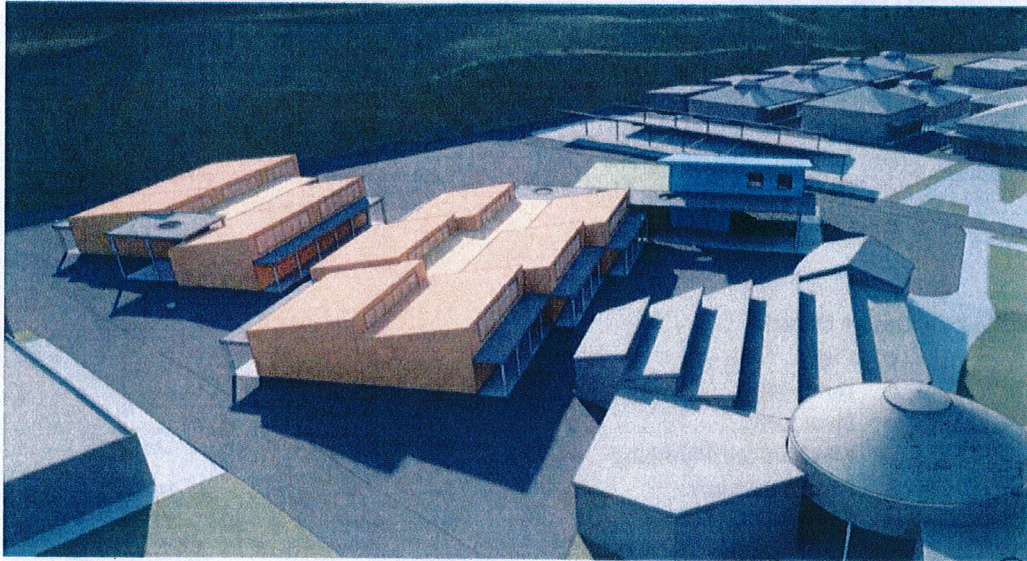




WEST CONTRA COSTA USD
UNIFIED SCHOOL DISTRICT



HERCULES MIDDLE / HIGH SCHOOL
NEW SCIENCE & CULINARY BUILDINGS
MASTERPLAN

February 17th, 2012

HY HIBSER YAMAUCHI ARCHITECTS

OAKLAND

LOS ANGELES

DAVIS

EXECUTIVE SUMMARY

Hibser Yamauchi Architects is commissioned by West Contra Costa Unified School District to lead the Design Team for the Master-planning of the new Science and Culinary Arts Facility at Hercules Middle High School as part of the District's 2010 Bond Measure D Projects.

HY Architect's Design Team includes the following consultants:

Civil Engineer:	KPFF
Landscape Architect:	Gates & Associates
Structural Engineer:	Kam Yan & Associates
Mechanical/ Plumbing Engineer:	Interface Engineering
Electrical Engineer:	WHM
Food Service Consultant:	Cini-Little

The purpose of this effort is to develop the Programming and Master Planning to add a new Science and Culinary facility to the existing campus that would support the current Middle through High school instructional program with amenities and classroom/laboratory sizes that are consistent with current district standards and educational specifications. This report serves to outline the process and design solution derivation and consequently, is the basis for the conceptual cost estimate of this project.

Some of the existing conditions driving the program are as follows:

- Existing Science Classrooms are undersized and do not have sufficient amenities to support the instructional program
- Due to lack of Science Classrooms, Standard Classrooms are being used for science instruction, but are under-sized and lack required amenities
- Culinary Arts Program is housed in a standard classroom without adequate amenities, equipment and square footage; Space does not meet health department standards
- Relocation of Science program into proper Science Classrooms will free up standard classrooms, which in turn will allow for majority of the portables to be removed from the campus

Existing Campus Description

The existing middle-high school campus is built in 1996, consisting of single-story wood-frame construction with stucco and masonry-clad facades. 14 High School Portables and 9 Middle School Portables were added to the grassy mound area behind the library in 2000. A solar installation project at the High School parking areas is slated to occur in 2012. The middle school

HERCULES MIDDLE HIGH SCHOOL – NEW SCIENCE BUILDING

West Contra Costa Unified School District

is on the east side of the site, and high school on the west, with shared administration and library facilities located at the center of the site.

Summary of Process

The Programming and Master Planning phase began with a kick-off meeting on August 9th, 2011 with the School District to identify goals and expectations, and overall coordination process with the district, users, and district consultants. A Site Committee was set up, made up of the Principal, Science teachers from Middle and High School, Culinary teacher, District Facilities and ROP/ CTE staff. A series of Site Committee meetings are held over the next 4 months to develop program and design criteria and review design concepts. The decisions and discussions are captured in the "Meeting Minutes" section in Tab 8.

The process is 2-fold. The first is an information gathering phase, where Site Committee members conveyed their needs and desires through a series of interviews and meetings. The design team visited the existing Science and Culinary spaces on the campus to understand the current deficiencies, and design for future growth potential. We also studied other existing conditions on the campus such as circulation patterns, building area opportunities, utility locations and capacity, solar orientation etc., to understand the potential and limitations of the existing site.

Some of the main needs and design criteria identified include:

- 6 High School Science Classrooms & 5 Middle School Science Classrooms
- Current District standard Science classrooms are 1,600sf and include both instructional and laboratory spaces in a single room
- Central shared Staff Prep Area for Science
- Develop a Culinary program and design criteria that sets the standards for the district
- Outdoor Gardens for Culinary and a Green house for Science
- A commons area that can be jointly-used by the community and City of Hercules for
 - Meetings and Presentations
 - Banquets (part of the Culinary/ Hospitality Career Technology strand)
 - Library/ Lecture Space
- An identifiable Commons building (from the street front) that is a show-piece for the school, city and district.
- Welcoming and stand-out façades of new buildings that integrate into existing campus fabric and circulation
- Single-story classrooms with exterior access – keeping with the feel and circulation of the rest of the campus
- Ability to segregate high school and middle school students
- Consideration for the location and size of a future theater (that has 400-450 seats)
- Parking area for Photo-Voltaic Panels cannot be disturbed or relocated
- Removal of Portables
- Consideration for location and size of a future theater with visibility to street and parking
- CHPS Certification & HPI funding

HERCULES MIDDLE HIGH SCHOOL – NEW SCIENCE BUILDING

The second part of the process is the “problem solving” phase, where program and spatial designs are developed. We started with a conceptual program to identify building and program area, followed by the development of diagrams that establish desired/ required relationships and adjacencies between the programmatic components. This in turn starts to influence the location and orientation of the proposed building configuration.

From there, we explored numerous conceptual layouts for the Science and Culinary Classrooms, studying circulation, furniture and equipment layout, instructional needs and styles, supervision and connection to adjacent spaces etc. After discussing the pros and cons of each scheme, and various rounds of refinements and modifications based on feedback from the Site Committee, the Site Committee selected the final conceptual design solutions that best respond to their needs and requirements – See Tab 3: Conceptual Layout. The scheme selected consists of the following:

- 3 separate buildings (1. Culinary/ Commons; 2. High School Science; 3. Middle School Science) to take advantage of existing grades and provide separate access points to effectively segregate the middle school and high school students
- All new buildings oriented in true solar East-West direction to take advantage of natural day lighting and minimize energy use in heating and cooling of buildings
- Roof of Science classrooms will be angled to maximize Northern exposure, to take advantage of natural day lighting and minimize solar heat gain in summer, while maximizing solar heat gain in the winter
- “Jagged” layout of the classrooms play off the form and orientation of the admin/library core. This establishes and celebrates this central area of the campus as being a special place, by having these buildings align differently than the rest of the campus. Orientation of buildings to align true North, creates opportunities to be more energy-efficient
- High ceiling Commons space, located on the site in a highly visible manner, from Refugio Valley Road
- Use of glazing and/or operable glass doors to create visual and physical indoor-outdoor connections and integration opportunities, to take advantage of mild local climate
- A single-story Culinary Program south of and adjacent to the Commons, with direct connections to delivery access, outdoor culinary gardens and an outdoor dining plaza. The location and placement of the Culinary program also allows for future expansion if the need arises.
- Single Story High School Science Building, adjacent to the Culinary Building, oriented longitudinally on the North-South axis to take advantage of natural day-lighting and energy-saving opportunities.

HERCULES MIDDLE HIGH SCHOOL – NEW SCIENCE BUILDING

- Separate Middle School Science Building with its own forecourt. Being at a grade elevation similar to that of the Middle School campus integrates the new building with the existing middle school "campus". Orientation of the building also allows for natural day-lighting and energy saving opportunities.
- External circulation and covered walkways and entries for all the Buildings, to maintain a similar circulation pattern as the existing campus and limit areas that are difficult to visually supervise.
- Creation of outdoor plazas in front of each of the 3 buildings, as part of the circulation path, and to promote gathering, outdoor interaction and learning opportunities.
- The high canopy elements (one between the Commons and High School Science buildings, and the second at the entry of middle School Science building), announce the entry points for these buildings while also providing a visual link in the aesthetics and form of these new buildings. They also serve as covered shelter, and are high enough such that they do not create dark areas/ supervision problems.
- Provision of a Science outdoor garden for the following reasons:
 - To provide as much outdoor learning opportunities as possible
 - To provide bio-swale areas for treatment of storm water run-off from buildings
 - For CHPS criteria
 - Location on southern side of campus is effective in maximizing solar exposure
- Area identified for Future Theater to receive some landscaping. Area drawn is purely a line-diagram – actual shape and size of the theater building will need to be determined in the future. Existing Campus storage containers will be relocated to this location.
- Central Staff Prep areas in both Science Buildings to promote staff interaction and cost-savings in terms of storage, utilities and equipment repetition.
- Site Committee likes the curved form of the Commons space as shown in Figure 1.
- Main features of the Commons space includes:
 - A stepped platform for speeches, presentations etc.
 - Storage Room for chairs, furniture etc.
 - Space equipped with Audio-Visual capabilities.
 - Built-in tiered seating
 - Furniture shown is to suggest possible uses and layouts – seating for lectures, tables and chairs for banquets/ dining etc.
 - Glazed façade with large operable exterior doors that enable usage of both

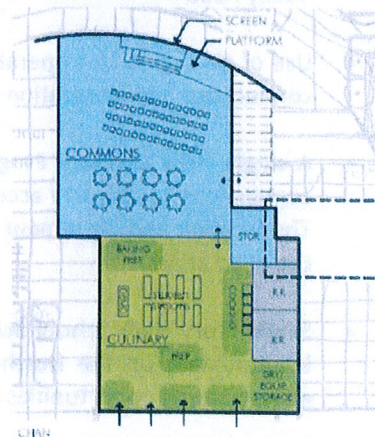


Figure 1: Curved Commons Form

HERCULES MIDDLE HIGH SCHOOL – NEW SCIENCE BUILDING

- interior and exterior plaza spaces simultaneously.
- Preference to provide additional public restrooms, directly accessible from Commons
- Features of High School Science Classrooms include:
 - Combination Lab & Instructional Classroom of 1600sf
 - Student capacity of 36-40
 - Double-seating instructional space for flexibility
 - Island Lab Stations, each station to accommodate 4-6 students
 - Casework around the classroom with additional sinks and storage
 - ADA accommodations
 - Orientation of demonstration desk and teaching space on long side of the room, backing prep area
 - Doors connecting all Science Classrooms
 - Fume Hood for future flexibility
 - 6-8 computers per Classroom
- Features of Middle School Science Classrooms include:
 - Combination Lab & Instructional Classroom of 1460sf
 - Student capacity of 36-40
 - Double-seating instructional space for flexibility
 - Sinks and casework around the perimeter of the classroom
 - Movable tables that can anchor perpendicularly to the perimeter casework and utilities for lab work or moved to center of the classroom for instruction/ project work
 - ADA accommodations
 - Orientation of demonstration desk and teaching space on long side of the room, backing prep area
 - Doors connecting all Science Classrooms
 - Fume Hood for future flexibility
 - 6-8 computers per classroom
- Culinary Classroom/ Teaching kitchen to be able to provide banquet service for an event in the Commons. Design for the ability to acquire a commercial license for catering and student entrepreneurship/ learning opportunities. *(More detailed description of the process and spatial/ equipment requirements are noted in the "Food Service" portion of this report in Tab 4 – Additional Design Criteria)*
- Design will be sensitive to the existing fabric of the campus, while also incorporating freshness and appropriateness of exterior materials to celebrate the special function of each of these buildings.

The proposed concepts are a result of close collaboration with the Site Committee. The open and integrative process allowed for the team to build consensus in defining the scope of work and design criteria, which are then reconciled with the district's standards.

HERCULES MIDDLE HIGH SCHOOL – NEW SCIENCE BUILDING

The **conceptual program (Tab 2)** identifies all the programmatic elements and room sizes required and the **conceptual layouts (Tab 3)** clarify building and site configurations and designs. **Additional design criteria (Tab 4)** further expands on this section to provide further design criteria in terms of utilities, grading, site design, buildings systems and structure. **Meeting Minutes (Tab 6)** is a record of all the Site Committee meeting discussion and decisions made throughout this phase.

Appendixes C & D include the district's middle and high school educational specifications on which the designs for the Science facilities will be based upon. The district does not currently have any standards for a culinary program or commons area. In working closely with the Site Committee and our consultants, we have developed preliminary design and performance criteria for these spaces. In addition, design solutions are driven by sustainable considerations and measures as identified in a **CHPS scorecard (Tab 5)** for preliminary targeted design goals.

Anticipated Phasing

Based upon our preliminary study of the current and desired classroom capacity for the campus, 2 middle school portables and 2 high school portables will need to be relocated. The rest of the portables can be removed from the site. This conceptual study and final locations of the 4 relocated portables are identified in the **Conceptual Portable Relocation Diagram in Appendix A**.

The **conceptual construction phasing diagram in Appendix B** identifies the areas of work as listed below:

Phase I – Relocation of Temporary Portables

Based upon the Conceptual Design, the new buildings fall within the footprint of the existing portables. As such, it is anticipated that some of the portables will need to be temporarily relocated prior to Construction of the new facilities. Areas for temporary relocation have been identified in Appendix E. Four portables will be relocated to their final location at this time.

Phase II – Construction of New Buildings

Construction of new Science Buildings and surrounding landscape.

Phase III – Occupancy of New Buildings

Science and Culinary Programs move into their new location.

Phase IV – Conversion of old Science/ Culinary Classrooms into Standard Classrooms & Removal of Temporary Housing

As the Science and Culinary Classes move into the new buildings, their existing spaces can be converted back to standard classrooms. Degree of modernization may be necessary depending on scope and need. The exact scope needs to be studied in greater detail. This conversion will provide additional standard classrooms, which the classes in the temporary portables can then relocate into. After this conversion and relocation of standard classrooms, the temporary portables will be removed from this campus.

HERCULES MIDDLE HIGH SCHOOL – NEW SCIENCE BUILDING

Future

The School staff has indicated a need for a new theater in the future. As part of this study, we performed a cursory development of the program and area that is required of a 450 seat theater, based upon the district's current high school theater standards. This allowed us to ensure that consideration has been given to this potential future plan.

Conceptual Program

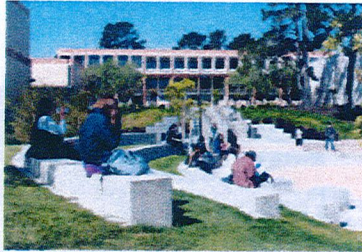
Hibser Yamauchi Architects | Hercules Middle-High School - December 6, 2011

Science Classroom Building Area Calculations						
Space Name	Quantity	Area (sq. ft.)	Occupancy	OLF	Description	Total Area
Commons/ Multi-Use	1	3000	100	15	Includes Multi-Use Presentation, Banquet and Student Break area	3,000
Table/Chair Storage - Commons	1	400				400
Culinary Arts:						
Culinary Arts Classrm/Kitchen	1	2968				2,968
General Storage - Dry, Refrig.	1	400				
Entry Changing Area	1	160				
Garden Storage	1	80				
Trash	1	100				
Science Classrooms:						
High School Science						
High School Lab/CR	6	1600	40	20		9,600
<i>Support Spaces (inc. below)</i>	1	2589				2,589
Chem Prep/Stor	2	300		100		
Multi-Science Prep/Stor	2	250		100		
Department workroom	1	250		15		
Break-out/Small Group	2	300		20		
Middle School Science						
Middle School Lab/CR	5	1440		20		7,200
<i>Support Spaces (inc. below)</i>	1	1378				1,378
Prep/Work Rm.	2	225		100		
Break-out/Small Group	2	300				
Support Space:						
Custodian	1	40				40
Electrical/Data	1	150				
Mechanical	1	150				
Restroom - Staff	2	56				112
Restroom - Men	1	200				200
Restroom - Women	1	200				200
Total						27,687
Exterior Circulation (5%)						1,384
GRAND TOTAL						29,071

Building	Total Building Area
Commons / Culinary Building	6,920
High School Science Building	12,189
Middle School Science Building	8,578

TOTAL 27,687

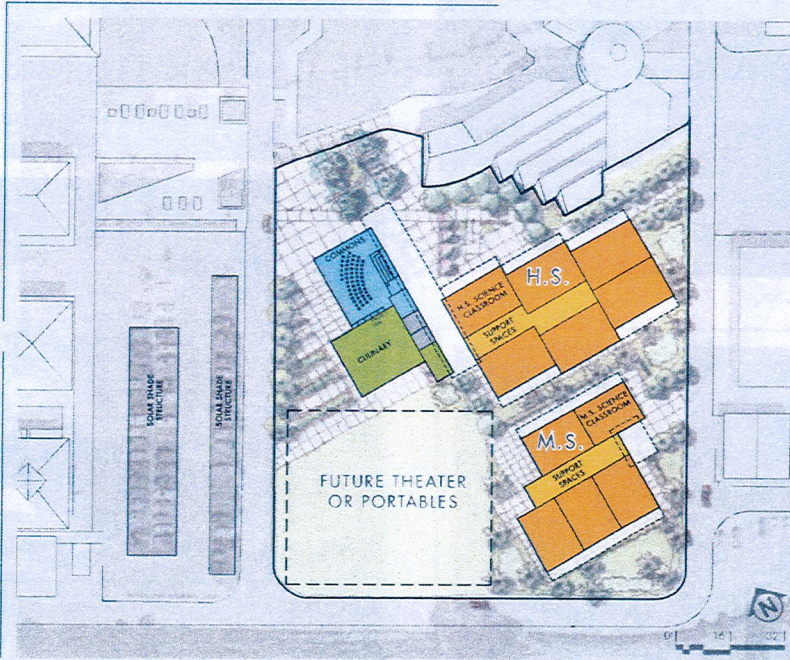
SITE CONCEPTS



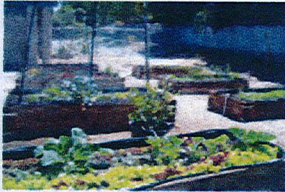
Learning opportunities



Plaza elements



Spatial definition



Culinary Garden



Site Plan



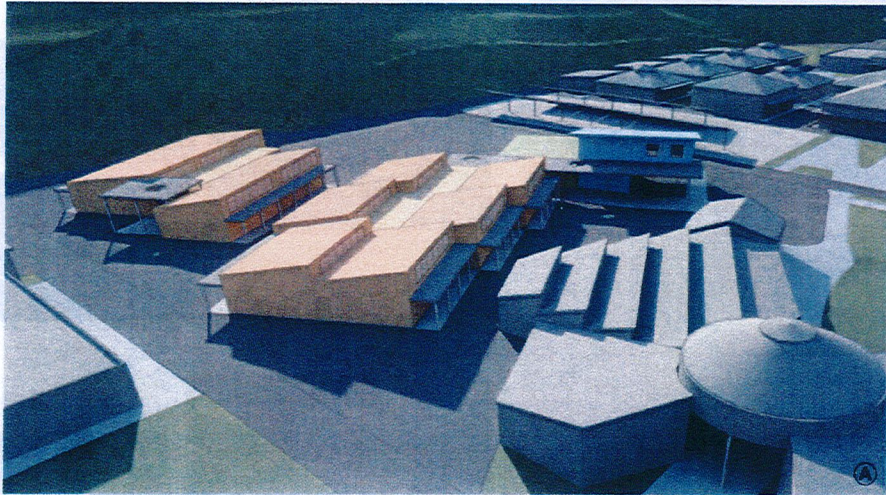
Trees serving many purposes



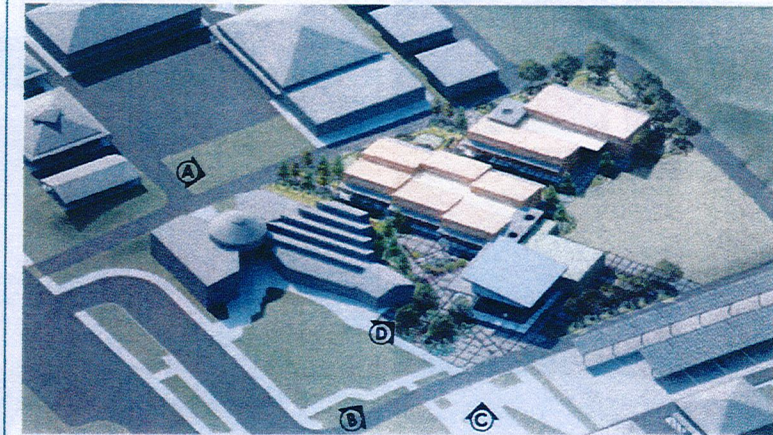
Planting ideas



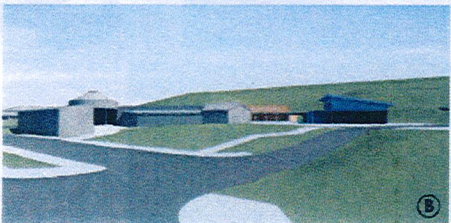
SITE OVERVIEW



Overview looking West



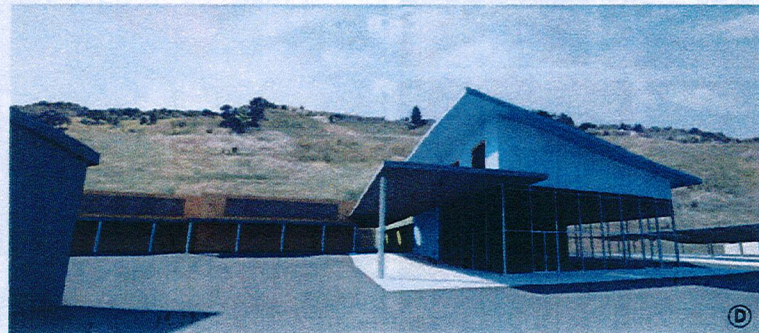
Axonometric Overview



Entry Perspective

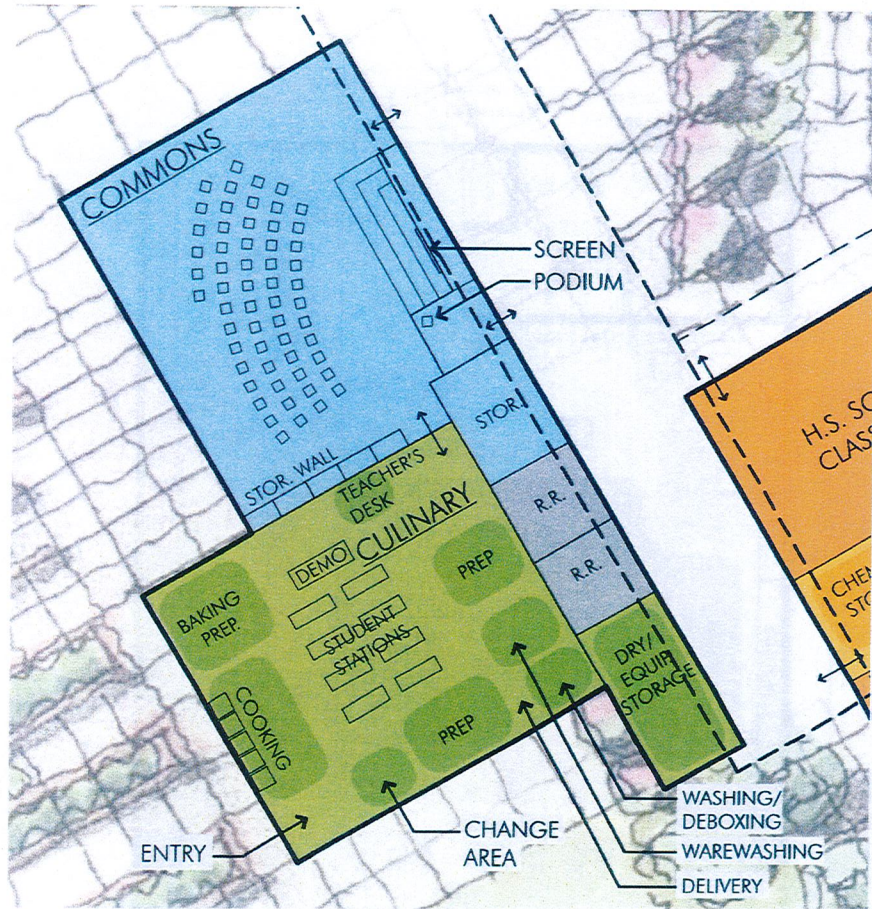


Entry Perspective

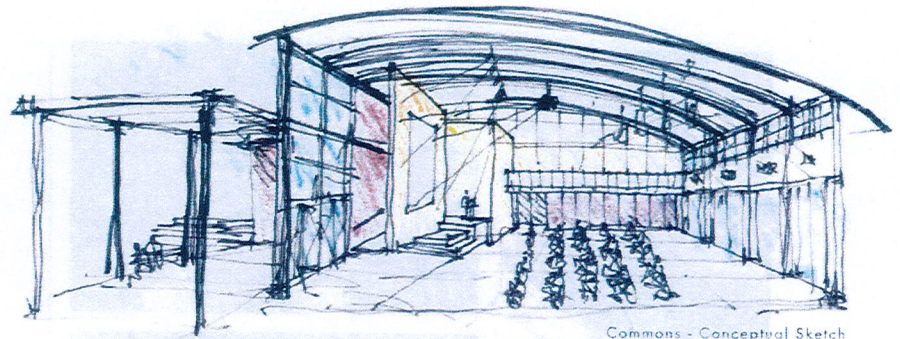


Commons Entry Perspective

COMMONS SCHEME



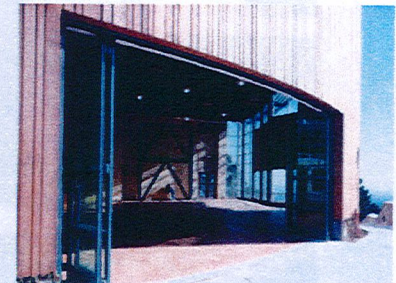
Culinary and Commons Plan



Commons - Conceptual Sketch



commons ideas



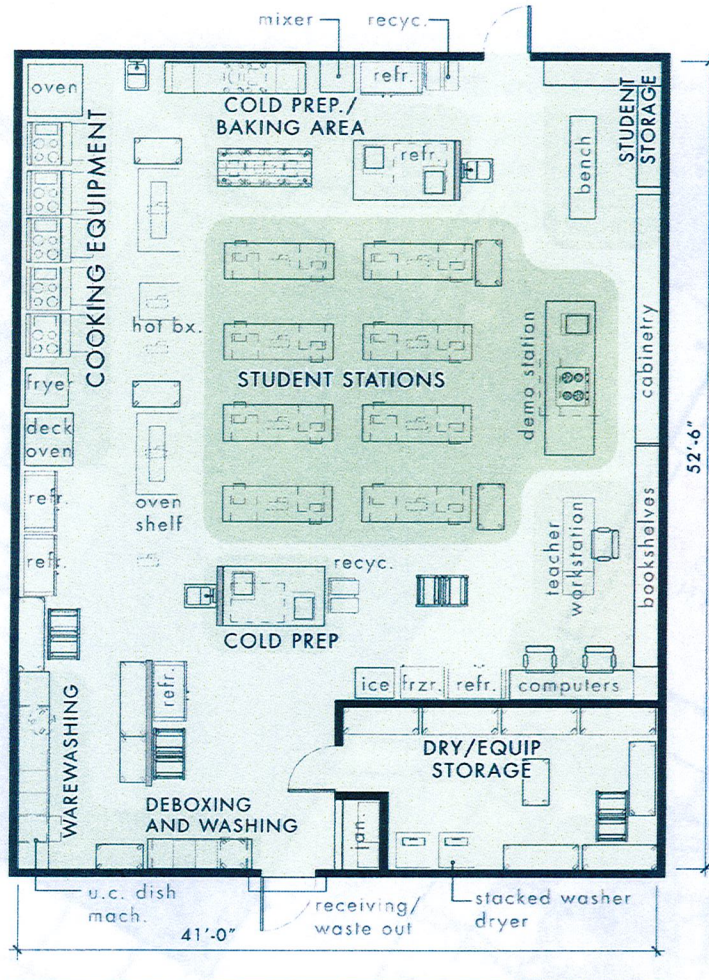
indoor-outdoor connections



commons ideas



CULINARY CLASSROOM SCHEME



01 141 321 Culinary Plan



01.27.12

HERCULES MIDDLE HIGH SCHOOL
NEW EXPANSION - CONCEPTUAL

WEST CONTRA COSTA UNIFIED SCHOOL DISTRICT

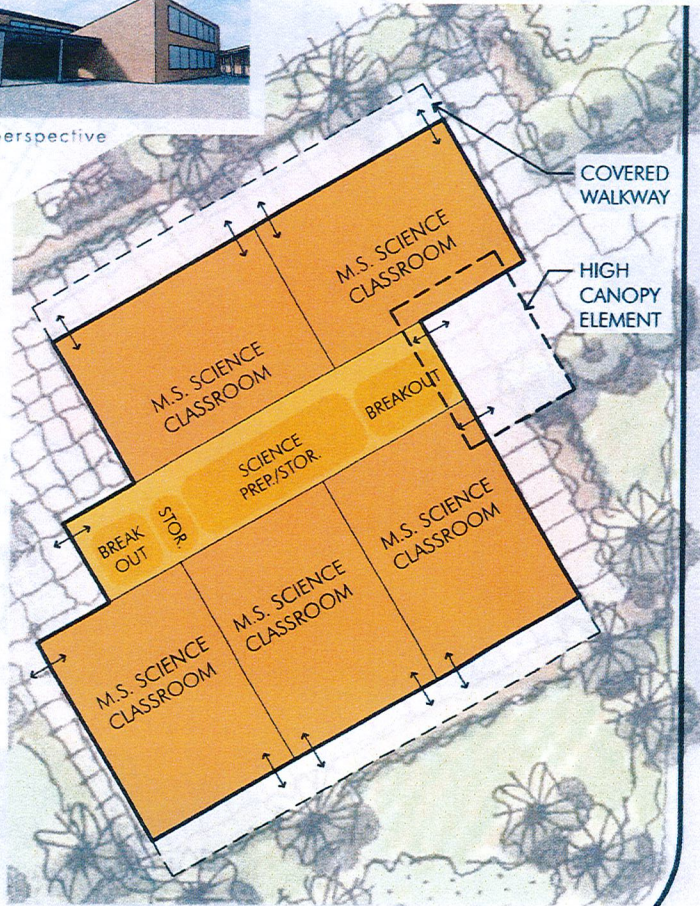
HIBSER YAMAUCHI Architects



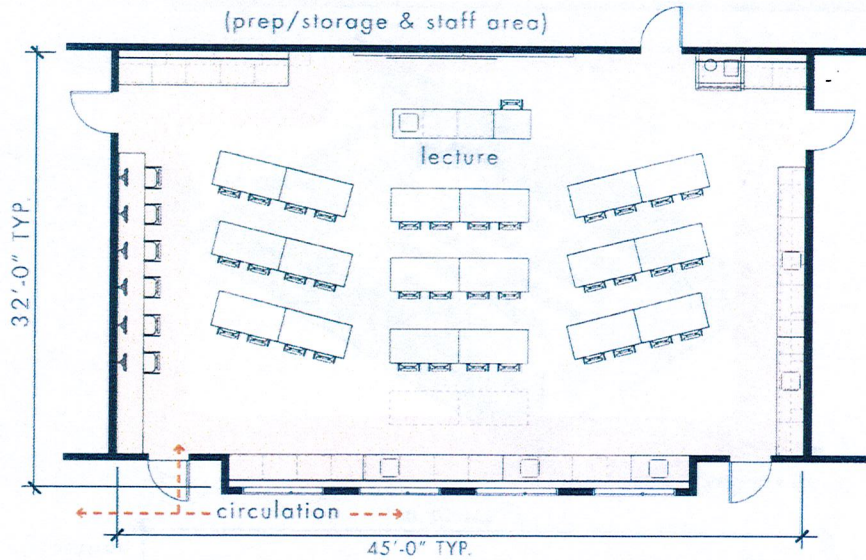
PLAN CONCEPTS MIDDLE SCHOOL



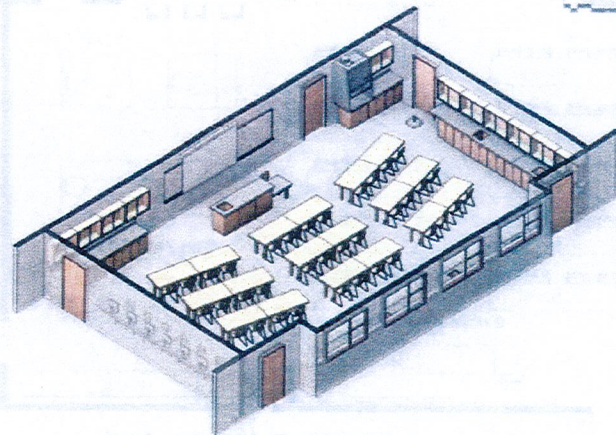
entry perspective



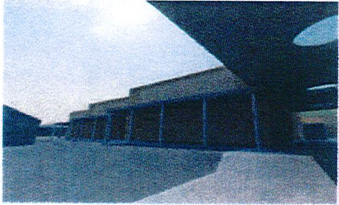
M.S. Building Scheme



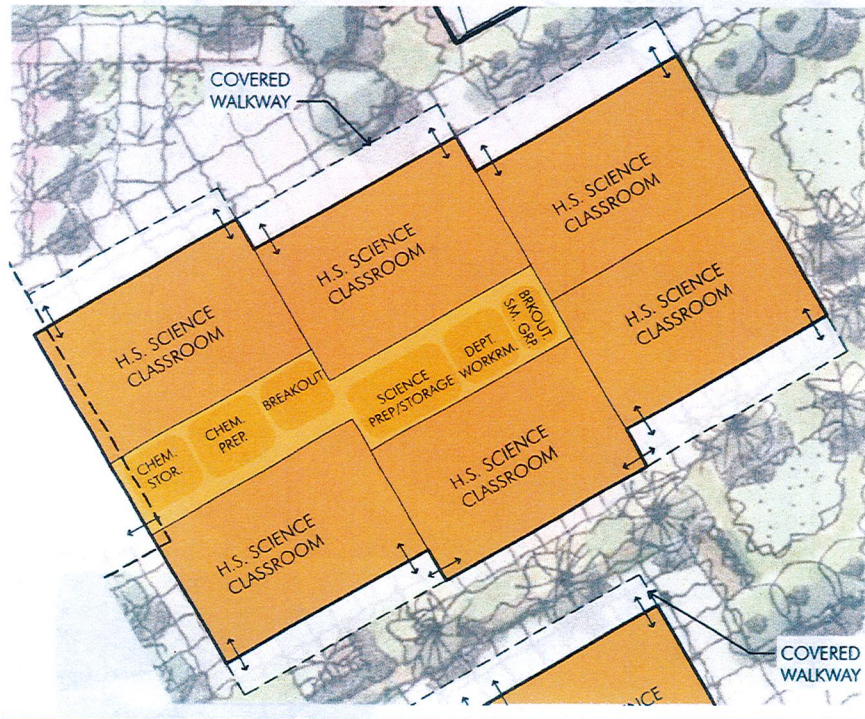
Science Classroom Plan



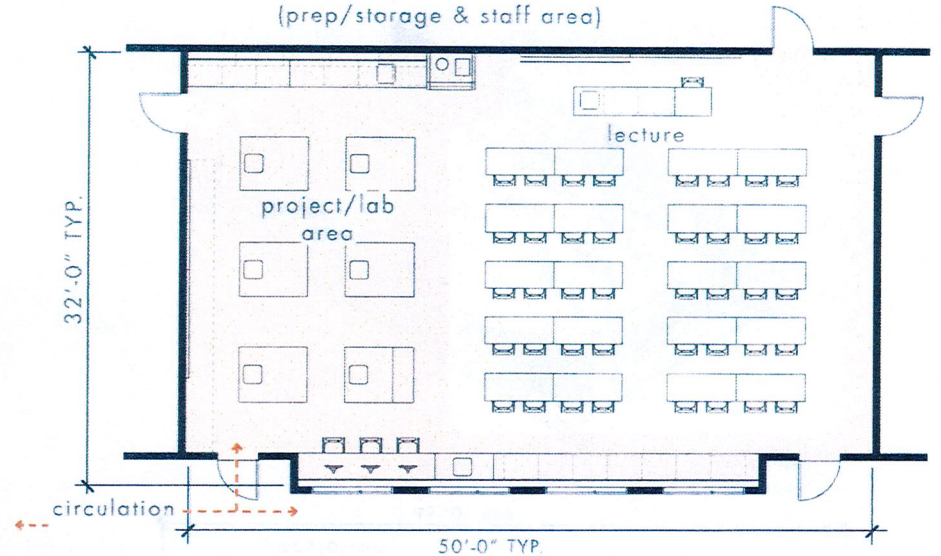
PLAN CONCEPTS HIGH SCHOOL



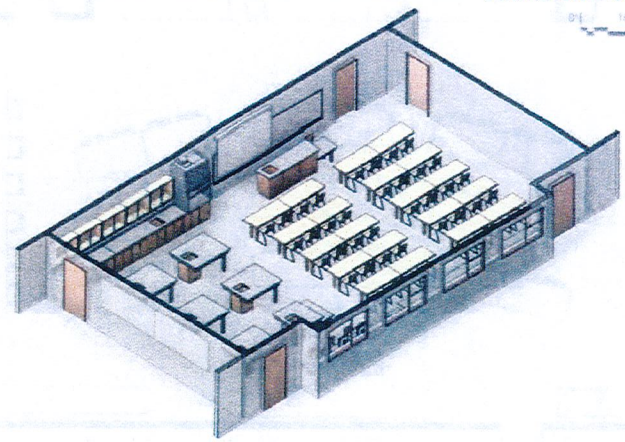
entry perspective



High School Building Scheme



Science Classroom Plan



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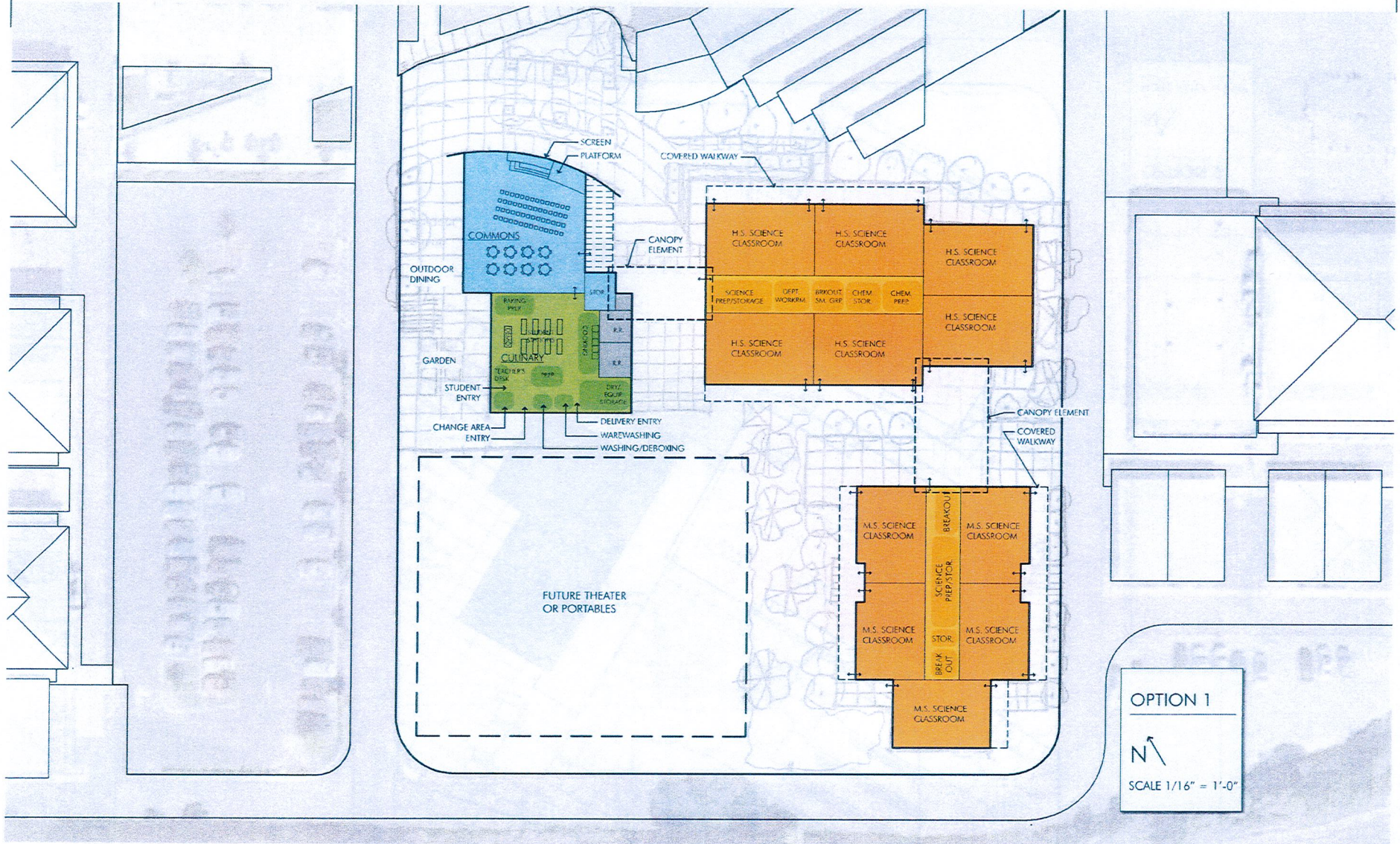
HERCULES MIDDLE-HIGH SCHOOL
NEW EXPANSION - CONCEPTUAL

WEST CONTRA COSTA UNIFIED SCHOOL DISTRICT

HIBSER-YAMAUCHI Architects



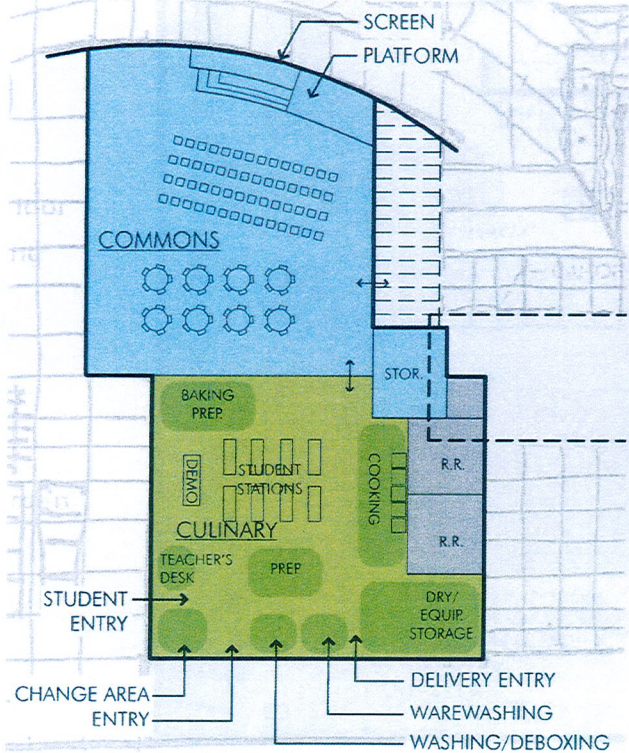
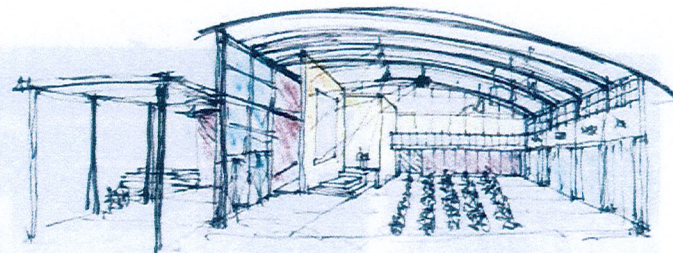
OPTION 1 SITE SCHEME



COMMONS SCHEMES

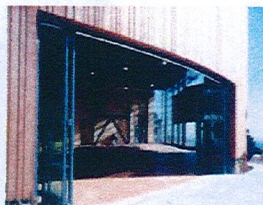


commons ideas

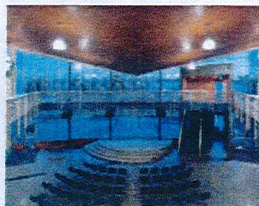


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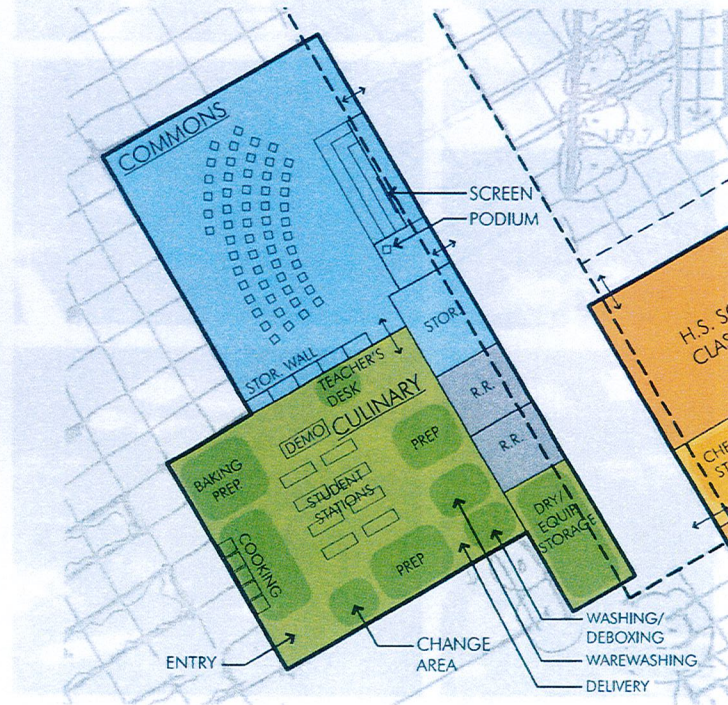
OPTION 1



indoor-outdoor connections



commons ideas

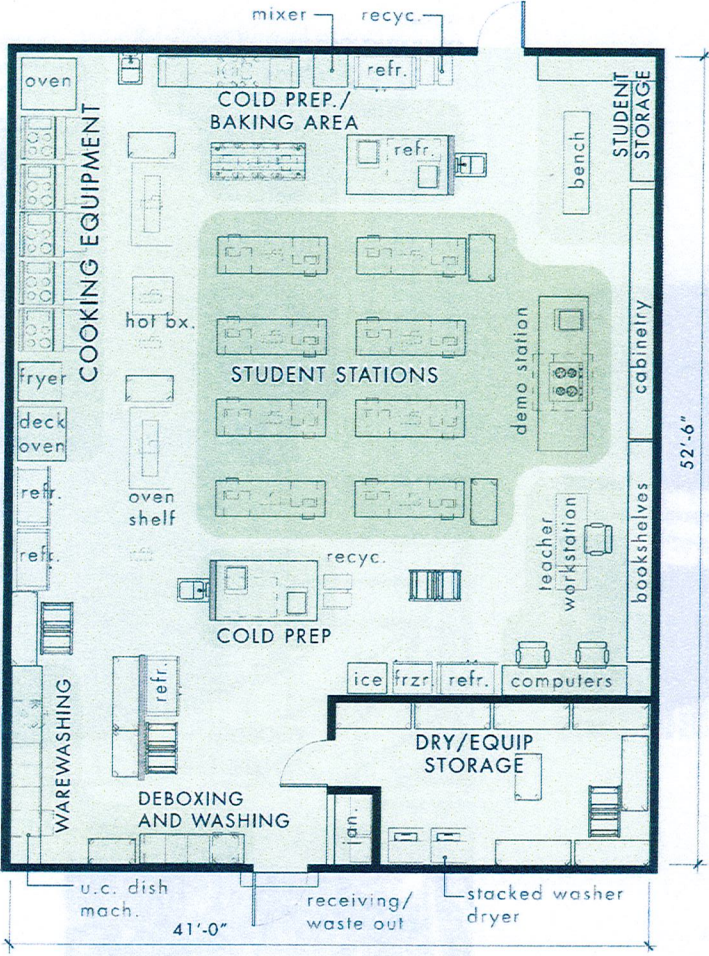


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OPTION 2



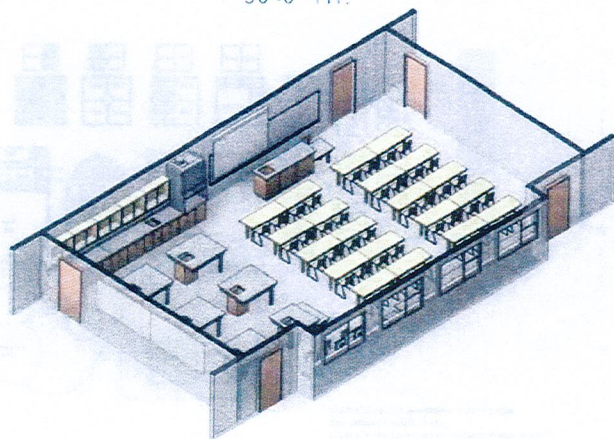
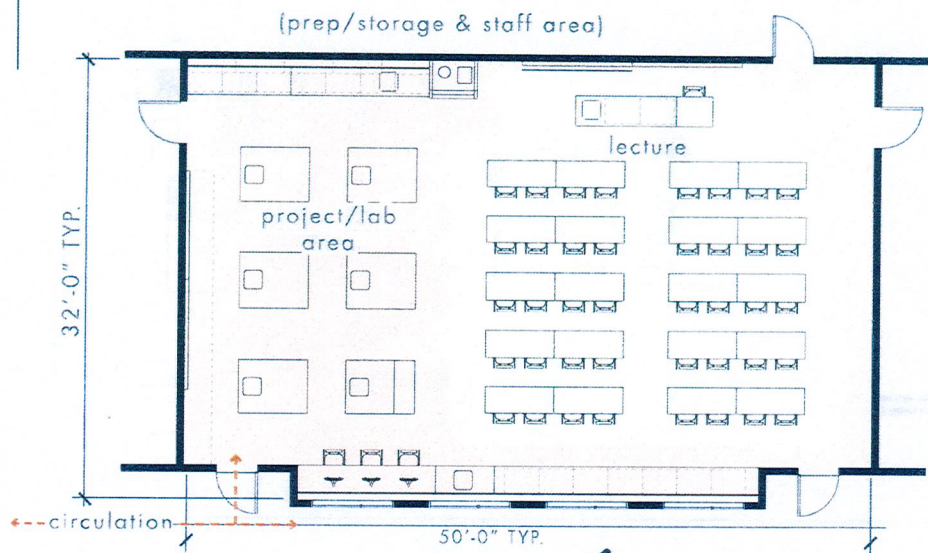
CULINARY CLASSROOM SCHEME



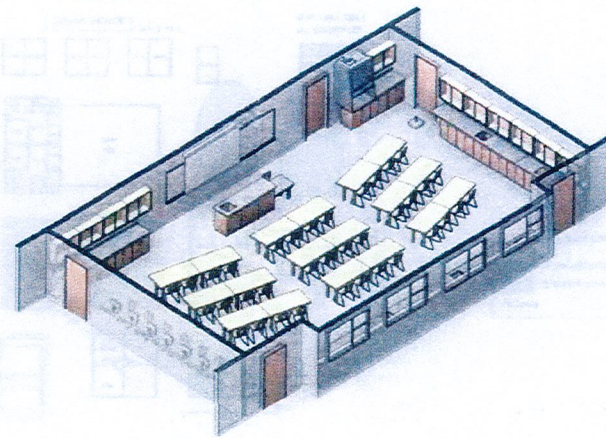
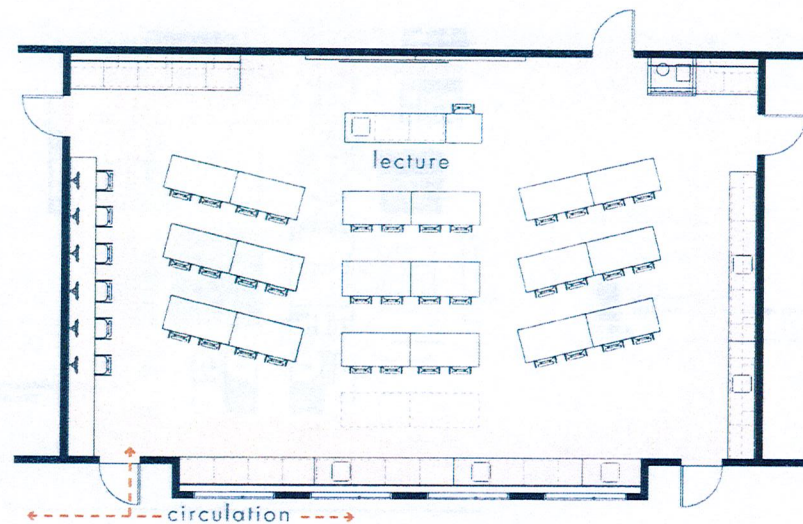
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SCIENCE CLASSROOM/LAB SCHEMES



High School



Middle School

plans: 1/4" = 1'-0"

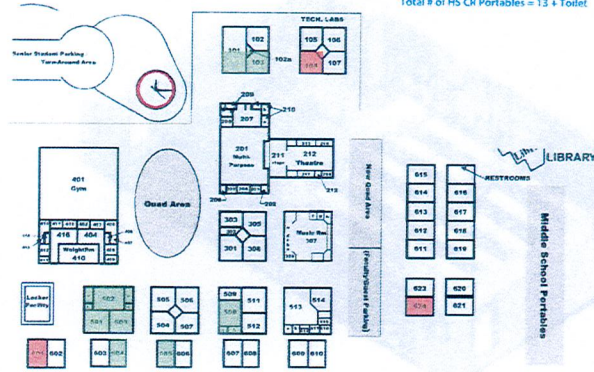


SITE OVERVIEW

Existing Classroom Utilization

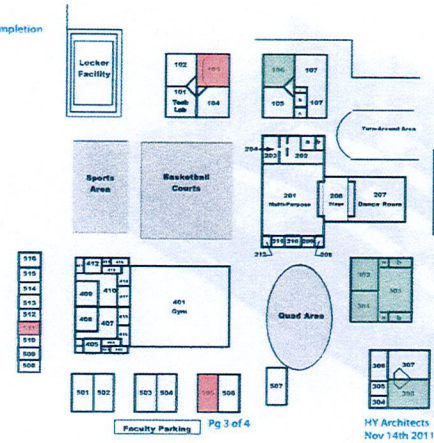
High School

Total Vacant Classrooms (after completion of New Science Bldg) = 10
Total # of HS CR Portables = 13 + Toilet



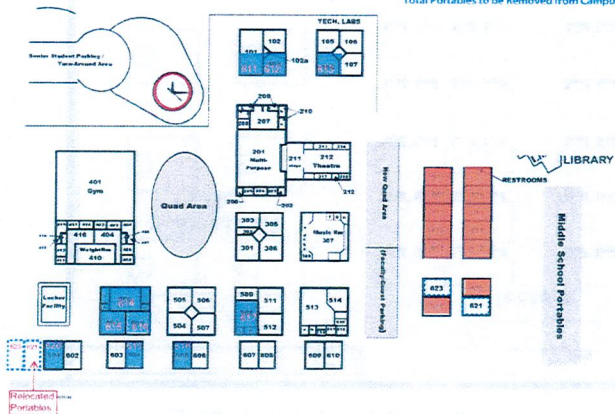
Middle School

Total Vacant Classrooms (after completion of new science bldg) = 7
Total # of MS Portables = 9

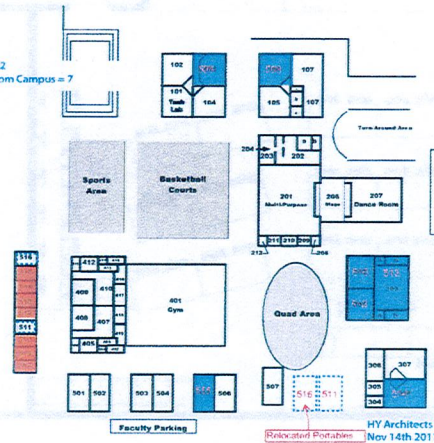


Conceptual Portable Relocation

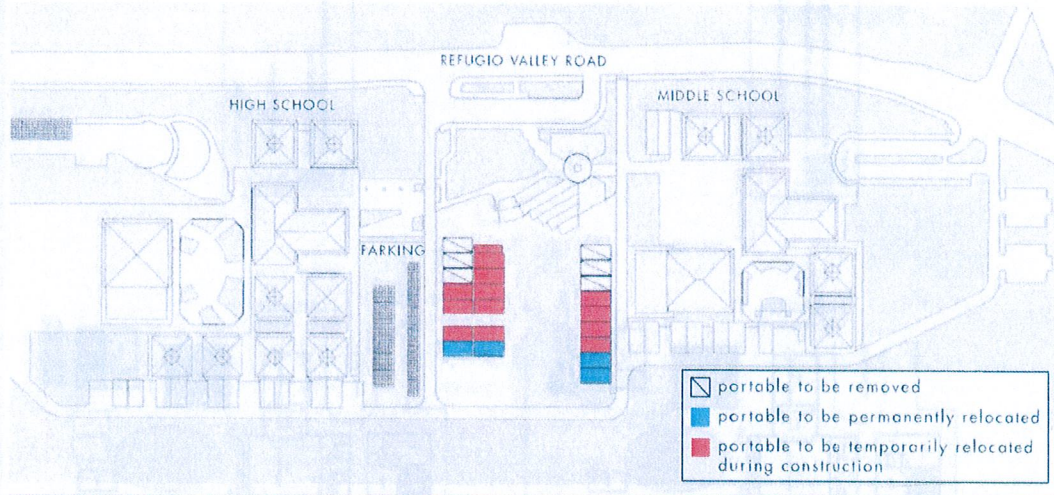
Total Portables to be Relocated = 2
Total Portables to be Removed from Campus = 12



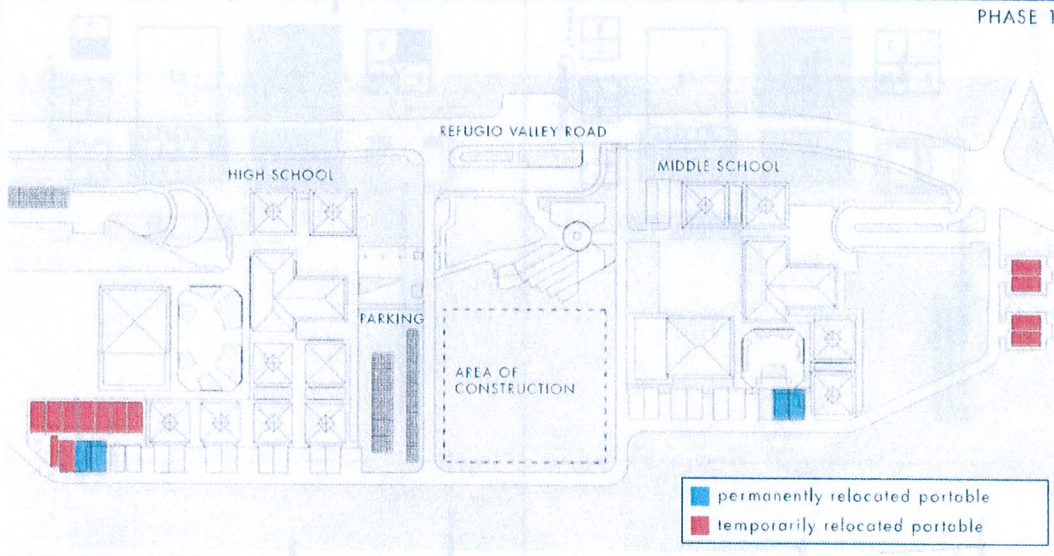
Total Portables to be Relocated = 2
Total Portables to be Removed from Campus = 7



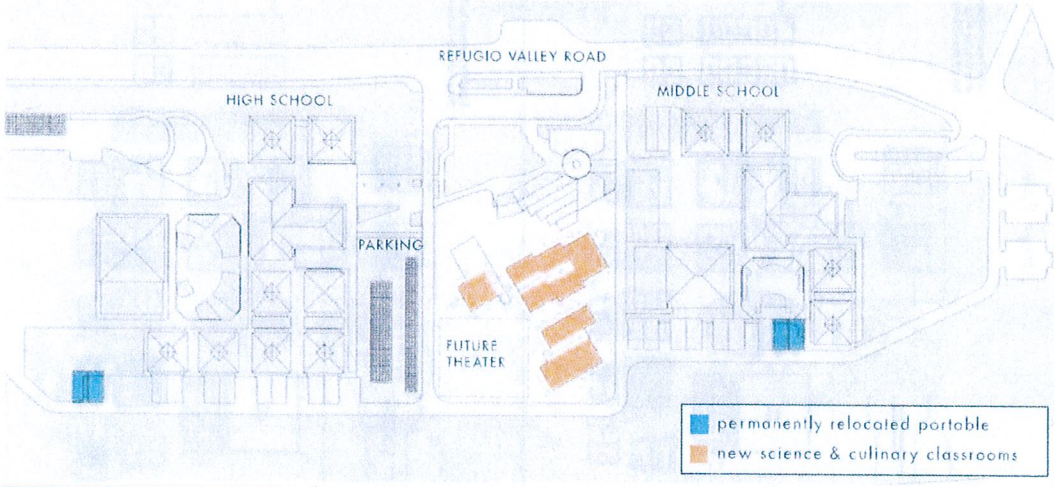
CONSTRUCTION PHASING



PHASE 1



PHASE 2



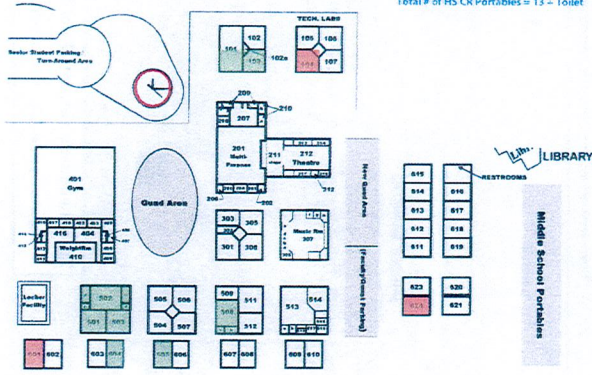
PHASE 3

SITE OVERVIEW

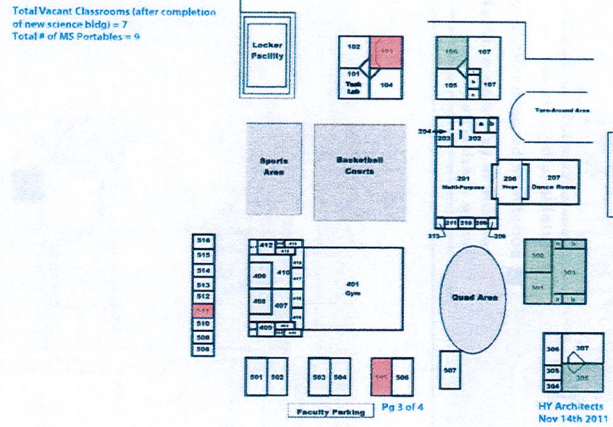
Classroom Utilization Study & Portable Relocation Plan

Existing Classroom Utilization

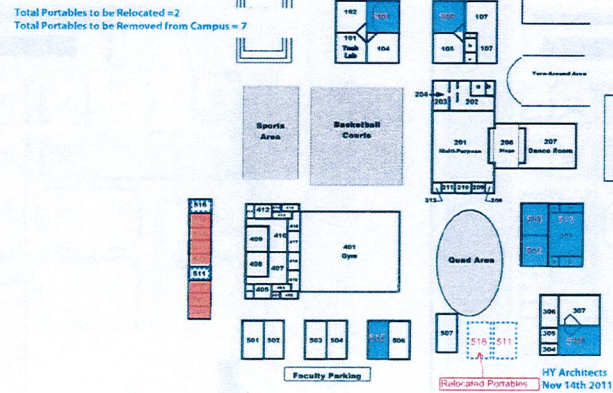
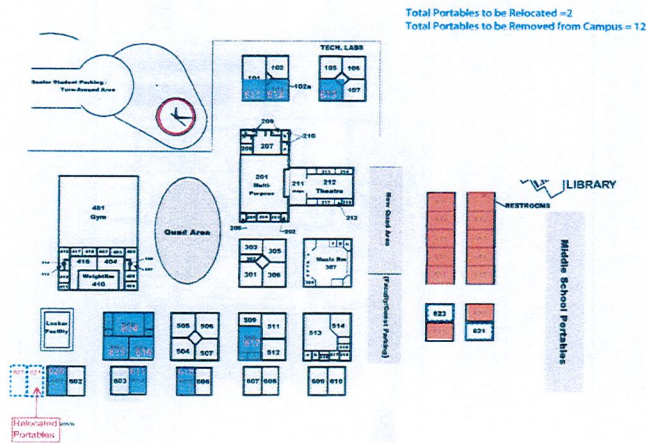
High School



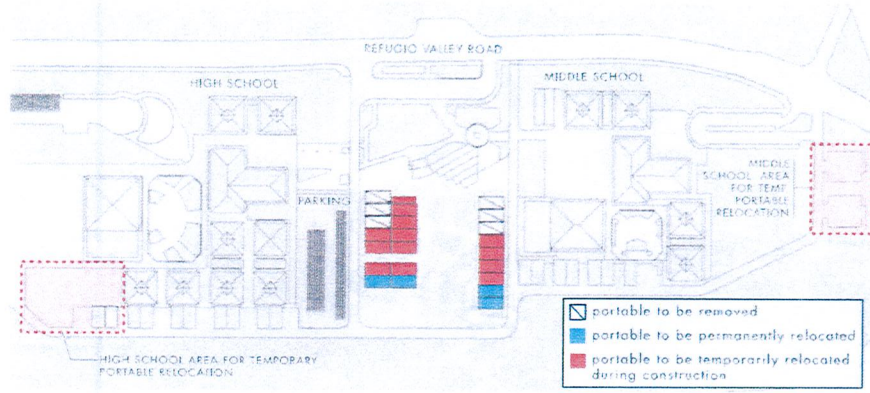
Middle School



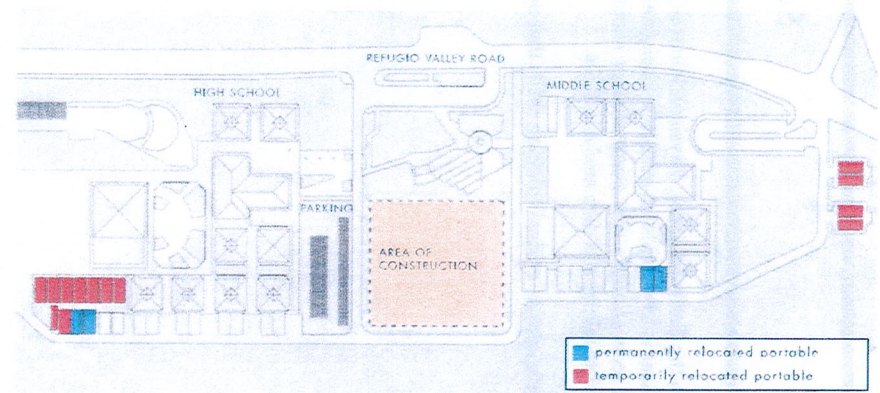
Conceptual Portable Relocation



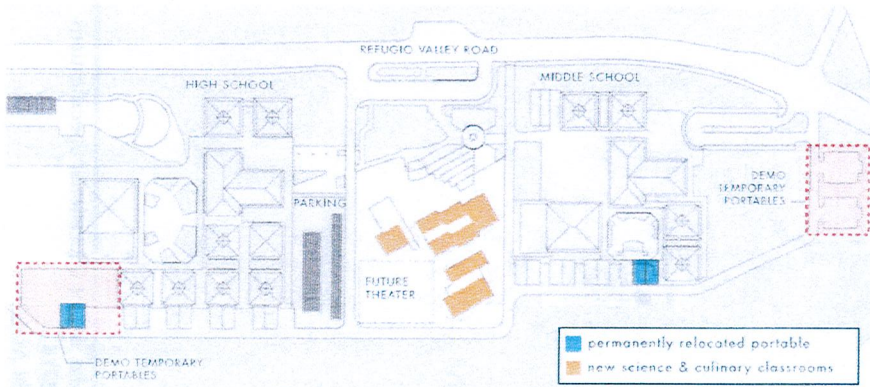
CONSTRUCTION PHASING



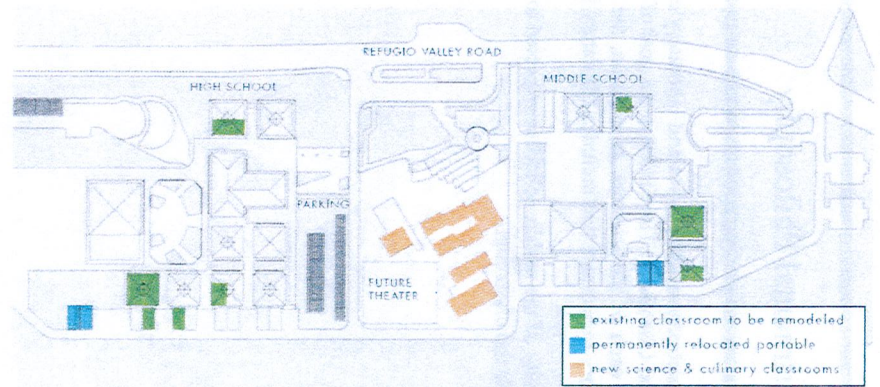
PHASE 1 - RELOCATION OF PORTABLES



PHASE 2 - CONSTRUCTION OF NEW BUILDINGS



PHASE 3 - OCCUPANCY OF NEW BUILDINGS AND DEMOLITION OF TEMPORARY PORTABLES



PHASE 4 - CONVERSION OF OLD SCIENCE/ CULINARY INTO STANDARD CLASSROOMS



I. Departmental Philosophy

Science

The Science Department offers classes and laboratory experience in the Earth Sciences, Physical Sciences, Physics, Life Sciences, and Chemistry. The fundamental goal of the department is to provide an academic background in the content areas of each of the sciences. In addition, the department feels strongly that every student should have a practical laboratory experience that includes laboratory techniques, data taking and data analysis skills.

The Science faculty of the middle school is expected to develop the students' critical thinking skills that apply both inside and outside the classroom.

II. General Requirements/Grouping Adjacency Considerations:

Science

1. The Science Department should be near Computer Labs, the Math Department and the Library/Media Center.
2. Small group project area adjacent to Science Classroom/Lab space desirable for ongoing projects and team projects.
3. Laboratory and classroom space should be combined in each teaching area.
4. An arrangement showing Science classrooms clustered around shared preparation workrooms should be explored.
5. All Science instructional spaces will be designed with a potential for up to 40 student stations, not 24 per the State loading formula, in order to plan for increased District classroom loading.
6. Health/Biology is taught by the Science Department.
7. All classrooms should have as much natural light and fresh air for ventilation as practicable.
8. Proportion room plan to maximize sight lines and minimize distance from student lab and lecture areas to teaching demonstration station for instruction and safety

III. Space Requirements:

Science

SPACE	QUANTITY	SF/SPACE	TOTAL AREA
Sixth Grade: Earth Science/General Science		1460	
Seventh Grade: Life Science Health/Biology /Anatomy / Physiology		1460	
Eighth Grade: Physical Sciences /Chemistry / Astronomy /Physics		1460	
Prep and Work Room		225	
Storage		100	

DEPARTMENT TOTAL

Number of Lab/Classrooms required based on planned student population.

IV. Individual Space Description:

Science

Space Title: Science Classroom/Laboratory

- A. Activities: Teaching general science, earth science, life sciences, physics and physical science.
- B. Atmosphere: Clean, scientific and orderly.
- C. Writing Surfaces: Front and rear teaching wall provide (2) 4' x 8' = 16 Lineal Feet (LF) porcelain enameled steel whiteboards mounted at +34" Above Finished Floor (AFF) maximum, with continuous chalk rail at bottom, tack strip and map hooks.
- Where layout allows provide Front teaching wall with 20'-0" L x 24" D x 7'-0" H casework teaching wall. Centered within the casework provide (2) 4' x 8' = 16 Lineal Feet (LF) sliding porcelain enameled steel whiteboards mounted at +34" Above Finished Floor (AFF) maximum, with continuous chalk rail at bottom, tack strip, map hooks, and flag holder at top.
- D. Walls: Gypsum wall board, smooth finish, painted semi-gloss.
- E. Flooring: Sheet good flooring – linoleum, rubber or vinyl system with welded seams and integral coved base.
Provide a two or three color basic floor pattern to be approved by the District.
- F. Ceiling: Suspended grid acoustic tile lay-in ceiling or 12" x 12" glue-up tile.
Five heavy eye hooks for pendulum weight mass demonstrations at Physics lab.
- G. Acoustical Treatment: Acoustical batt wall sound insulation in all interior walls.
- H. Daylight: District Standard modular classroom operable window system with low E insulated clear glass.
Window coverings to be vinyl, manually operated "Mecho" Shade with 50% translucency.
Clerestory windows, translucent white glass with District Standard exterior perforated metal vandal resistant screen (optional and site specific at the direction of the District).
- I. Display Space: Cork tackable wall board (4'x10' sheet, typical, to be cut in half) mounted +34" AFF maximum (align with bottom of whiteboards typical). Minimum

IV. Individual Space Description:

Science

Space Title: Science Classroom/Laboratory

of 5'-0" high band at all walls and 2'-0" high minimum band above whiteboards for "Open Court" requirements. Vertical seams to be the wrapped edges of board, exposed edges to be trimmed with aluminum 'J' mold, or chair rail and picture molding.

Provide continuous vinyl wrapped tackable wall board above sink counter to underside of upper casework.

Provide continuous wood chair rail all walls mounted +34" AFF maximum Detail with rabbeted top edge to conceal the cut end of the tack board

Provide continuous wood picture molding at all walls mounted +8'-0" AFF to serve as top trim for the tack board. Detail with rabbeted bottom edge to conceal the cut end of the tack board (optional and site specific at the direction of the District).

J. Cabinetry:

All casework to be Woodwork Institute (WI) Premium veneer plywood case, frames, doors and drawer faces, with full extension institutional drawer glides and Rockford Process wrap around hinges through bolted.

"Learning wall" teaching center on front wall. See 'C', writing surfaces above.

Resin countertops at demonstration tables and sidewall countertop area with resin sink per lab station layout. Provide chase for data/power and gas service in face of countertop splash.

Provide ADA accessible resin top sink cabinet and counter with 4" minimum coved backsplash.

Lab stations (fixed or movable) serving (4) students ((6) students maximum), located around perimeter of room. 34" high typ. For stool type seating. Provide ADA accessible lab station.

All cabinetry except at front learning wall to be lockable.

Sidewall upper casework to have glass fronts.

Teacher's lockable wardrobe cabinet with shelves (WI #511) Provide 30" x 40" poster storage flat file cabinet and maximize additional (WI #402) 24" deep, full height lockable storage cabinets if space available and at direction of District.

Upper casework with doors above sink counter.

Maximize open shelving under windows (WI #100), where lab station counter does not occur, with one adjustable 1" thick shelf only. Maximize

IV. Individual Space Description:

Science

Space Title: Science Classroom/Laboratory

- height of shelving to bottom of window sill.
- Provide casework base for fume hood
- Provide casework as necessary to facilitate the special use of this room.
- K. Electrical: (2) utility electrical duplex outlets minimum per wall. (3) electrical duplex outlets minimum at front teaching wall (center one under the markerboards). (2) electrical duplex outlets for lab stations. (6) duplex outlets for computers. *District will use surge suppressor power strips.*
- Provide electrical service for demonstration tables; floor outlets at student work tables in 4 rows of 2.
- District approved recessed floor box with duplex outlet, centered on whiteboards approximately 12' from front teaching wall.
- Provide additional electrical outlets as necessary to facilitate the special use of this room.
- L. Lighting: (2) rows of (3) T-8 lamp direct/indirect pendent fixtures (preferred), if ceiling height inadequate use comparable 2' x 4' direct/indirect recessed fixture.
- Provide adequate lighting above the teachers demonstration table.
- Provide daylight controls with dimmable ballast systems.
- M. Water: One single epoxy resin compartment sinks with strainers and anti-clog traps, shared per two Lab Stations. ADA height sink at ADA lab station.
- Single epoxy resin integral sink in Teachers demonstration table (sink mounted eye wash location).
- One eye wash station.
- Emergency shower/eye wash station in lab space if shower in prep/storage area is more than required ten second travel distance. Provide adequate drainage system at floor to prevent damage to adjacent finishes.
- N. Gas / Air Gas outlets: one at teachers demonstration table, one –dual head outlet shared per two lab stations and one at fume hood.
- O. HVAC: Ducted heating and ventilation from roof mounted package unit

IV. Individual Space Description:

Science

Space Title: Science Classroom/Laboratory

Dedicated science lab exhaust air system with ducted low velocity ventilation/ heat recovery system.

Provide a fume hood at each lab, front wall location preferable. Possible shared lab use of fume-hood located in Prep Room.

Entire school HVAC to be able to be shut down from a single location for "Shelter in Place" events (through the EMS).

- P. Ventilation: Operable windows, Science Lab dedicated exhaust ventilation system (see HVAC above).
- Q. Communications/
Instructional Technology (2) Voice Over Internet Protocol (VOIP) phone ports over network backbone, one on each side of front teaching wall. School intercom is programmed through the VOIP.
- Ceiling mounted projector wired into data system. Projection screen over marker board at teaching wall.
- Wireless access point (WAP) in each floor of each building, confirm coverage.
- (12) computer ports: ((2) teacher at front teaching wall and demonstration table and (1) computer port at each student lab station at side and/or rear walls.
- District approved recessed floor box with (2) data ports, centered on whiteboards approximately 12' from front wall.
- Independently programmable bell system.
- R. Access: Direct connection to main circulation, Science storage and corridor circulation corridor.
- Direct from main circulation, if doors are interior, solid core wood doors with 6" x 20" maximum vision panel and swing free lever hardware with standard Schlage cylinders.
- Primary exterior classroom doors are to be hollow metal, 6" x 20" maximum vision panel with swing free lever hardware and standard Schlage cylinders.
- If classroom has a secondary exterior exit door, it is to be hollow metal, no vision panel, have ADA panic hardware only on the inside and ADA exterior pull with no key lock on the outside.
- All doors to have wall mounted, rubber type bumpers with appropriate backing to protect the walls from the door handle.

IV. Individual Space Description:

Science

Space Title: Science Classroom/Laboratory

- S. Furniture and Equipment: Sixteen flat top tables for lecture and lab work, coordinate height with under-window lab stations and chair/stool height. Provide accessible height lab table each science classroom/lab space.
- Campus system based clock centered at rear classroom wall.
- 6' x 6' pull down projector screen centered above whiteboards at front teaching wall.
- (10) student computers, (1) staff computer, (1) student printer, and (1) staff printer (printers are not networked) - Not in Contract.
- Furniture to meet District Standards - Not in Contract.
- Equipment as necessary to facilitate the special use of this room - Not in Contract.
- Surface mounted, District Standard, lever activated, ADA 'Roll' type paper towel dispenser at sink.
- Soft soap dispenser will be provided by the District at each sink location.
- Provide interior sign at door to be two color etched plastic with brail as required by code, indicating general name of the space to have a slot to insert a paper nameplate. All signs are to be mechanically attached to the wall with vandal resistant fasteners.
- T. Comments: None.

IV. Individual Space Description:

Science

Space Title: Science Prep. Work/ Storage

- A. Activities: Dedicated to staff use for storage of miscellaneous supplies, equipment and preparation of Science Lab materials.
- B. Atmosphere: Clean, bright, orderly.
- C. Writing Surfaces: None.
- D. Walls: Tackable wall surface; Gypsum wall board smooth finish, painted semi-gloss.
- E. Flooring: Sheet good flooring – linoleum, rubber or vinyl system with welded seams and integral coved base. Flooring must be chemical resistant.
- F. Ceiling: Suspended grid acoustic tile lay-in ceiling or Gypsum wall board, smooth finish, painted semi-gloss.
- G. Acoustical Treatment: Acoustical batt wall sound insulation in all interior walls.
- H. Daylight: No windows required.
- I. Display Space: Tackable panels
- J. Cabinetry: 72" high by 24" deep minimum, adjustable metal storage shelves or Woodwork Institute (WI) economy grade shelving with 1" thick shelves on one wall minimum.

2' deep perimeter cabinets upper and lower with resin countertops, (2) microscope balance cabinets 4' wide, 8' high, with shelves @ 14". Space for dishwasher and under counter refrigerator. Storage for 20 boxed catalogs 20"d x 8"w x 8"h.
- K. Electrical: (3) 110V outlets per wall above counter at casework area. Service for dishwasher, under counter refrigerator.
- L. Lighting: 2' x 4' T-8 Fixtures.
- M. Water: (2) single compartment sinks, dishwasher
- N. HVAC: Ducted heating and ventilation from roof mounted package unit
Dedicated science lab exhaust air system with ducted low velocity ventilation/ heat recovery system.

Provide a fume hood at each lab, front wall location preferable. Possible shared lab use of fume-hood located in Prep Room.

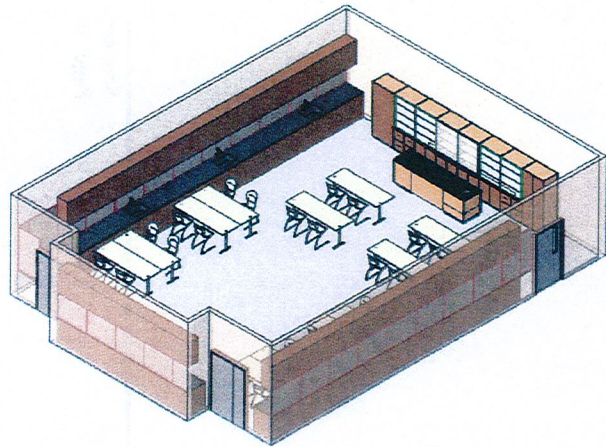
IV. Individual Space Description:

Science

Space Title: Science Prep. Work/ Storage

- O. Ventilation: Operable windows, Science Lab dedicated exhaust ventilation system (see HVAC above).
- P. Communications/
Instructional Technology: Voice Over Internet Protocol (VOIP) phone ports over network backbone. School intercom is programmed through the VOIP.
(2) computer/data outlets.
- Q. Access: Directly accessible and shared between Science classroom/labs. Close to all labs. Observation windows desirable.
- R. Furniture and Equipment: Storage of microscopes, balances, etc.
- S. Comments: None.

GENERAL SCIENCE LAB



ACTIVITIES	Flexible design to allow for typical classroom instruction and laboratory instruction in physics, physical science, and biology.
ATMOSPHERE	Bright, clinical, exciting!
WALLS	5/8" thick type -"X" high impact gypsum wall board, with level 5 smooth finish, painted neutral color with eggshell acrylic finish.
FLOORING	Chemical resistant rubber. Provide a two- or three-color basic floor pattern to be approved by the District. Sheet goods may be used with the permission of the District.
CEILING	2' x 4' suspended grid premium acoustic lay-in tiles (Armstrong "Optima"), 10' high from finish floor minimum. suspended grid to have seismic hold down clips and uplift struts. Attach (5) heavy eye hooks to ceiling structure or unistrut system, for pendulum weight mass demonstrations.
DAYLIGHT	District Standard modular classroom operable window system with low-E laminated clear glass. Window coverings to be vinyl, manually operated sunshades with 0% (blackout) openness factor. Clerestory windows, translucent white laminated glass with District Standard exterior perforated metal vandal-resistant screen (optional and site specific at the direction of the District).
WRITING SURFACES	At front Wall provide (3) 4' x 8' = 24 Lineal Feet (LF) horizontal sliding porcelain enameled steel whiteboards mounted at 34" Above Finished Floor (AFF) maximum with continuous chalk rail at bottom; tack strip, map hooks, and flag holder at top. (1) "Eno" board or approved interactive whiteboard 8 LF porcelain enameled steel whiteboard mounted at 34" AFF on wall opposite windows.
ACOUSTICAL TREATMENT	Acoustical batt wall sound insulation in all interior walls (blown in may be used at existing walls). Walls to have 35dB with material assemblies that meet an STC rating of STC 60.
DISPLAY SPACE	Vinyl wrapped tackable wall board (4' x 10' or 4' x 12' sheet, typical) mounted mounted full wall height. Vertical seams to be the wrapped edges of board, no exposed edges all edges to be wrapped. All walls to have vinyl wrapped tackable wall board where applicable. Provide continuous wood chair rail at all walls mounted 34" AFF maximum (align with bottom of

GENERAL SCIENCE LAB

whiteboards). Detail with rabbited top edge to conceal the cut end of the tack board (optional and site specific at the direction of the District). Allow wall space for the large periodic table element charts and any other large charts.

CABINETRY All casework to be Woodwork Institute (WI) Lab Grade Premium plywood case, frames, doors, and drawer faces, with full extension institutional drawer glides and Rockford Process wrap around hinges through bolted.

2' deep x 3' high perimeter counters with lockable upper and lower cabinets. All upper cabinets to have safety glass fronts. chemical resistant resin topped counters. Provide counters along the perimeter of the classroom with sinks spaced to allow for 7 lab stations.



Tables/stools make reconfiguration for group collaboration a breeze

Demonstration table with overhead mounted mirror rig to observe teacher demonstrations.

Window shelf space for terrariums and aquariums.

ELECTRICAL (2) 120V utility electrical duplex outlets minimum per wall. (3) electrical duplex outlets minimum at front teaching wall (center under the markerboards) and side walls and (2) on back wall above counter.

Service for demonstration table. Floor outlets with metal covers at student work tables; (1) at front of room, and (1) at back for possible teacher's desk locations.

Spot light above demonstration table.

(2) rows of (3) T-8 lamp direct/indirect pendant fixtures (preferred), or if ceiling height inadequate, use comparable 2' x 4' direct/indirect recessed fixture. Lighting to meet CHPS general mode classroom lighting level of 35 - 50 footcandles at desk.

Provide daylight controls with dimmable ballast systems.

PLUMBING (1) single ADA accessible compartment sink with strainers and anti-clog traps at demonstration table and (1) single compartment sink per student lab station. Provide minimum of (1) ADA student lab station.

Eye wash with body spray at demo station with 24" x 24" grating and drain box to capture the 50 gallons of water the shower emits.

(1) Hot and cold water faucet at all sinks.

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CORE ACADEMICS

GENERAL SCIENCE LAB



MECHANICAL (1) Gas outlets at demonstration table and (1) gas outlet per lab station. Compressed air and vacuum at demo table.

District Standard HVAC system. Provide Energy Management System (EMS). Entire school HVAC to be able to be shut down from a single location for "Shelter in Place" events (through the EMS).

All science classrooms and labs should have exhaust fans.

TECHNOLOGY (2) Voice Over Internet Protocol (VOIP) phone ports over network backbone, one on each side of front teaching wall.

School intercom is programmed through the VOIP: integrated intercom/phone system allowing calls to be placed to the office, other locations on campus, and outside numbers; system should allow restriction and documentation of long distance calls.

Wireless computer connection to local area network, school network, and district-wide network. Wireless Access Point (WAP) on each floor of each building, confirm total coverage.

(4) power and data outlets per student lab station.

District approved recessed floor box with (2) data ports at front of room in teacher's station.

ACCESS Adjacent to prep room. Access to emergency shower.

Direct from main circulation; if doors are interior, solid core wood doors with 6" x 20" maximum vision panel and swing-free lever hardware with standard Schlage cylinders.

Primary exterior classroom doors are to be hollow metal, with no vision panel, and with swing-free lever hardware and standard Schlage cylinders.

If classroom has a secondary exterior exit door, it is to be hollow metal, have no vision panel, have ADA panic hardware only on the inside and ADA exterior pull with no key lock on the outside.

All doors to have wall mounted rubber type bumpers with appropriate backing to protect the walls from the door handle.

FURNITURE/EQUIPMENT

3' x 5' 36" high movable science lab tables with black chemical resistant epoxy resin tops. Demonstration table, 12' long minimum, should be positioned where students could either congregate or turn from seats to see.

(1) Fire blanket and fire extinguisher (break glass enclosure) at end of demonstration table and (1) at opposite end of room.

Goggle sanitizer in which goggles are displayed.

Eye wash, which should not interfere with sink usage. All sinks to be drop-in, integral epoxy.

Integrated clock program system: wall-mounted electric clock tied into central clock program system that synchronizes times throughout the school and allows for class change chimes or bells; a variety of pleasant sounds should be available from which the school can choose.

Ceiling mounted projector with capability to rotate and project onto different walls in the classroom. Projector to be wired to the data ports at teacher's desk to allow display of information from teacher's computer. Control of projector to be wall-mounted.

Provide interior sign at door to be two-color etched plastic with brail, as required by code, indicating the general name of the space, with a slot to insert a paper nameplate. All signs are to be mechanically attached to the wall with vandal-resistant fasteners.

Provide (1) Fume Hood station for lab experiments.

COMMENTS

Ability to transition from classroom to lab setting, preferably both at once, tables with chemical resistant resin tops to be used rather than individual desks; do not use casework peninsula lab stations.

For safety standards, refer to Flinn Scientific Standards.

Provide main shut-off for classroom gas, air, water, and electricity at or near the demonstration table.

Design room for minimum (35) students or a maximum of 40 students classroom, no more than (6) students per lab station.

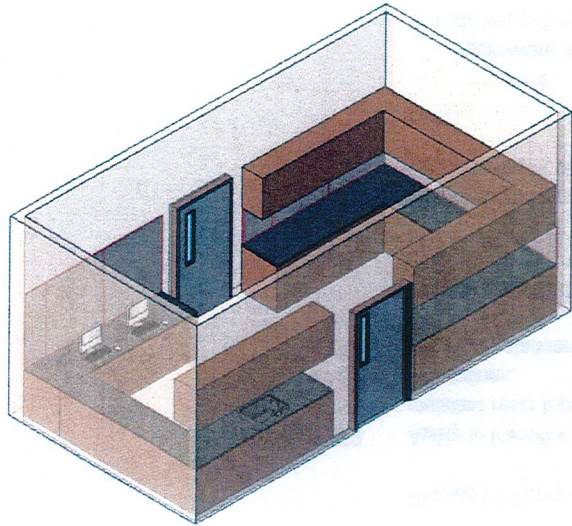
Utilities not to be location on lab working surfaces, rather locate on adjacent walls above working surface.

Place glassware drying rack above each perimeter sink.

Provide key cabinet, verify which casework is individually locked.



GENERAL SCIENCE PREP ROOM



ACTIVITIES	Dedicated to staff use for storage and preparation of science lab materials.
ATMOSPHERE	Bright, orderly, clean!
WALLS	5/8" thick type -"X" high impact gypsum wall board, with level 5 smooth finish, painted neutral color with eggshell acrylic finish.
FLOORING	Chemical resistant rubber. Provide a two- or three-color basic floor pattern to be approved by the District. Sheet goods may be used with the permission of the District.
CEILING	2' x 4' suspended grid acoustic lay-in tiles or painted gypsum board, 10' high minimum.
DAYLIGHT	Windows are not required in this space.
WRITING SURFACES	No writing surfaces required in this space.
ACOUSTICAL TREATMENT	Acoustical batt wall sound insulation in all interior walls (blown in may be used at existing walls). Walls to have 35dB with material assemblies that meet an STC rating of STC 60.
DISPLAY SPACE	Vinyl wrapped tackable wall board (4' x 10' or 4' x 12' sheet, typical) mounted mounted full wall height. Vertical seams to be the wrapped edges of board, no exposed edges all edges to be wrapped. All walls to have vinyl wrapped tackable wall board where applicable.
CABINETRY	All casework to be Woodwork Institute (WI) Lab Grade Premium plywood case, frames, doors, and drawer faces, with full extension institutional drawer glides. 2' deep perimeter counters with lockable upper and lower cabinets, resin topped counters, typical. (2) microscope balance cabinets 4' wide x 8' high, with shelves at 14". Space for glassware, dishwasher and full size refrigerator-freezer with ice maker..
ELECTRICAL	(3) 120V utility electrical duplex outlets minimum per wall above counter at casework area, service for dishwasher, under counter refrigerator. Lighting to meet CHPS general mode classroom lighting level of 35 - 50 footcandles at desk.
PLUMBING	(2) single compartment sinks with strainers and anti-clog traps; water line to dishwasher and icemaker.
MECHANICAL	Emergency combo eye wash/shower with 24" x 24" grate with drain to capture the 50 gallons

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GENERAL SCIENCE PREP ROOM

	<p>of water the shower emits.</p> <p>(2) gas outlets.</p> <p>Provide ventilation Exhaust fan for room and required equipment.</p>
TECHNOLOGY	<p>School intercom, programmed through the VOIP: integrated intercom/phone system allowing calls to be placed to the office, other locations on campus, and outside numbers; system should allow restriction and documentation of long distance calls.</p> <p>Wireless computer connection to local area network, school network, and district-wide network. Wireless Access Point (WAP) on each floor of each building, confirm total coverage.</p> <p>(2) computer stations with (2) data ports.</p>
ACCESS	<p>Direct to general science labs.</p> <p>Solid core wood doors with swing-free lever hardware with standard Schlage cylinders.</p> <p>All doors to have wall mounted rubber type bumpers with appropriate backing to protect the walls from the door handle.</p>
FURNITURE/EQUIPMENT	<p>Space for glassware, dishwasher and full size refrigerator-freezer with ice maker..</p> <p>Provide Fume Hood equipment chemical preparation.</p> <p>Provide interior sign at door to be two-color etched plastic with brail, as required by code, indicating the general name of the space, with a slot to insert a paper nameplate. All signs are to be mechanically attached to the wall with vandal-resistant fasteners.</p>
COMMENTS	<p>(1) prep room to include 'grow lights' above one counter, (1) prep room to allow space for (2) students to pursue a year-long research project at individual workstations.</p> <p>Chemical storage cabinets will be in a separate room and exhausted adjacent to prep room per CBC.</p> <p>For safety standards, refer to Flinn Scientific Standards.</p> <p>One prep room can service two science classrooms or lab spaces.</p> <p>District attempting to move to prepackaged lab kits</p>

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CHEMISTRY LAB



General Science Lab specifications apply; exceptions in the following categories do not preclude compliance with other remaining building components, adjacencies and other requirements:

ACTIVITIES	Academic and laboratory instruction in chemistry.
ATMOSPHERE	Bright, clinical, safe, fun!
CEILING	2' x 4' suspended grid acoustic lay-in tiles, 10' high minimum.
PLUMBING	District Standard modular classroom operable window system with low-E laminated clear glass.
	(1) single compartment sink with strainers and anti-clog traps at demonstration table and (1) single compartment sink per lab station.
	Eye wash with body spray at demo station with grating and drain well to capture large amounts of water from wash station.
	Deluge shower.
MECHANICAL	District Standard HVAC system. Provide Energy Management System (EMS). Entire school HVAC to be able to be shut down from a single location for "Shelter in Place" events (through the EMS).

CHEMISTRY PREP ROOM

General Science Prep Room specifications apply; exceptions in the following categories do not preclude compliance with other remaining building components, adjacencies and other requirements:

CABINETRY All casework to be Woodwork Institute (WI) Lab Grade Premium plywood case, frames, doors, and drawer faces, with full extension institutional drawer glides.

2' deep perimeter counters with lockable upper and lower cabinets, resin topped counters, typical.

Chemical storage cabinets will be in a separate room and exhausted adjacent to prep room per CBC.

Space for glassware, dishwasher and full size refrigerator-freezer with ice maker.

(2) microscope balance cabinets 4' wide x 8' high, with shelves at 14".

COMMENTS Prep room to allow space for (2) students to pursue a year-long research project at individual workstations.

Chemical storage cabinets with venting will be in a separate room adjacent to prep room per CBC. Certain quantities of chemical storage rooms may require additional fire rated construction.

For safety standards, refer to Flinn Scientific Standards.

