A4LE Southern California Awards

Legacy Magnet School

New Construction

Executive Summary—describe the overall goals and outcomes of the project

The Tustin Unified School District (where the Legacy Magnet School is located) is at the forefront of educational curricula with a complete commitment to collective learning, and the entrepreneurial spirit. The challenge: design a campus that can accommodate advancements in education and technology and create a facility that will house emerging instructional strategies and technological innovations to help educate the entrepreneurial leaders of tomorrow.

The project began with a cutting-edge educational specification. The concepts outlined within this document aimed to create a campus that establishes interactive collaborative spaces, which implement Technology-Innovation-Design-Entrepreneurship (T.I.D.E.). The education experience is no longer confined to classroom walls, students will have the ability to collaborate as groups or study independently, campus wide.

Following this new educational model, a highly collaborative planning process ensued. A design committee was formed that included representatives from school administrators, staff, and teachers within the district as well as the project architects. The topic of budget was consistently at the discussion table. A construction management firm worked in parallel with the design team through collaborative preconstruction processes, extracting analytical data from the projects BIM software. This provided instantaneous feedback to the design team on cost, material quantities, scheduling, and overall design audits.

Scope of Work and Budget

- Overall budget: $44,613,139

- Scope of work: Design a campus that can accommodate advancements in education and technology and create a facility that will house emerging instructional strategies and technological innovations to help educate the entrepreneurial leaders of tomorrow.

School & Community Engagement

- Describe the Community: A new 1,600-acre master-planned community that defines itself by service, innovation, and the entrepreneurial spirit. The project site is flanked by two iconic structures, the U.S. Navy and Marine Corps Air Station (M.C.A.S.) North and South blimp hangars. The hangars were constructed shortly after the attack on Pearl Harbor and have the honor of being the largest wood framed structures ever built with over 2 million board feet of lumber used due to wartime rationing of steel. Additionally, the hangars were added to the National Park Service, National Register of Historic Places of 1978. Each hangar is seventeen stories tall, 300 feet wide, over 1,000 feet long.

- Identify stakeholders: Students, faculty, and overall community.

- Name challenges: Designing a campus that can accommodate advancements in education and technology and create a facility that will house emerging instructional strategies and technological innovations to help educate the entrepreneurial leaders of tomorrow.

- Describe available assets: Legacy Magnet School is different from traditional public schools. In the U.S. education system, magnet schools are public schools with specialized courses or curricula. "Magnet" refers to how the schools draw students from across the normal boundaries defined by authorities (usually school boards) as school zones that feed into certain schools. Attending them is voluntary. Having this laser-focused approach for Legacy was a valuable asset toward the designing and building of Legacy.

- There are magnet schools at the elementary, middle, and high school levels. In the United States, where education is decentralized, some magnet schools are established by school districts and draw only from the district, while others are set up by state governments and may draw from multiple districts. Other magnet programs are within comprehensive schools, as is the case with several "schools within a school". In large urban areas, several magnet schools with different specializations may be combined into a single "center,"

- Describe value of process and project to community at large: The Legacy Magnet School building design acknowledges and celebrates its historic neighbors through the use of all wood-framed construction, parabolic roof assembly features three-point hinged glued-laminated beams, parabolic trellis assembly features structural round tube steel, longitudinal panelized skylights, and parabolic curtainwalls

Educational Environment

- Explain the educational vision and goals of the school: The design celebrates the multiple use of one space, capable of accommodating individual, small group, and large groups instruction both indoors and outdoors.

- Describe & illustrate how the environment supports the curriculum: Learning Commons integrate small group study rooms for individualized study. Extensive use of natural light elevates student performance and lowers absenteeism (Heshong Mahone study, 1999, https://h-m-g.com/downloads/Daylighting/schoolc.pdf).

- Describe & illustrate how the environment supports a variety of learning & teaching styles: Academic buildings feature a (4) six-classroom + learning commons academic module consisting of science, math, language arts, elective classrooms.

- Describe & illustrate how the environment is adaptable and flexible: T.I.D.E classroom and student amphitheater offers flexible capacity for C.T.E. instructional space, keynote speakers, academic competitions, large group instruction and student rallies.

Physical Environment

- Describe & illustrate the physical attributes of the environment: The space provides students with refuge to study, collaborate, and recreate. Seamless integration of outdoor learning labs to indoor study spaces that create unconfined classrooms. Elevated pedestrian walkway connects all buildings. All wood framed construction, parabolic roof assembly features three-point hinged glued-laminated beams, parabolic trellis assembly features structural round tube steel, parabolic curtainwalls, and longitudinal panelized skylights. The exterior panelized cladding was influenced by the iconic hangar bay doors panel cladding. The parabolic roof gives the appearance of a seamless transition between building envelope and rooftop equipment sceens.

- Describe & illustrate how the facility fits within the larger context of the community: The development will house restaurants, historic landmarks, retail, parks, neighborhoods, and innovative businesses with a goal to cultivate connection, alliance, and innovation.

- Describe & illustrate how the project inspires and motivates: Since the space provides students with a refuge to study, collaborate and recreate, they will be inspired to produce their best work in a comfortable, healthy, and relaxed environment.

- Describe & demonstrate the role of high performance/sustainability in the planning and design of the project and the metrics used: Both energy and water management for the campus was at the forefront of design. Wood framed wall construction easily exceeds Title 24 building envelope requirements. All non-playfield landscaping utilizes drought tolerant species with sub-terrain drip irrigation systems. Playfields and parking lots double as water collection and filtration areas.

Results of the Process & Project

- Explain how the project achieves educational goals and objectives: Since the space provides students with a refuge to study, collaborate and recreate, they will be inspired to produce their best work in a comfortable, healthy, and relaxed environment.

- Explain how the project achieves school district goals: Campus incorporates both middle school and high school students. Seamless integration of outdoor learning labs to indoor study spaces that create unconfined classrooms. Elevated pedestrian walkway interconnects all buildings. Lastly, the configuration produces a highly efficient use of programed space, reducing non-educational area such as corridors and foyers.

- Explain how the project achieves community goals: The development will house restaurants, historic landmarks, retail, parks, neighborhoods, and innovative businesses with a goal to cultivate connection, alliance, and innovation.

- Explain any unintended results and achievements of the process & project: Both energy and water management for the campus was at the forefront of design. Wood-framed wall construction easily exceeds Title 24 building envelope requirements. All non-playfield landscaping utilizes drought tolerant species with sub-terrain drip irrigation systems. Playfields and parking lots double as water collection and filtration areas. Extensive use of tubular daylighting devices floods the interior spaces with natural light, which has been proven to be conducive to elevated performance and lower absenteeism among students and faculty. The Solatube lighting addressed the task lighting requirements at the admin desks, reducing daytime electrical lighting loads.

Visuals

Videos

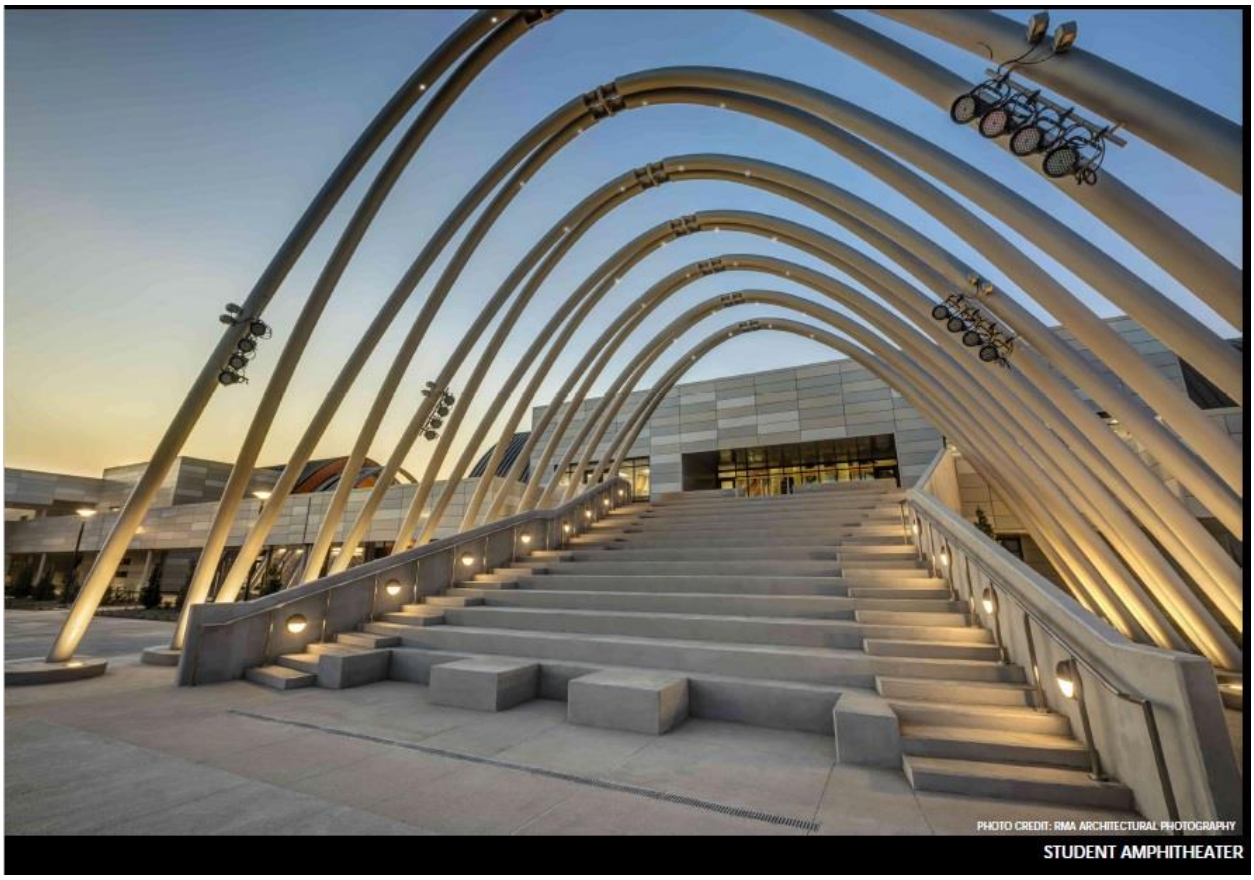
https://youtu.be/5PsAhoN61Lo

https://www.youtube.com/watch?v=4lzhgz6VTFU

Photos (on the following pages)

ADMINISTRATION BUILDING

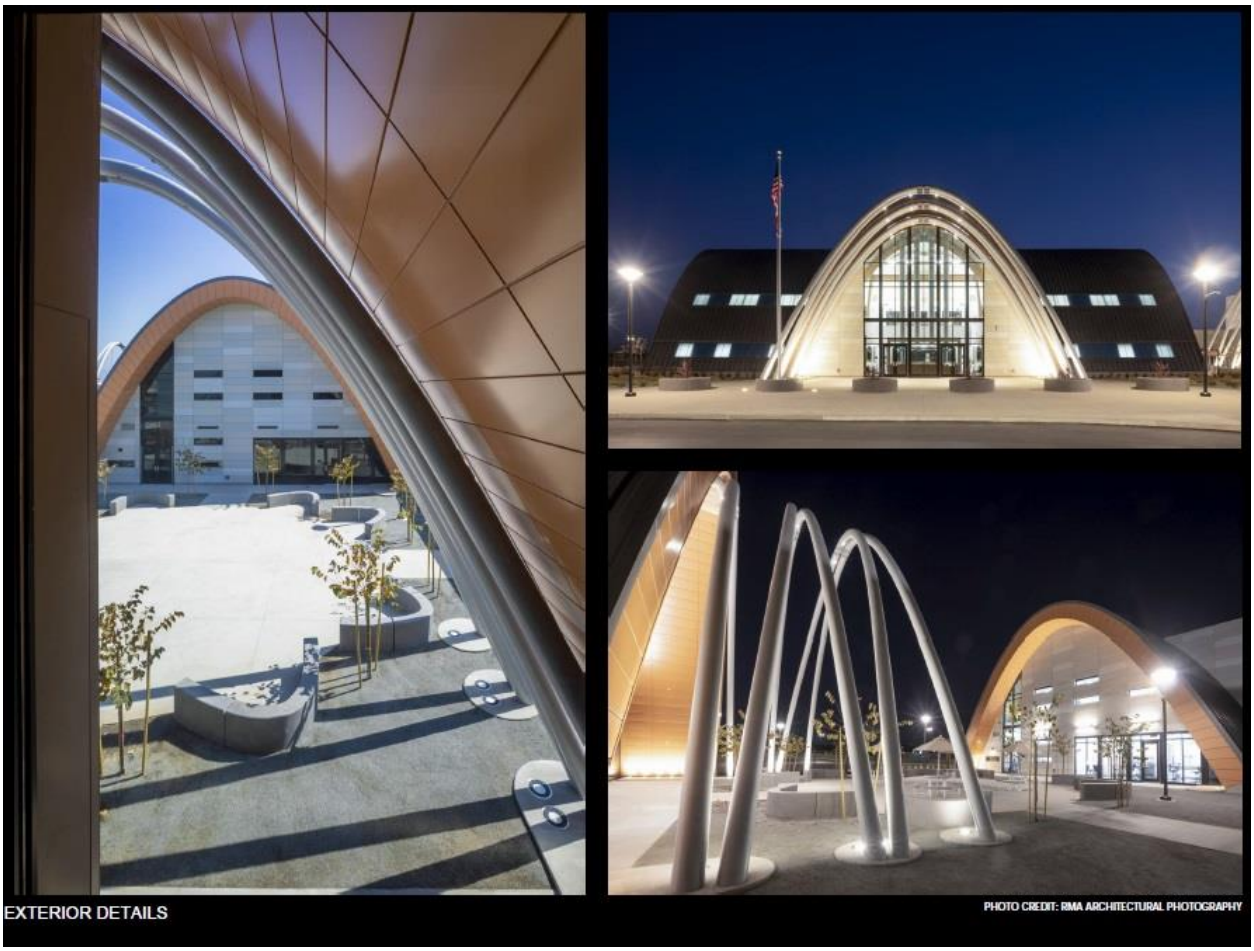
ADMINISTRATION BUILDING INTERIOR



STUDENT AMPHITHEATER

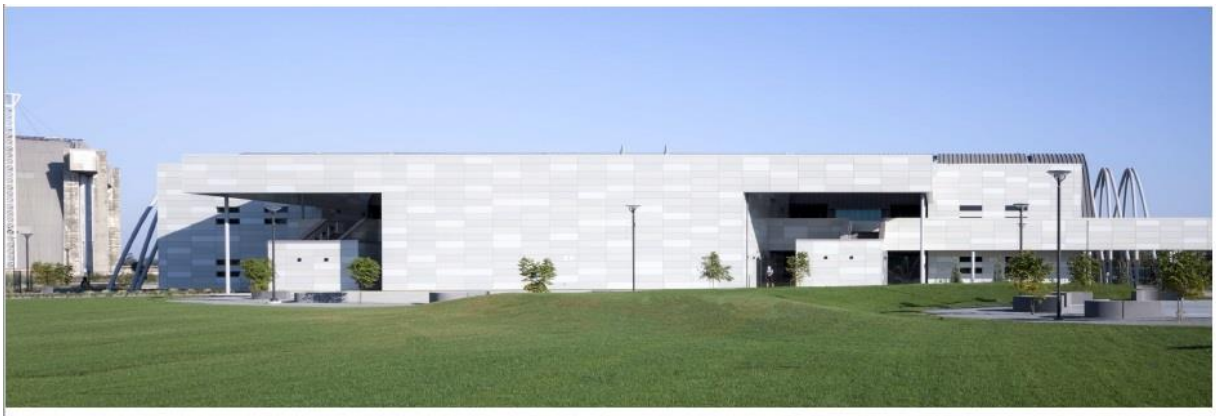
TYPICAL CLASSROOM

CONTEXTURAL VIEW



EXTERIOR DETAILS

PHOTO CREDIT: RMA ARCHITECTURAL PHOTOGRAPHY



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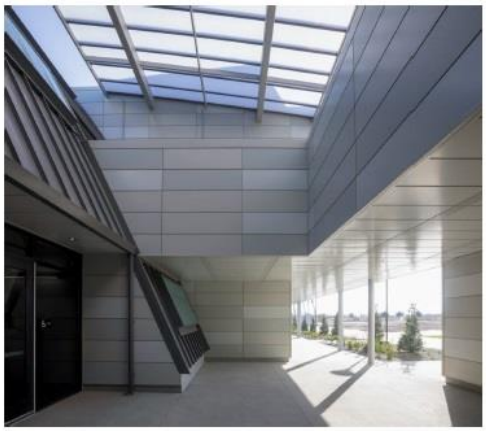

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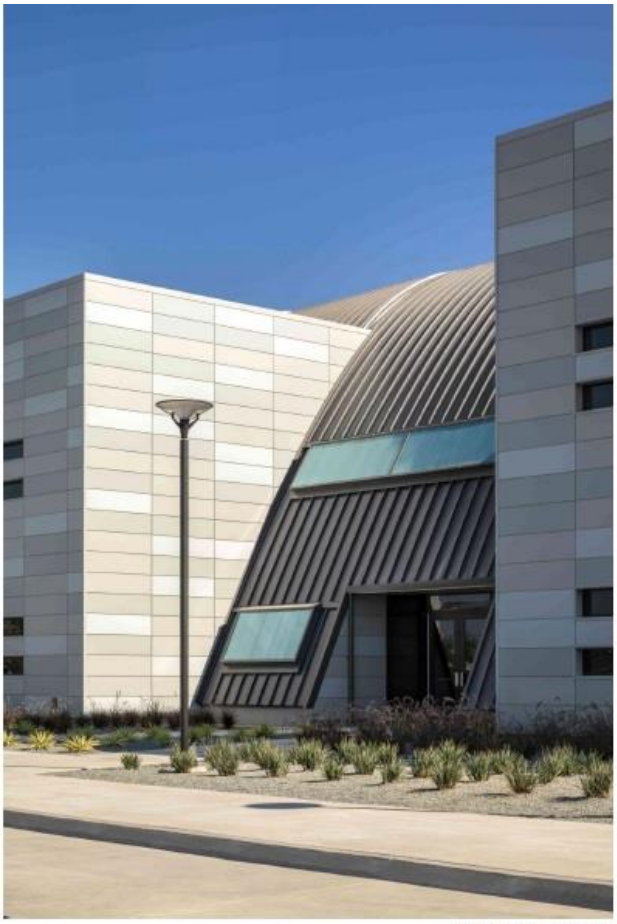

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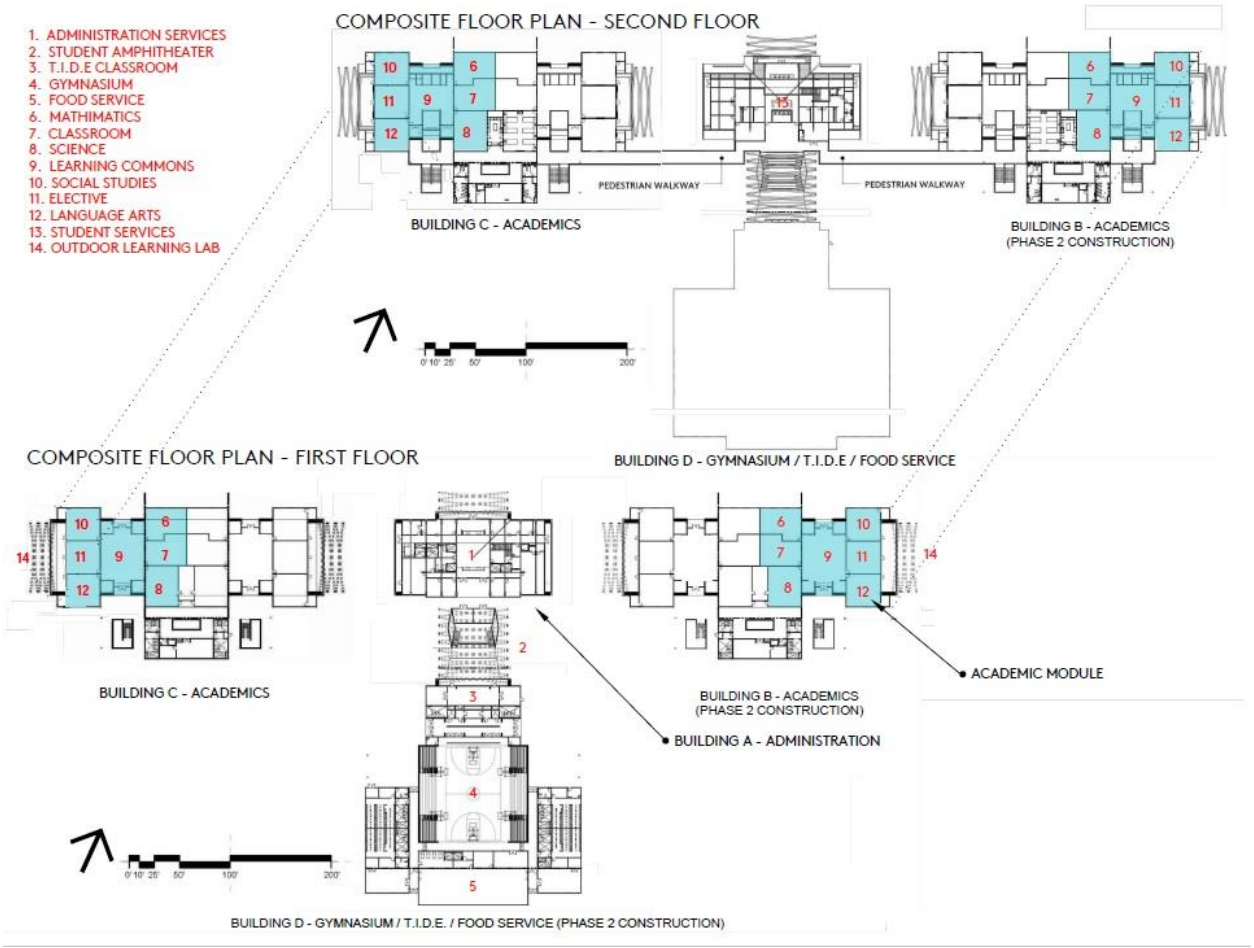
EXTERIOR DETAILS


1. ADMINISTRATION SERVICES
2. STUDENT AMPHITHEATER
3. T.I.D.E CLASSROOM
4. GYMNASIUM
5. FOOD SERVICE
6. MATHIMATICS
7. CLASSROOM
8. SCIENCE
9. LEARNING COMMONS
10. SOCIAL STUDIES
11. ELECTIVE
12. LANGUAGE ARTS
13. STUDENT SERVICES
14. OUTDOOR LEARNING LAB
COMPOSITE FLOOR PLAN - SECOND FLOOR
PEDESTRIAN WALKWAY
PEDESTRIAN WALKWAY
BUILDING C - ACADEMICS
BUILDING B - ACADEMICS
(PHASE 2 CONSTRUCTION)
BUILDING D - GYMNASIUM / T.I.D.E / FOOD SERVICE
COMPOSITE FLOOR PLAN - FIRST FLOOR
BUILDING C - ACADEMICS
BUILDING B - ACADEMICS
(PHASE 2 CONSTRUCTION)
ACADEMIC MODULE
BUILDING A - ADMINISTRATION
BUILDING D - GYMNASIUM / T.I.D.E. / FOOD SERVICE (PHASE 2 CONSTRUCTION)

INTERIOR DETAILS

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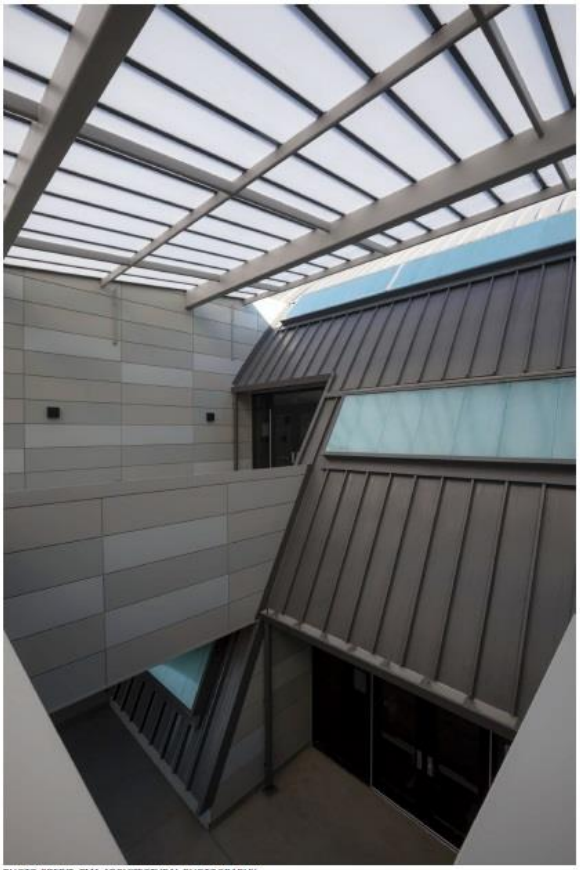

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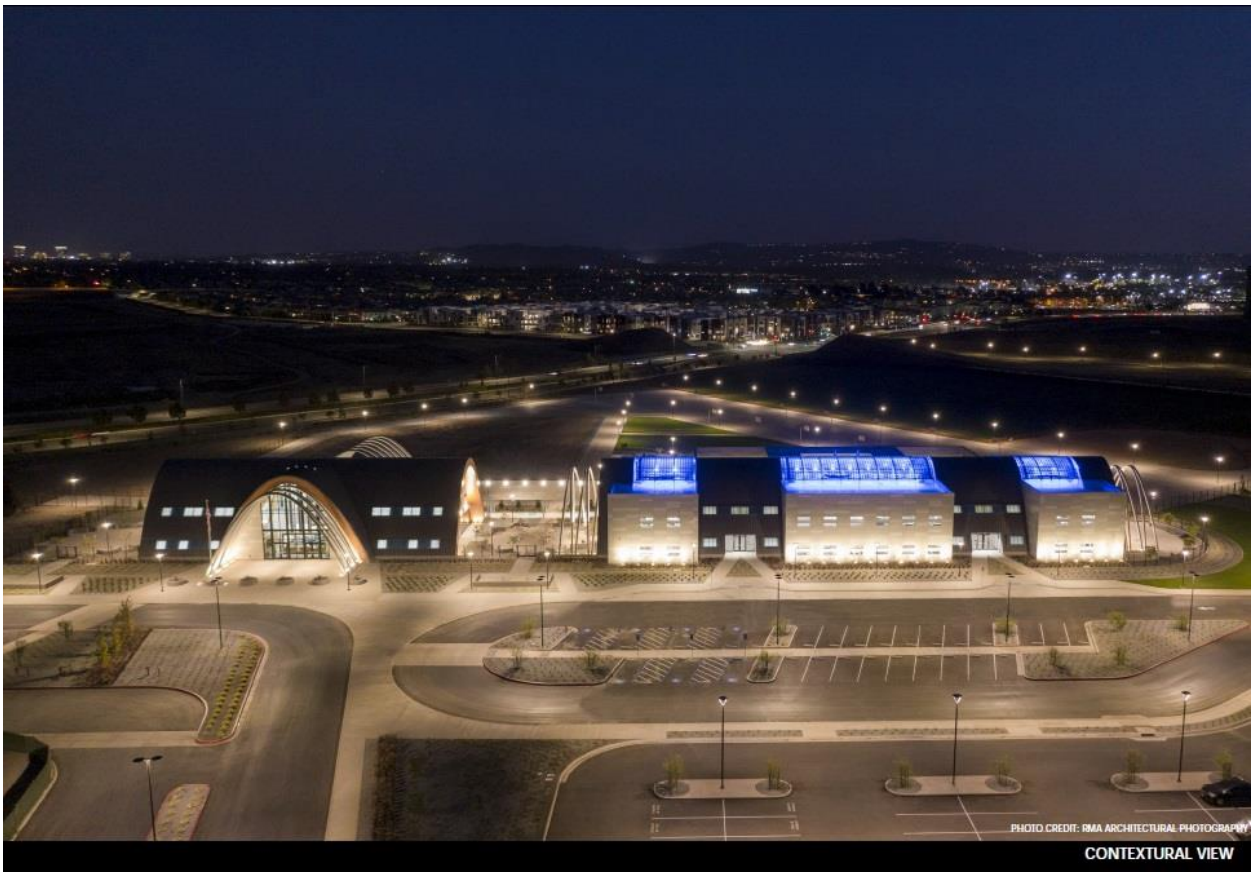
DETAILS



CONTEXTURAL VIEW

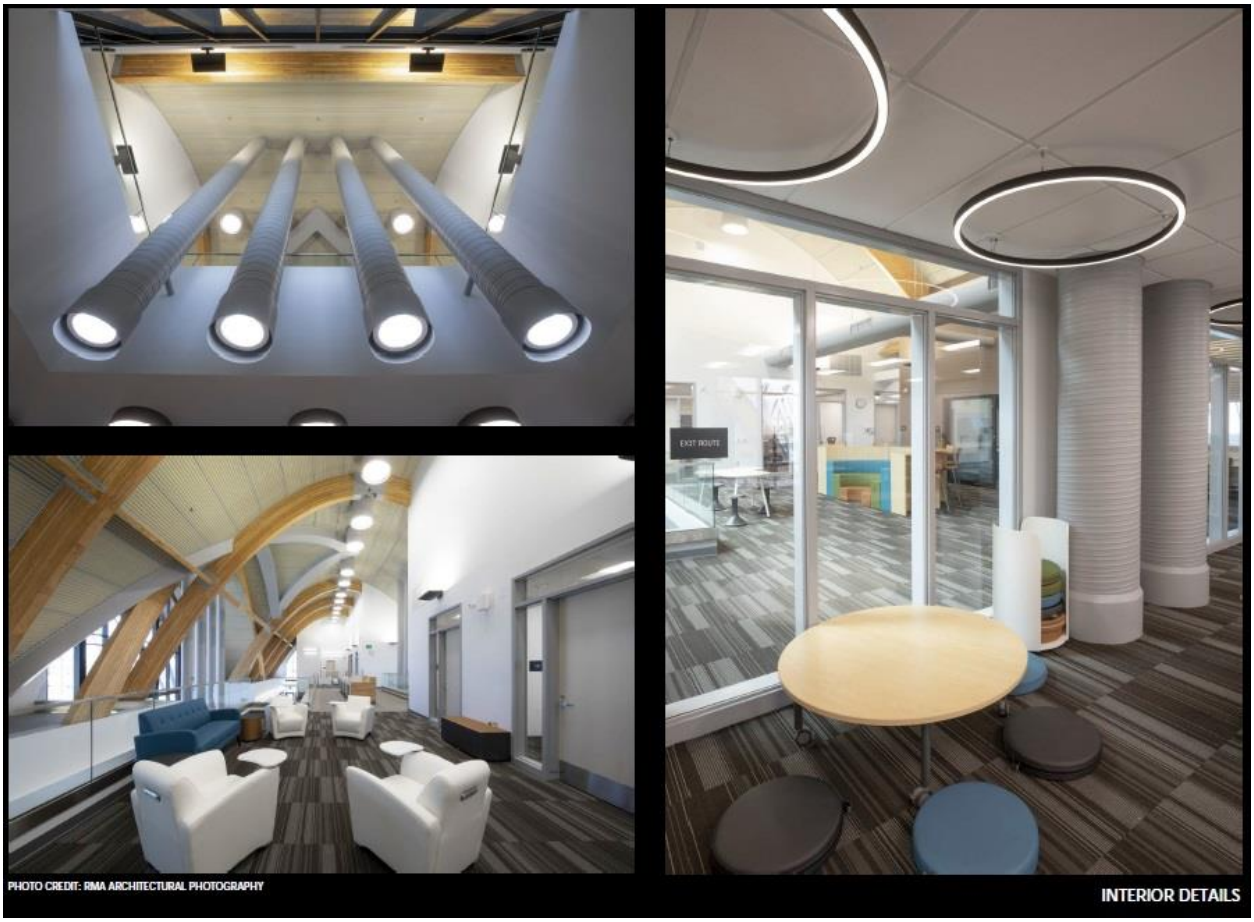
CAMPUS SITE PLAN

1. PARKING LOT - BUILDING A
2. PARKING LOT - BUILDING B
3. PARKING LOT - AUXILIARY
4. PLAY FIELDS
5. PLAY COURTS
6. FOOD SERVICE DELIVERY
7. PARENT DROP-OFF - HIGH SCHOOL
8. PARENT DROP-OFF - MIDDLE SCHOOL
9. BUS LOADING
10. UTILITY AND TRASH ENCLOSURE
11. BIKE RACKS
12. SITE WALL
13. SERVICE AND EMERGENCY VEHICLE ENTRY
14. VISITOR AND ADA PARKING - BUILDING A
15. VISITOR AND ADA PARKING - BUILDING B
16. FUTURE SIGNALIZED INTERSECTION

- MAIN BUILDING ENTRY
- VEHICLE ENTRY/EXIT
- CONTROLLED VEHICLE EXIT ONLY

SITE DATA

TOTAL SITE AREA:	32.32 ACRES
TOTAL PARKING:	611 SPACES
BUILDING A:	278 SPACES
BUILDING B:	289 SPACES
AUXILIARY:	44 SPACES


EXIT ROUTE
PHOTO CREDIT: RMA ARCHITECTURAL PHOTOGRAPHY
INTERIOR DETAILS