes caring, while minimizing security vulnerabilities. Openness, transparency, and layered connectivity provide for maximized sight lines – reinforced by the glazed welcome center and classrooms – ensuring that no one is ever hidden from view.

Additional security strategies include passive barriers, and building and interior space orientation that allows for passive monitoring. Teachers monitor each other's students; and students are taught to take notice of their surroundings and report any issues.

DESIGN STRATEGIES

All buildings have steel construction with brace frames and covered exterior egress walkways to allow the interiors to be much more open with large glazed openings, operable windows, and bi-folding doors. Maximizing flexibility for future use and changing curriculum is part of the building's design strategy.

All of these physical design elements work in tandem with the educational environment in support of the notion that physical space can evolve and progress as it allows the educational model to grow.



CONTEXT DIAGRAM

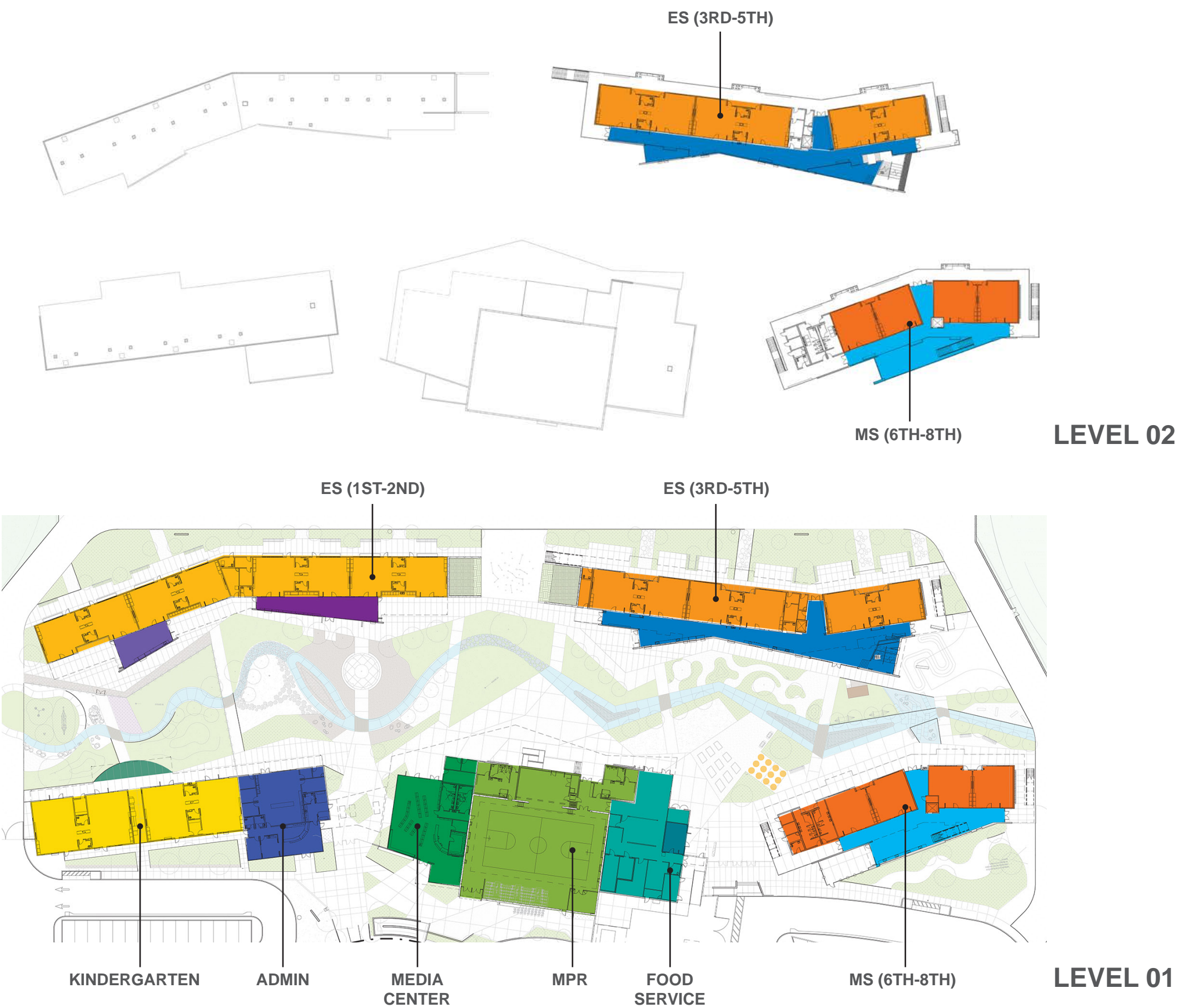
Rio del Sol is bordered by a community park, a commercial zone, and the Santa Clara River, and is integrated into a new housing development.

Due to the school's proximity to the Santa Clara River, the site is graded and the buildings are carefully situated in consideration of the 100-year flood plain. All buildings are located south of the 100-foot easement from the Santa Clara River, while still allowing for all hardcourts to be placed on the northern part of the property.

- RIO DEL SOL K-8 STEAM
- BUSINESS
- MULTI-FAMILY HOUSING
- COMMERCIAL
- PARKS
- RIVER, PONDS, WETLANDS
- AGRICULTURAL FIELDS
- STREETS, HIGHWAYS
- RAILROAD
- BIKE PATH
- BUS STOP



FLOOR PLAN

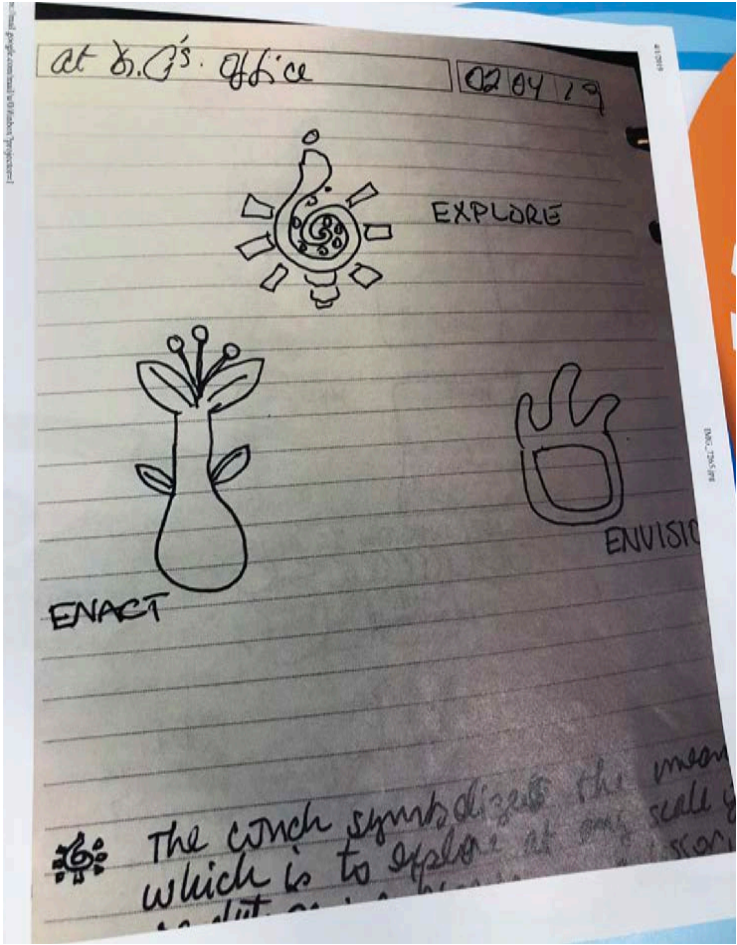


THE BUILDING AS A CANVAS FOR LEARNING

Supporting several of the “5 Cs of 21st Century Learning,” the design of the physical environment takes inspiration from ancient Native American/Aztec paintings; the white plaster “canvas” of the buildings’ walls are utilized to showcase murals of three symbols that represent three areas of critical study at Rio del Sol.

The design team collaborated closely with Principal Ralph Cordova to develop these “touchstones,” and determine how they would be integrated into the architecture as educational tools. By utilizing the building as a canvas for learning, the opportunities are endless.

As the school develops new areas of study, symbols representing each concept can be documented as murals on the buildings. Since the original three symbols were selected and painted onto the buildings, an additional area of study, pertaining to the school’s “Save the Steelhead Trout” initiative has been added, as well as a treasure map of the school’s architecture, and plans for a biome garden mural are currently underway.



Sketch by Dr. Ralph Cordova,
Principal of Rio Del Sol

“We think of the students here at Rio del Sol STEAM School being on a never-ending spiral of learning in the here, now and future.”

– Dr. Ralph Cordova, Principal,
Rio School District

THREE AREAS OF CRITICAL STUDY

EXPLORE

The **Conch**, a symbol for a journey and never-ending spiral of learning and pattern recognition.



ENACT

The **Seed**, a symbol of life and knowledge cultivation.



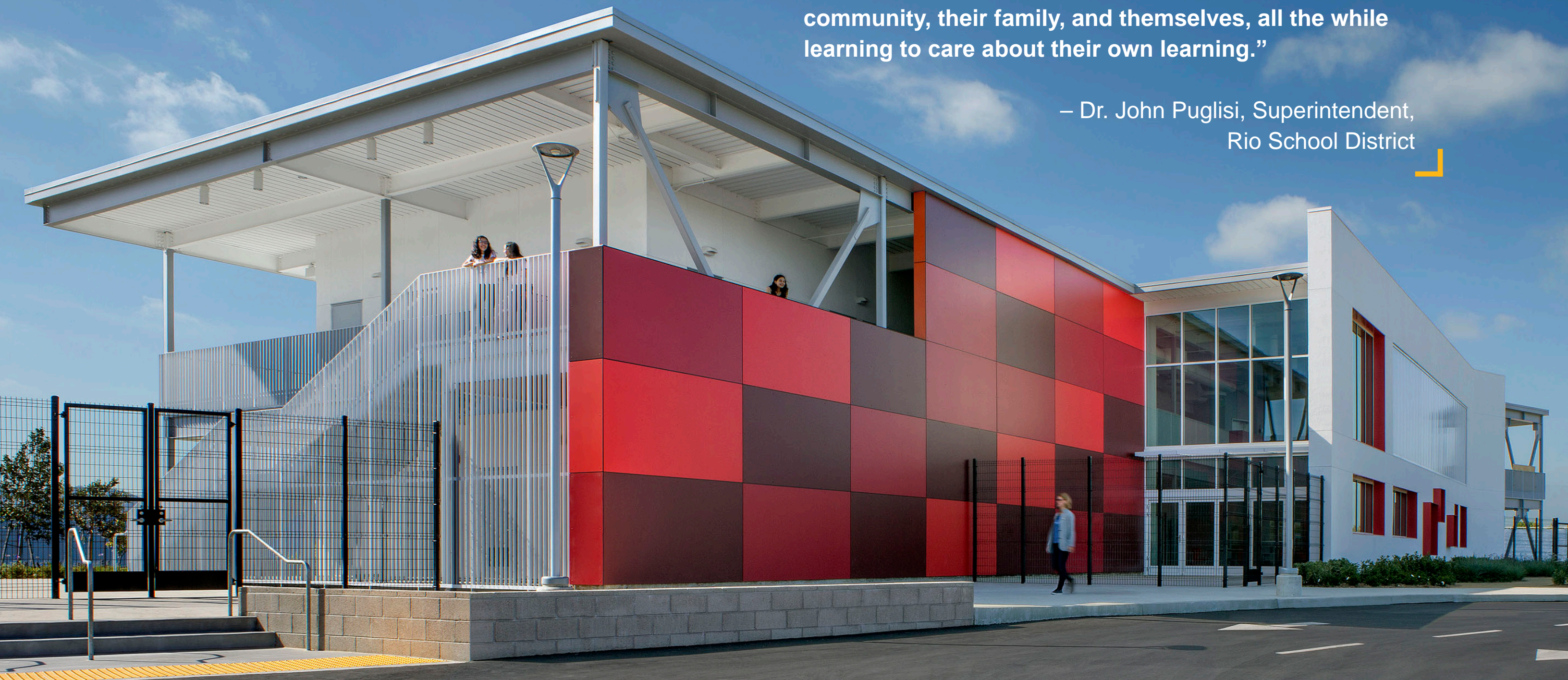
ENVISION

The **Có**, a symbol of intentional reflection of geographical/spatial beginning in the past, present, and future.



“Students follow inquiry-based learning processes that engage both process and content related to their care for others, their place, their environment, their community, their family, and themselves, all the while learning to care about their own learning.”

– Dr. John Puglisi, Superintendent,
Rio School District



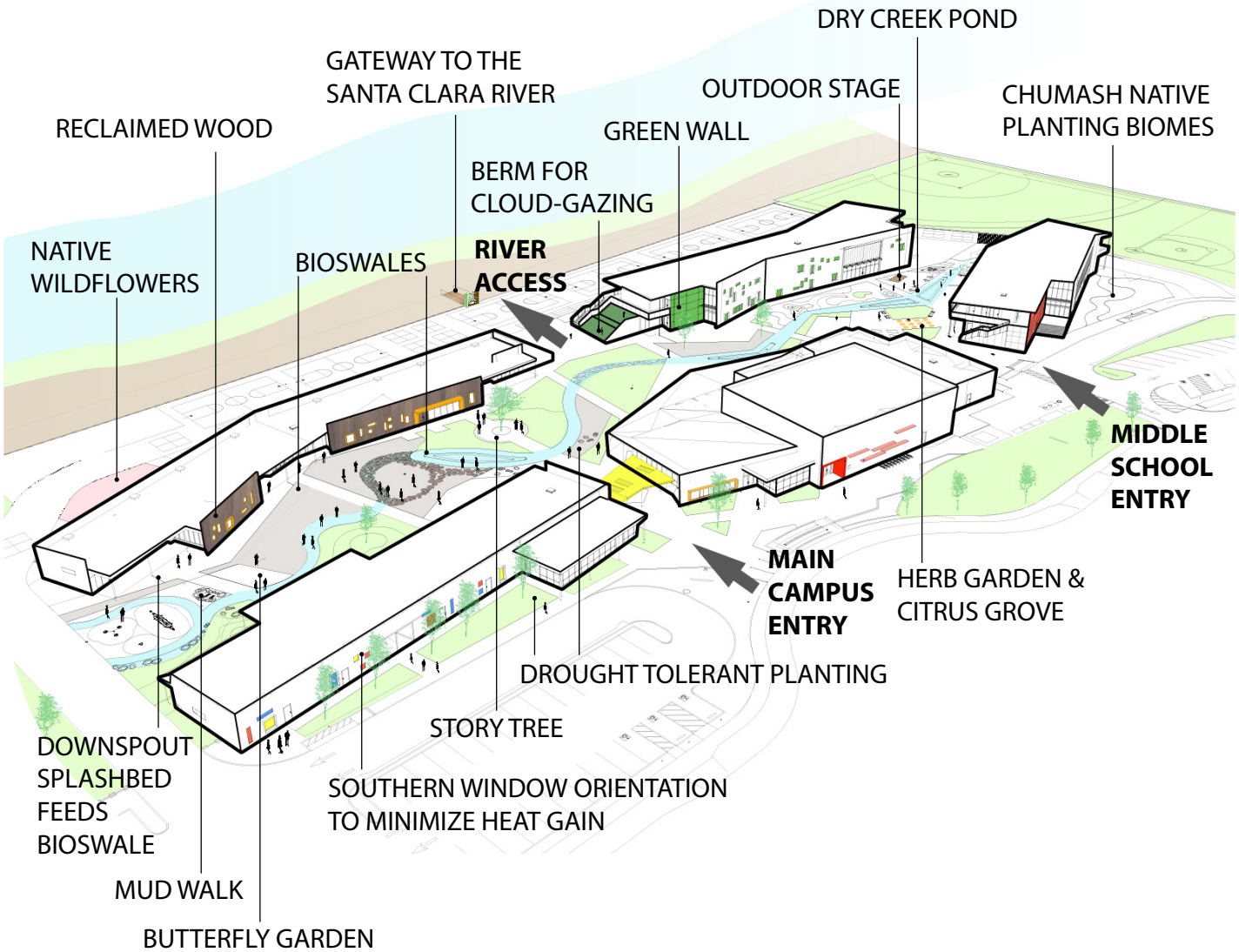
DESIGN FOR SUSTAINABILITY

The Rio del Sol campus was designed for ecological sustainability, environmental education/stewardship, and economy – meeting a number of high-performance building criteria.

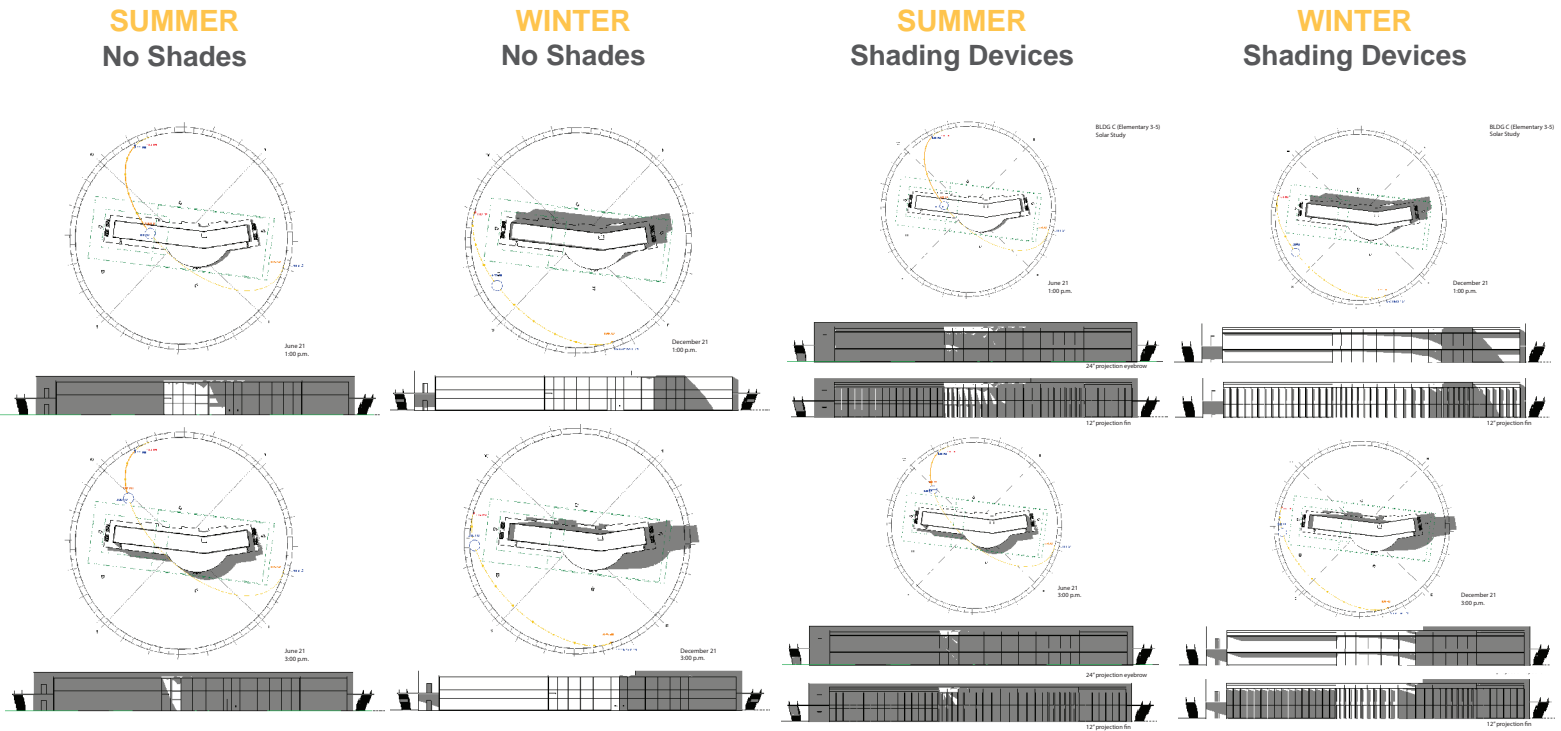
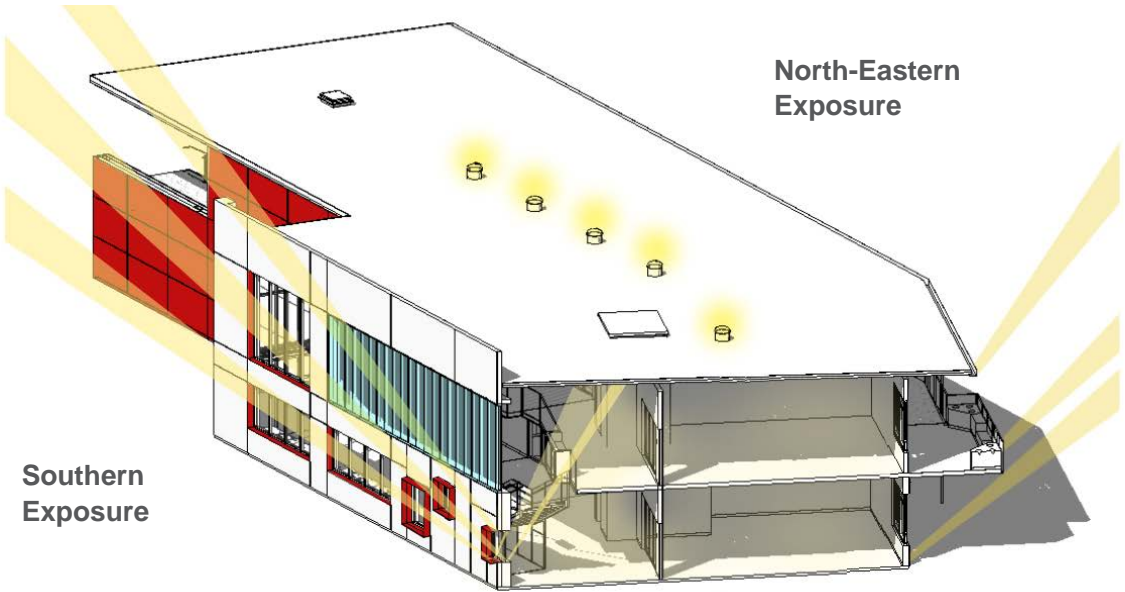
Passive sustainable strategies include: thoughtful building orientation; natural daylighting; translucent insulated panels to maximize natural light and minimize heat gain; southern exposure punched windows providing deep seating nooks and simultaneously enabling shade; translucent panels in maker-spaces to maximize natural light; tubular skylights in classrooms; natural ventilation and operable windows in each classroom / shared space; and FSC-certified wood and recyclable carpets throughout the campus interiors. Low VOC and

reclaimed materials, bioswales, native drought-tolerant plantings, biomes, sustainable gardens and citrus grove, dry creek pond, butterfly garden, mud-walk, and a green wall further contribute to sustainability goals.

The student-led “Save the Steelhead Trout” initiative is a prime example of promoting environmental stewardship, which is supported through the siting of the buildings and the design of integrated learning activities, including integrated stone splash-beds that make water drainage from the building's downspouts visible for sustainable strategy teaching moments.



SUN SHADING STUDIES



“The numerous outdoor/green spaces around campus are beautiful and conducive to an outdoor classroom environment while also having enough room for various STEAM activities.”

– Larry Kelman, Learning Guide,
Rio del Sol STEAM School



04 RESULTS OF THE PROCESS & PROJECT



SUPPORTING DISTRICT, EDUCATIONAL & COMMUNITY GOALS

HARMONY BETWEEN DESIGN, CURRICULUM & CULTURE

Supporting District and Educational Goals, the Rio del Sol STEAM School features two rivers for students to explore and navigate: the Santa Clara River and the “River of Knowledge.” Both are integral to Rio del Sol’s curriculum, the culture of the District, and overall student success. By engaging students with immersive, varied learning environments that encourage freedom of thought, choice, and flexibility, the learning and teaching spaces are evolving organically and simultaneously, showing that the physical space can harmonize and progress with pedagogy and school culture, allowing the educational model to grow and thrive. This is a benefit of a school designed with no traditional barriers—where the architecture and curriculum can live in perfect harmony and constantly inform each other to enhance the student experience.

I’M NOT LOST, I’M MEANDERING

The students of Rio del Sol STEAM School have come to love and appreciate the special learning environment that has been created for them. In particular, the Educational Meander, which both ‘carves’ the architecture and creates nodes of unexpected activity throughout the campus, reinforcing the school’s freedom-centric approach, is a very well-received design element.

Students are encouraged to explore these carved-out areas along the Meander – from the circular natural seating space around the Wisdom Tree, to unusual hardscape features, nature-inspired settings, and serene, meditative spaces. The freedom of choice presented by the Meander has become a theme for the school, with students embracing this motto by wearing t-shirts that say, “I’m not lost, I’m meandering.”



LONG-TERM COMMUNITY ENGAGEMENT & IMPACT

The community engagement process that was key to development of the new Rio del Sol STEAM School did not stop with the school being built. Rio School District is committed to ongoing community engagement, and actively encourages parent involvement by providing resources and access to the new school’s facilities. The school plays host to community events; serves as a venue for dance recitals, workshops, and other public/semi-public events; and is actively sought-out by the community due to its open space, promenades, and multi-purpose environments.



UNINTENDED RESULTS & ACHIEVEMENTS

ADAPTING DURING CONSTRUCTION

Since the Rio del Sol STEAM School was constructed in phases, one unexpected outcome of the project was that students became actively inquisitive about the phased construction activities going on around them. By witnessing construction first-hand, students learned to look beyond the existing physical space to what it can and will be and developed a collective sense of “ownership” of the evolving school.



“By occupying a school that is constantly growing around us, the kids have developed a high tolerance for the unknown. They are constantly learning how to adapt and be flexible.”
– Dr. Ralph Cordova, Principal, Rio del Sol School

ONGOING IMPROVEMENT

In addition, the phased construction approach allowed a continuous cycle of improvement and lessons learned. Teachers were able to provide ‘real-time’ feedback about how the spaces and furniture supported progressive teaching methods, while also communicating any desired improvements. This continuous evaluation process informed the programming and design process for the next phase.



INDUSTRY RECOGNITION

The completed Rio del Sol STEAM School has become a prime example of how pedagogy and space can evolve in tandem to create a freedom-centric and transdisciplinary model for learning. The project has been honored as the winner of:

- 2020 A4LE Southern California, Awards of Excellence – Honor Award
- 2020 Learning By Design Grand Prize Award
- 2019 AIA Pasadena Foothill Chapter Award

In addition, Rio del Sol STEAM School has served as a case study for a broad variety of industry presentations and conferences sessions for organizations including A4LE, AIA, and EDspaces. Due to its national appeal, a virtual tour was developed and presented through various organizations and digital channels.



INCREASED ENROLLMENT, HIGH DEMAND DRIVES CREATIVITY

With the first two buildings completed in time for the Fall semester of 2018, and an initial enrollment of 300 students, which reflected maximum campus capacity at the time, the school has had to constantly evolve and be creative in the use of its space – both indoor and out – in order to accommodate both high enrollment and high demand.

While the school is planned to grow significantly through the current construction phase, teachers and staff have embraced flexibility and, as needed based on high enrollment, have temporarily repurposed support spaces, such as the Multi-Purpose Room and Library/Media Center as instructional spaces.

The school has become in such high demand, there is currently a waiting list, as well as plans to build a sixth classroom building, which is currently in the pre-design phase.



Media Center Used as Two Classrooms



Portion of MPR Used as Classroom



GUIDING PRINCIPLES

These guiding principles and strategies were developed in tandem with the Stakeholder / Planning Committee to envision how the Educational Specifications would include pedagogy and space:

- Students can take **pride in their community image**; students will serve as tour guides or hosts in the school and learn to present their school to the public
- Outdoor spaces to include use of **native landscape elements** and plant materials to reinforce the link with the surrounding environment.
- Students can learn **responsibility** for their own activities and learn effective planning for their activities by using the school calendar, as well as presenting public notices in an intelligent, graphic manner.
- Students should be in charge of arranging and setting up their displays to learn **curatorial skills**.
- The use of glazing and sun shading can teach concepts of **energy conservation**, light control, as well as marking the sun angles throughout the year and reinforcing passive cooling strategies.
- Provide means for students to **observe** shade and shadows.
- Use building and landscape as a **pictorial history** lesson for local area. Show social and educational changes of the local area.
- Provide visual “idea billboards” or **murals** to reinforce curriculum goals and objectives.

LEARNING LABS

Learning Potential:

- Use colors to reinforce visual learning.
- Provide lower windows for kindergarten students to encourage exploration.
- Incorporate display areas to give students and teachers the opportunity to personalize their spaces and encourage responsibility for their environment.

Activities:

- Individual and group work.
- Hands-on/minds-on.
- Specialists conduct private sessions during class time in break-out areas

Atmosphere:

- Open, bright, connected to outdoors, mobile furniture.
- Access and visibility of the shared STEAM Centers extends the learning area.

MUDROOMS

Learning Potential:

- Locate sink at the end of a counter to allow students the opportunity to group around the sink for experiments or demonstrations.

Atmosphere:

- Safe.
- Open sight lines from classrooms for teacher/ learning guide supervision.

MULTI-PURPOSE ROOM

Activities:

- Cafeteria, school and public assemblies, STEAM Center.
- Band and music instruction.
- Performance “stage.”
- Rehearsal and classroom use.
- Capacity: 400 for Dining, 900 for Assemblies.

Atmosphere:

- Bright, airy, clean.

PROGRAM SPACE	SIZE (SF)
Administration & Welcome Center	4,419
Library/Media Center	4,419
Learning Environments & STEAM Centers	
Kindergarden	5,398
1st - 2nd Grade	10,244
3rd - 5th Grade	17,399
6th - 8th Grade	23,097
Kitchen & Culinary Center	2,380
Multipurpose & Stage / Music Room	18,355
TOTAL BUILDING AREA	85,711
Outdoor Covered Areas	24,480

STEAM CENTERS/MAKERSPACES

Learning Potential:

- Provide open floor area for project development.
- Specify utilitarian floors and materials for durability and “messy” experimentation.
- Include large door for direct access to outdoor classrooms and nature.

Activities:

- Location for wet activities, such as painting or clay modeling and science experiments.
- Small construction projects, sculptures, or mechanical assemblies could all be accommodated.

Atmosphere:

- Lots of energy, movement.
- Gathering areas for 6 to 8 students to meet for formal or informal study.

WELCOME CENTER/ADMINISTRATION

Learning Potential:

- Use as Maker Space.
- Allow children to be engaged while parents visit or connect to technology; siblings can participate in activities while waiting for parent to interact with staff.

Activities:

- Function as school reception, waiting, informal gathering area; also welcome center to campus culture.

Atmosphere:

- Professional, warm, and friendly
- Open, welcoming, central.

MEDIA CENTER

Activities:

- Reading, research, meetings, individual and group work.
- Story-telling area.
- Parent training area.

Atmosphere:

- Large open space and can act as Maker Space.
- Feels like an interactive museum.

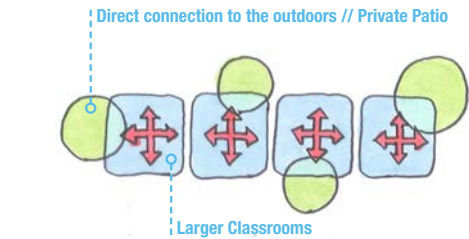
HIGHLIGHTS OF VISIONING PROCESS

Early in the Visioning process, the Stakeholder / Planning Committee explored the idea of creating a school that would serve as a resource to underserved students wishing to engage in the in-depth study of Science, Technology, Engineering, Art, Agriculture and Mathematics. This specialized campus was envisioned as potentially resembling an ultra-flexible science lab integrated with a museum or exploratorium; an education environment that would spark student interest in vocations usually reserved for later introduction. Key Visioning exercises are described on this page.

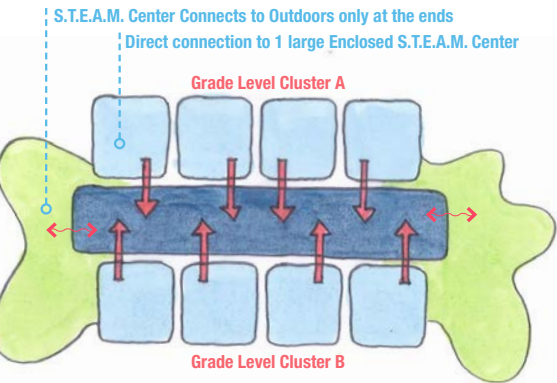
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LEARNING ENVIRONMENT CONFIGURATIONS AND CONNECTIONS

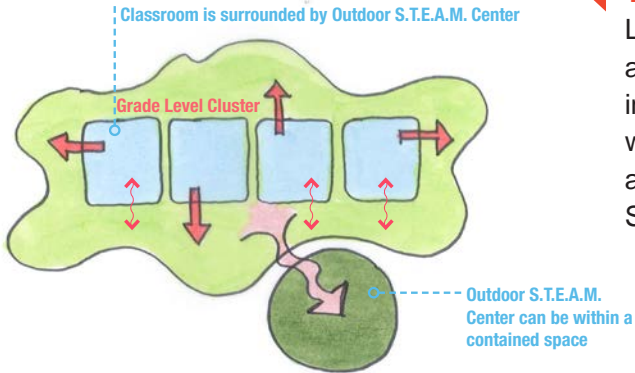
Participants discussed and evaluated various learning configurations and potential relationships of classrooms to the STEAM centers, makerspaces, and the outdoors. Options included:



◀ **The Classroom Silo**
Learning labs/Classrooms are large and have access to private gardens and patios. They are individual classrooms and not connected.



◀ **The Expanded Hallway**
Learning Labs have direct access to a large, central, indoor STEAM center. Two grade-level clusters share the STEAM center. Connection to the outdoors is on the periphery and not immersive.



◀ **The Garden Patio**
Learning Labs have multiple connections and access points to the outdoors and are organized in grade clusters. STEAM centers are integrated within each Learning Lab. All grade clusters have access to various Outdoor all-school/all-grade STEAM centers.

This diagram illustrates 'The Immersive Variety for Spatial Well-being' configuration. It shows a central STEAM center represented by a blue rectangle. The center has direct access to private outdoor patios, indicated by dashed lines and red arrows. The center also has access to a shared STEAM center, indicated by a dashed line and a red arrow. The center is surrounded by a landscape, indicated by a dashed line and a red arrow. Labels include 'Private Patio for each Classroom' and 'Landscape // Outdoor Learning Environments'.

The Immersive Variety for Spatial Well-being*
Learning Labs have direct access to private outdoor patios, as well as direct access to a shared STEAM center/. The STEAM Center has access to central outdoor learning and play environments that are accessible to the whole school and serve to connect each grade cluster. Spaces therefore transition from private to most public.

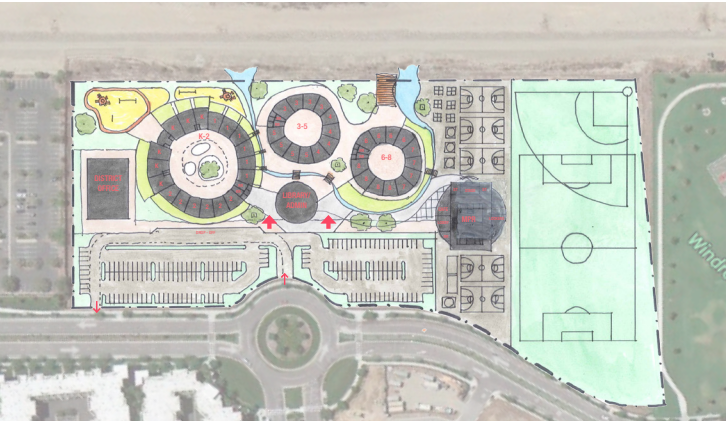
◀ **This was the option chosen by the Stakeholder / Planning Committee during the Visioning Process.**



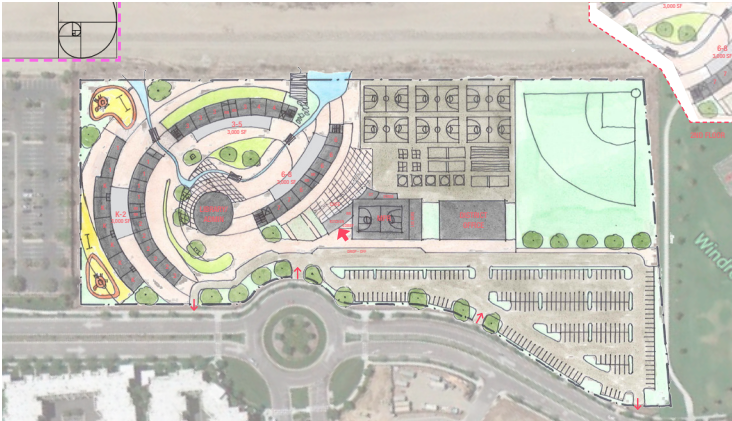
HIGHLIGHTS OF VISIONING PROCESS, continued

2 MASTER PLANNING / CAMPUS SCHEME OPTIONS

Participants provided input on Master Plan layouts for the campus.



CIRCLE SCHEME



SPIRAL SCHEME

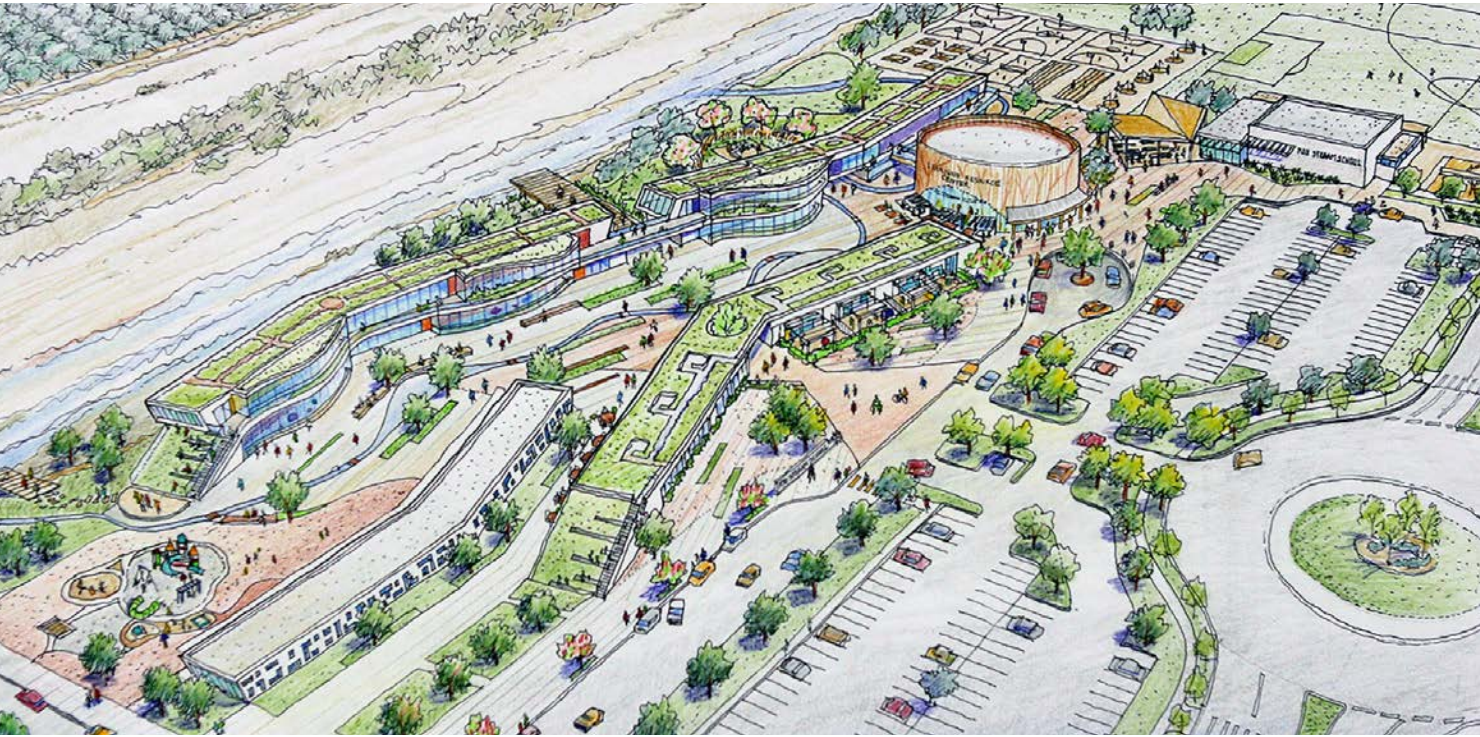


VILLAGE SCHEME



LINEAR SCHEME

3 FROM VISION TO REALITY



VISIONING OUTCOME: RENDERING TO SUPPORT BOND MEASURE/FUNDING



COMPLETED CAMPUS: REALIZING THE VISION