

DEL ORO HIGH SCHOOL KERN HIGH SCHOOL DISTRICT

ACHIEVING SUCCESS THROUGH AN IMMERSIVE DESIGN PROCESS

Public Art by Stan Bitters

Creating a Quilted Aesthetic



Before embarking on the creative process, we engaged in meaningful dialogues with the Kern High School District and the community. Our primary objective was to immerse ourselves in their vision for the project and gain a comprehensive understanding of the essential program requirements, desired features, and delightful extras that would imbue the campus design with resonance for the students, the school district, educators, and the wider community. This collaborative endeavor has culminated in the formulation of the key aspirations for Kern High School District's New High School #19:

- / The new school would open for the school year 2022-23
- / The school would meet the project budget of \$120,000,000.
- / School pride:
- The quad and campus center would become the heartbeat of the campus.
- The campus would offer the students a sense of place and pride.
- The campus would create safe and supportive school environments for the students and staff.
- The campus would offer programs that better prepare and connect students for work, career training, and college.

/ Community identity:

- The school would offer the students and community a sense of place and pride.
- The campus would be zoned to allow for community use after hours.
- The campus would support and offer connectivity for parents and the community.
- / Future Focused learning instruction and learning environments:
- Spaces would be designed to allow for flexibility in educational delivery, size of student groups, collaborative student activities, and increasingly intensive use of technology.
- Flexible interior and exterior spaces would create flexible and supportive collaboration areas adjacent to the learning environment.
- Spaces would be designed to consider current and future collaborative learning environments.
- The educational environment would support multiple learning styles, programs, student populations, and instructional delivery methods.

Ensuring Success Through Comprehensive Planning

Our project commenced with a rigorous educational specifications validation phase, enabling us to meticulously assess the district's objectives and identify key program components to prioritize. Collaborating closely with the district and our engineering teams, we embarked on a design strategy fostering a collaborative and innovative culture. Recognizing the paramount significance of the district's financial constraints and project timeline, we advocated for an immersive design approach, expediting the project schedule while actively involving the district,

- d This process allowed the district and the A/E
 - team to see the following benefits:
 - / Helped to ensure the project would be delivered on time and budget.

its user groups, and the community as

- / Achieved a collaborative design in a shorter time than a traditional path (the schedule was reduced by 2 months).
- Everyone was involved in the design process, and feedback was implemented immediately.
- Cultivated trust and deepened the relationship between the district and the A/E team.
- / The district and all stakeholders understood why every decision was made.
- / Due to the accelerated process, individuals involved didn't need to recall decisions made in meetings weeks or months prior.
- Innovation comes quickly through short feedback loops and compressed meeting schedules.
- / The community, district leadership, administration, teachers, parents, and students became transformed in the way they worked together to solve challenges.







SCOPE OF WORK AND BUDGET

In the heart of Bakersfield, California, lies a 77-acre agricultural site that has become the canvas for an ambitious undertaking: creating a forward-looking educational institution on a tight budget. This endeavor demanded the design of a Zero Net Energy learning environment catering to 2,500 students while adhering to the stringent cost constraint of less than \$500 per square foot.

The total area of the project is 227,000 SF of building space that houses a combination of innovative student instruction spaces and services, including administration/ counseling, food service, and dining, a performing arts center (including an auditorium for 600), gymnasium with locker rooms for physical education and athletic programs, and a media center.



The overall site master plan covers 77 acres, and this high school campus site is 60 acres. It includes student, staff, and visitor parking; bus loading and unloading; physical education fields (basketball, volleyball courts, and tennis courts) and athletic fields (including football/soccer/track and seating for 4,000, varsity baseball and softball, and a practice field); and ancillary storage and campus support buildings.



IMMERSIVE DESIGN PROCESS

3 Day Process We created an immersive We worked engaged the client, and developing ideas based on District feedback. worked side by side with

AFTERNOON We met with Groups to present ideas and receive feedback.

SCHOOL & COMMUNITY ENGAGEMENT

Community

design process that

resulted in real-time

decision making. We

them, testing ideas in

real time, and building

consensus along the

way.

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The new 2,500-student high school campus is located on the rural east side of Bakersfield, California. This campus, which is the district's 19th high school, will help relieve overcrowding at several of the district's surrounding high schools.

District Stakeholders

The district's stakeholders were comprised of five primary groups:

1. Key members from the district's board of education

- 2. The district's executive steering committee
- 3. A large design committee composed of key staff, community members, teachers, and students
- 4. Community groups
- 5. Multiple user groups, including top-level staff from several local high school sites

Project Challenges

Situated within a community facing significant economic challenges, this campus assumes a crucial role as a beacon of hope, providing an array of before- and after-school services to keep students engaged and safeguarded from local gang influences.

EVENING

We worked that night to refine ideas to present to the District . leadership team and key staff members in the morning.

This process starts with us making revisions to the Ed Spec to meet the district's goals, and continues until we complete Schematic Design.

The campus design, therefore, had to address these pressing concerns while accommodating the requisite levels of supervision and fostering environments conducive to innovation. Our team was tasked with devising an efficient decisionmaking process in collaboration with the district, which allowed leadership decisions to strike the delicate balance between adaptability for launching Future Focused learning opportunities with staff and students and maintaining the project's integrity. Simultaneously, we grappled with the complexities of overseeing a substantial scope, adhering to a stringent schedule, and navigating the constraints of a limited budget.



SCHOOL & COMMUNITY ENGAGEMENT, CONT.

The Value of **Collaborative Design**

Our approach to designing as a cohesive team underscores the district's substantial involvement in shaping the project. On numerous occasions, we held morning meetings, followed by extensive user group discussions in the afternoons. We integrated and refined our plans throughout the evening and presented our updated designs the following morning.

This collaborative engagement process empowered us to craft a school design centered around the community's needs and the holistic development of its students. We worked closely with school principals and educators to gain deep insights into their operational procedures, actively challenging and improving various processes where necessary. This endeavor allowed us to create a campus that met and exceeded their expectations, setting a new standard for functionality and effectiveness.



Blended Learning Community Studies





EDUCATIONAL ENVIRONMENT

Vision and Goals

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The immersive design process yielded a wealth of information. To create a future-focused learning environment on this campus, we needed to be mindful of existing facility paradigms in the district.

Supporting the Curriculum

We studied various ways to create blended learning environments within each classroom building on campus. A range of traditional (single subject) to fully blended (various subjects) learning models were presented and discussed with teachers, department heads, and district leadership.

Supporting Various Learning and Teaching Styles

The resulting layouts allow for long-term flexibility for the district to transition from a more traditional to a more blended teaching model. This solution spoke directly to the need to achieve parody in the district while allowing for future changes to the space to occur with ease.





EDUCATIONAL ENVIRONMENT, CONT.

Adaptable and Flexible Spaces

To ensure that spaces in the new school were flexible to allow for learning to happen everywhere, we created a campus plan for various activities for groups of different sizes and noise levels. Learning spaces are flexible and provide collaboration areas, allowing students to work in various-sized groups where teamwork and accountability lessons are learned. These spaces also allow students to leverage technology to bolster their awareness of the subject matter and offer various ways to collaborate and share knowledge. The following are the results of our immersive design workshops: / Classrooms are designed with flexible furniture, strategically placed marker boards, and tackable surfacing, allowing the room to adapt quickly and easily to different teaching modalities.

/ Technology is integrated into the buildings and sites to allow learning to happen everywhere. These amenities include short-throw projectors, highspeed Wi-Fi throughout campus, and digital presentation areas in all learning spaces—including the library, cafeteria, and gymnasium. / Rather than teachers owning one classroom, they are provided several teacher collaboration areas where their main workspace resides. This, in turn, allows for more flexibility throughout the campus.

Views & Security Diagrams: Quad Views









Balancing Accessibility and Safety

Our design concept for the site and buildings harmoniously blends an open and welcoming atmosphere with robust security measures to ensure the safety of both students and staff. To achieve this, we strategically positioned the fencing between the buildings, reducing their visual impact and minimizing the institutional feel of the campus. We integrated expansive roof overhangs leading to entrances and strategically placed wayfinding signage to simplify navigation for first-time visitors. During school hours, access to the campus is controlled through a single entry point, where visitor screening is conducted before granting access. This entry point ensures security and provides clear sightlines to each sub-quad within the site, facilitating both safety and intuitive wayfinding for all who visit.

NEED: The district wanted a large central quad and different zones for various activities in that central space for congregation and outdoor learning opportunities. They also wanted us to include a ninth-grade sub-quad to provide students with a transitional space of their own. **SOLUTION:** Our team created a quad design inspired by the quilted landscape idea and offers various activities within a quad with excellent supervision for security.

NEED: Flexible learning opportunities were needed for various groups throughout campus and in each classroom building to inspire and motivate students to work together to solve problems.

SOLUTION: Flexibility and collaboration are part of the DNA of this campus plan. We designed spaces to provide opportunities for collaboration in every building and various locations in the quad and sub-quads.

Traditional and non-traditional spaces offer areas throughout the campus where students can collaborate, inspire, and be motivated by each other.



SITE PLAN

DETENTION BASIN

SOLAR PV FARM



CLASSROOM BUILDINGS



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RESULTS OF THE PROCESS AND PROJECT

Design and Physical Environment

Influenced by the picturesque patchwork of the neighboring farms, our design concept centers on a central quad flanked by public buildings to the south and classroom structures to the north. This arrangement not only shapes the secured campus perimeter but also significantly reduces the need for extensive fencing, avoiding an overly institutional feel. The buildings facing the public serve as invaluable community assets, encompassing administrative offices, a campus center housing the cafeteria and library, a gymnasium, and a performing arts center (PAC).

The strategic placement of the PAC at a public-facing corner establishes an axial link to the central guad, a circular gathering space adorned with trees and benches. Here, all pathways converge, creating a focal point. Along these pathways, we've designed shaded outdoor learning and dining spaces and formal entry points for daily school activities and special events. Drawing inspiration from the guilted landscape and mid-century modernism, our architectural aesthetics employ elements of light, texture, color, and scale to honor their presence within the school campus and resonate with the surrounding community. Textured and colored concrete block walls,

meticulously adorned with thoughtfully placed openings and storefronts, contribute to a layered massing approach. Additionally, bold color accents and shade canopies at entry points visually connect each building, creating a seamless and harmonious architectural tapestry.

Community Environment

The influence of this campus extends far beyond the realm of education, embracing a profound commitment to supporting underprivileged families through initiatives such as the "Sun Pantry," a testament to the school's compassion. This campus distinguishes itself by addressing academic and safety challenges with a remarkable safety record and significantly reducing bullying incidents.

The district is a pioneer of educational transformation driven by innovation, sustainability, and robust community engagement. The Campus Center building

functions as an academic hub and a vital community resource center, housing the Library and Cafeteria. It's here that many students rely on daily meals, often representing their primary source of sustenance. Principal Bentley shared a profoundly moving account of the security team's compassionate assistance to a homeless student, providing transportation to school facilities, including showers, food, and clothing, thus ensuring an equitable learning experience for all. The administration building is a versatile career and parent center, fostering dynamic community engagement. Adjacent to it, the PAC, featuring a 600-seat theater, hosts an array of public performances and community events, enriching the cultural tapestry of the area.

Quilted Landscape

Expressed in Site Design





CLASSROOM LEGEND CLASSROOM SPECIAL EDUCATION ELECTIVES CIRCULATION

RESULTS OF THE PROCESS AND PROJECT. CONT.

Further enhancing community involvement and inclusion, the shared athletics complex boasts a three-court gym, varsity baseball and softball fields, regulation soccer fields, practice spaces, and a stadium with track and field facilities. This comprehensive facility encourages active participation and connection within the community.

Learning Environment

Taking inspiration from the flexibility of junior colleges, our campus is dedicated to nurturing self-directed learning, free from the constraints of bells. They offer a comprehensive blend of college-preparatory curriculum, dual enrollment options,

and career technical education (CTE) to empower students. The design incorporates a guilted landscape theme situated amidst serene farmland, seamlessly weaving into the planning and architectural elements. This academic philosophy has translated into remarkable success, evident in a significant reduction in grade failure rates and a notable increase in students achieving a 4.0 GPA. The campus layout reflects this guilted landscape inspiration, with shifted landscapes, well-planned hardscapes, and shaded zones thoughtfully scattered throughout, inviting students to congregate, collaborate, and engage in informal gatherings. The learning spaces are designed to be interconnected through an interactive corridor, creating a fluid learning environment that opens into a collaborative teaching lab. This innovation

allows students and staff to bridge diverse subjects, seamlessly fostering collaboration and interdisciplinary learning. Harnessing technology to enhance subject awareness and collaboration, the interior spaces are thoughtfully organized for efficiency, enabling easy transitions to outdoor learning environments. These outdoor spaces are adaptable, catering to groups of varying sizes and offering a diverse range of learning opportunities, further enriching the educational experience on our campus.

High Performance

Elements of this campus' high-performance design include harnessing ambient daylight, controlling acoustic performance, using durable and appropriate materials, and creating flexible and adaptable spaces. The campus' sustainability achievements include: • Energy Use Intensity: AIA 2030 Baseline EUI: 104.4 KBTU/SF/Year, and our predicted EUI is 0 KBTU/SF/Year = a predicted reduction of 100% (we are awaiting a full year of energy bills to show actual EUI)

Flexible Learning

- Embodied Carbon: 494.76 kgCO2/M2
- Lighting Power Density: 0.69 W/SF

This transformative educational campus is a testament to innovative design, community engagement, and sustainability. It equips students for the future and serves as a vital resource for the entire community, reflecting compassion, inclusivity, and highperformance standards.

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Administration Building Campus Entry





This campus design draws from the rich tapestry of the local farms, creating a quilted landscape theme that informed both site and building design. This patchwork of collaboration, hang-out and dining spaces bolsters campus culture and engagement.



Careful placement of public facing buildings and amenities allow for various points of connection to the community, including Performing Arts, Administration, Library, Special Ed, Gymnasium, Stadium, and several points of access for after school sports.



Storm-water is filtered by bio-swales, and retained on-site. Native and drought tolerant vegetation was specified that thrive in this arid climate context.



Integration of low-flow plumbing fixtures, and drip irrigation used in planting areas to reduce water use across campus.



Before placing pen to paper, we met with our consultants to brainstorm the most sustainable and cost effective way to meet the program needs. We created a modular planning approach and leveraged local manufacturers to create a 100+ year facility for less than \$500/sf.



Starting with a passive first approach, we oriented the buildings along the east/west axis to provide long north and (shaded) south facades while increasing thermal efficiency. We then added a solar farm to allow this campus to be powered 100% by the sun.



Our team added food distribution areas at each of the classroom buildings to minimize wait times for nourishment. Access to daylight and acoustical comfort were key design considerations in all spaces.



We used concrete masonry as the primary structural and exterior finish system for its durability, and longevity (100+ year facility). There are also several CMU plants near the site, and a large pool of local skilled labor. This key decision helped us stay on budget.



Interior walls are designed to be nonload-bearing, allowing the district to make adjustments as educational needs change. Sliding wall systems and garage doors allow spaces to flex and adapt to accommodate various uses over time.



Flex-lab spaces are designed to allow for various uses, and are filled with collaborative and easily movable furniture that allow these spaces to adapt with ease. These types of spaces foster deeper student engagement and discovery.









View Inside Administration (Secure Single Point of Entry)





"Making a difference in the community is about creating spaces that students can learn, grow, and thrive in. We create spaces that engage and inspire, so the students have the tools necessary for them to achieve their dreams. These students are part of our community, and our future leaders. My goal is to create spaces that will last a lifetime. As a mom, and a designer, affecting these communities and creating a positive impact is what Design for Good is all about for me."







EXPLORING THE QUILTED LANDSCAPE IN PLAN

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"We created spaces here at Del Oro that were specifically designed for us to allow students to seek out the best way that each student learns. Our collaboration rooms have roll up doors, movable walls that open to double the space, and flexible furniture that allow classes to teach in a lot of different ways."





View of Classroom Building (Showing Outdoor Dining Service)









"We are the future designers, athletes, builders, doctors, and nurses. We are the future changers of the world. So what you designed, we will we will use it fully. This is our community, and we are very proud of our school!"

- 9th Grade Student

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View of Performing Arts Public Entry













Science Building & Brise-Soleil

"The spaces that [the designers] created here at Del Oro High School are specifically designed to meet our needs, and allow our students to seek out the best way that each student learns. Our collaboration rooms have roll up doors, movable walls that open up to bring flexibility to the learning spaces, and collaborative/movable furniture that allow classes to teach in many different ways. Education happens everywhere on our campus."

- Jenny Hanna Brown, Exec Facilities Director, Kern HSD



