2016 exhibition of school planning + architecture

eSTEM ACADEMY

design concept submittal

corona–norco unified school district

eastvale, california

eSTEM ACADEMY

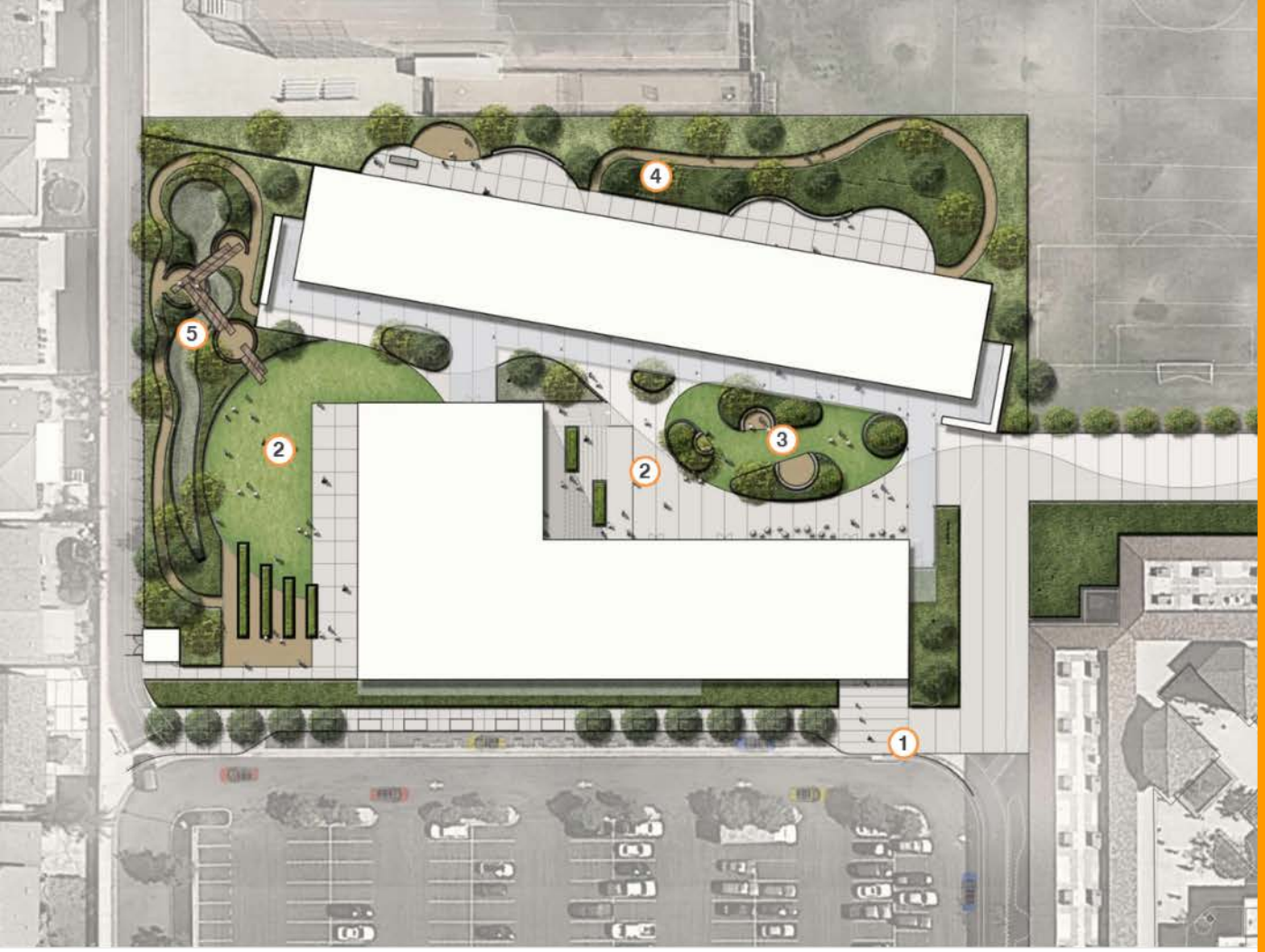
CORONA-NORCO UNIFIED SCHOOL DISTRICT

900 students

health medical + engineering

2 pathways

92,500 sf



SITE/FIRST FLOOR PLAN

0 50

FIRST FLOOR PROGRAM

Student Union
Research Lounge
Administration
Specialized Labs
Fitness Lab+Changing Rms

SITE PROGRAM

1. Welcome: reception + entry
2. Gather: dining + meeting apace
3. Mingle: student work/social space
4. Think: outdoor lab patios
5. Collect+Treat: water management

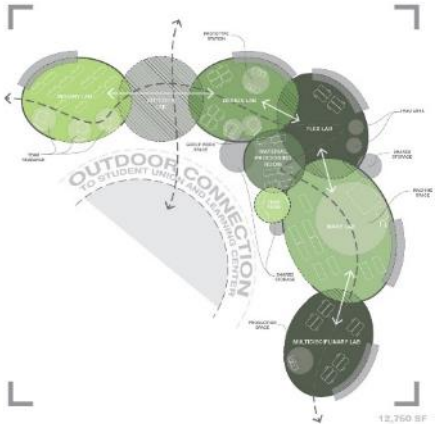
AREA PLAN

AREA PLAN LEGEND:

A. eSTEM Academy
B. Eleanor Roosevelt High School
C. Hardcourts + Aquatics
D. Athletics Fields
E. Stanford Grove Neighborhood

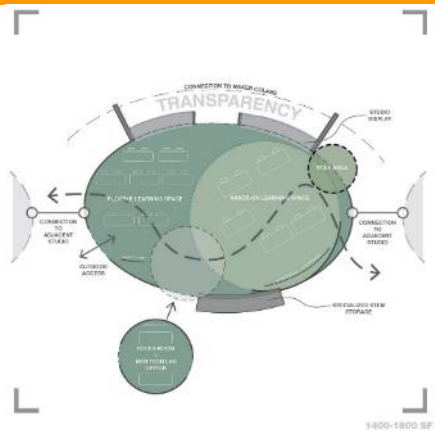
COMMUNITY ENVIRONMENT

One of the challenges of building this “school within a school” is finding the balance between creating a strong sense of identity for this specialized new campus and fostering an inclusive environment where eSTEM and ERHS students alike feel welcome. This quotient shapes everything from the program, to building and site design, to establishing site location. But as important as the connection is between campuses, so is the sensitivity to respecting the privacy of immediately adjacent neighboring homes, complicating this balancing act.



COMMUNITY ENVIRONMENT

The process of community engagement began well before the start of the architectural planning process. CNUSD based their decision to build a state-of-the-art STEM learning facility on strong community need in the medical and engineering professions. The district engaged local colleges and universities, and prominent professionals in the aforementioned fields early on to gain a better understanding of the skills a graduating student needs in order to succeed in both higher education and work placement. During the Planning Process, formalized relationships were made with local colleges and businesses to ensure eSTEM students are able to earn college credits and engage in professional internships.

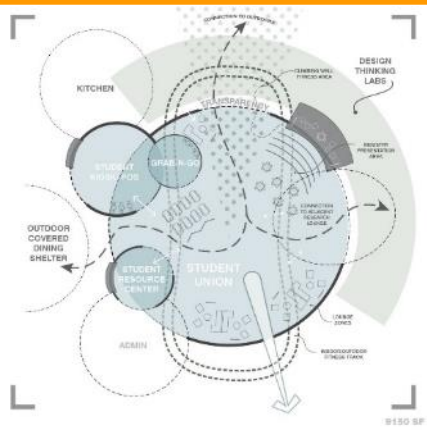


LEARNING ENVIRONMENT

The overarching themes established during programming were collaboration, access, partnership and flexibility. As a result, learning studios are flexible as possible to allow for multiple teaching modalities and the ability to evolve with future unknowns. Health-medical and engineering labs, while completely open, are connected and zoned largely by furniture, ceiling changes, casework, minimal partial-height and operable walls, and are outfitted to recreate real-world environments. They are connected to, and integrated with, both learning studios and shared colabs to allow for interdisciplinary collaboration. “Spark” tanks can be found sprinkled throughout campus to offer opportunities to do the same on a smaller, more intimate scale. Outdoor labs take many forms, including floating learning pods, and can be found on each floor of this 3-story campus. The combination of numerous, dispersed, and varied learning spaces of all kinds, coupled with visibility and access, encourages learning and collaboration to happen everywhere.

LEARNING ENVIRONMENT

eSTEM Academy accommodates the **future-ready learner** with a variety of indoor and outdoor learning spaces. The different academic spaces—**outdoor labs, think tanks, versatile classrooms, and colabs**—give students the chance to **work collaboratively** and learn skills like communication and leadership. At the same time, **connection to open student spaces** encourages **social learning** and builds well-rounded students.



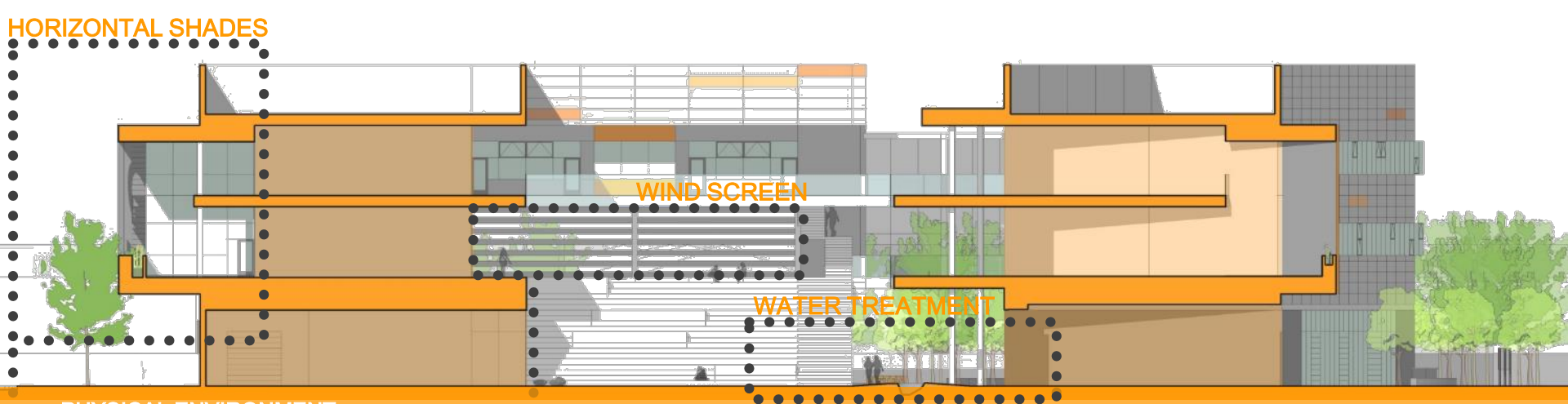
PHYSICAL ENVIRONMENT

eSTEM Academy will stand where Eleanor Roosevelt High School's practice softball field sits today. A condensed 3-acre site locked in between residences, playfields, and straddled by two fire roads, starts to establish very clear site parameters. To maximize outdoor learning space and create a distance buffer from houses, program is consolidated into a 3-story footprint. To maintain visual and pedestrian connection with ERHS and facilitate a phased delivery method, program is further divided into 2 buildings with a courtyard quad between them.

eSTEM Academy builds an **identity for its students**, embracing ideas from **Health-Medical and Engineering** pathways and incorporating them into building elements to **inspire students** in their fields, encouraging students to **interact** with their built environment in every level.

Louvers and the placement of colored panels replicate a **heart beat** read through an EKG and **brainwaves** as measured by an EEG.

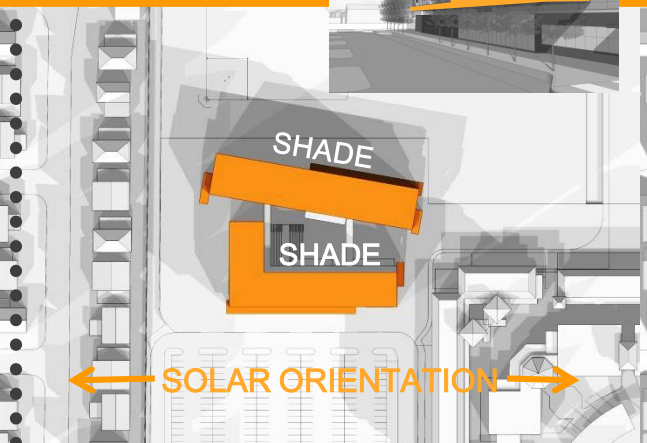
Solar and wind screens display **code**, and **exposed building systems** show **engineering at work.**



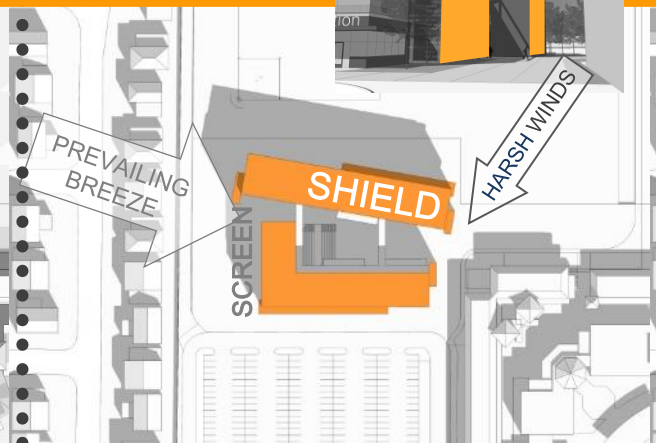
PHYSICAL ENVIRONMENT

In the earliest stages of schematic design, extensive site analysis was performed not only by the architectural and engineering design team, but by a wind consultant as well, due to the site's high valley location. The northern building wing rotates 10-degrees clockwise to protect the internal campus courtyard from harsh Santa Ana winds while screens on the west side of campus mitigate strong prevailing breezes. The building's east-west orientation maximizes northern daylighting, while strategic screening elements minimize heat gain and glare from the south and visibility to the westerly houses. Operable windows encourage airflow through learning spaces to supplement the mechanical system. The campus collects storm water from the building roofs and quad and treats it within infiltration planters strategically located around the site, cleansing the water prior to leaving the campus.

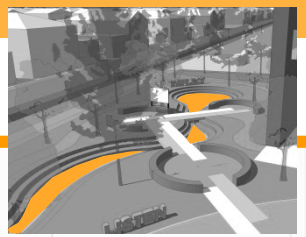
SUN

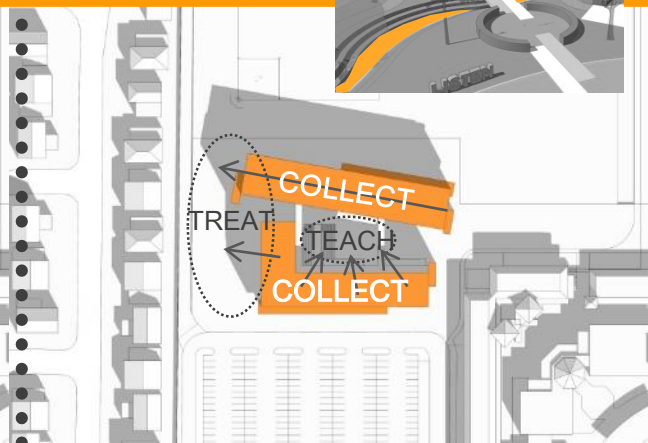


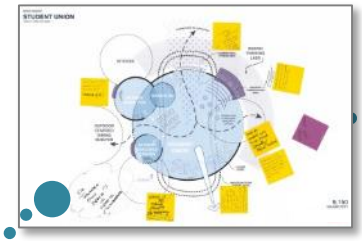
WIND



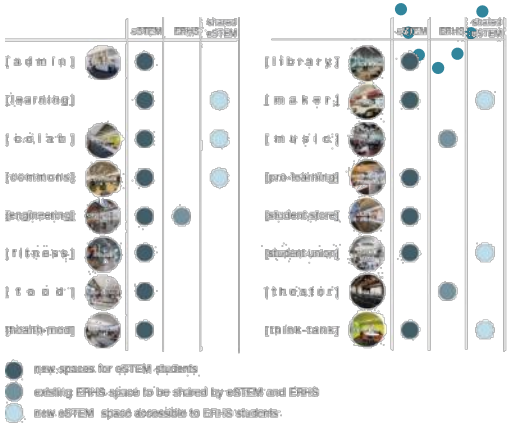
WATER

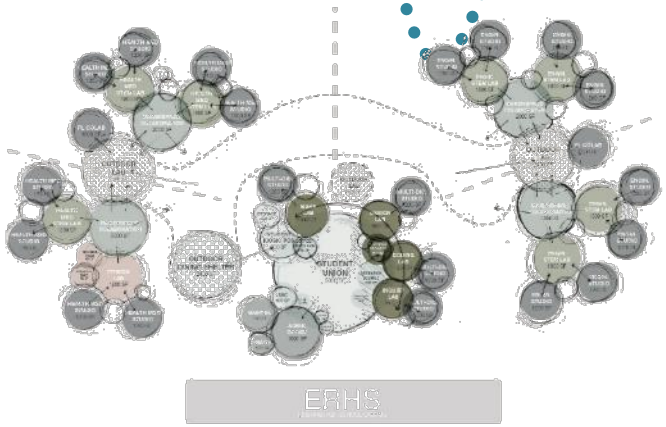


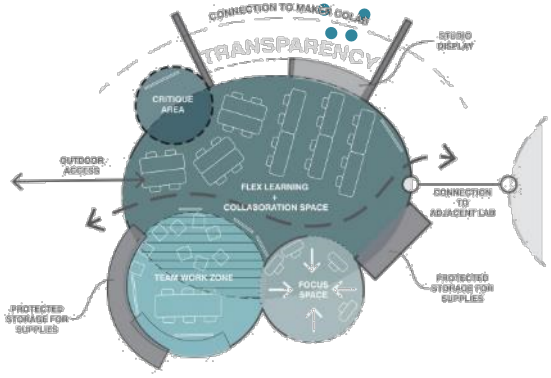




Collaborative workshops, **focus groups**, and **project tours** shaped the program to fit the **future-ready learners** of eSTEM Academy.







PLANNING PROCESS

Over the course of a two month long programming phase, an enthusiastic team of over 50 members—students, parents, teachers, administrators, affiliate college professors and deans, district and board members, city council members, professionals from the local medical and engineering communities, and a design team of architects, landscape architects, interior designers and professional learning experts—formed four subcommittees to be able to better focus on the following:

- discovering the needs of the community in order to define STEM pathways to ready students for in-demand careers in the health/medical and engineering industries
- collaborating with Eleanor Roosevelt High School and Corona-Norco Unified School District to fully understand the ideal relationship between a new 900-student STEM campus addition and an existing school site of 4,000 students
- exploring other successful projects demonstrating applicable attributes like flexibility, visibility, connectedness and student-centeredness
- researching the future-ready learner profile of an eSTEM student and the curriculum, teaching methodologies and built environment to support them

PLANNING PROCESS

The result of this effort was a **team-authored**, board-approved **educational vision document** to serve as the foundation for the design process.

PLANNING + PROGRAMMING PHASE SCHEDULE

kickoff meeting 7.07
goal: introduce the team, the process + project goals
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, board members, city council, parents, professional learning experts, design team

discover meeting 7.20
goal: gain stakeholder insight
participants: district members, ERHS admin. staff, ERHS teachers, professional learning experts, design team

collaborate meeting 7.20
goal: establish the relationship between ERHS + eSTEM
participants: district members, ERHS admin. staff, ERHS teachers, professional learning experts, design team

research meeting 1 8.03
goal: tour other exemplary STEM spaces
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, professional learning experts, design team

research meeting 2 8.05
goal: tour other exemplary STEM spaces
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, professional learning experts, design team

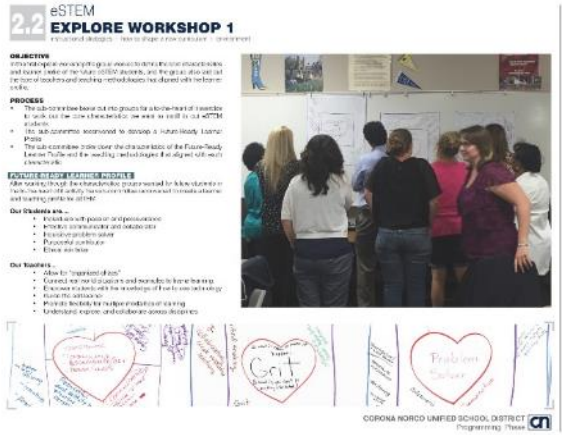
research meeting 3 8.13
goal: tour other exemplary STEM spaces
participants: district members, ERHS admin. staff, professional learning experts, design team

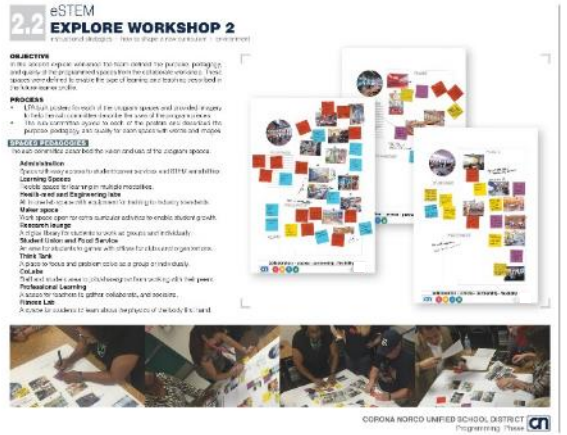
explore meeting 1 7.20
goal: define the eSTEM learner profile
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, parents, professional learning experts, design team

explore meeting 2 8.01
goal: define place in terms of purpose + pedagogy
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, professional learning experts, design team

explore meeting 1 8.17
goal: confirm program + spatial adjacencies
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, parents, professional learning experts, design team

recap meeting 9.02
goal: share committee findings + introduce schematic design process
participants: district members, ERHS admin. staff, CNUSD teachers, local college professors, community professionals, board members, city council, parents, students, professional learning experts, design team





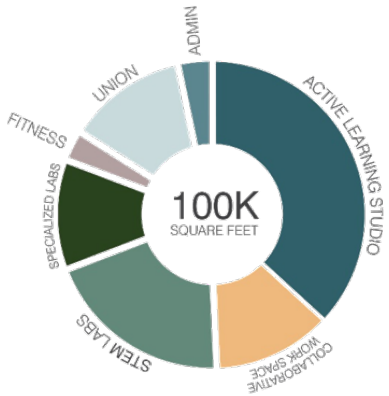
FIRST FLOOR PLAN

1. Administration
2. Student Union
3. Kitchen
4. Amphitheater
5. Engineering Labs
6. Medical Labs
7. Maker Lab
8. Fitness Lab

0 25

STEM lab spaces with **specialized equipment** are connected to a think tank and colab that act as **breakout spaces** for **group work and focused study** outside of the lab.

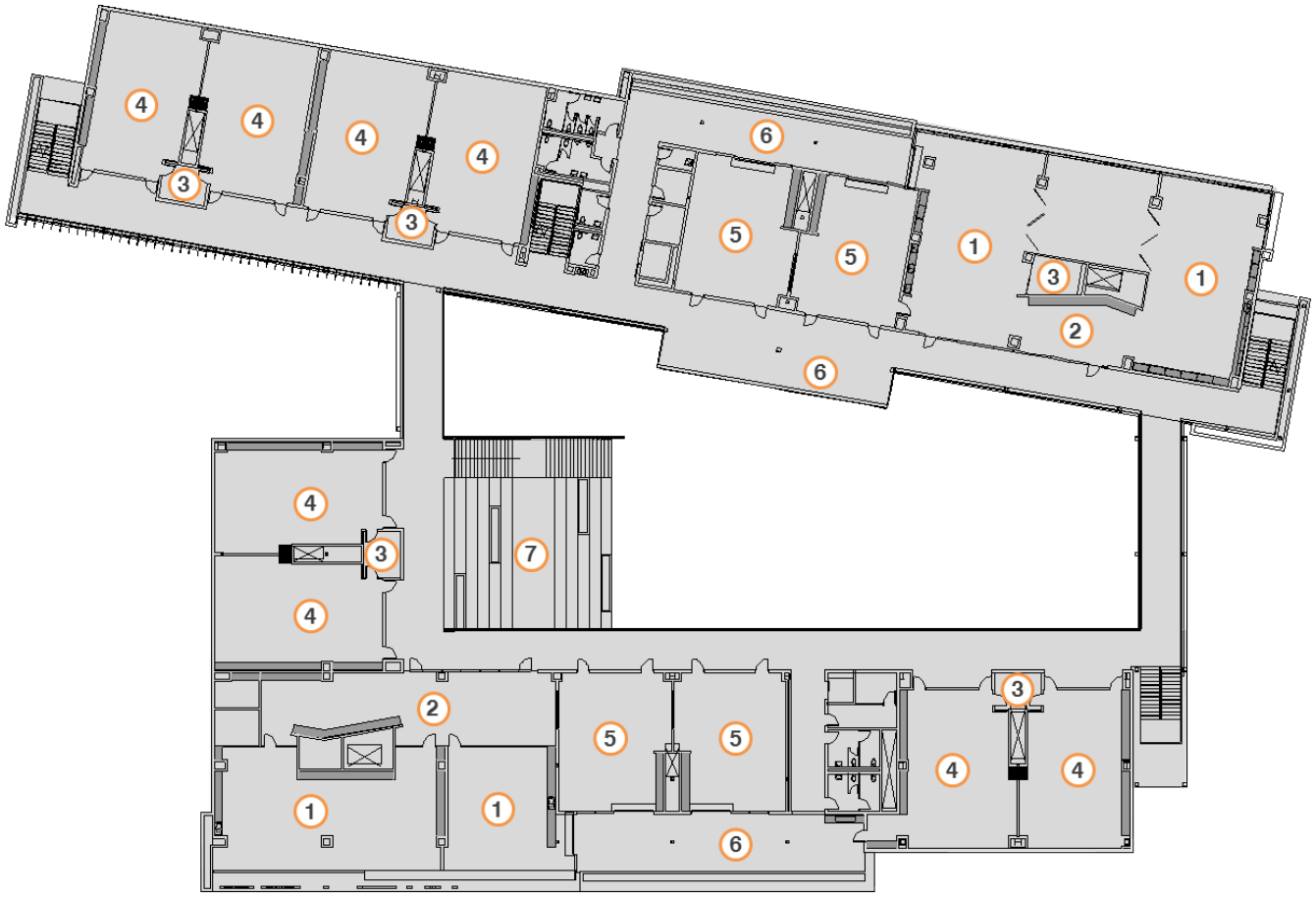
1200sf learning studios with **movable furniture** create a flexible classroom that enables **different learning modalities**. With connected **think tanks**, **operable partitions** and **outdoor labs;** collaboration, **inquiry and creativity** happen everywhere.



3 classrooms / STEM labs / colabs

2 classrooms / STEM labs / colabs

1 union / admin / specialty labs



TYPICAL UPPER FLOOR PLAN

1. STEM Lab
2. CoLab
3. Think Tank
4. Learning Studio 1
5. Learning Studio 2
6. Outdoor Lab
7. Amphitheater

0 25

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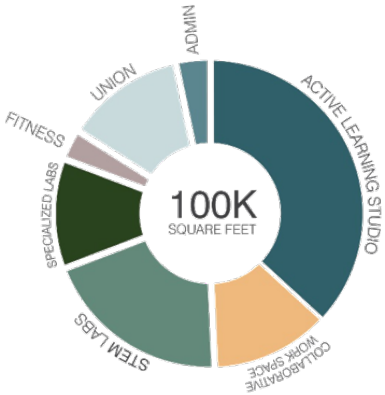


3 classrooms / STEM labs / colabs

2 classrooms / STEM labs / colabs

1 union / admin / specialty labs

exhibition of school planning + architecture project data

Submitting Firm :	LPA, Inc.
Project Role	Planner, Architect and Engineer
Project Contact	Wendy Rogers, CTO
Title	Design Principal
Address	5161 California Ave #100
City, State or Province, Country	Irvine, CA
Phone	949-261-1001

Joint Partner Firm:	
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

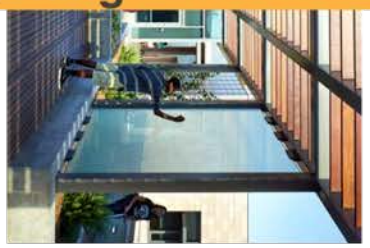
Other Firm:	
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Construction Firm:	NEFF Construction
Project Role	Construction Manager
Project Contact	Ronald Kuehl
Title	Chief Operations Officer
Address	1701 S. Bonview Ave #104
City, State or Province, Country	Ontario, CA
Phone	909-947-3768

exhibition of school planning + architecture project details

Project Name	eSTEM Academy
City	Eastvale
State	CA
District Name	Corona-Norco Unified School District
Supt/President	Michael Lin
Occupancy Date	Fall 2018
Grades Housed	9-12
Capacity(Students)	900
Site Size (acres)	3 acres
Gross Area (sq. ft.)	92,500sf
Per Occupant(pupil)	103
gross/net please indicate	1.37
Design and Build?	No
If yes, Total Cost:	
Includes:	
If no,	
Site Development:	$5.0M
Building Construction:	$41.5M
Fixed Equipment:	included
Other:	N/A
Total:	$46.5M

outdoor learning writable walls mini amphitheater **collaboration rings** tinker tables



COURTYARD [EAST]

OUTDOOR STUDENT LIFE [WEST]

MAIN ENTRY [SOUTH]