SAN RAFAEL CITY SCHOOLS

PROJECT SPECIFIC EDUCATIONAL SPECIFICATIONS

Madrone HighSchool

December 18, 2017

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INTRODUCTION

The purpose of the *project specific* Educational Specifications is to provide guidance to the design professionals on the educational and programmatic needs of Madrone High School (Madrone). Existing Madrone will be relocated about 400 feet west of its current location as part of the master planning for Madrone and San Rafael High School.

Place matters. We know through research that clean air, ample day lighting, and a small, quiet, comfortable, and safe learning environment is important for students' academic achievement and well-being. School design has the power to reach the whole learner—cognitive, physical and emotional—when educators and students are thoughtfully engaged in the planning process. Beginning with an educational vision and ending with activities and spaces that engage students, Educational Specifications are designed to communicate the programmatic, functional, spatial, and environmental requirements of Measure B projects for Madrone.

School and classroom design should facilitate twenty-first century learning that prepares students for college, careers, and community. Project-based learning, personalized instruction, blended learning, and other twenty-first century teaching methods should be well supported in the design of San Rafael's high schools. Student mastery of content as well as the "Four Cs"—critical thinking, communication, collaboration, and creativity—are the foundation of the District's educational goals that begin this document.

In 2015 the voters in the San Rafael City Schools (SRCS) approved Measure B, a $161 million bond measure for the high school district. These funds, together with other capital funds, will provide capital improvements to the high schools and include significant funding directed at creating safe, innovative learning environments and instructional technology to support twenty-first century learning.

The District wishes to acknowledge the Madrone site committee and the staff that contributed to the development of this document (see Acknowledgments). Through both survey and on-site meetings, and guided by the principal, the District developed these educational guidelines for Madrone.

Not all recommendations within the Educational Specifications will be realized due to budget, site, or other constraints. The Educational Specifications are intended to serve as a guideline for the school's programmatic needs and to allow the design professionals flexibility in addressing the site's unique requirements.

MADRONE HIGH SCHOOL

Madrone High School is currently located on the San Rafael High School campus, east of downtown San Rafael. The school provides alternative secondary education for students who have special needs for individualized instruction. Students 16 years or older are referred to Madrone by the San Rafael and Terra Linda High School referral committee.

Madrone's mission is to provide a positive educational experience for its students and the opportunity to foster the key developmental qualities essential to becoming a totally integrated individual in a changing society.

Madrone's school-wide learner outcomes are to:
Meet or exceed District and State academic requirements
Acquire knowledge of and access to workforce and post-secondary educational opportunities
Demonstrate critical thinking and problem-solving skills
Respect and maintain a healthy lifestyle
Obtain proficiency in the use of written and oral language
Navigate and utilize modern technology
Explore a wide variety of experiences to become a contributing member of the community

Madrone's professional staff includes the principal, four teachers, a counselor, a technology specialist, a resource specialist, a school-to-career liaison and an administrative assistant who serve approximately 80 students. It is anticipated that Madrone's student population could expand to 100-120 students in the next five years.

The school operates a modified block schedule with an alternating A and B four period day, 8:30 to 2:00 p.m., and has a variable credit system whereby students earn credits by hours attended and passing assessments. In addition to direct classroom instruction, the site utilizes Apex digital curriculum that includes direct instruction, practice and application, and formative and summative assessment for credit recovery.

Madrone has relationships with a number of county and city agencies that provide services to students. Agency personnel meet with students, staff and guardians at the site in situations that require confidentiality.

MASTER FACILITIES PLAN GOALS

The District engaged in a facilities master planning process in 2015. Goals for facility standards, sustainability, technology, maintenance and operations, and parity were established. Goals for facilities to support curriculum were discussed both at the site committee level and at the district level during the master planning process. "From the individual sites, the most common concern is not having enough space for administration and counseling, pull out programs and break out spaces. At the district level, the focus is on providing adequate space for specialty curriculum. These concerns highlight the need to provide science or other multi-use classrooms at the elementary sites and improved career technical education spaces at the middle and high schools that more adequately prepare those spaces to be flexible in accommodating future programs." [i]

The vision that upgraded facilities must provide environments that allow learning to occur in any space was also articulated during the master planning process. "Cafeterias should be more like commons with wireless access ubiquitous and supportive of 1:1 student to device ratios." [ii]

The Master Facilities Plan articulated, "that all telephone and clock and bell systems be migrated to a Voice Over Internet Protocol (VoIP) system for better controllability. Data infrastructure, both in terms of cabling and appropriate MDF and (or) IDF closets with appropriate cooling and power, is imperative for a robust infrastructure that will continue to meet the requirements of technology-heavy instruction that is anticipated as the United States moves into the twenty-first century.

As new buildings are developed, the following requirements should be taken into consideration with respect to classrooms:

- AV systems should be integrated into the room

- Short-throw projectors are to be used with whiteboards designed for display; projectors should be wireless capable

- Voice amplification for teachers to improve the instructional environment...

- ...All spaces (indoor and outdoor) should have robust wireless access so that all spaces can be part of the learning environment." [iii]

DESIGN GUIDING PRINCIPLES

The following design guiding principles were developed by the Educational Specifications Executive Committee and confirmed by the Educational Specifications Survey administered in early May 2017.

Guiding Principle #1: Learning Environments

- Create twenty-first century learning environments which:

    - Are flexible

    - Are engaging

    - Are technologically up-to-date

    - Facilitate student-teacher interaction in the education process

    - Enhance collaborative learning and working

    - Accommodate different teaching styles

    - Allow for learning anywhere, anytime

- Be student and teacher friendly—design learning spaces with:

    - Well-insulated walls and quiet mechanical systems

    - Individual environmental controls

    - Flexible use of wall surfaces including tackable surfaces

    - Modern, comfortable furniture

    - Low-emitting materials

Guiding Principle #2: Safety and Security

- Design schools with pleasing aesthetics that are welcoming and secure:

    - Design structures, fences, and site amenities to:

        - Maintain safety

        - Prevent unauthorized access

        - Deter vandalism

- Limit opportunities to gain access to roofs and second stories

Guiding Principle #3: Community Focus

- Create schools to serve as neighborhood centers by:

    - Creating easy access zones without allowing full campus access

    - Making designated rooms (library, multipurpose and performing arts) accessible on evenings and weekends for joint use of facilities by the community

    - Making schools available to serve a wide audience for extended learning concepts

Guiding Principle #4: Architectural Quality

- The appearance and overall character of each school should be:

    - Pleasing and stimulating to students, teachers, families, and the surrounding community

    - Welcoming and attractive places to visit or to spend the day

    - Easy to understand how to enter and exit buildings with ease, and how to navigate the campus with attractive signage (wayfinding)

Madrone High School Concept Image, HY Architects

EDUCATIONAL SPECIFICATIONS SURVEY

An Educational Specifications Survey was sent to all SRCS staff on April 28, 2017. Eighty-six staff members responded, and all school sites were represented including all three high schools. Staff were asked open-ended questions about what two to five features of the physical learning environment are most important and most engaging for student learning, and what two to five features are most important for staff satisfaction and comfort.

Around the topic of student learning environments, six themes emerged:
- Comfortable temperatures and HVAC
- Cleanliness
- Plentiful daylighting
- Access and placement of technology
- Mobile and adjustable furniture
- Space to configure different types of learning environments.

Similarly, the same themes emerged for staff job satisfaction and comfort with an emphasis on collaborative space.

A series of questions were asked about what type of facilities should SRCS consider as it plans and implements the bond program. Consensus results included:
- Flexible spaces that facilitate student-teacher interaction and allow for collaboration and interdisciplinary and team teaching are strongly supported whereas transparent spaces are not.
- Instructional technology, movement rich environments, good aesthetics, outdoor learning spaces, and a variety of teaching spaces, including libraries, are strongly supported.
- Safe and secure schools are a top priority for staff.

Staff was asked to rank the top five technology tools that would have the greatest impact on student learning. The top five choices included:
- The ability to access the internet anywhere on campus
- Chromebooks for every student (grades 3–12)
- Adaptive learning software geared to adjust levels of difficulty or content based on student needs
- Interactive projectors
- Interactive large screen monitors.

There were other open-ended questions on twenty-first century learning environments with thoughtful responses that emphasize students and teachers thrive in environments that inspire them and of which they can be proud.

INSTRUCTIONAL TECHNOLOGY

Vision

This instructional technology specification is a summary of the district roadmap developed as part of the Educational Specification process. It is a compilation of State of California and regional research focused on integrating technology into everyday instructional delivery at SRCS. The District technology standards and roadmap create benchmarks for technology use by all teachers and staff. Sources that contributed include the State Blueprint for California Education Technology, State Frameworks, The Consortium of School Networking (CoSN), the District's LCAP and the District's 2015 Facilities Master Plan. It is noted that the collective opinion is that students will control more of their learning through personalized learning. The tools of technology will aid in this type of learning as teachers and students monitor and design the learning specific to the students' needs. The 2015 Facilities Master Plan set the groundwork by listing the technology tools needed in a standard classroom.

Technology enhances strong student learning by providing students with greater access and rich opportunities, through powerful instructional models supporting:
- Differentiation of instruction
- Self-directed and teacher-directed learning
- Student centered learning developing student ownership of his/her learning
- Blending of curriculum and technology
- Highly complex instruction and learning
- Flexible and responsive instructional practices
- Increased teacher productivity, collaboration, efficiency, and efficacy

Trends

The CoSN publishes an annual report geared toward technology trends spanning five years. This report, called the NMC/CoSN Horizon Report, offers a guide to the future, as trends become reality. The 2016 K–12 CoSN Education report charts long-term and short-term trends, including:
- Redesigning learning spaces to accommodate more immersive, hands-on activities, and rethinking how schools work to keep pace with the demands of the twenty-first century workforce and equip students with future-focused skills.
- In the short-term, the rise of coding and programming skills as literacy emerged. These skills will bolster problem solving, creativity, and critical thinking skills. [iv]

District Technology Standards—Classroom and Office Spaces
- Standard Classroom Model will have PC-based desktop, document camera, projector display (interactive ultra-short-throw), and enhanced audio system (voice amplification with priority page system adjustment)
- Matte-finish magnetic whiteboards
- Classrooms equipped counter-level access of three (3) duplex outlets for charging six (6) Chromebooks
- Mobile device for all classroom teachers
- Cloud-based applications (move from on-site server applications)
- Google Suite services
- Learning Management System (such as Canvas or Google Classroom)
- Nine (9) (3 locations x 3 drops) cat 6a plenum rated network data drops
- One (1) IP-based speaker/clock combo
- One (1) VoIP basic handset
- One (1) wireless access point—minimum Meraki MR42
- One (1) audio/visual connection plate, including audio adjustment-off-set front of the room and includes; USB, HDMI, mini (3.5) data connections
- Other staff or office set up: PC desktop (optional laptops for administration); VoIP super handset; printers as determined at each site

Classrooms will be modernized with displays and projectors so teachers and students are able to quickly and seamlessly show their work on the classroom screen. Spaces must be retooled to create collaborative and flexible working environments.

District Technology Standards—Other Spaces
- Libraries will function more like media centers. As the District moves to 1:1 there will be a reduction of mini labs in the library so those spaces can be used for small group areas.
- Mini project stations should be designed that allow for quiet zones that allow for video production.
- All common or courtyard spaces must have wireless connectivity to support after-hours access.

Spaces will be retooled to create collaborative and flexible working environments. The demand for more digitally produced work invokes the need for mini video production environment so students can demonstrate their work.

HIGH SCHOOL LEARNING SPACES (CLASSROOMS)

Vision and Program Statement
The SRCS community ensures that every student receives an empowering education. High expectations and skillful individualized instruction enable all students to embrace their own learning, think critically, and experience success. Our welcoming school climate ensures that our diverse community of students, families, staff, and community members are treated with dignity and respect, creating opportunities for participation, engagement and support. Every student graduates ready for college and/or a career, able to take responsibility for a future that includes life-long learning.

Trends
Personalized learning continues to be a dominant trend for education, including the differentiation of lessons for students of different skill levels and efforts to help students move at their own pace. Increasingly, students are given more control over their learning through technology and other means to help with how they learn best, what motivates them, and their academic goals.

Increasingly, students work cooperatively and learn collaboratively in cross-age level groups and mixed-age groupings. Critical thinking, decision-making, problem solving, and other important life skills associated with utilizing a wide variety of information resources are integral to the entire educational process.

Curriculum / Anticipated Use
These specifications are for classrooms dedicated to English, Social Science, World Language, English Language Development, and Mathematics. Square footage of specialty areas will vary according to the instructional needs of each area as defined in these specifications.

Curriculum includes: Common Core, Science and Health, History and Social Science, Visual Arts, Physical Education, Technology and Computer Skills, English Language Development.

Educational Process
The teaching and learning activities for the high school grades are done in many settings. Students do individualized desk work, whole group learning with the teacher, small, flexible group work, and special projects that relate to real life within the community. Individuals and groups are in tutoring sessions. Demonstrations and breakout sessions are conducted. Workspaces with hands-on materials are utilized. Student work and special projects are amply displayed for numerous purposes. Student access to material areas and display areas is critical to instruction.

Teachers circulate around the classroom space to monitor individual student needs,

work with various flexible groups, give small group demonstration lessons, conference with students on a one-on-one basis as well as instruct the whole group for certain periods of time.

Space Requirements
The high school learning space should include the following:

- 960-1,200 square feet
- Adjacent area for small group instruction
- Nano or another adjustable wall between classrooms for interdisciplinary instruction as budget allows
- Connection to outside for outdoor instruction
- Floor to ceiling magnetic whiteboard on teaching wall or whiteboard at student height with storage below
- Resilient adhesive floors that meet California Green Standards
- Blinds for windows

Technology (See Instructional Technology Section)

Display
- Mobile whiteboard(s) (option)
- Tackable wall surfaces floor to ceiling

Cabinetry/Storage
- Backpack storage
- Two (2) to four (4) full height, double door, lockable storage units (could be mobile), one (1) with wardrobe area to hang teacher's coat
- Two (2) or three (3) built-in book cases (could be mobile)

Utilities
- One (1) deep sink per classroom with drinking fountain and hot water (counters and cabinets adjacent to sink)
- Minimum two (2) electrical outlets per each wall
- Charging zone for Chromebooks and other devices (see Instructional Technology standards section)
- Climate control thermostat
- Light switch panel located near main classroom door

Furniture and Equipment
- Standup student desks or other easily configured modular tables and chairs for 30 students
- Soft furnishings as needed
- Basic VoIP handset

THE PROJECT AND SPECIFICATIONS

Measure B includes a new school for Madrone including three (3) regular classrooms, one (1) science lab, one (1) art classroom, a principal's office, an administrative assistant space and reception area, a partnership office, a conference room, a counseling office, and a career center.
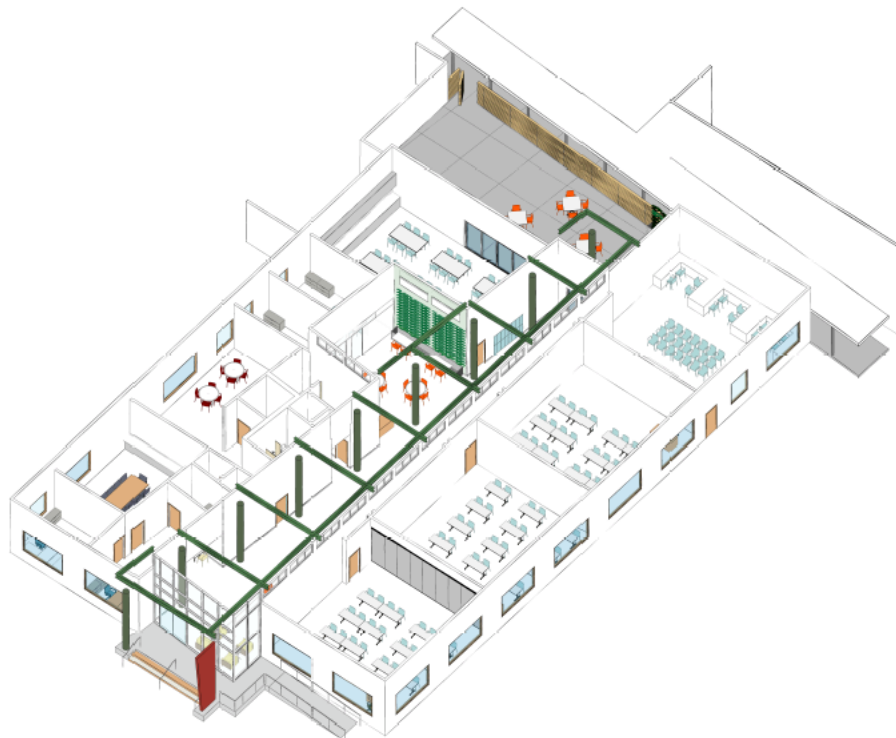
Vision/Program Statement
The vision for Madrone is to prepare students for college and career.

Trends
The major trend for Madrone is increasing student population.

Curriculum / Anticipated Use
Madrone offers core high school academic classes for graduation including English Language Arts, Math, Science, Art and Physical Education.

Madrone Layout Concept Image, HY Architects

Orientation and Relationship
The new Madrone High School requires its own identity. Madrone should be oriented with a clearly marked entrance for students and the public and be provided with other space and building elements that indicate this is a learner-centered, safe school for all students. Madrone students do not currently have the same range of

electives as San Rafael and Terra Linda comprehensive high schools; therefore, an orientation that allows for easy access to San Rafael High School electives including Career Technical Education would provide greater opportunities for career and college pathways.

Orientation near the San Rafael High School cafeteria is also desired so Madrone students would have access to the District's food service programs. Madrone requires its own outside physical activities area where students have the opportunity for outdoor recreation and physical education as well as spaces for informal gathering, dining, and opportunities for collaboration and further development of social and emotional skills. Madrone should allow for easy supervision of campus-wide activities by administrative and other staff preferably in a single story campus.

Sound attenuation, ample daylighting and vibrant architectural elements are important to creating the learner-centered environment. Green zones to alleviate sound and provide aesthetics are important.

Space Requirements
21st Century Learning Spaces **-** The programing for Madrone is for up to three (3) learning studios or classrooms, one (1) science lab, and one (1) art lab (currently there are five classrooms at Madrone). These classrooms would be technologically up-to-date with the district's educational technology standards including a robust wireless network that has an access point per classroom, PC desktop, document camera, projector/monitor display (interactive short-throw), and an enhanced audio system (voice amplification). The classrooms should allow for project based learning and the easy configuration of furnishings. Classrooms should be a minimum of 960 square feet or equivalent and allow for small and large group instruction.

Madrone requires a space for all school assembly of up to 80-100 students and staff, which can be achieved with operable walls between the classrooms. Flexible walls would also allow for interdisciplinary teaching and learning opportunities.

A covered breeze way or corridor connecting the high school and the cafeteria is desired.

Madrone school design will adhere to the Collaborative for High Performance Schools (CHPS) design standards under CHPS Designed™ recognition program. CHPS standards help make schools energy, water, and material efficient, well lit, thermally comfortable, acoustically sound, safe, healthy and easy to operate.

Space Requirements for Specific Areas

Program Area	Educational Specific Requirement
21st Century Learning Studios/Classrooms **Resource Specialist will deliver program in one of these three classrooms**	3 learning studios or classrooms, a minimum of 960 square feet or equivalent Apex learning studio/classroom requires ten (10) computer workstations Nano or adjustable walls between classrooms to allow all school meetings Learning studios to be equipped with a mini-charging unit for mobile devices Voice over Internet Protocol (VoIP) handset Tables and chairs or standup desks for maximum 30 students Blinds for operable windows Strong acoustics Instructional technology standards per District Standard: standard classroom model will have a PC-based desktop, a document camera, a projector display (interactive ultra-short-throw), and an enhanced audio system (voice amplification with priority page system adjustment)
Science Lab	1 science lab 1,000 square feet with 5-6 lab stations with gas and water around perimeter of classroom to retain flexibility of configuration or built in lab stations are an option Consider virtual reality capabilities Instructional technology standards per District Standards (see above)

Art Studio and/or Makerspace	1 art studio of 960 square feet Area for portfolio storage Two large sinks Area for student display Easily cleaned flooring Instructional technology standards per District Standards (see above)
School Office	450 square feet Located at entry point of campus Located to maximize supervision of student activity areas
Lobby Area	(Area included in office) Seating for 4 people Project display case
Public Counter	(Area included in office) Located at public entrance Solid surface counter
School Secretary	(Area included in office) Located near principal VoIP super handset Computer, printer, network workspace Electrical outlets Space for desk (stand up option) with two side chairs; 6'-8' workspace, 2 file cabinets; computer printer table Bookcases (2)

	Space for large copier
Principal's Office	200 square feet
	Separate exterior entrance/exit
	VoIP super handset
	Electrical outlets on all walls/data outlets on 2 walls
	Computer, printer workspace with networking
	Space for executive desk, credenza, computer printer table, stand up desk option
	4-person conference table
	Bookcases (2)
	Adjacent to conference room
Conference Room	400 square feet
	Space for 8-person conference
	White board surface
	VOIP handset
	Ability for video conferencing
	Electrical outlets on all walls
	Computer outlets
	Sink and counter area
Student Work Area (could be in commons)	150 square feet
	Adjacent to school secretary/principal area
	Space for 3 desktop computers

	Easy to supervise
Counseling Office	240 square feet VoIP handset Electrical outlets on all walls/data outlets on 2 walls Computer, printer workspace with networking Space for desk, computer, printer table Table and chairs for 4-6 students Bookcases (1-2)
Multi-purpose Office (1) – can be used by outside agencies that require confidential space	150 square feet VoIP handset Electrical outlets on all walls/data outlets on 2 walls Computer, printer workspace with networking Space for desk, computer, printer table Space for 4 visitors Bookcases (1-2)
Workroom and Staff Collaboration Area	500 square feet Shelving Counter space Storage cabinets Plentiful electrical outlets Space for prep Counter with sink and area for

	microwave
	Refrigerator
	Lockable key storage
	Lockable coat closet
Storage Room	120 square feet – to include textbook storage
Career Center including space for Career Center Manager	240 square feet
	VoIP handset
	Desk with space for 2 side chairs and one file cabinet
	Tables for 2-3 students/visitors
	Throw projector and monitor
	Display areas
	Bookshelves
	Lockable storage
Commons – could be combined with outdoor space for dining for students	400 square feet
	Small inside common space for informal student collaborative work opportunities and social gathering
Student Lockers	200 square feet
	Student lockers (100 total)
Staff Restrooms	150 square feet
	Staff and student separate
Student Restrooms	300 square feet
	3 stalls per restroom
Technology Closets MDF/IDF	100 square feet

Custodial Supply Closet	75 feet per M&O Standard
Physical Recreation Space	Outdoor space with basketball backboard is desired
Covered Outdoor Dining Space	Tables and chairs for dining for 20 students

Summary Madrone HS Educational Specifications Area

Area	Number	Square Footage	Total
Classroom	3.00	960.00	2,880.00
Science Lab	1.00	1,000.00	1,000.00
Art Lab	1.00	960.00	960.00
Reception/Counter and School Secretary	1.00	450.00	450.00
Principal's Office	1.00	200.00	200.00
Conference Room	1.00	400.00	400.00
Student Work Area	1.00	150.00	150.00
Counseling Office	1.00	240.00	150.00
Multipurpose Office	1.00	150.00	150.00
Workroom	1.00	200.00	200.00
Staffroom	1.00	300.00	300.00
Career Center	1.00	240.00	240.00
Storage	1.00	120.00	120.00
Commons	1.00	400.00	400.00
Student Lockers	1.00	200.00	200.00
Restrooms	3.00	150.00	450.00
Custodial	1.00	75.00	75.00

8,325.00

ACKNOWLEDGMENTS

Site and Educational Specifications Committee

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Endnotes

[i] (San Rafael City Schools Master Facilities Plan, 2015, page 2.11–12)
[ii] (San Rafael City Schools Master Facilities Plan, 2015, page 2.11–12)
[iii] (San Rafael City Schools Master Facilities Plan, 2015, page 2.11–12)
[iv] (NMC/CoSN Horizon Report: 2016 K–12 Education, Page 1
https://www.nmc.org/publication/nmc-cosn-horizon-report-2016-k-12-edition/)