

MATILDA TORRES HIGH SCHOOL

MADERA UNIFIED SCHOOL DISTRICT | MADERA, CA





EXECUTIVE SUMMARY

“We are committed to maintaining and sustaining a culture that enables Madera Unified students to experience an unparalleled educational journey that is intellectually, socially, and personally transformative. And when you consider what Torres High School is, it’s the manifestation of that.”

— Mr. Todd Lile, District Superintendent

EXECUTIVE SUMMARY

For generations, Madera Unified had been in a cycle of modernizing their aging school campuses. If the board of trustees and district leadership were going to change the trajectory for investment in educational facilities, a new approach was needed.

It was identified as part of a district-wide master planning project that a new comprehensive high school campus was needed to serve the students of Madera Unified. This would be the first high school campus in the district since 1989. There was motivation within the community and from district leadership to build a new facility that fully realized the district's educational goals.

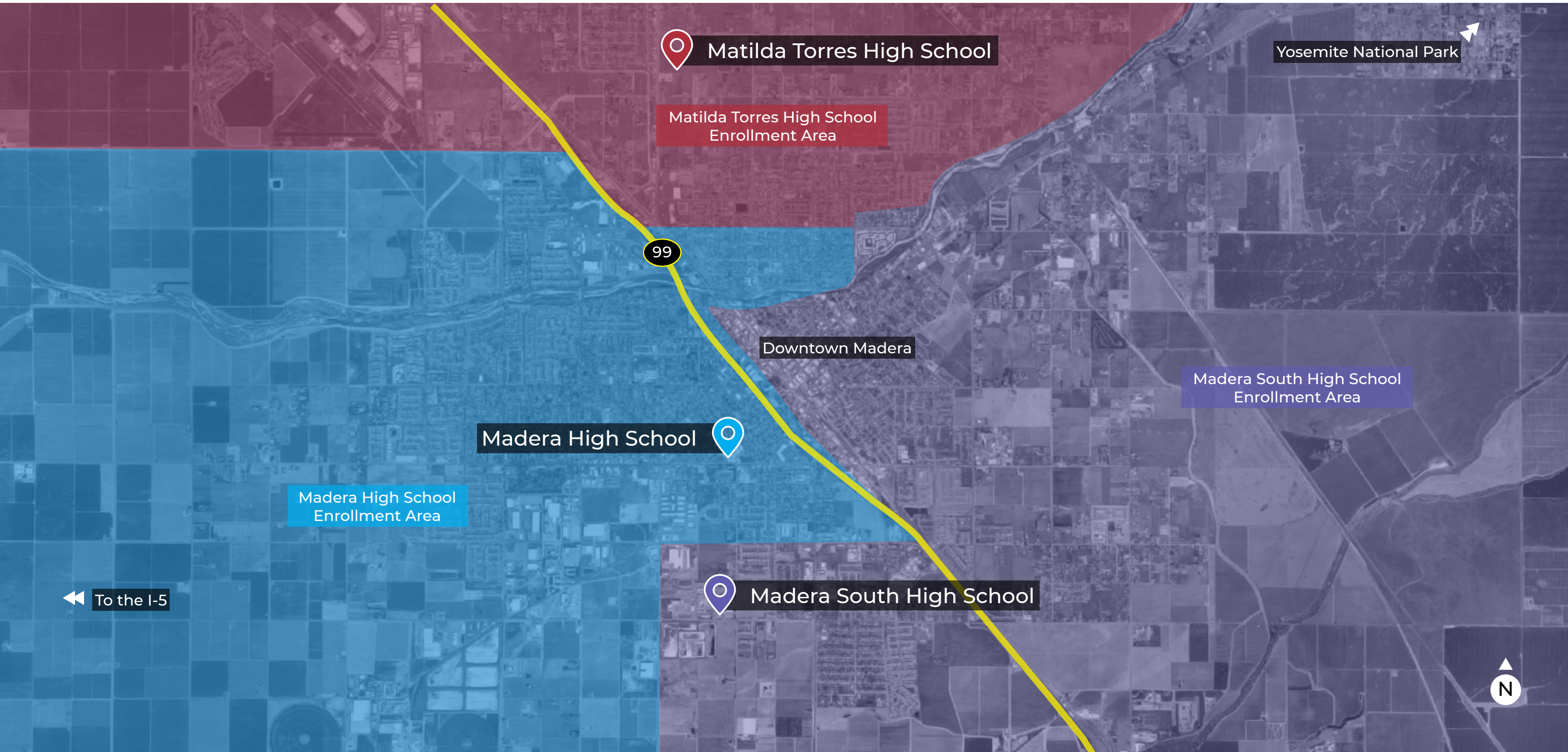
One of the driving questions put forward to the design team by the district superintendent and Madera native Todd Lile was, "How do we create a school that kids will be proud of 100 years from now? Our goal is to offer the students an environment that creates intrinsic motivation. The choices that the District makes in the design, the instructors, the school leadership, the representation of the school branding all have a direct effect on the student experience and that intrinsic motivation."

Matilda Torres High School is the culmination of over a decade of planning, collaboration, and design. The Architect approached the project with an understanding of the importance for the community and the generations of students who would walk the halls. There was a commitment to be good stewards of the community funding, and create a venue for students to enjoy the many opportunities that a world-class educational facility can offer.



EXECUTIVE SUMMARY

Another primary goal for the project was to construct a high school on the East side of Madera. When talking about East and West sides of town the district uses the 99 freeway as the dividing line. Both of the 2 existing high schools were on the West side so many East-side students had to be bussed across town to and from school. This added travel time added hours to the students’ day, making extracurricular activities prohibitive, leaving less time for study, and most importantly taking precious time away from their families. The new Matilda Torres High School now serves one of the fastest growing regions in Central California. This comprehensive high school provides appealing new educational opportunities and a better school-life experience for students.



SCOPE OF WORK + BUDGET



SCOPE OF WORK + BUDGET

Planned to accommodate 2,500 students upon final build-out, the Matilda Torres High School campus consists of 10 buildings totaling over 246,000 SF and is uniquely designed to provide students with world class Career Technical Education (CTE) in addition to the traditional college preparatory offerings.

At the outset of the design process the two existing high school campuses were over capacity and the district anticipated continued population growth. Over 2,500 students were enrolled at Madera High School and 3,000 at Madera South High School, exceeding both campuses planned capacities. In addition, the student population was growing at a rate of 200 to 300 students per year. A new high school was desperately needed.

The community had struggled with how long Madera South High School took to complete: almost 20 years to reach full build-out. The community was adamant that the district provide a comprehensive high school all at once. The district promised the community that Torres High School would be planned, designed, and constructed with focus and intention to meet an immediate community need.

In order to accomplish this the district knew they would have to pass a general obligation bond that, based on the district bonding capacity, would not be able to cover the full cost of the school. To expand the budget and fulfill the promise to deliver a new the school in a single phase, the board to set aside general funds into a separate “building fund” to make up the difference in cost for this facility.

As a fellow Madera native, Deputy Superintendent Sandon Schwartz had experienced the piecemeal development of district facilities first hand and the effect that it can have on the student experience, school pride, and community investment. During the decade of development of this project Sandon often reassured the board of trustees and district leadership of the decision they had made to go about creating the school in a single phase by reminding them that “you only get one chance to do it right.”



OWNER
Madera Unified
School District

**SITE
AREA**
57 acres

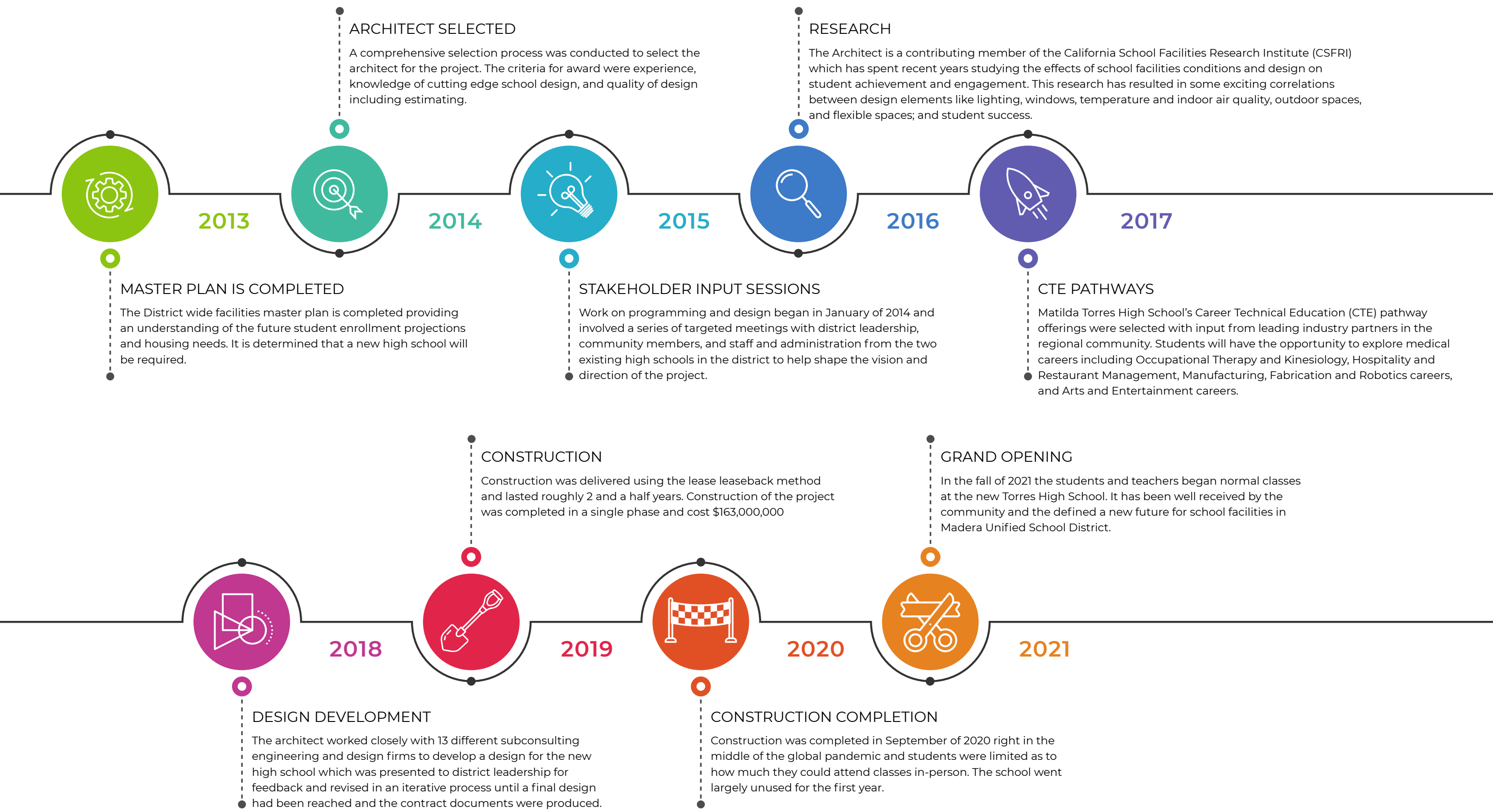
**BUILDING
AREA**
246,176 SF

**GRADES
HOUSED**
9-12

**STUDENT
CAPACITY**
2,500

**OCCUPANCY
DATE**
Sept. 2020

PROJECT TIMELINE



SCHOOL AND COMMUNITY ENGAGEMENT



SCHOOL & COMMUNITY ENGAGEMENT

An Outstanding Community Improvement Project

Work on programming and design began in January of 2014 and involved a series of targeted meetings with district leadership, community members, and staff and administration from the two existing high schools in the district to help shape the vision and direction of the project. A steering committee was formed to guide the planning and development of the project. The committee included upper-level district leadership, department heads, curriculum and instruction staff, and the district superintendent. There was also input from the subject-area department heads from both existing high school campuses.

The community was represented as part of the site selection committee and the original bond campaign which was specifically intended to fund the school. During design there were two community input meetings and a presentation of the design. The purpose of these was to gather input about what the families living in the area were concerned with, and what they wanted to see from this project. These meetings were conducted in English and Spanish.

In 2021, Matilda Torres High School received the award for "Outstanding Community Improvement Project" from the American Society of Civil Engineers (ASCE) San Francisco Section. The Outstanding Community Improvement Project Award recognizes civil engineering projects with the primary goal of improving the community.

The community priorities included:

- "Create a campus that Madera can be truly proud of and that promotes unity and community involvement"
- "Provide a safe environment for students and employees"
- "Plan to accommodate growth"
- "Design a school that is environmentally friendly, energy efficient, and beautiful"
- high-tech facility that incorporates technology into instruction"
- "Create as many teaching spaces for specific areas of study as possible"



1. EQUIPADOS PARA ENTRAR A LA PREPARATORIA
LOS PREPARAN PARA ENTRAR A UC MERCED
• CONSEJERAS SUFICIENTES PARA AYUDAR A LOS ESTUDIANTES
• MATEMATICAS
• MAESTROS CAPACITADOS
• PERSONAL DESPUES DE CLASES
• INCORPORAR LA TECNOLOGIA APROPIADAMENTE
BASADO EN GRADO DEL ESTUDIANTE

2.

- MATEMATICAS, INGLES, LENGUAJES EXTRANJEROS, DEPORTES,
- OPORTUNIDADES DE CARRERAS CORTAS.
- CONSEJERIA EN ESPANOL
- CONSTRUCCION/PROGRAMAS
- MECANICA
- ROBOTICA

- * SOLAR READINESS - COVERED PARKING W/ SOLAR
LP HIGH QUALITY
DEF. 2 GYMS
• MORE NATURAL LITE
AQUATICS FACILITIES
• GREEN STATE PROJ.

WEIGHT ROOM / MP

DEDICATED FACILITIES FOR ARTS

STADIUM - DESIGNATED FIELDS

LP COMPREHENSIVE - TENNIS SOCCER
BASEBALL

MORE TREES + SYNTHETIC TURF

WATER CONSERVATION

TREES

LIMITING ACCESS INTERIOR CORRIDOR

≥ STOREY BLDG

ENERGY EFFICIENCY COST VS. GAIN

CAFETERIA - FAST SERVICE

MEDIA CENTER - COMPUTER ACCESS

LP GOOD LIGHTING

INCREASED TECHNOLOGY

MEETING ROOMS / LECTURE HALL

MORE ACCESS / EDUCATION / HANDS ON TO TECH

GROUPING BY GRADE?

TEACHER / STUDENT ACCESS W/ KEYCARDS / ID

RESTRICTED ACCESS TO BUILDINGS

METAL DETECTORS?

FACULTY / STUDENT PARKING SEPARATE

CAMERAS EVERYWHERE

SCHOOL & COMMUNITY ENGAGEMENT

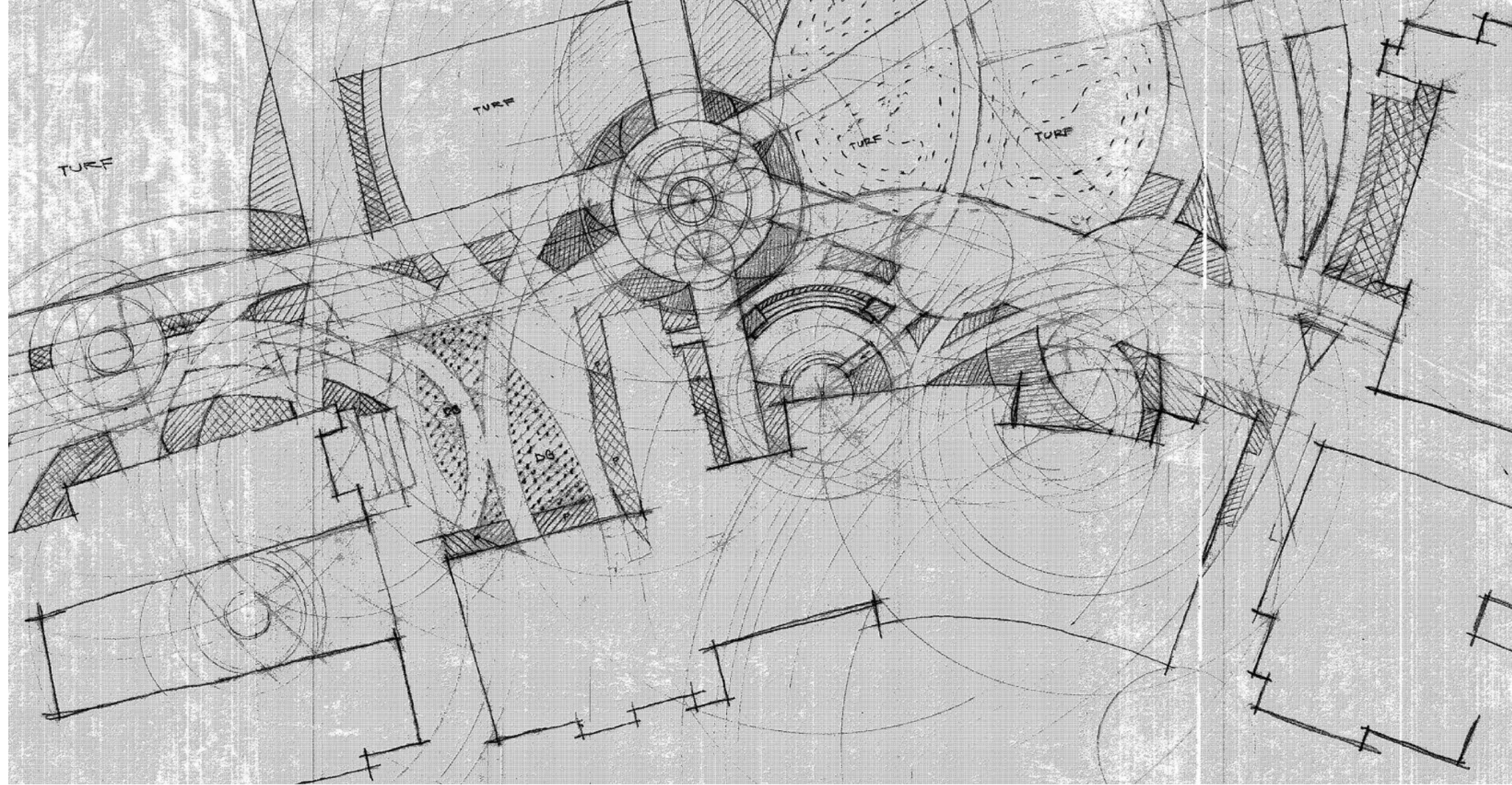
Design Challenges

There were many challenges to be overcome with this project including funding, site orientation, regional weather, traffic issues, and specialized design for the wide variety of spaces. There were many challenges that were overcome in the planning and design process.

Due to City planning requirements the campus is oriented facing primarily East/West. Although the solar orientation was an initial design challenge, perforated vertical louvers were utilized at west and east facing glazing to allow for maximum transparency without sacrificing energy efficiency or occupant comfort.

Traffic issues were a challenge, because of the two existing schools. The district was required by the City of Madera to keep any additional traffic off Martin Street because of the existing Desmond Middle School and Nishimoto Elementary School. Along with this, it was a challenge to run the sufficient utility lines to support the operation of the school. And finally, there was found to be evidence of nests of a native species of burrowing owls which had to be preserved and/or relocated.

Putting together such a large project with so many different types of dedicated spaces was a challenge. It was important to make sure that the design team was devoting the right level of detail to each of the spaces so that they would effectively suit the intended use and educational programs.



SCHOOL & COMMUNITY ENGAGEMENT

About Matilda Torres

Matilda Torres High School is named after the real life beloved educator in Madera Unified School District. Mrs. Matilda Torres served as a teacher for ten years from 1969-1979 and then as a counselor for Madera High School for 25 years from 1980-2005. Matilda Torres was known to be a champion for students and wholeheartedly embraced the philosophy that all students can achieve at high levels. Her mentorship and relationships with students positively impacted their lives. As a result of her dedication, the Madera Board of Trustees proudly named its newest comprehensive high school after this remarkable educator and to honor the legacy she left behind to the community.

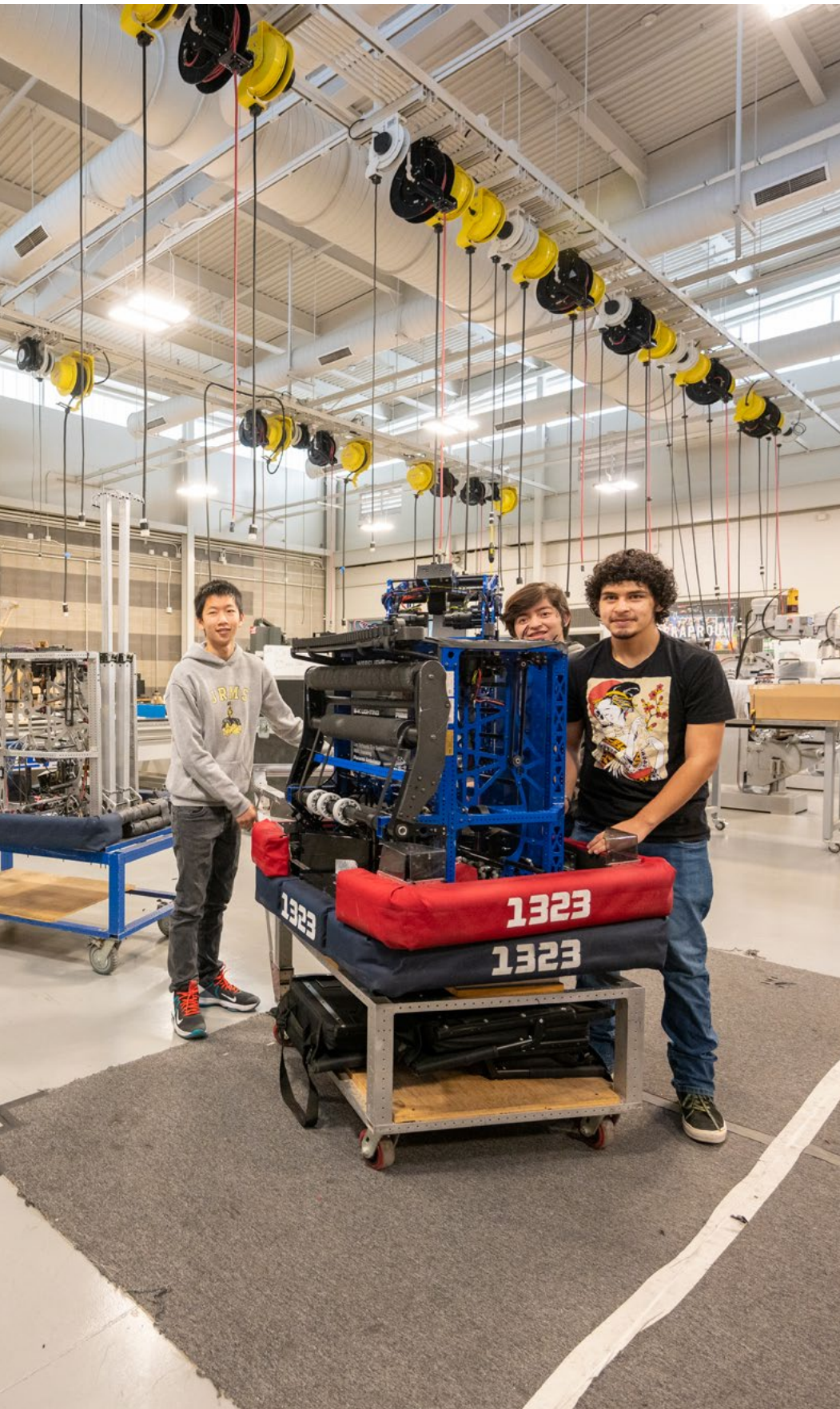
Architect with George Torres, husband of Matilda Torres



EDUCATIONAL ENVIRONMENT



The Importance of Career Technical Education



At no time in American history has more than a quarter of the population been a college graduate. So the question within the district was “how can we dignify the other 75% of our population, who may not go on to college? They have potential to make an outstanding contribution to our community. The district wanted to make sure that the choices those students make for their future, are validated by the choices made in planning and design for the new high school.” Said Todd Lile the District Superintendent. The district wanted its students to complete their high school education with as many options for employment as possible. If students are have a sub par experience in school, then they are not set up for success.

In response to this goal the district is particularly committed to offering Career Technical Education (CTE) programs at their high schools. This is especially true at Torres High School because of what CTE programs can do for student engagement. Students that are engaged in experiencing what they are learning are more committed to their own academic advancement in school and more prepared for the job market or secondary education. CTE allows students to experience the realities of a career and can help them in focusing their pathway through higher education and eventually their career.

Matilda Torres High School's Career Technical Education (CTE) pathway offerings were selected with input from leading industry partners in the regional community. Students will have the opportunity to explore:

- Arts, Media, and Entertainment Business and Finance
- Education and Child Development
- Engineering and Architecture
- Health Science and Medical Technology
- Hospitality, Tourism, and Recreation
- Manufacturing and Product Development
- Marketing, Sales, and Service
- Public Safety

“There were years where many school district in California got away from vocational education. However in Madera career readiness has always been important.” Remarked Kristin McKenna, Director of College and Career Readiness for Madera Unified School District. “The other important element of this is the support from the community for offering career technical education in Madera schools. The local industry and advisory partners do so much in support of students and these programs.”

The most well known CTE pathway in Madera is Manufacturing and Product Development which has produced a world championship robotics team in 2019. This team was housed at Madera High School in an outdated and ill-suited facility and still won the world competition. So when the district began to prepare for building Torres High School, it was important to consider what CTE programs would be offered there, and one of those that would be brought over from Madera High School was Manufacturing and Product Development and the robotics team along with it. Many of the pathways in the district are duplicated at all three high schools including public safety, health sciences, and culinary arts. But certain programs that need more space is needed or are costly to run, are not replicated school to school. The Manufacturing and Product Development pathway is only offered at Torres High School

Functionality is the most important consideration in the design of CTE teaching spaces. It was important for the district and design team to consult with industry partners on the design in order to replicate what students would see in the “real-world.” For example In the student café for the culinary pathway the students will be using commercial grade appliances. The district knew that they may not be able to go back and adjust certain aspects of the spaces years down the road so it was critical to do it correctly the first time by looking forward at the future of these different industries and anticipating what changes are to come and provide learning spaces that reflect that. “You only get one chance to do it right!” Repeated Kristin McKenna.

Career Technical Education Pathways

The CTE learning spaces are conveniently co-located with complimentary program areas to create synergies between CTE offerings and other aspects of the traditional high school experience. This integrated approach resulted in CTE spaces distributed throughout the campus facilities and woven into the fabric of the educational experience for students and staff. Dedicated CTE facilities include a state-of-the art Robotics and Welding shop, Digital fabrication lab, Commercial food lab and restaurant, Sports Medicine lab, medical careers suite, Graphic Design Lab, and Video and Audio Production Lab.

The nursing program is directly adjacent to the school-based health clinic which allows the students to get clinical hours toward their future career path. The culinary arts program is adjacent to the school kitchen and servery, and even has a dedicated student run café. This café will be operated by the high school seniors in the capstone advanced culinary arts program. These adjacencies throughout the campus allow students to experience hands-on real-life career technical training.

Recruitment for these programs begins in 6th grade. Students are given an introduction to all of these industry sectors and pathways. These are provided by the California department of education, and the district supplements with “Local path videos” which provide more information about the pathways that are offered at local secondary schools, including Torres. There are also specialized courses offered in 7th and 8th grade to provide more information and experience with the various CTE pathways that will be offered at the high school level.



- A** — Health Science and Medical Technology

B — Education and Child Development
- C** — Marketing, Sales, and Service

D — Arts, Media, and Entertainment
- E** — Public Safety

F — Engineering and Architecture
- G** — Manufacturing and Product Development

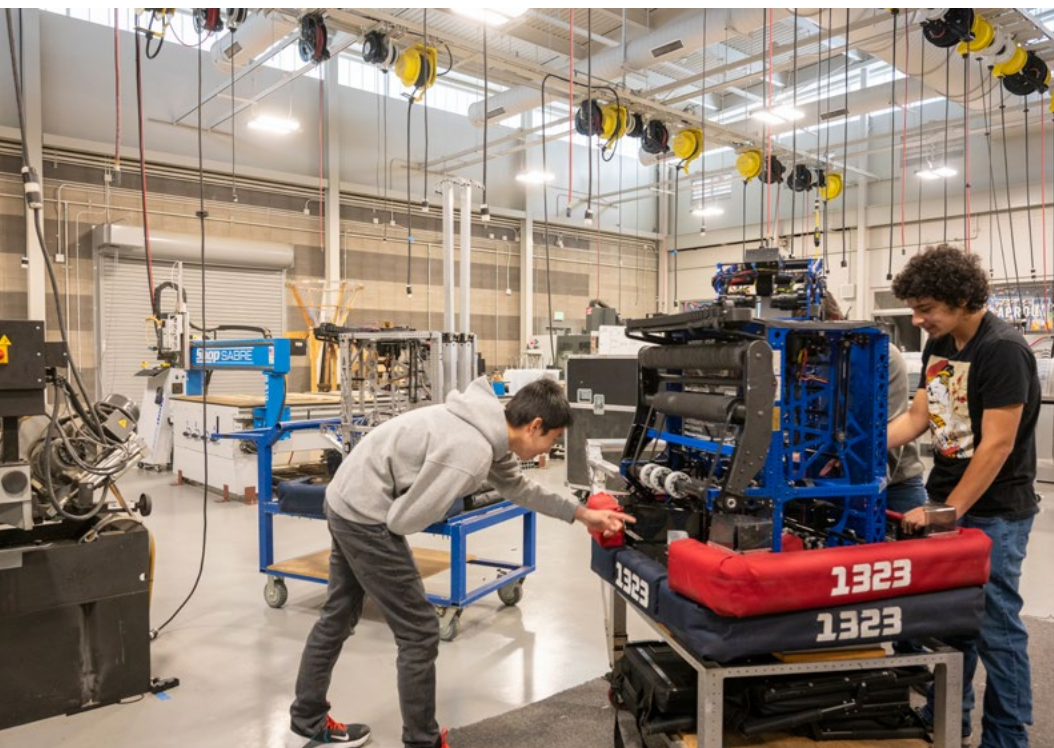
H — Hospitality, Tourism, and Recreation

EDUCATIONAL ENVIRONMENT

Manufacturing and Product Development

During the programming process for the campus, the district elected to move its world champion robotics program, “Mad-Town 1323,” to the new high school. This is one of the flagship CTE offerings in the District’s Manufacturing pathway, and would need a new home capable of supporting the rigorous technical requirements expected by the instructors, students and community partners.

The facilities that house the robotics program are centered on a 5200 SF manufacturing shop. The space is served by an overhead utilities distribution system (Power, Data, compressed Air reels drop from the ceiling) that can easily be reconfigured as additional equipment is added or relocated within the shop. Adjacent to the shop is a digital fabrication lab that supports the design and prototyping of components via 3d printing and laser cutting equipment. Students can then execute fully refined designs in the CNC lathes, routers, and plasma cutters housed in the manufacturing shop. These types of hands on “learn by doing” educational opportunities prepare students to hit the ground running upon enter the growing manufacturing sector in Madera County.

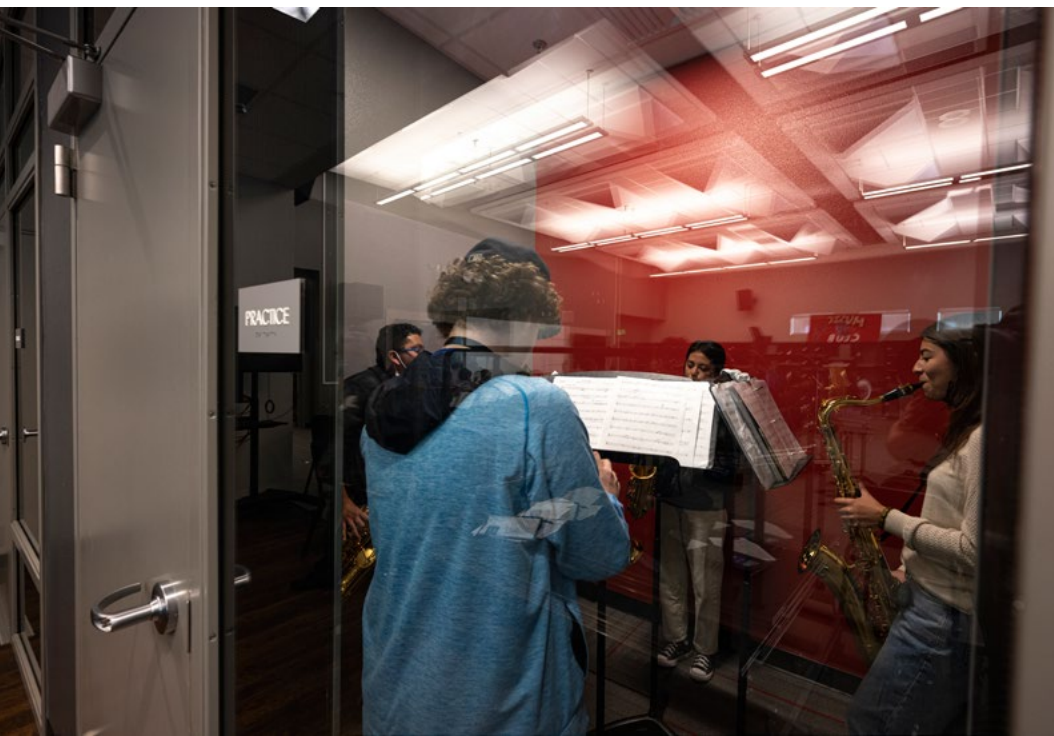


EDUCATIONAL ENVIRONMENT

Arts, Media, and Entertainment

The Performing Arts Complex at Matilda Torres High school is the first proscenium stage performance venue in Madera County. The complex was conceived as a “teaching theater”. Catwalks over the house and stage area allow students to easily and safely access back of house technical spaces for instruction in theater production and sound and lighting design in addition to the dramatic and musical arts. The complex features a scene shop/wood shop to support stagecraft instruction and set design and dedicated classroom space for the drama, choir, and band programs.

In addition to serving the students and staff that attend Matilda Torres High School, the Performing arts complex has also made possible the expansion of the Madera Theater Project – A partnership between Madera Unified School District and Madera County Arts Council that is committed to inspiring the community to develop their skills, share their unique voices, and collaborate in an interactive, supportive, and educational environment. This program is another example of the extent to which the facility is supporting and enriching not only the immediate community of students that attend the campus but the community of Madera at large.



EDUCATIONAL ENVIRONMENT

Health Science and Medical Technology

The Health careers pathway at Matilda Torres High School support students ability to pursue a full range of career opportunities in health science and medical technology, from entry level to management as well as technical and professional career specialties. A community health group, Camarena Health, partnered with Madera Unified to enrich the health careers pathway at Matilda Torres High school. A School based health clinic, fully staffed and open to the public, operates out of the campus in a suite accessible from the main administration office. The Health careers lab is collocated adjacent to this clinic. In addition to providing primary care services to the students and staff of the site free of charge, the clinic also allows students enrolled in the health careers capstone courses real world experience in Medical assisting and Medical office work settings.

In addition to the health careers lab, a kinesiology and sports medicine lab is located within the larger athletic complex adjacent to the campus athletic trainer suite and weight room. Students learning is enriched by quick access to the training equipment and support space offered by this adjacency Collocating CTE programs with other like spaces was a major goal of the design, as CTE offerings that overlap and coexist within the broader context of the traditional high school experience increases student engagement



EDUCATIONAL ENVIRONMENT

Hospitality, Tourism, and Recreation

Hospitality and Culinary careers continue to be a large sector of the economy in Madera and the broader economy of California. Madera Unified wanted to empower students interested in the culinary arts with a series of spaces that elevate the expectations and reveals the possibilities of this career path. Rather than a curriculum based only on mastering the basics of food preparation, the spaces allow for a restaurant management and culinary arts curriculum to be implemented.

The Culinary arts lab was designed to serve dually as instruction space for the program courses as well as a professional kitchen to support a student run restaurant space that will be open to the public. Students enrolled in the capstone course will plan, execute, and serve a menu of their own creation, receive feedback from customers, and gain firsthand understanding of the economics of running a restaurant.



PHYSICAL ENVIRONMENT



PHYSICAL ENVIRONMENT

- An

— Academic I + Administration
- As

— Academic I + Library
- B

— Science + Mathematics
- C

— Activities + Athletics
- D

— Gymnasium
- E

— Dining Hall
- F

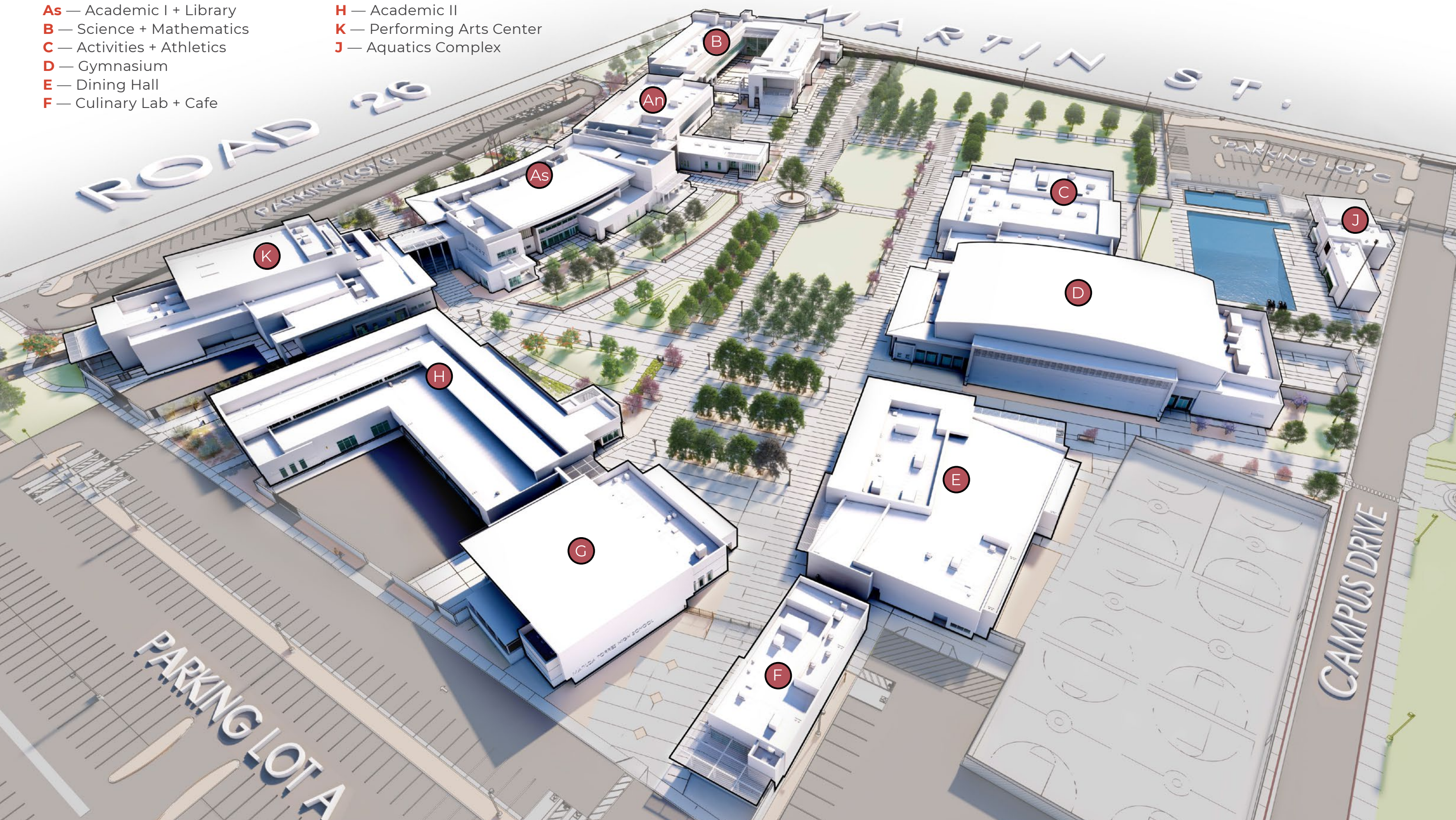
— Culinary Lab + Cafe
- G

— Manufacturing + Engineering Lab
- H

— Academic II
- K

— Performing Arts Center
- J

— Aquatics Complex



PHYSICAL ENVIRONMENT

How the Environment Supports a variety of Learning and Teaching styles

No two students are alike. They all learn differently and have different backgrounds and goals which inform their decision on campus and in the classroom. One of the ways that the District has attempted to respond and tailor the learning experience to each unique student is by offering such a wide variety of experiences for learning and growth at Torres High School. Whether a student is into athletics, drama, mathematics, mechanics, cooking, music; whether they prefer to learn in a group setting and be involved in campus culture, or they prefer solo study experiences; Torres high school has been planned and designed to offer a venue where all types of students can be engaged and successful.

District leadership wanted students to have the most dynamic experience possible. This variety of spaces and opportunities is not something that any of the past generations of Madera Unified School District students has been able to experience to this extent. **It is difficult to offer a customized experience in a standardized space.** The wide range of purpose-built learning spaces is unlike many other high schools in the State. The District and designers carefully considered how these learning spaces would need to change and evolve over the coming decades.



PHYSICAL ENVIRONMENT

How the Environment is Adaptable and Flexible

There is a strong push in design for schools to offer learning and teaching spaces that are flexible and adaptable to support the different ways that students learn most effectively. These spaces also offer to teachers the flexibility to present lessons in a variety of ways. Torres High School features a unique blend of both flexible and program specific spaces. One example of the flexibility is the courtyard in the Math + Science building. The Math + Science building is a two-story single loaded U-shaped building that faces a central courtyard. The laboratory classrooms that face the courtyard allow the students to learn in concept inside the classroom and then spill out into the courtyard to experience what they learned in an outdoor setting. This large, protected courtyard makes it possible for multiple classes and teachers to work together in a controlled outdoor space. The convenience of this indoor/outdoor connection offers flexibility for learning and teaching. Relating back to the previous page, there was discussion during the design about reducing the cost of the project by removing the courtyard and double loading the classrooms in the math + science building. But again, the district was able to avoid making cuts to the design simply to save on cost and stayed true to their goal to provide a world-class facility.

Another space where the design is suited to the educational program is the Engineering and Manufacturing pathway spaces, this teaching space includes roll-up doors, power drops from the ceiling, and plenty of space for equipment layout.

And even with the standard classrooms time was spent in design to determine what the standard classrooms were going to look like and what the technology was going to be. It was a priority for the standard classrooms that “every wall is a teaching wall.” In this way the teachers have flexibility even within the four walls of their classroom. Rather than offering a series of blank-slate empty spaces with no defined intended use, designed a wide variety of teaching spaces to suit the myriad of needs when the was opened and to support future programs as well. **At Torres High School “variety is flexibility.”**



Design Influences

The architectural design aims to highlight the unique educational programs through a sleek and high-impact design style. The district and community expressed a desire that the design pay homage to a historic brick academic building that was demolished in the 1970's. The main volumes of the buildings are clad in Manganese Iron Spot brick which serves as a modern interpretation of the classic Spanish revival reference. Other more contemporary materials, including metal panel, fiber cement, and corrugated metal siding were used as foils to the more traditional brick volumes.

There was a great deal of discussion during the design process about the human element and how students and staff would interact and exist within the spaces.

The Architect is a contributing member of the California School Facilities Research Institute (CSFRI) which has spent recent years studying the effects of school facilities conditions and design on student achievement and contentment. This research has resulted in some exciting correlations between design elements like Lighting, Windows, temperature and indoor air quality, outdoor spaces, and flexible spaces and student success.

For example, in a study by Heschog, L. (1999) a that examined records from three school districts in the United States, in over 2000 classrooms during an academic year, found that students in classrooms with the most daylighting advanced 20% faster on math tests and 26% faster on reading tests." Transparency into and from the instruction spaces was a primary goal for the district and resulted in extensive access to natural light and views to the campus core for students and staff.

There are significant associations between student attentional capacity and windows with views of nature from classrooms. Nature based learning (outdoor learning) has been shown to increase student interest, improve grades, reduce dropout rates, reduce disruptive episodes and help close income-related gaps. Stepped concrete planters near all of the buildings were also incorporated to reference the district's architectural past and offer gathering space for outdoor instruction and student collaboration.



PHYSICAL ENVIRONMENT

Drawing Inspiration from the Local Architecture

The design of Matilda Torres High school seeks to embody in physical form the High-tech nature of its pedagogy while echoing the district architectural past. The overall context of the civic center of Madera was also considered, as the area around the campus consisted of mostly ranch homes and did not provide any specific architectural context.

The design team toured the city of Madera, taking pictures and studying historical and contemporary architecture in the civic core. In addition, the district provided two specific touchstones for the design: Use of brick and references to the old academic building at Madera High School, which was demolished in the 1970s and was considered a major architectural icon for the district and the community at large.

The Old academic building was referenced in a number of ways including the use of window sizes and patterns as well as the incorporation of raised planters at the building entrances to echo the grand entry of the former building. These features also support the overall student environment on the site. The large windows allow for ample natural light and views into and out of every classroom. The raised stepped planters create opportunities for outdoor instruction, spontaneous collaboration, and relaxation during breaks and lunch service.

Branding and campus identity were also important considerations for the design. A neutral palette of grays and white were selected to offset the communities selection of red as the schools main color. “toro red” is present throughout the exterior and interior material palette and large scale murals of the schools mascot were incorporated by the design team to provide a sense of identity and campus pride from day one.

The resulting design is unlike any other collection of buildings in Madera. It is the hope of the district that the campus manifests the importance of education and the opportunities it affords to the students of Madera Unified.



PHYSICAL ENVIRONMENT



PHYSICAL ENVIRONMENT



RESULTS OF THE PROJECT



RESULTS OF THE PROJECT

A Project That Inspires and Motivates

The design style for the schools is completely different from anything that was in that area, both in style and scale. The District was not concerned about this difference from the existing context and saw the school as a point of inspiration for what the future could hold for Madera. This East side of Madera has struggled to thrive in the last century and the collegiate aspirational design was meant to lift up the surrounding area to achieve great new things and experience growth.

“This part of the community is impoverished. These are families where often all members work to support an earn wages to bring home and make a better life.” said Deputy superintendent Sandon Schwartz. He continued with a memory of when he was a principal at a Madera elementary school. He had met with a first grade student to talk about why they were coming to school late over and over again. And when he spoke to the student, and the parents, he learning that every morning the parents had to go to work at 5 am and had no choice but to leave this little first grader to wake himself up, and dress and pack his backpack and try to get to school on time, all by himself. There are circumstances like these that are faced by students in this community that are above and beyond anything that kids in more affluent areas face.

“Critical Income based disadvantages that take incredible effort to overcome. So Matilda Torres High School is intended to dignify the resiliency of the student population.” It acknowledges what they and their parents have been through and celebrates a brighter future.

Matilda Torres High School is a testament to the visionary goals of Madera Unified and its community and will support the educational ambitions of the next generation of MUSD staff and students.





“The creation of Matilda Torres High School is a watershed moment for the district and the community of Madera. It is a new statement of quality that will define the future of education in the region.”

— Mr. Todd Lile, District Superintendent