CANYON VIEW
HIGH SCHOOL

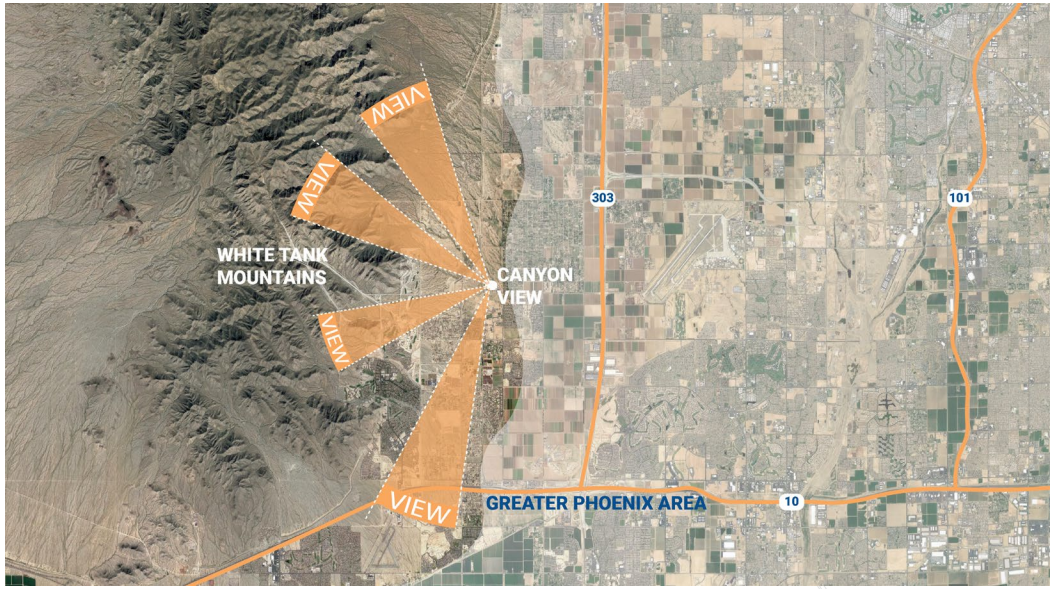
Where Place Matters!

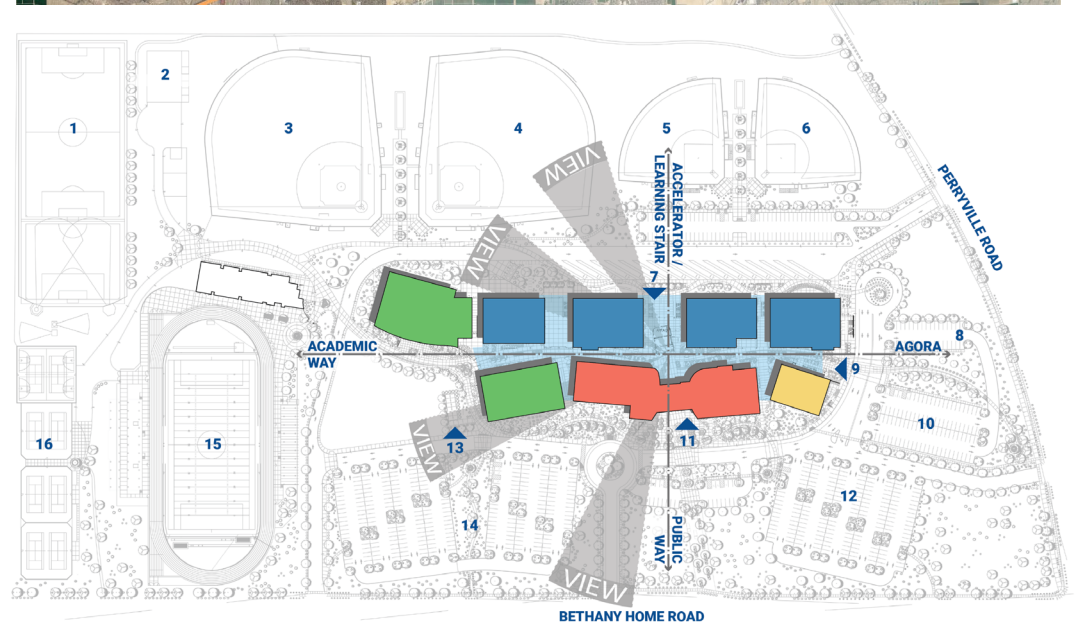
Exploring Innovation Inside & Out | Connecting to Context

Nestled within the West Valley adjacent to the White Tank Mountains, the architectural design was purposefully conceived to be “of the earth” while also being a celebration of innovation and change. The Canyon View High School campus reflects a design that seamlessly connects the natural to the built environments. Building materials were carefully chosen to withstand the harsh desert elements.

The overall master planning for the site integrates both passive and active performance strategies. The east-west building orientation maximizes daylighting into the learning spaces, while the building’s narrow sides are oriented east-west to minimize the west elevation, where exposure is severe. The architecture/engineering team used local climatic responses and to design passive cooling that extends the comfort zone of outdoor spaces throughout the school year, allowing the interior learning environments to extend outside. Extensive photovoltaic shade canopies, control radiant heat gain, produce energy and can also be used as a teaching tool designed to temper adjacent outdoor environments.

Outdoor learning was further enhanced through views to the surrounding mountains, shade and protection from natural elements, and comfortable furniture to create a space that’s flexible, safe and sustainable with a light footprint on the environment. Furthermore, the facility embraces the surrounding physical context with its use of indigenous and low-water use plants which were incorporated into the landscape to harmonize with the site context.

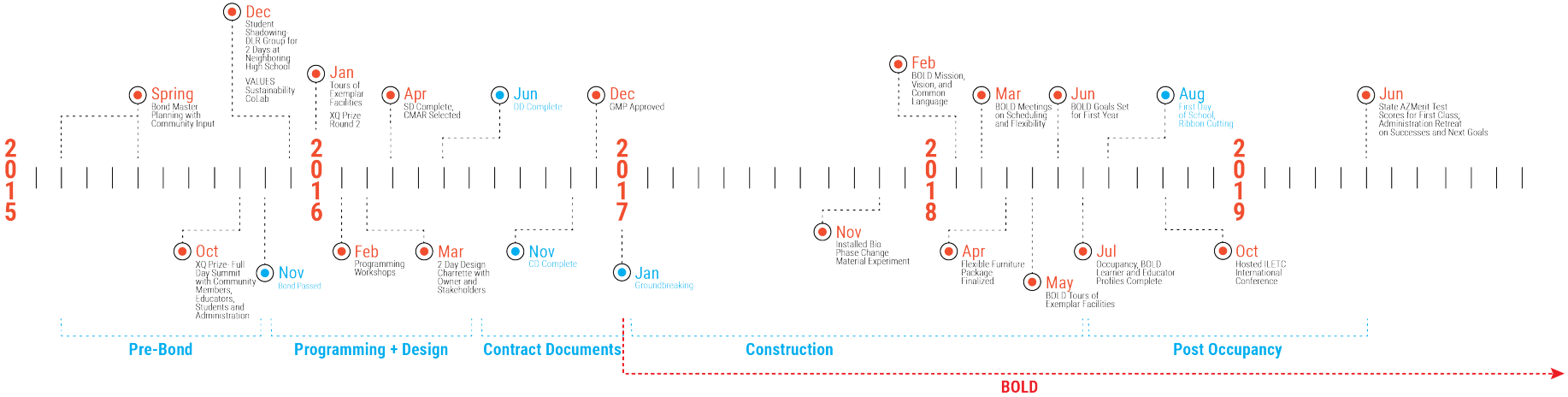




Co-Creating with Educators & Designers | Process

Participatory Design. Imagination to Integration. Programmatically ambitious, architecturally challenged with a modest budget, Canyon View High School fosters academic and curricular exploration by expanding the definition of a 'place-based' high school. Guided by the heavy involvement of local businesses, government officials, parents, students, and community members – ***the school was built through a journey of collaboration***. In total, over 480 of the project's stakeholders participated in community meetings to create three bold ideas and five guiding principles prior to conceptualizing the design. The future place-based learning at Canyon View High School was thoughtfully crafted with aspirational consensus to consider the project as a unique invention – with the student experience at its proverbial center.

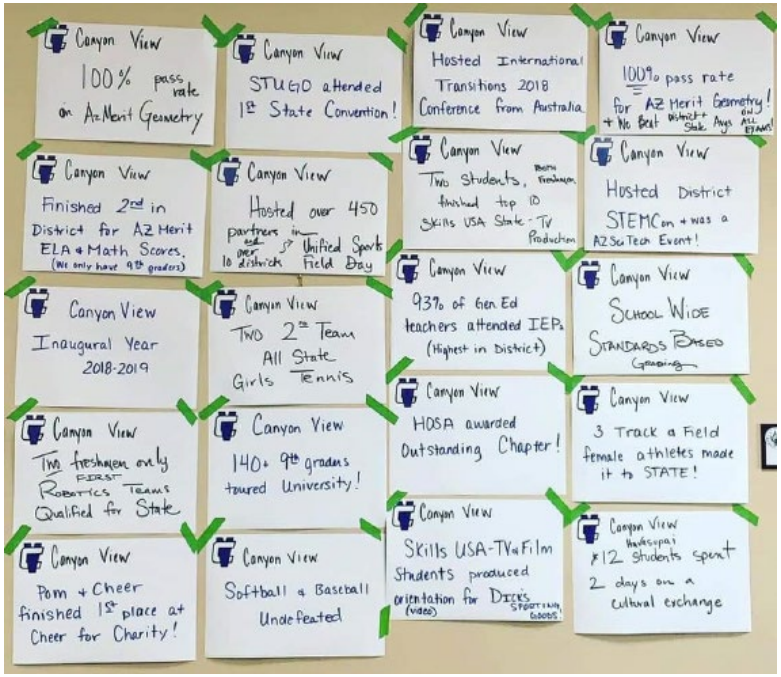
COMMUNITY MEETINGS included architects, engineers, community members, business partners, government agencies and district leadership - all aspired to treat the project as a unique invention. Together they developed a path forward that shaped the outcome of Canyon View High School.

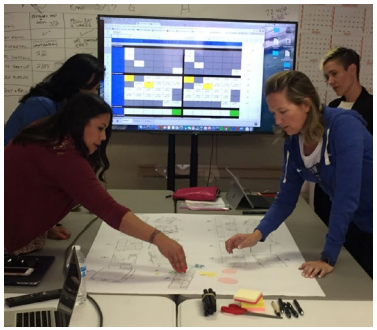


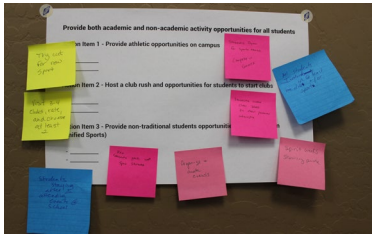
Creating a Culture of Success | B.O.L.D.

"...You can build a school, but without intentional planning of how you want to use that space and how you want to intentionally be innovative, it's not going to happen."

Aligning Culture, Values, and Mission. Seeking to have a community of learners engaging and thriving within the new innovative environment, the District approach to change management was to work with the interdisciplinary design team. Together, through a **B.O.L.D. [Bridging Organization, Learning and Design]** process, new school faculty engaged in professional development to align the school's culture and values to the physical environment to further the mission and allow intended partnerships and relationships to **Be BOLD. Accept risk.**



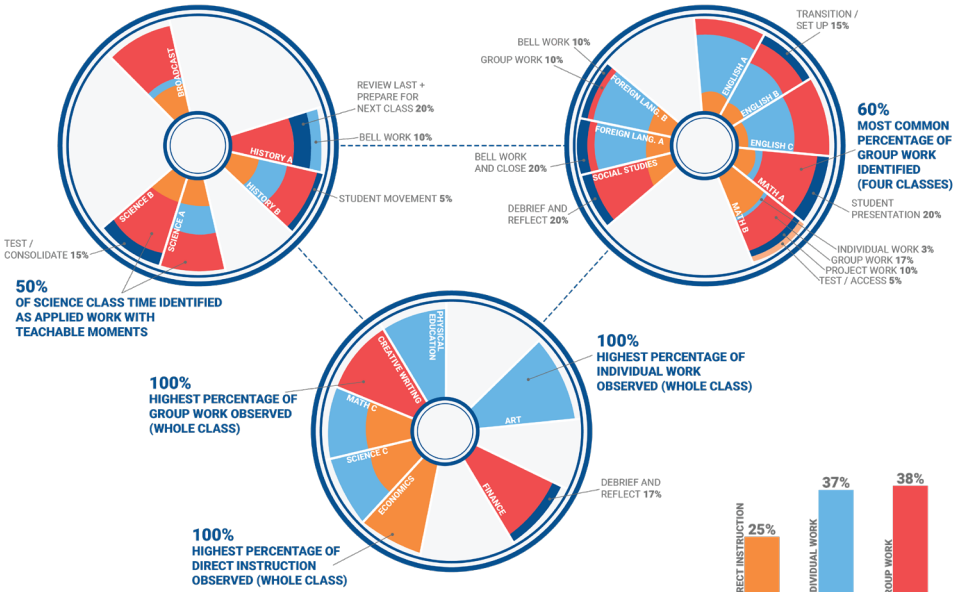




"Clarifying the district goals and how that is driven down to our campus was so worthwhile. Every campus should do this."

"I am ready to celebrate! We just received our freshman AzMERIT test scores and they were phenomenal! 100% of our "Baby Jags" passed geometry! 100%"

Creating a Learning Marketplace | Placemaking



Learning must be inspiring. Student input was critical to the success of the project. Obtaining firsthand accounts of current needs as well as what students wanted for those who would follow them was profound. While the process was centered around this new campus, the feedback should be considered universally in its emphasis. We heard that tutoring, access to materials and resources, curricular choice, multiple ways of learning topics, the ability to find passion in and relevance of the coursework would drive them towards success faster. In some cases, students expressed that relevance of the coursework could also help them choose a career or college major that suited their skills or at least show them what they might not be adept at sooner rather than when it was costing time and money after high school.

Learning requires a positive culture. The teacher must play a variety of roles as we shift towards a student-centered learning environment. As the curriculum changes, collaboration between teachers becomes more important than ever. Interdisciplinary and project-based learning, for example, require creativity, constant iteration and critical feedback from peers. Working this way requires great spaces for teachers beyond the classroom; we must provide alternatives to working alone in an isolated space. We must build spaces where teachers will collaborate and create, as well as concentrate and prepare. At the same time, we must foster a professional community throughout the school. The informal spaces in-between, from classroom portals to corridors, is just as important to collaboration as formal spaces. Given the challenging nature of the work, teachers require ample downtime. Give them spaces to get away, relax and recharge.

Stakeholders throughout the process spoke of the vital presence the community must play in the success of Canyon View High School. Tangible examples listed above speak to opportunities for mentorship, a shared community garden where herbs and spices could be grown for preparation of meals and how skills like fashion design can help deliver a tremendous performance.


CANYON VIEW HIGH SCHOOL

The South Buildings are scaled to public use and are predominately load-bearing masonry.

The North Buildings are scaled to the student with steel frames and plaster exteriors


6024

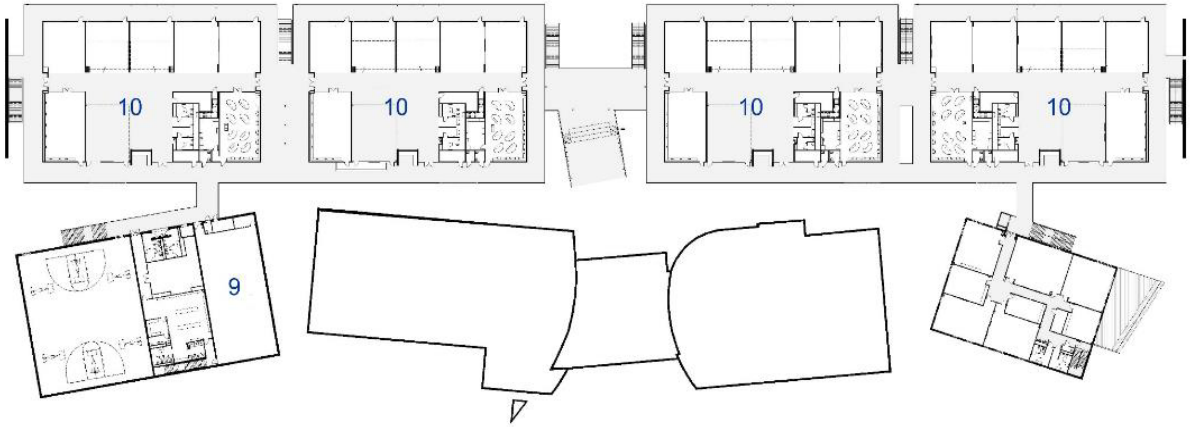
Landscape Plan

Tying the campus together is an outdoor central spine where the southwest climate was leveraged in providing this 102,835 SF of outdoor space, aptly named the *Agora*, or Marketplace for Learning, between buildings that includes outdoor project rooms, a learning stair, student dining, an athletic training corridor and more.

Learning Environment Layout | Floor Plans

"The design has made a big impact. I chose to go to this school; I could have gone anywhere. I am super excited and want to learn everyday. Not only does the environment make us light up, it also makes the teachers light up. And the students can see that in the teachers, and it makes us want to do more."

First Level



Second Level

1. Administration
2. Fine Arts
3. Faculty Collaboration
4. Performing Arts
5. White Box
6. Learning Commons
7. Dining
8. Applied Learning
9. Athletics
10. The Forts

0' 50' 100' 150' N

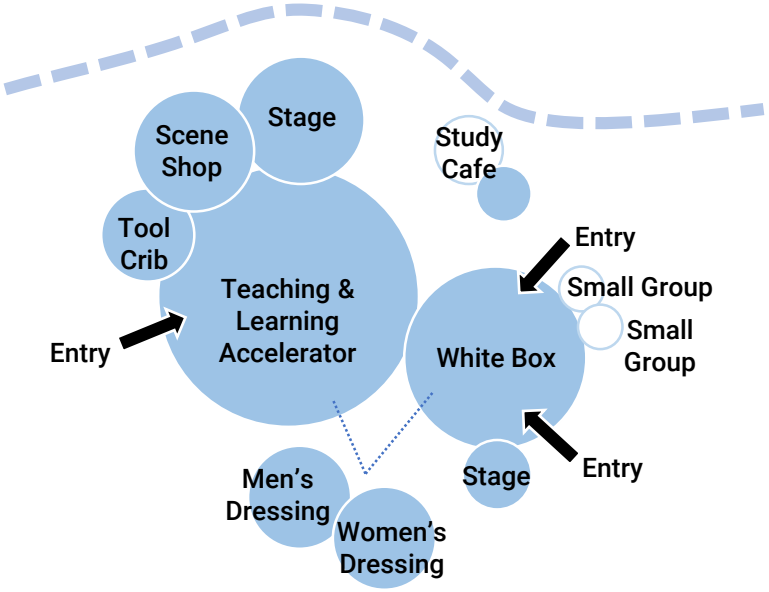

BROADCAST

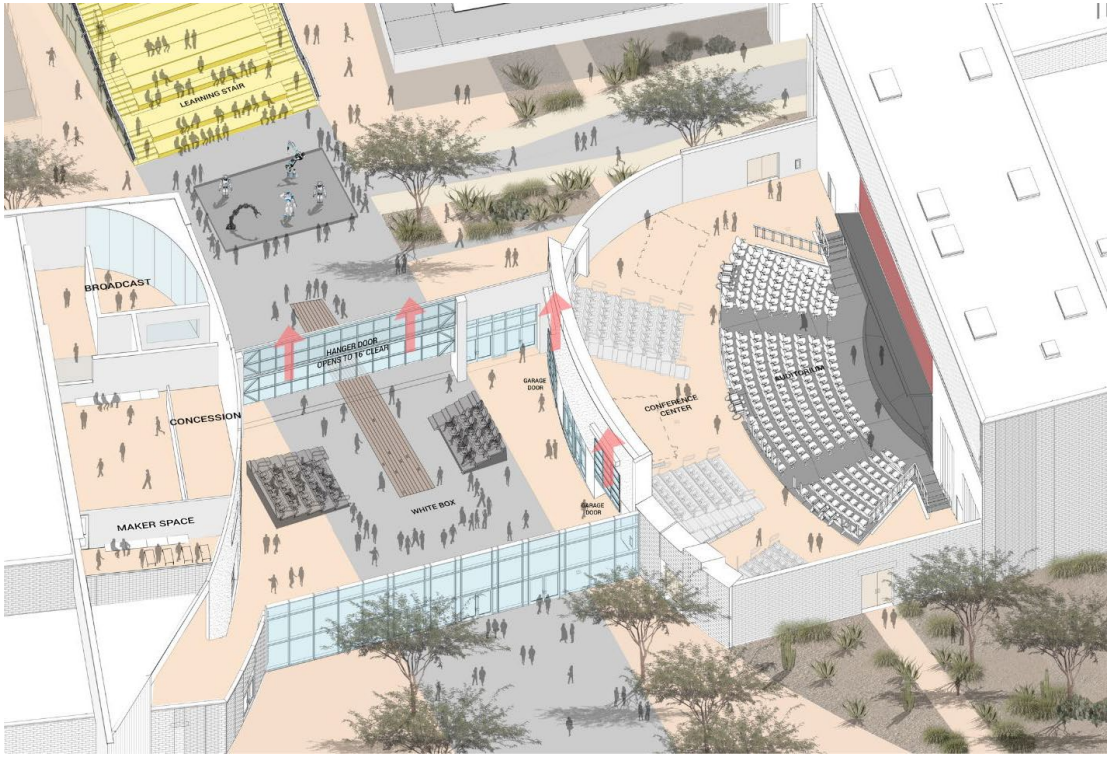
A One-of-a-Kind *Accelerator*

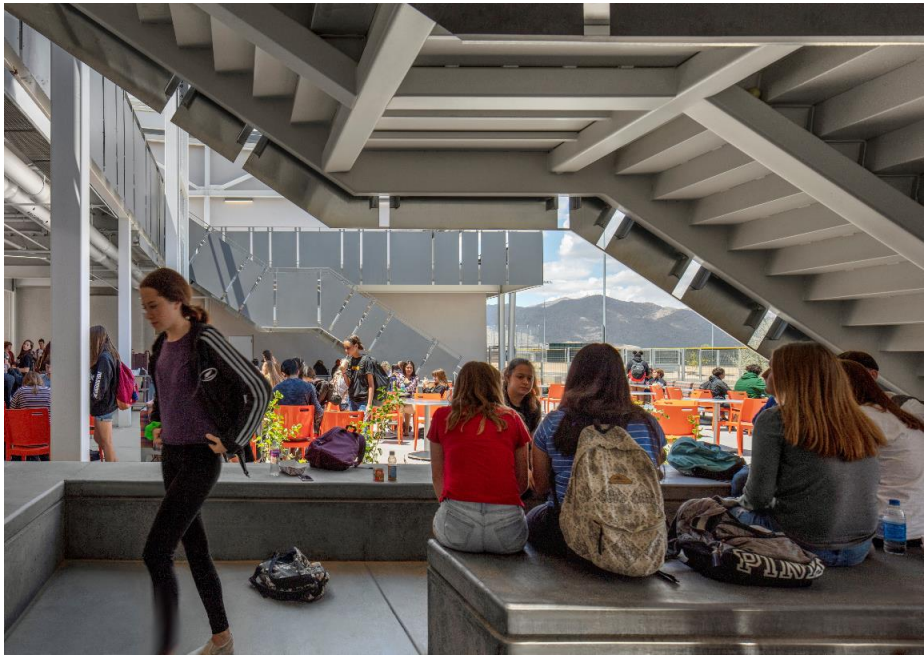
This first-of-its-kind *Accelerator* - an open source incubator for the art of teaching and learning -evolved to further support the surrounding schools within the district, community and nearby business partners.

"At Canyon View High School, the mission is to employ concepts of science, technology, engineering and math to activate student learning by connecting curriculum to real world problems and solutions through a project based model. The students are challenged to look beyond their own scope of experiences and dream what is possible and utilize the unique innovative building spaces to provide authentic learning that will prepare them for post-secondary success."

– Principal

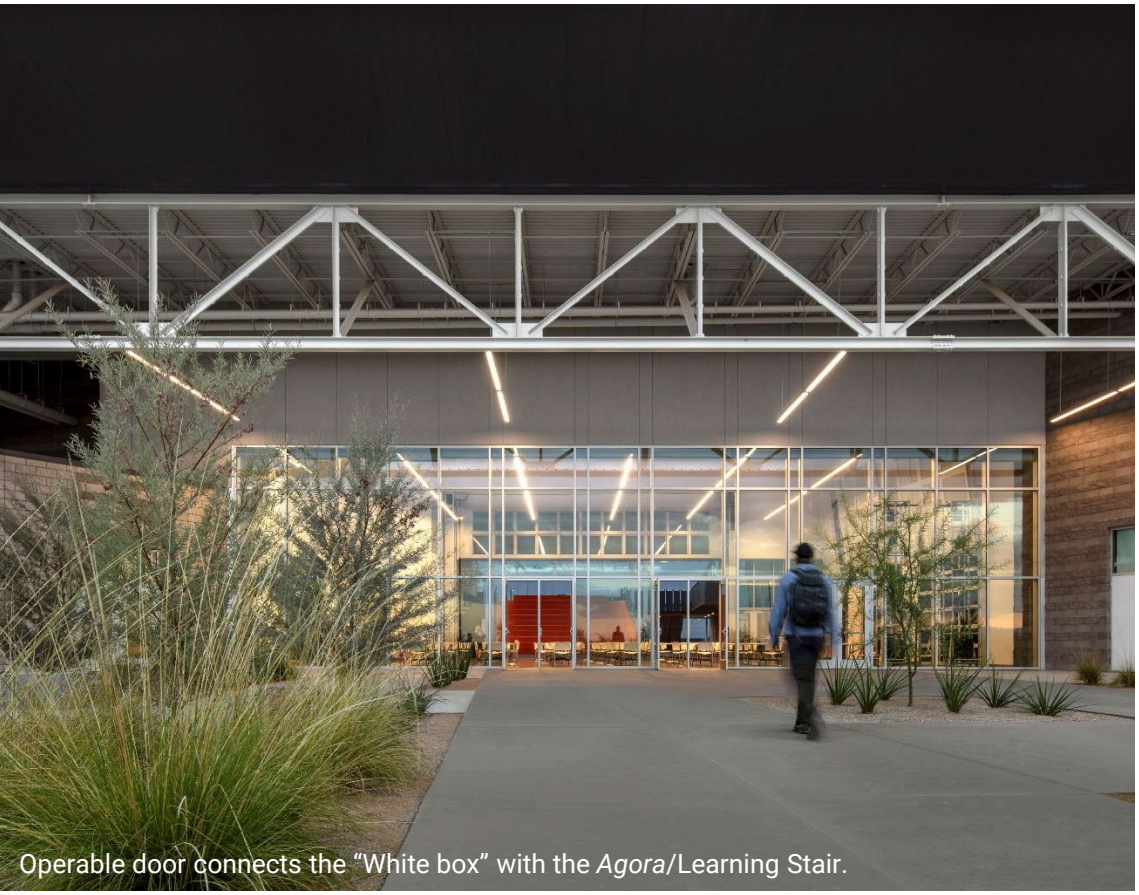






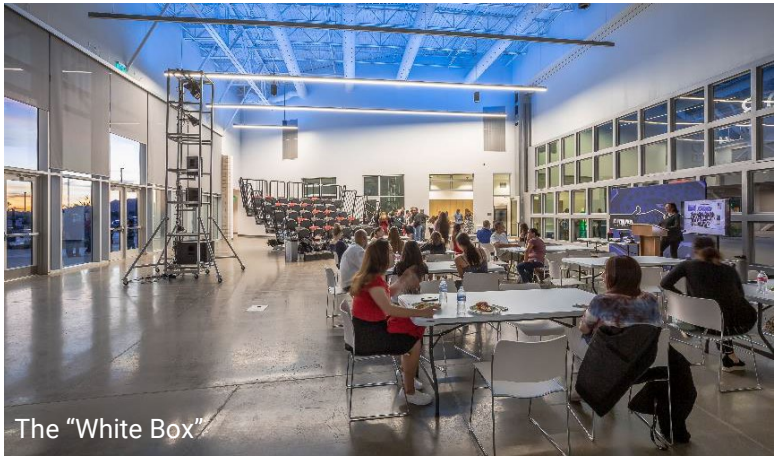
The *Accelerator* and Learning Stairs celebrate their presence as community spaces.

The confluence of the Learning Stair, the *Accelerator* and the *Agora* create the heart of the campus.



Operable door connects the “White box” with the *Agora*/Learning Stair.

Auditorium

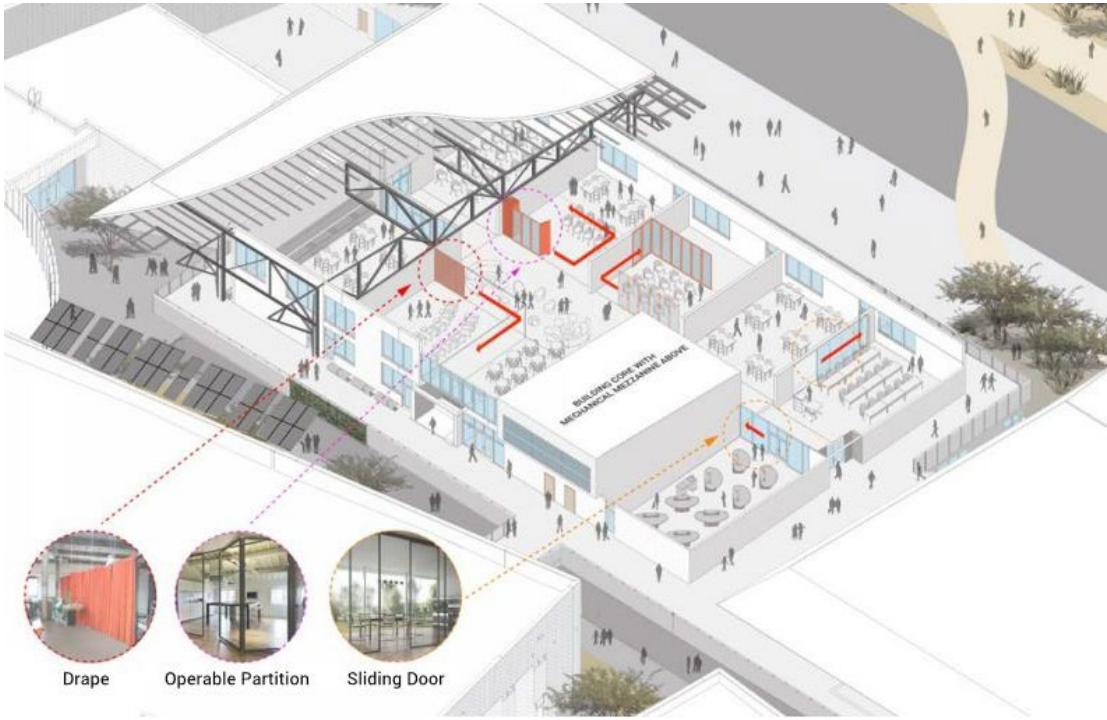


The “White Box”

Small Learning Communities/*Forts*

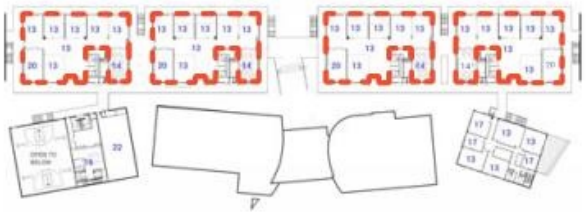
Canyon View High School defined a vision that would "blur the lines between ages and abilities, and foster authentic learning and curricular exploration."

Canyon View High School is an innovative ecosystem of mobility, enhanced resource availability and application that maximizes content mastery through hands-on exploration, develop skills for success in college/career/life and allow students to apply their learning in real time in the real world. Classroom ownership is transferred to the collective school, with students having greater freedom to explore curriculum wherever that may physically take them within. Classes have the flexibility to be held in spaces designed to suit the learning of the moment and adjust when necessary without a wasted "home room" that is empty 20% of the day. Affectionately named the *Forts*, these suites of spaces serve to simulate the unlimited capacity for imagination that was created when one built a *Fort* made of chairs and sheets in their mother's living room as a youth.



Movable partition system for flexibility

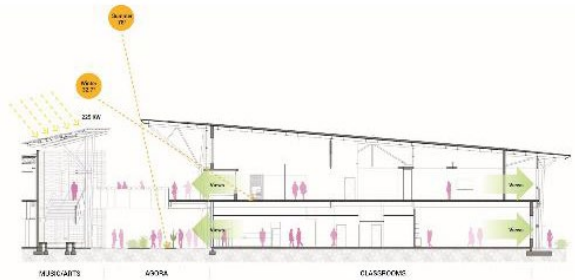
The *Fort*



Movable walls and flexible furniture allow for “learning of the moment”.

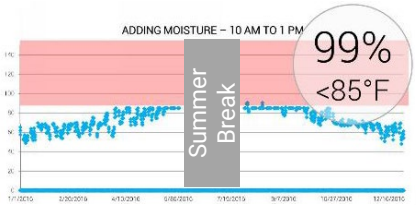
Sustainable/High Performance Design

Using buildcarbonneutral.org, we estimate that the net embodied CO2 for this project as 5,689 Metric Tons of CO2, which is equivalent to 54 lbs of CO2/sf. This is a reduction of 43% compared to a typical high school at 96 lbs of CO2/sf.

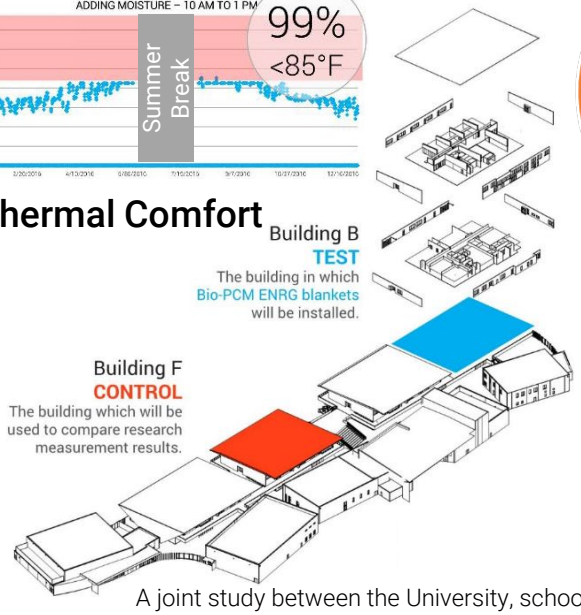


Parametric Modeling – Computational Fluid Dynamics (CFD)

Sun angles, ambient temperature, radiant energy, air movement, and humidification from landscape were accounted for in creating usable outdoor learning spaces and 100% naturally-lit non-glare interior learning spaces.



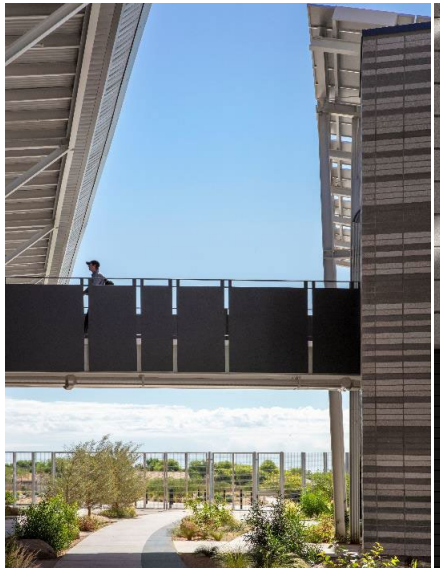
Thermal Comfort



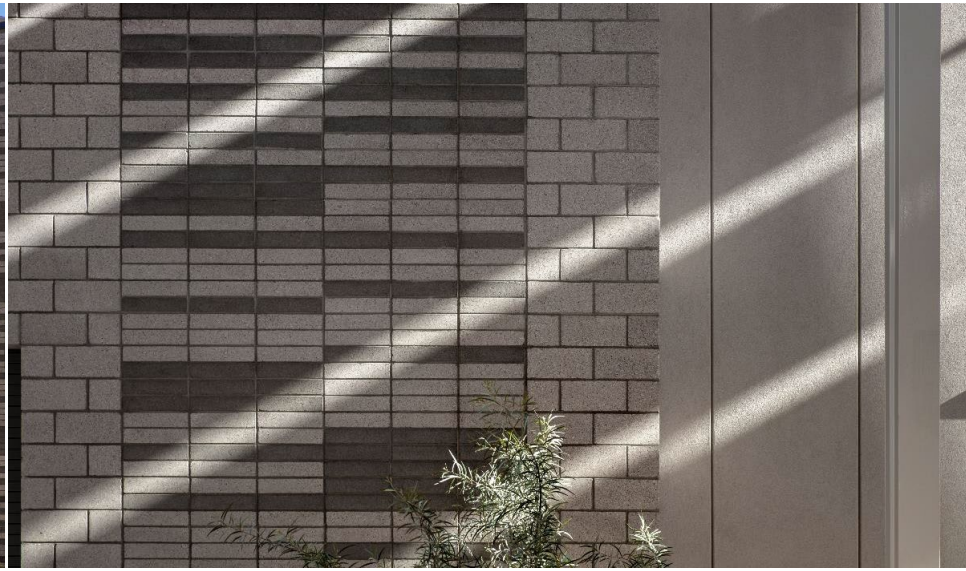
Living Laboratory

A joint study between the University, school and design team will study the affects of phase change materials in the walls on human comfort, temperature moderation and energy conservation. Monitoring will become part of the science curriculum beyond the 2-year study period.

The masonry patterns reflect the White Tank Mountains



The Fibonacci Series as a connector



Human DNA pattern is incorporated into masonry pattern at fly tower of stage

PV panels and vegetation provide a micro-climate in the *Agora*

PV panel arrangement follows animal DNA strands from simple life forms to complex mammals