Focus Option Educational Specification
Benson Polytechnic High School
July 31, 2017

bassetti architects

PPS

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*This BPHS Focus Option Educational Specification room data sheets provide information about spaces that are unique or specific to the Benson Polytechnic program. For spaces that are listed in the program summary and not included here, refer to the PPS Comprehensive High School Education Specification for information.

1. INTRODUCTION

EXECUTIVE SUMMARY

"Within an environment that fosters diversity, Benson's mission is to integrate hands-on career technical education and core academics today for the innovations of tomorrow."

Benson Polytechnic High School Mission Statement

The goal of this report is to create an educational specification that describes the physical environment in which the academic, hands-on Career Technical Educational (CTE) programs and other supporting athletic and performing arts programs are to be conducted. Bassetti has created the educational specification from feedback in teacher meetings and Master Planning Committee (MPC) meetings. The MPC consists of staff, parents, students, business partners, and alumni that represent the broad range of stakeholders at Benson Tech High School.

School buildings make a statement as to how the community regards education. Benson Tech High School should provide a positive image for the staff, students and community to feel proud of. It should be a place of learning primarily for the students, but also for the community. The educational specification has been documented to reflect future trends in education and district planned programs. Benson Tech High School will be designed for a capacity of 1,700 students.

The educational specifications are to be used as a management tool for design and cost control. The report has been broken down into each space that is required for the renovated/new high school. Some general spaces refer back to the PPS Comprehensive Education Specification and are noted as such in the program summary. All graphic diagrams are not to be considered as design solutions.

BACKGROUND[1]

Benson Polytechnic High School is Portland, Oregon's premier four-year career-technical education focus high school, building on a history that spans nearly 100 years. Benson Polytechnic High School offers the academic rigor and the practical training that prepares students for college and the highly skilled, highly paid 21st-century work force. The 9-acre campus is situated in Portland's inner east side commercial area.

Benson Tech is among the most diverse high schools in the Northwest, with equal numbers of white, Latino, African-American, and Asian American students. BPHS fosters an environment of mutual respect and understanding that prepare students to excel in global society.

Freshmen and sophomores are enrolled in a rotation of career/technical exploratory courses. Freshmen have eight quarter rotations, and sophomores have four semester rotations. After exploring a variety of classes, juniors will select one of the three career academies and a major focus within the academy. All Benson career/technology majors provide students with the opportunity to earn community college credit. Students will also participate in rigorous college preparatory academic courses and rich career experiences. The academy and major options are as follows:

Arts and Communications Technology Academy
- Radio Broadcasting KBPS
- Digital Media Production Health Science Academy

Medical Professions
- Nursing
- Dental

Industry and Engineering Academy
- Manufacturing Technology
- Automotive/Aviation Technology

+ Building Construction Technology
+ Electrical Technology
+ Architectural Design
+ Computer Engineering

ACKNOWLEDGEMENT

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Special thanks to the BPHS staff and department representatives:

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Megan Hill	SPED	Peter Harley	Electric CTE
Stephanie Schiavo	SPED	Brian Gerber	Engineering and Manufacturing CTE
Julie Morris	Library	Nicole Kennedy	Health Occupations CTE
Monty Catabay	PE	JaNae Jamison	Health Occupations CTE
Michelle Cvitanich	PE	Lesley Keith	Health Occupations CTE
Linda McLellan	PE	Barth Clooten	Manufacturing CTE
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Bret Anderson	Automotive & Aviation CTE	Matt Pellico	Robotics

Special thanks to the MPC members:

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Bryan Smith	Teacher
Richard (Dick) Spies	Alumni, Program and/or Site Use Partners
Lisa White	Boosters, Parents/PTA/PTSA
Curtis Wilson Jr.	BPHS Principal

[1] Background text cited from Benson 2017/18 Course Guide (http://www.bensonhs.pps.k12.or.us/files/course-guide/Benson_Courseguide_2017-18.pdf) and PPS website (https://www.pps.net/domain/1913)

Benson Polytechnic High School
Program Summary

Program Space	Teaching Stations			Total (SF)
Academic Programs	48			51,760
CTE Programs	45			111,724
Other Programs	0			3,800
Fine & Performing Arts	0			22,381
PE/Athletics	5			43,195
Education Support	0			47,200
Wrap-Around Services	0			5,155
Space Totals				285,215
Circulation & Walls (Approx. 29 - 32%)		82,918	-	90,921
GRAND TOTAL RANGE*	**98**	**368,133**	**-**	**376,136**

*Area total provided is a target based on information gathered from Benson Tech staff, administration and equipment surveys. Final building area to be determined in design, and may vary based on extent of work and existing conditions.

Program Space	Teaching Stations	Quantity	Area (SF)	Total (SF)	Refer to PPS Comprehensive Ed Spec for Room Data
Academic Learning Communities					
Academic Classrooms				*25,000*	
General Classrooms	28	28	850	23,800	
Small Classrooms	2	2	600	1,200	
Specialized Classrooms				*12,900*	
Science	9	9	1,300	11,700	
Prep w/ Chemical Storage		3	200	600	
ELL	1	1	600	600	Y
SPED				*5,610*	
Low Intensity Classroom	8	8	600	4,800	
Speech Pathologist Office		3	100	300	Y
Psychologist Office		3	120	360	Y
Conference Room		1	150	150	Y
Academic Support Spaces				*8,250*	
Flexible Learning Areas		5	900	4,500	
Academic Teacher Planning		5	600	3,000	
Academic Conference Rooms		5	150	750	
Academic Programs	**48**			**51,760**	
CTE Programs					
Design and Applied Arts				*3,110*	
2D Art Lab	1	1	1,200	1,200	
3D Art Lab	1	1	1,500	1,500	
Kiln Room		1	100	100	
Art Storage Room		1	160	160	
Teacher Planning		2	75	150	
Outdoor Work Area				500	
Architectural Design				*4,360*	
Freshman Drafting Classroom	1	1	980	980	
Sophomore Drafting Lab	1	1	980	980	
Junior/Senior Architecture Lab	1	1	1,200	2,025	
Pin-Up/Presentation/Small Classroom		1	600	incl. above	
Plot/Print/Layout Room		1	225	incl. above	
Storage		1	150	150	
Teacher Planning		3	75	225	
Automotive & Aviation				*22,160*	
Freshman Classroom	1	1	2,000	2,000	
Sophomore Shop	2	2	2,000	4,000	
Junior/Senior Shop	1	1	4,000	4,000	
Junior/Senior - Diesel Shop	1	1	4,000	4,000	
Small Classroom (Shop Support)		4	600	2,400	
Equipment and Tool Storage		2	1,200	2,400	
Outdoor Storage		3	120	360	
Teacher Planning		4	75	300	
Outdoor Work Area				1,500	
Aviation Design Shop	1	1	2,000	2,000	
Aviation Testing Lab		1	300	300	
Aviation Storage		1	400	400	
Computer Engineering				*4,725*	
Freshman Lab	1	1	1,200	1,200	
Sophomore Lab	1	1	1,200	1,200	
Junior/Senior Lab	1	1	1,800	1,800	
Storage		1	150	150	
Server Closet		1	150	150	
Teacher Planning		3	75	225	
Construction				*9,275*	
Sophomore Shop	1	1	2,000	2,000	
Junior/Senior Shop	1	1	4,500	4,500	

Program Space	Teaching Stations	Quantity	Area (SF)	Total (SF)	Refer to PPS Comprehensive Ed Spec for Room Data
Loading/Storage		2	200	400	
Small Classroom (Shop Support)		1	600	600	
Tool Storage		2	400	800	
Material Storage		2	300	600	
Teacher Planning (includes Math Tech)		5	75	375	
Outdoor Loading				1,000	
Outdoor Work Area				2,000	
Construction: Math Technology				*5,000*	
Large Classroom	1	1	1,200	1,200	
Sophomore Lab - Algebra	1	1	1,200	1,200	
Freshman Shop - Geometry	1	1	2,000	2,000	
Tool Storage		1	200	200	
Material Storage		1	400	400	
Outdoor Work Area				750	
Digital Media				*7,160*	
Freshman Classroom	1	1	850	850	
Sophomore Classroom	1	1	850	850	
Photo/Web Lab	1	1	1,200	1,500	
Printing/Plotting/Layout		1	300	incl. above	
Video/Graphic Design Lab	1	1	1,200	1,200	
Video/Sound Studio		1	600	600	
Photo Prep		1	460	460	
Studio/Presentation		1	600	600	
Storage		4	200	800	
Teacher Planning		4	75	300	
Electrical				*9,900*	
Freshman Shop	1	1	1,800	1,800	
Sophomore Shop	1	1	1,800	1,800	
Junior - Res/Comm Elec Shop	1	1	1,800	1,800	
Senior - Automation Shop	1	1	2,400	2,400	
Small Classroom (Shop Support)		1	600	600	
Storage		4	300	1,200	
Teacher Planning		4	75	300	
Engineering				*4,985*	
Classroom / Design Lab	2	2	980	1,960	
Fabrication Lab	1	1	2,000	2,000	
Storage		2	400	800	
Teacher Planning		3	75	225	
Health Occupations				*11,880*	
Freshman Classroom	2	2	850	1,700	
Anatomy Lab	1	1	1,300	1,300	
Anatomy Lab Prep		1	100	100	
Nursing Lab	1	1	1,500	1,500	
Sterilization Room		1	150	150	
Medical Lab	1	1	1,200	1,200	
Medical Scenario Clinic		1	750	750	
Medical Sim Lab		1	600	600	
Dental Lab	1	1	1,500	1,500	
First Responder Classroom	1	1	980	980	
Storage		4	150	600	
Extended Learning Area		1	900	900	
Conference Room		1	150	150	
Teacher Planning		6	75	450	
Manufacturing				*23,460*	
Freshman Shop	1	1	2,500	2,500	
Sophomore/Junior - Metals Shop	1	1	5,000	5,000	
Senior - Machining Shop	1	1	5,000	5,000	
Foundry Shop	1	1	2,592	2,592	
Pattern Making Shop	1	1	4,293	4,293	
Small Classroom (Shop Support)		2	600	1,200	
Storage		4	300	1,200	
Teacher Planning		5	75	375	
Computer Design Lab		2	600	1,200	
Flammable Storage		1	100	100	

Program Space	Teaching Stations	Quantity	Area (SF)	Total (SF)	Refer to PPS Comprehensive Ed Spec for Room Data
Radio				*5,709*	
Small Classroom[1]	2	2	550	1,100	
Classroom	1	1	850	850	
AM Radio Air Booth[1]		1	115	115	
AM Radio Production[1]		1	146	146	
AM Studio / Digital Station[1]		1	254	254	
Comm Tech TV / Digital Media Studio[1]		1	412	412	
Comm Tech Office / Streaming Station[1]		1	165	165	
Comm Tech Control Room[1]		1	264	264	
Listening Room[1]		4	60	240	
Lobby/Reception[1]		1	487	487	
Conference Room[1]		1	225	225	
Engineering Office[1]		1	90	90	
IT Office[1]		1	72	72	
Storage Closet[1]		2	25	50	
Storage[1]		1	879	879	
Teacher Planning[1]		3	120	360	
CTE Programs	**45**			**111,724**	
Other Programs					
Maker Space / Robotics		1	1,400	1,400	
After School Space		2	600	1,200	Y
Community Room/Alumni/Boosters		1	1,200	1,200	
Other Programs				**3,800**	
Performing Arts					
Theater Arts				*18,881*	
Theater[1]		1	13,122	13,122	
Stage[1]		1	3,500	3,500	Y
Laundry		1	150	150	Y
Control Room		1	190	190	Y
Box Office[1]		1	78	78	Y
Concessions[1]		1	61	61	
Equipment Storage		1	120	120	Y
Lighting Storage		1	100	100	Y
Costume Storage		1	400	400	Y
Make-Up		1	400	400	Y
Boy's Dressing & Toilet		1	380	380	Y
Girl's Dressing & Toilet		1	380	380	Y
Music Arts				*3,500*	
Multi-Use/Green Room/Music		1	2,400	2,400	
Small Practice Room		2	100	200	Y
Large Practice Room		1	300	300	Y
Instrument Storage		3	200	600	Y
Fine & Performing Arts				**22,381**	
PE/Athletics					
Gymnasium[1]	2	1	14,107	14,107	Y
Auxiliary Gym with Indoor Track1	1	1	10,505	10,505	
Wrestling/Mat Room[1]		1	2,505	2,505	Y
Weight Room[1]		1	3,148	3,148	Y
Circuit	1	1	1,500	1,500	
Cardio	1	1	1,500	1,500	
Boy's PE Coach Office/Toilet/Shower/Locker		1	300	300	Y
Girl's PE Coach Office/Toilet/Shower/Locker		1	300	300	Y
Boy's Locker Room/Shower		1	1,900	1,900	Y
Girl's Locker Room/Shower		1	1,900	1,900	Y
Gender Neutral Toilet/Shower		1	150	150	Y

Program Space	Teaching Stations	Quantity	Area (SF)	Total (SF)	Refer to PPS Comprehensive Ed Spec for Room Data
PE Storage		2	200	400	Y
Training Room		1	580	580	Y
School Team Room		2	800	1,600	Y
Athletic Storage - Uniform/Equipment		1	1,000	1,000	Y
Athletic Storage - Field Equipment		1	1,000	1,000	Y
Athletic Storage - Small		1	500	500	Y
Concessions		1	100	100	Y
Laundry Room		1	200	200	Y
PE/Athletics	**5**			**43,195**	
Education Support					
Administration				*4,420*	
Reception/Lobby/Waiting		2	400	800	Y
Principal's Office		1	400	400	Y
Principal's Secretary		1	125	125	Y
Vice Principal's Office		2	200	400	Y
Vice Principal's Secretary		2	125	250	Y
Dean of Students		1	200	200	Y
Attendance		1	200	200	Y
Bookkeeper/Manager		1	200	200	Y
Resource Officer		1	300	300	Y
Restrooms		2	60	120	Y
Records Storage		1	200	200	Y
Office Storage		1	125	125	Y
Workroom/Mail/delivery Process Center		1	300	300	Y
Staff Lounge		1	500	500	Y
Conference Room		2	150	300	Y
Counseling/Career [1]				*2,630*	
Counseling Offices		6	120	720	Y
Counseling Secretary/Waiting		1	400	400	Y
Conference Room - Large		1	240	240	Y
Conference Room - Medium		1	150	150	Y
Career Center		1	700	700	Y
Career Counselor		1	120	120	Y
Secure Records storage		1	180	180	Y
Restroom		2	60	120	Y
Student Activities				*470*	
Athletic Director		1	150	150	Y
AD Support Staff		1	120	120	Y
Student Government		1	200	200	Y
Technology Access				*2,780*	
Computer Lab - Large		2	1,100	2,200	
Computer Lab - Small		1	580	580	
Student Center				*14,730*	
Commons		1	10,000	10,000	Y
Main Servery		1	1,700	1,700	Y
Food Prep/Kitchen		1	1,500	1,500	Y
Dish Washing		1	200	200	Y
Dry Storage/Cart Storage		1	500	500	Y
Cooler		1	200	200	Y
Freezer		1	200	200	Y
Office		1	120	120	Y
Restroom		1	60	60	Y
Table Storage		1	250	250	Y
Media Center/Library [1]				*9,550*	
Library		1	6,000	6,000	Y
Office		2	120	240	Y
Workroom		1	200	200	Y
Text Storage		1	1,100	1,100	Y
Collaboration Space		1	400	400	Y
Multi-use Room		3	150	450	Y
IT Repair/Tech Coordinator		1	180	180	Y
Library Classroom		1	980	980	Y

Program Space	Teaching Stations	Quantity	Area (SF)		Total (SF)	Refer to PPS Comprehensive Ed Spec for Room Data
Custodial					*3,650*	
Custodial Office		1	250		250	Y
Custodial Rooms		7	100		700	Y
Receiving		1	200		200	Y
Building Storage		1	2,000		2,000	Y
Material Storage		1	500		500	Y
Miscellaneous					*8,970*	
Lobby[1]		1	1,000		1,000	
Student Lockers[2]		850	1		850	Y
Boy's Restroom		6	250		1,500	Y
Girl's Restroom		6	250		1,500	Y
Gender Neutral Restroom		11	60		660	Y
Boiler Room		1	1,200		1,200	Y
MDF		1	200		200	Y
IDF		10	100		1,000	Y
Main Electrical Room		1	240		240	Y
Sub-Electrical Room		5	80		400	Y
Fire Pump Room		1	100		100	Y
Elevator Machine Room		4	80		320	Y
Education Support					**47,200**	
Wrap-Around Services						
Wellness Center					*1,575*	
Lobby/Waiting		1	400		400	
Office - Social Worker		1	80		80	
Office - OHSU Family Medicine		1	150		150	
Exam Room		2	130		260	
Mental Health/Therapy Room		1	200		200	
Laboratory (Clean/Dirty)		1	65		65	
Restroom		1	60		60	
Nurse Office		1	80		260	
Sick Room		1	120		incl. above	
Sick Toilet		1	60		incl. above	
Storage		1	100		100	
Teen Parent					*2,180*	
Infant Room		1	500		500	Y
Breastfeeding Room		1	60		60	Y
Toddler Room		1	500		500	Y
Crawler Room		1	500		500	Y
Restroom		1	60		60	Y
Changing Area		1	60		60	Y
Nap Area		1	200		200	Y
Storage/Kitchen		1	300		300	Y
Other					*1,400*	
Food Pantry		1	200		200	Y
Food/Clothes Closet		1	1,200		1,200	Y
Wrap-Around Services					**5,155**	
Space Totals					285,215	
Circulation & Walls (Approx. 29 - 32%)			82,918	-	90,921	
GRAND TOTAL RANGE[3]	**98**		**368,133**	**-**	**376,136**	

[1] Existing location and general size to remain.

[2] Assumes double lockers will be used, so total locker count will be double the area total, which equals one locker per student.

[3] Area total provided is a target based on information gathered from Benson Tech staff, administration and equipment surveys. Final building area to be determined in design, and may vary based on extent of work and existing conditions.

Benson Polytechnic High School
Utilization Calculations

	BPHS Proposed Program @ 1,700 Student Design Capacity with Academic Teacher Planning (85% CR Utilization)							
	TS	*	Util	*	Students per Classroom Range		= Stud - low	Stud - high
General Classroom	28		85%		25	30	595	714
General Small Classroom	2		75%		10	20	15	30
Academic Teacher Planning	0		75%		10	20	0	0
Science Lab	9		75%		20	30	135	203
Career Technical Ed (CTE) Labs/Shops	34		75%		15	21	383	536
Career Technical Ed (CTE) Classrooms	11		75%		15	21	124	173
PE/Athletics	5		75%		25	30	94	113
Special Education & ELL	9		75%		5	15	34	101
Total	**98**						**1,379**	**1,869**

	BPHS Proposed Program @ 1,700 Student Design Capacity without Academic Teacher Planning (75% CR Utilization)							
	TS	*	Util	*	Students per Classroom Range		= Stud - low	Stud - high
General Classroom	28		75%		25	30	525	630
General Small Classroom	2		75%		10	20	15	30
Academic Teacher Planning Converted to Small CR	5		75%		10	20	38	75
Science Lab	9		75%		20	30	135	203
Career Technical Ed (CTE) Labs/Shops	34		75%		15	21	383	536
Career Technical Ed (CTE) Classrooms	11		75%		15	21	124	173
PE/Athletics	5		75%		25	30	94	113
Special Education & ELL	9		75%		5	15	34	101
Total	**103**						**1,346**	**1,860**

2. ACADEMIC LEARNING COMMUNITY

ACADEMIC LEARNING COMMUNITY

Introduction

In response to District-wide design goals, spaces for learning within the modernized Benson Tech High School will be organized differently from those in most traditional high schools. A wider variety of learning settings will be provided, and these will be arranged in distinct groups, or teams. Each team consists of students and teachers that create a community of learners, a team learning cluster. As small communities within the school, the team clusters will facilitate stable, close, mutually respectful student relationships with adults and peers.

Each team cluster will include spaces appropriate for a greater range of group sizes and learning activities than is typically accommodated. Individual classrooms within the cluster will be flexible to accommodate a variety of learning activities. To the greatest extent possible, furnishings and equipment will be modular and easily reconfigured. Lab spaces in each team cluster will provide the necessary space, storage and utilities for a variety of hands-on activities, including science and other project learning. Openness from classrooms to the extended learning area and to each other, through the use of relites and/or other methods, will be explored to provide further opportunities for team teaching and interdisciplinary learning.

At the heart of each team cluster will be an extended learning area, provided as a common area available to any of the learning settings when needed. This extended learning area space will have resources for a range of activities and group sizes. It will also provide focus and spatial orientation to each cluster, reinforcing the sense of community within each team.

Support spaces for the clusters include: teacher planning, lab prep with chemical storage, toilet rooms, custodial closet, and mechanical and electrical equipment rooms. The shared teacher planning room addresses the need for school facilities to be used as efficiently and effectively as possible. Providing a space where teachers can plan and collaborate allows all classrooms to be fully available for student learning.

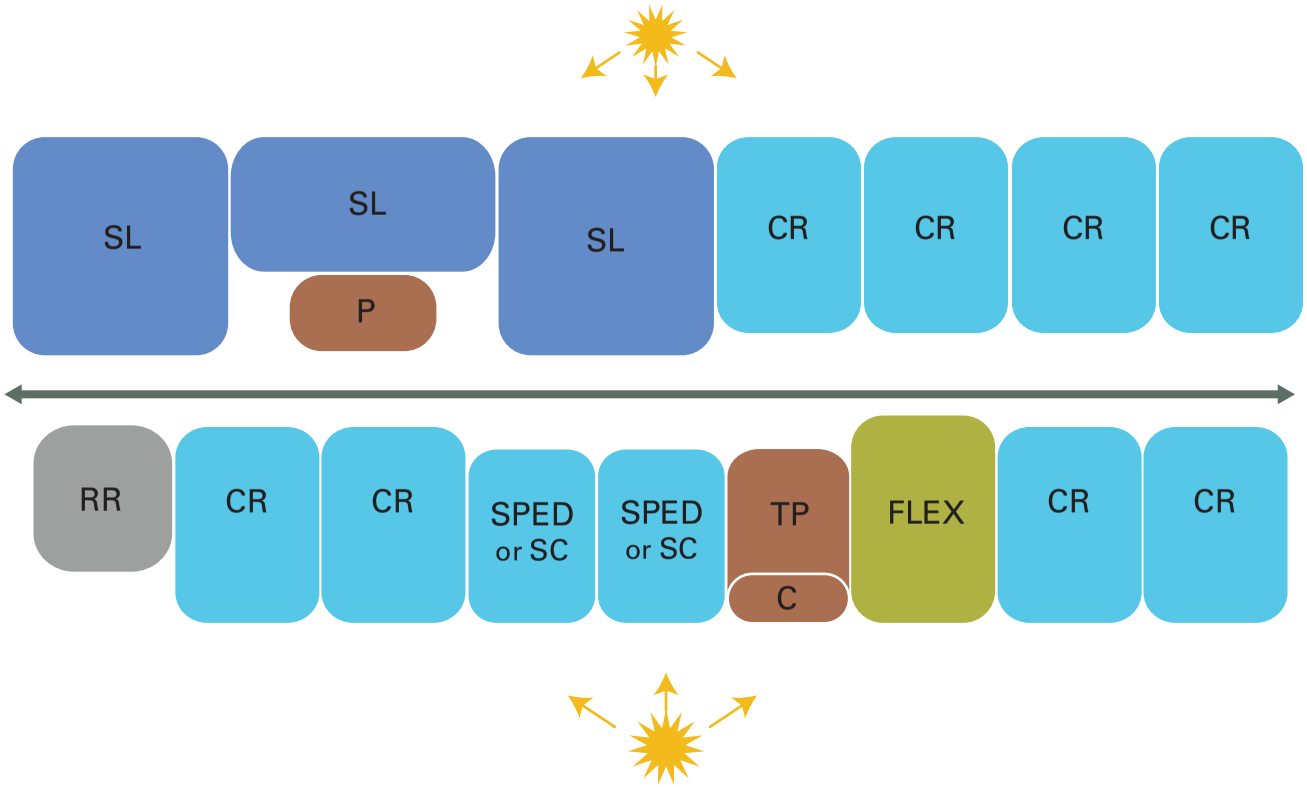
The following rooms are outlined in this document:

Academic Learning Community – General Classroom
Academic Learning Community – Science Lab
Academic Learning Community – Extended Learning Area
Academic Learning Community – Teacher Planning
Academic Learning Community – Lab Prep with Chemical Storage
Academic Learning Community – Conference Room
Academic Learning Community – SPED Room or Small Classroom

Other Program Adjacencies

+ Vertically integrated with CTE programs

ACADEMIC CLASSROOMS / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

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PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: General Classroom

Brief Instructional Objectives:

- Provide classroom space for general areas of study, including Foreign Language, Language Arts, Math, and Social Studies

Users of this Activity Area:

- All students, academic teachers, and staff

Activities Conducted in this Space:

- Presentations by teachers and students, individually and in groups;
- Small and medium group instruction;
- Display of material such as student work;
- Watching DVDs;
- Storing books, teachers' belongings, learning materials;
- Information access and manipulation by computer.

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Other General Classrooms
- Extended Learning Area
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Small Classrooms
- Extended Learning Area
- Science Labs
- CTE Programs
- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 30

Number of Aides (or Volunteers):..... up to 2 depending on program

Meets Daily? ..... Yes

Floor Area ..... 850 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating,

	ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• None required
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board and projection surface (4'x8')....2
Tack Boards:	• On walls where possible (4'x8')....2
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional learning materials. • Student portfolios. • Teacher files and belongings.

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (2 person)....15 • Student chairs....30 • Teacher table....1 • Teacher chair....1
Storage:	• Bookshelves (3 ft. wide, 3 ft. high)....2 • Tall storage cabinets (3 ft. wide, 7 ft. high)....2
Moveable Equipment:	• Mobile Computer Cart....1 • VIOP Telephone....1
Fixed Equipment:	• LCD Display....1 • Short Throw Projector....1

COMMENTS:

- Classroom layout should support team learning. Classrooms should all have easy access to the extended learning area and other shared team spaces.

PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: Science Lab

Brief Instructional Objectives:

- Provide science classrooms that can support varying curriculum over time

Users of this Activity Area:

- All students and science teachers

Activities Conducted in this Space:

- Presentations by teachers and students, individually and in groups
- Small and medium group instruction
- Display of material such as student work
- Supports biology, chemistry, physics, anatomy, physiology, geology, and astronomy curriculums
- Storing books, teachers' belongings, learning materials
- Information access and manipulation by computer
- Lab experiments

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Lab Prep
- Storage
- Teacher Planning
- General Classrooms

Activities that should be NEAR this Activity Area:

- CTE Programs
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 30

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area..... 1,300 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements

and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Low voltage preset controls to allow dimming control of illumination levels and support educational flexibility
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:

- Power via 20 Ampere duplex receptacles set flush in new walls.
- Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
- Power available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity.
- Wireless access points with sufficient density to support student network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- LCD screen for display
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems in all classrooms.
- VOIP telephone capability for staff communication.

Plumbing:

- DI/RO water
- Sinks located at lab perimeter, between peninsulas.....8
- Sink at teacher demonstration station 1
- All sinks in chemistry labs to have acid waste resist piping
- Acid waste pipe to central acid waste neutralization tank
- Eyewash and emergency shower station.....1
- Natural gas spigot at each lab station 8
- Natural gas spigot at teacher demonstration station 1
- Compressed air spigot at teacher demonstration station.....1

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: DOAS with heat recovery, radiant heating and

	cooling
	• Fume hood exhaust where applicable
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board and projection surface (4'x8') 2
Tack Boards:	• On walls where available (4' x 8') 2
Display Case:	•
Other:	• Chemical resistant countertops
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional learning materials. • Student portfolios. • Teacher files and belongings.

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Lab tables (4 person) .....8 • Student chairs .....30 • Teacher table .....1 • Teacher chair .....1 • Teacher fixed demonstration station 1
Storage:	• Cabinets with doors and drawers of various sizes at perimeter, sufficient to meet school specific program requirement • Adjustable shelves in cabinets
Moveable Equipment:	• Mobile Computer Cart .....1 • VIOP Telephone 1
Fixed Equipment:	• LCD Display .....1 • Short Throw Projector 1

COMMENTS:

- Science Labs will be grouped in threes and will share a lab prep
- with chemical storage.
- Lab layout should support team learning. Labs should all have easy access to extended learning area and other shared team spaces.
- Labs should be flexible. Arrangement with perimeter fixed countertops and casework, with movable peninsulas offers a variety of teaching arrangement options.

PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: Extended Learning Area

Brief Instructional Objectives:

- Provide a shared extended learning area within a learning cluster that serves as an extension of the classroom environment

Users of this Activity Area:

- Students and teachers from classrooms around the extended learning area

Activities Conducted in this Space:

- Meetings, small group work, open discussions, etc.
- Space is flexible for a variety of activities

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Teacher Planning

Activities that should be NEAR this Activity Area:

- General Classrooms
- Science Labs
- Small Classroom
- Student Toilets
- Student Lockers

Number of Teachers: ..... multiple, shared space

Number of Students:..... up to 20

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 900 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires

	are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, student research stations, instructor demonstration station, lecture station, and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points with sufficient density to support student network access. • Short throw projector access to both the network and portable HDMI access capability • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems available. • VOIP telephone capability for staff communication.
Plumbing:	• Sink desirable
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation, if provided. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Wainscot
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board and projection surface (4'x8') 1
Tack Boards:	• On wall where available (4'x8') 2
Display Case:	• No requirement.
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Moveable tables and chairs ..... Seating for 20
Storage:	• No requirement
Moveable Equipment:	• VIOP Telephone.....1
Fixed Equipment:	• LCD Display 1
	• Short Throw Projector.....1

COMMENTS:

•

PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: Teacher Planning

Brief Instructional Objectives:

- Provide teachers with a space to collaborate with other teachers and prepare for class

Users of this Activity Area:

- Teachers
- Students when meeting with teachers

Activities Conducted in this Space:

- Class preparation
- Student to teacher meetings at personal desk or small meeting table
- Teacher to teacher meetings at personal desk or small meeting table
- Small Kitchen

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Conference room
- Extended Learning Area
- Small classrooms

Activities that should be NEAR this Activity Area:

- Classrooms
- Science labs
- Restrooms
- Storage

Number of Teachers: ..... Up to 8

Number of Students:..... 0

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 600 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in

	the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at office desk locations • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Additional computer network, data and communication, and telephone communication access capability provided at office desk locations. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• Sink at kitchenette..... 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space.Combine zones per discussions with PPS, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for passive supervision of corridor and extended learning area. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy.
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board adjacent to meeting table (4'x8') 1
Tack Boards:	• On one wall (4'x6') 1
Display Case:	• No requirement
Other:	• P.lam countertop
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional learning materials. • Teacher files and belongings.

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Teacher desk.....8 • Teacher chair.....8 • Small meeting table .....1 • Meeting chairs 4
Storage:	• Upper and lower cabinets at kitchenette • Storage Cabinets (shared).....4
Moveable Equipment:	• All furniture is moveable • Microwave .....1 • VIOP Telephone.....1/teacher
Fixed Equipment:	•
COMMENTS:	•

PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: Lab Prep and Chemical Storage

Brief Instructional Objectives:

- Storage and prep area for science labs

Users of this Activity Area:

- Science Teacher

Activities Conducted in this Space:

- Chemical storage and preparation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Science Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning

Number of Teachers: ..... Shared between 3 teachers

Number of Students:..... 0

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... No

Floor Area ..... 200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- No requirement

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment including fume hoods, glass washers, refrigeration, freezers, and microwave ovens. Positioning of power outlets will be coordinated with the Architectural design. • Power and Data & Communication access capabilities provided at countertops. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• DI/RO water • Sinks with acid waste resist piping ..... 2 • Acid waste pipe to central acid waste neutralization tank • Eye Wash at sinks ..... 2 • Natural gas spigot ..... 3 • Compressed air spigot ..... 3 • Emergency shower 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, local control of dedicated exhaust systems • Thermal System: DOAS with heat recovery, radiant heating and cooling • Fume hood exhaust where applicable
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirement
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4'x8') 1
Tack Boards:	• On walls where available (4'x8') 1
Display Case:	• No requirement

Other:	• Chemical resistant countertops
Items to be Stored in this Space:	• Chemicals • Lab Supplies

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Chair/stool.....3
Storage:	• Robust cabinetry set required with door and drawers of various sizes to meet requirements of lab equipment storage needs • Adjustable shelves in cabinets • Rolling storage/prep cart.....3 • Flammable chemical storage cabinet.....2
Moveable Equipment:	• Autoclave.....1 • Deep freezer.....1
Fixed Equipment:	• Refrigerator..... 1 • Dish Washer..... 1 • Water Purifier.....1

COMMENTS:

•

PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: Conference Room

Brief Instructional Objectives:

- Meeting space for teachers and students

Users of this Activity Area:

- Teachers
- Students

Activities Conducted in this Space:

- Meetings and presentations
- Small group work

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Teacher Planning
- General Classrooms
- Small Classrooms
- Extended Learning Area

Activities that should be NEAR this Activity Area:

- Science labs
- CTE Programs

Number of Teachers: .....shared, up to 8

Number of Students:.....shared, up to 8

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....150

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.

	• 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• None required
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior: Fixed clear glass adjacent to entry door to provide supervision of team space, horizontal mini-blinds; • Exterior: Operable within reach, horizontal mini-blinds.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Carpet/ rubber base
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• At front of room, magnetic (4 x 8) 1
Tack Boards:	• On one wall (4 x 6) 1
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Conference table .....1 • Conference chairs 8
Storage:	• No requirement
Moveable Equipment:	• VIOP Telephone 1
Fixed Equipment:	• LCD Display .....1 • Short Throw Projector 1

COMMENTS:

-

PROGRAM DATA SHEET

ACTIVITY AREA: Academic Learning Community

DESCRIPTION: SPED and Small Classroom

Brief Instructional Objectives:

- Provide a low intensity special education space for smaller groups of students seeking SPED assistance

Users of this Activity Area:

- SPED: Students with autism and ADHD
- General Ed: All students

Activities Conducted in this Space:

- Homework and assignment help
- Small and medium group instruction;
- Student conflict/resolution
- Storing books, teachers' belongings, learning materials;

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Teacher Planning
- Extended Learning Area

Activities that should be NEAR this Activity Area:

- General classrooms
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:.....up to 15 for SPED, up to 20 for General Ed

Number of Aides (or Volunteers):.....up to 2

Meets Daily? .....Yes

Floor Area.....600 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• None required
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

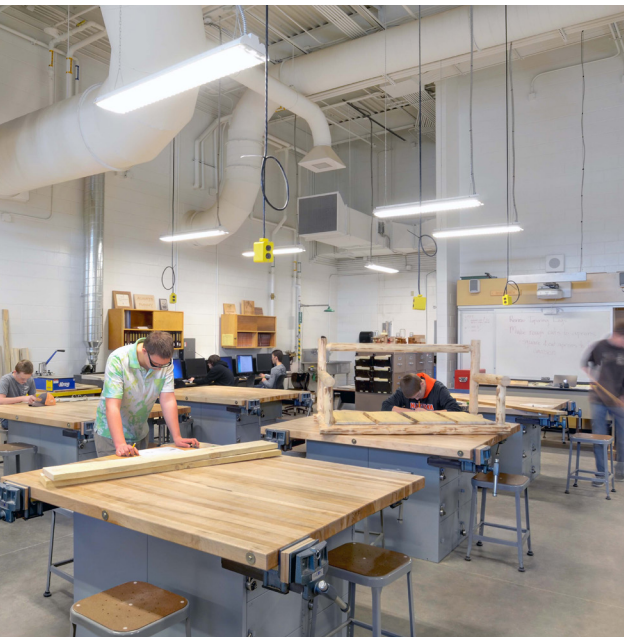
SPECIALTIES:

Casework:	• None required
White Boards:	• Magnetic white board and projection surface (4'x8') 2
Tack Boards:	• On walls where possible (4'x8').....2
Display Case:	• None required
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional learning materials. • Student portfolios. • Teacher files and belongings.

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (2 person).....5 (SPED), 10 (General Ed) • Student chairs.....10 (SPED), 20 (General Ed) • Teacher table .....1 • Teacher chair.....1
Storage	• Bookshelves (3 ft. wide, 3 ft. high).....2 • Tall storage cabinets (3 ft. wide, 7 ft. high) 2
Moveable Equipment:	• Mobile Computer Cart .....1 • VIOP Telephone.....1
Fixed Equipment:	• LCD Display .....1 • Short Throw Projector.....1

COMMENTS:	• Small Classrooms will be paired in twos and will be adjacent to teacher planning within each cluster. • SPED classrooms should not be too near the commons. These rooms prefer a quiet atmosphere that is away from large groups of activity and noise



3. CTE PROGRAMS

DESIGN & APPLIED ARTS CTE PROGRAM

Arts and Communications Technology Academy

Summary

The Design & Applied Arts CTE Program requires two lab spaces to support drawing/sketching/painting within a 2D Lab, and sculpting within a 3D Lab. The 3D Lab also needs an adjacent kiln room and access to outdoor space to allow Raku firing. Storage and Teacher Planning should be provided between the two lab spaces so they can be shared, providing easy access to both spaces, and allowing for teacher supervision of the learning spaces.

The following rooms are outlined in this document:

Design & Applied Arts – 2D Art Lab
Design & Applied Arts – 3D Art Lab
Design & Applied Arts – Kiln Room
Design & Applied Arts – Art Storage Room

Please reference the indicated section for the following rooms:

Teacher Planning – Reference Section 2.4

Other Program Adjacencies

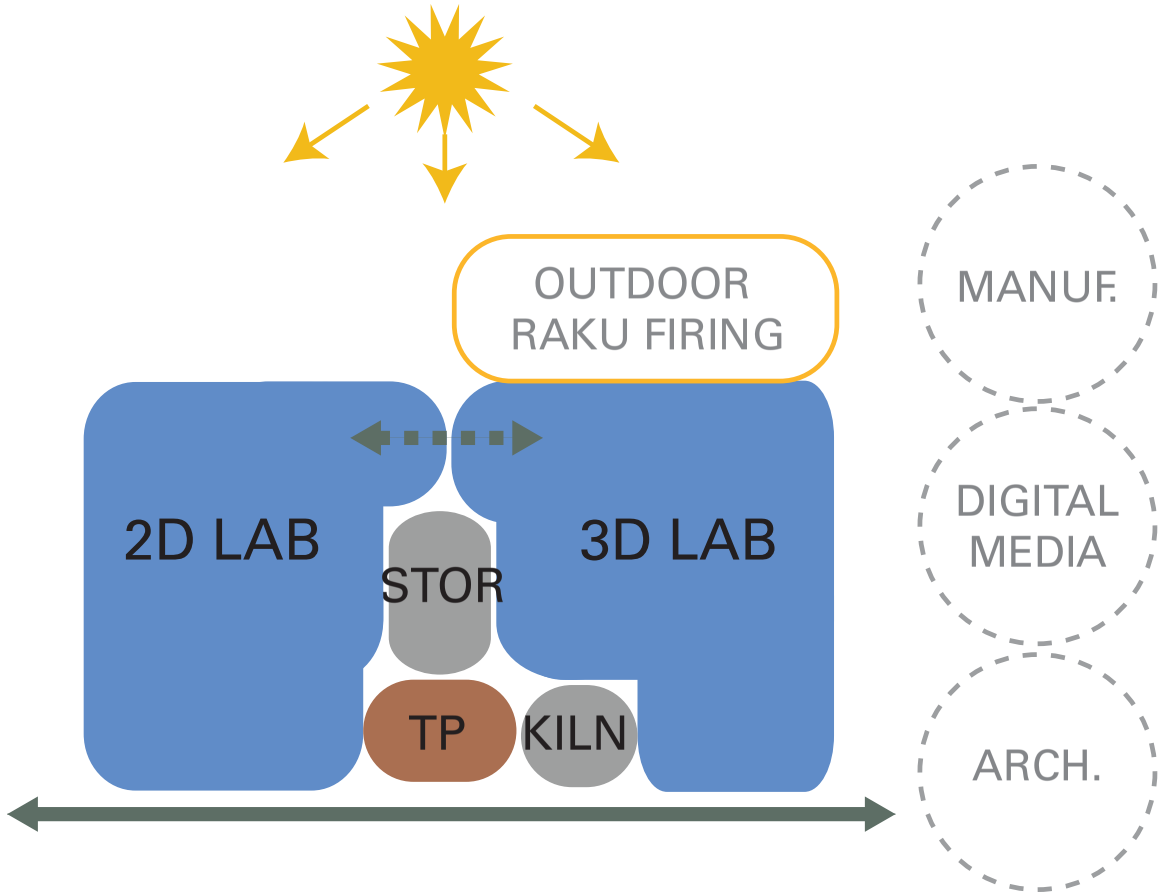
- Manufacturing
- Digital Media
- Architecture
- Construction

Future Trends in the Industry

Due to the need to support a wide range of possibilities for personal expression, the potential trends in Applied Arts are wide and varied. A few examples include:

- Digital Mixed Media
- Virtual Reality
- Kinetic Sculpture (Wood, Metal, etc.)
-

DESIGN & APPLIED ARTS / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

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PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Design & Applied Arts

DESCRIPTION: 2D Art Lab

Brief Instructional Objectives:

- Students explore creativity, design, and craftsmanship through a variety of two-dimensional media. In advanced classes, students explore principles of design and idea development.

Users of this Activity Area:

- Freshman
- Sophomore
- Junior
- Senior

Activities Conducted in this Space:

- Drawing and painting through charcoal, ink, colored pencil, oil pastel, watercolor, gouache, tempera, collage, and mixed media.
- Digital design, including 3D printing
- Display and review of instructional materials and student work

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- 3D Art Lab
- Teacher Planning
- Art Storage Room
- Student Display

Activities that should be NEAR this Activity Area:

- Restrooms
- Student Lockers

Number of Teachers: 1

Number of Students:..... Intro classes = up to 30 students
Intermediate/Advanced classes = 10-15 students

Number of Aides (or Volunteers):..... 1 student teacher

Meets Daily? ..... Yes

Floor Area ..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.

	• Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • The relay lighting is controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided. • VOIP telephone capability for staff communication.
Plumbing:	• Utility Sinks (Wall mounted, 3-basin) 2
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0"

- Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board and projection surface (4'x8') 2
Tack Boards:	• Covering all walls where possible
Display Case:	• Display case in hallway or near front entrance to advertise department
Other:	•
Items to be Stored in this Space:	• Art Supplies • Cleaning Supplies • Paper

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Workstation tables.....15 (2 students/table) • Chairs.....30 • 3D printing workstation tables.....2 • Teacher desk.....1 • Teacher chair.....1
Storage:	• Large format (42'x36" preferred) flat paper storage .....1 • Cabinets with doors and drawers of various sizes .....multiple • Cabinets with open shelves.....multiple
Moveable Equipment:	• Refer to equipment list for details
Fixed Equipment:	• 3D printers with computers.....2 • LCD screen .....1 • Short Throw Projector .....1 • Refer to equipment list for details

COMMENTS:

- Transparency to hallway is desired

ACTIVITY AREA: Design & Applied Arts

DESCRIPTION: 3D Art Lab

Brief Instructional Objectives:

- Students will explore sculpture, creating 3D works through clay, architecture works, industrial design, and mixed media nature works. In advanced classes, students focus on sculpture with a strong emphasis on industrial design, product design and manufacturing, and modern art design.

Users of this Activity Area:

- Freshman
- Sophomore
- Junior
- Senior

Activities Conducted in this Space:

- 3D art – ceramics, sculpture
- Digital AV Instruction
- Wax cooking
- Display of instructional materials and student work

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- 2D Art Lab
- Teacher Planning
- Art Storage Room
- Student Display
- Kiln Room
- Outdoor work area

Activities that should be NEAR this Activity Area:

- Restrooms
- Student Lockers

Number of Teachers: 1

Number of Students:..... Intro classes = up to 30 students
Intermediate/Advanced classes = 10-15 students

Number of Aides (or Volunteers):..... 1 student teacher

Meets Daily? ..... Yes

Floor Area..... 1,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.

	• Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation and note taking during screen viewing. • Display lighting.
Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power computing devices and equipment • Wifi provided within room • Wall projector at teaching wall • Power requirement for pug mill
Plumbing:	• Utility Sinks with clay traps (Wall mounted, 3-basin).....2
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling • Specialized Systems: Exhaust for wax cooking
Doors and Hardware:	• Exterior door for outdoor work area
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9’-0” • Maximum: 12’-0”

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards preferred. • Provide floor drains with plaster traps, if feasible
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash • FRP panel or wall finish at pottery wheels and pug mill
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4’x8’).....2
Tack Boards:	• Covering all walls where possible
Display Case:	• Display case in hallway or near front entrance to advertise department
Other:	•

Items to be Stored in this Space:	• Ceramic wheels • Art Supplies • Cleaning Supplies • Pug Mill

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Workstation tables.....15 (2 students/table) • Prep table.....1 • Chairs.....30 • Teacher desk.....1 • Teacher chair.....1
Storage:	• Open shelving/racks for ceramic pieces in process (4'x2') .....8 • Bookshelf (1' x 3') 2
Moveable Equipment:	• Ceramic Wheels.....6 • Pug Mill.....1 • Slab Roller • Refer to equipment list for details
Fixed Equipment:	• Wall projector • Refer to equipment list for details

COMMENTS:

- Outdoor access provided for Raku firing
- Transparency to hallway is desired

ACTIVITY AREA: Design & Applied Arts

DESCRIPTION: Kiln Room

Brief Instructional Objectives:

- Provide dedicated space to support clay and ceramic preparation and finishing needs of 3D Lab

Users of this Activity Area:

- Instructors

Activities Conducted in this Space:

- Ceramic firing
- Clay preparation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- 3D Art Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Art Storage Room

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....100 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• No requirements
Lighting:	• LED lighting with occupancy sensor for energy conservation
Power/ Communications:	• Power requirements for kilns • Power outlets provided and spaced sufficiently at perimeter of room
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling • Specialized Systems: Exhaust for kilns
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements

Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards preferred. • Provide floor drains with plaster traps, if feasible
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Gypsum board hard ceiling / paint or exposed structure.

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	• Stainless steel countertops
Items to be Stored in this Space:	• Kilns

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• None
Storage:	• Open shelving (18" deep)
Moveable Equipment:	• None
Fixed Equipment:	• Kilns .....3 • Refer to equipment list for details

COMMENTS:

ACTIVITY AREA: Design & Applied Arts

DESCRIPTION: Art Storage Room

Brief Instructional Objectives:

- Provide support space to 2D and 3D Labs for storage of art materials

Users of this Activity Area:

- Instructors

Activities Conducted in this Space:

- Storage of materials, art supplies, and projects

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- 3D Art Lab
- 2D Art Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Kiln Room

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....160 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• No requirements
Lighting:	• LED lighting with occupancy sensor for energy conservation
Power/ Communications:	• Power outlets provided and spaced sufficiently at perimeter of room
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling, gypsum ceiling with paint, or exposed structure.

SPECIALTIES:

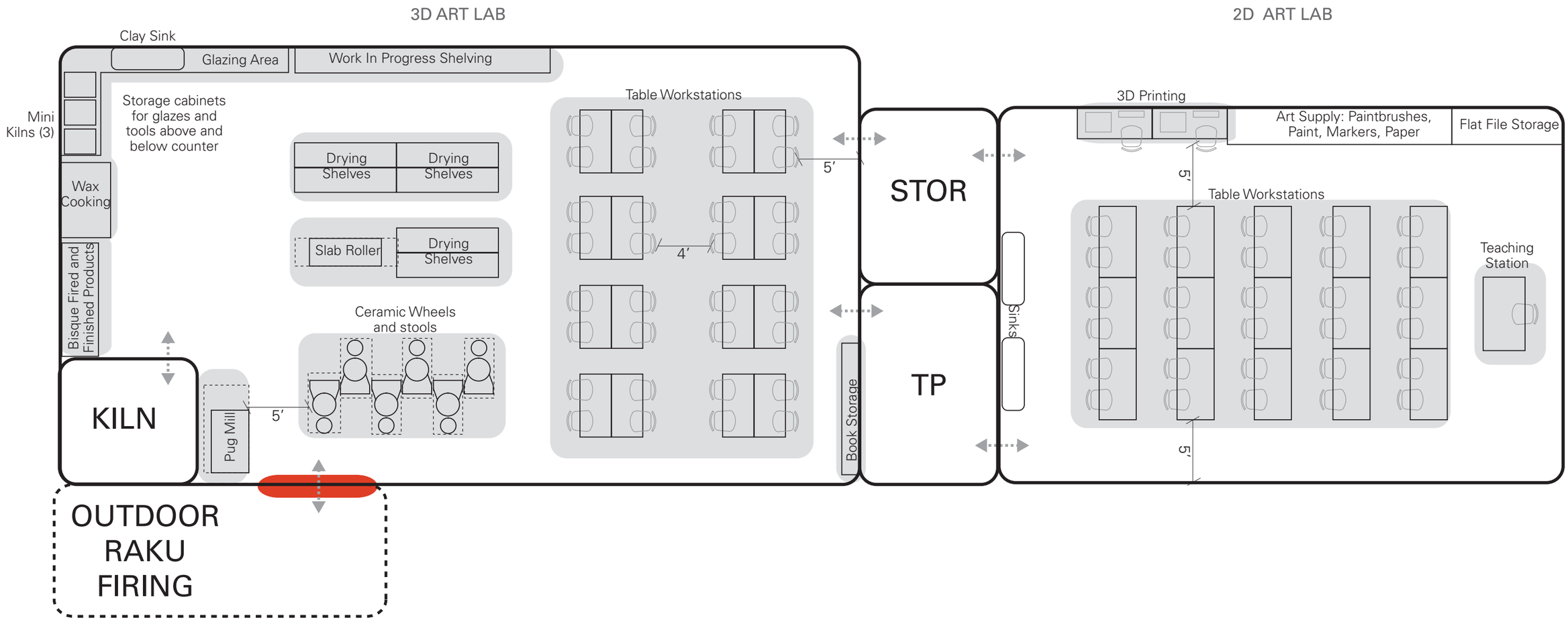
White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	• None
Items to be Stored in this Space:	• Materials • Supplies • Art work in progress

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•
Storage:	• Wire shelving racks..... multiple
Moveable Equipment:	• None
Fixed Equipment:	• None

COMMENTS:

APPLIED ARTS / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in red

If any equipment needs to be added, please highlight in yellow

Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements
Art	Applied Art 2d/3d	124							
			Ceramic storage for bisque fired and glazed finished pieces	4			3' x 2'		
			Glaze storage	1			3' x 2'		
			Work tables	13			4.5' x 2.5'		
			Clay sink	1			1'8" x 1'5"		
			Paint sink	1			2.5' x 1.5'		
			Regular sink	1			1'8" x 1'5"		
			Mini kiln	3			2' x 2.5'		Only has room for 1, 2 in storage
			Work in progress shelving	6			3' x 1'		
			Ceramic wheels	1 (multiple in future)			2'8" x 2'4"		
			Pug mill	1			2' x 7'		Needs electrical plug like one needed for a washer and dryer
			Painting supply area	1			3' x 2'		
			Markers, colored pencils, etc	1			3' x 2'		
			Painting supply cabinet tall	1			4' x 1.5'		
			File cabinet	1			1.5' x 2.5'		
			Storage cabinet	1			3'10" x 2'		
			Book and storage shelves	3			3'6" x 1'5"		

ARCHITECTURE CTE PROGRAM

Industry and Engineering Academy

Summary

The Architecture CTE program consists of three main lab spaces: a freshman drafting room, a sophomore drafting/computer lab, and a junior/senior architecture lab. Students develop drawing, drafting and model making skills in industry relevant software and techniques, and apply these to project designs.

Pin-up space and collaboration space is important for critique and display of student work. Collaboration with other Industry and Engineering Academy programs is also a critical aspect of the adjacency considerations as the drafting skills feed into other programs – most notably Engineering, Construction and Manufacturing.

Access to outdoor space is also desired, with a visual connection to the Construction Program.

The following rooms are outlined in this document:

Architecture – Freshman Drafting Classroom
Architecture – Sophomore Drafting Lab
Architecture – Junior/Senior Architecture Lab
Architecture – Pin up/Presentation/Small Classroom/Project
Architecture – Print/Plot/Layout Room/Storage

Please reference the indicated section for the following rooms:

Teacher Planning – Reference Section 2.4
Storage – Reference Section 2.9

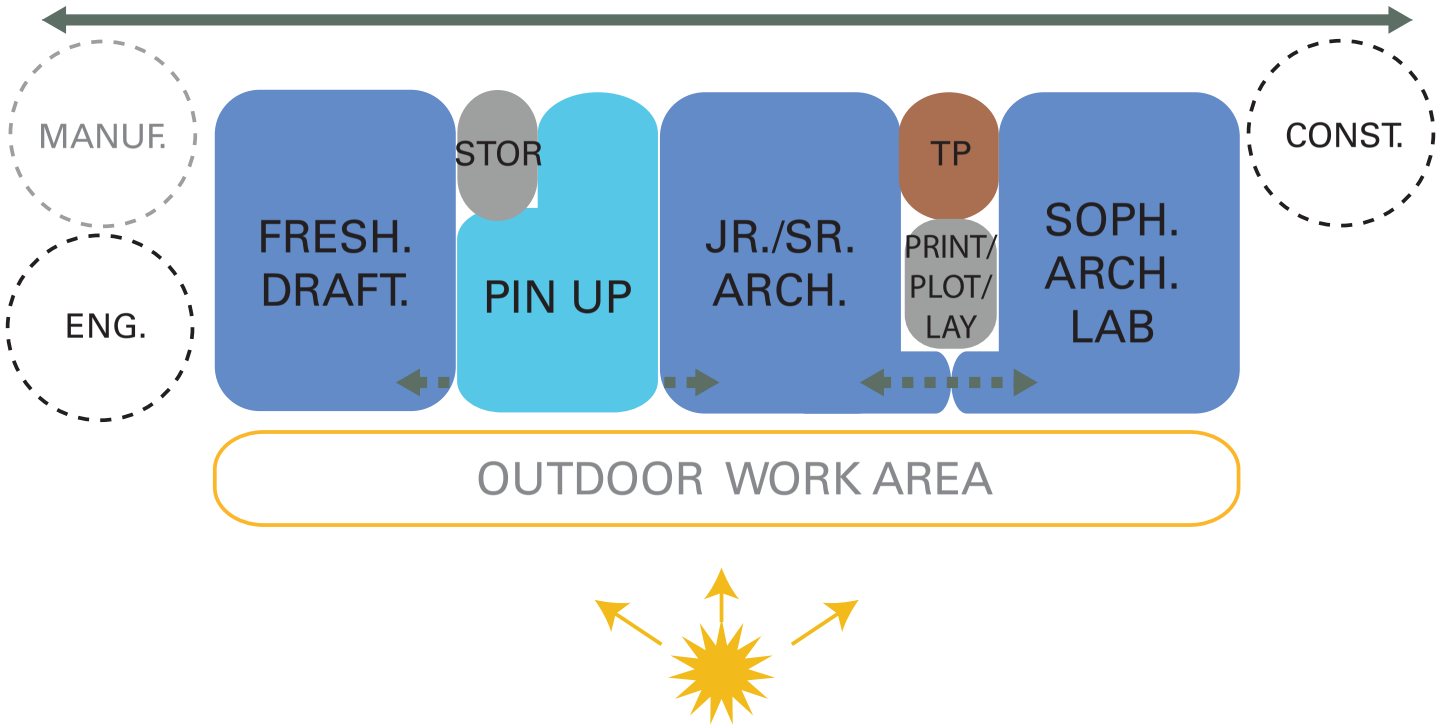
Other Program Adjacencies

+ Construction
+ Engineering
+ Manufacturing
+ Design and Applied Arts

Future Trends

+ Large format monitors
+ 3D printing and laser printing for model making and project construction
+ Parametric design
+ 3D BIM drafting and rendering
+ Virtual Reality
+ Alternative Energy
+ Smart Materials
+

ARCHITECTURAL DESIGN / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

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PROGRAM DATA SHEET

ACTIVITY AREA: Architecture

DESCRIPTION: Freshman Drafting Classroom

Brief Instructional Objectives:

- Introduce students to basics of hand drafting
- More advanced students can begin to use computers for CAD and 3D modeling

Users of this Activity Area:

- All Freshman

Activities Conducted in this Space:

- Small and medium group instruction;
- Display of material such as student work;
- Storing books, learning materials;
- Hand Drafting: Instruction in drafting basics using drafting boards.
- Computers for research, exploration of AutoCAD and Sketch-up.

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Sophomore Drafting Lab
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Junior/Senior Architecture Lab
- Pin-up/Presentation/Small Classroom/Project
- Print/Plot/Layout Room/Storage
- Storage
- Restrooms
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24 students/class

Number of Aides (or Volunteers):..... Up to 2 student T.A.s

Meets Daily? ..... Yes

Floor Area ..... 980 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the

	reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • The relay lighting is controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided. • VOIP telephone capability for staff communication.
Plumbing:	• Utility Sink (Wall mounted, single-basin).....1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish (preferred). • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board and projection surface .....28-36 linear ft.
Tack Boards:	• Tack boards desired.....16-24 linear ft.
Display Case:	• None
Other:	• Countertop with sink
Items to be Stored in this Space:	• Textbooks, office supplies • Additional learning materials • Student portfolios • Student files

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (6' x 2.5').....12 (2 students/desk) • Student stools (18"-20" tall).....28 • Computer table (6' x 2.5").....2 (2 seats) • Lesson and equipment staging tables (60" x 24").....2 • Teacher table: (30" x 72" able to adjust 38-42" from floor).....1 • Teacher drafting chair (adjustable with wheels).....1
Storage:	• Drafting Board storage (custom,mobile: 30"x24").....2 • Lockable tall storage cabinets with adjustable shelves (On wheels: 84" tall, 42"wide, 24" deep).....3 • Bookshelves (Metal: 36" x 60" x14").....2 • File cabinets, 3 drawer (1'6"x2'6").....3 • Sink cabinet
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone.....1 • Document Projector (connect to projector).....1 • Speakers (connect to projector).....1 • Laptop doc station (connect to projector).....1
Fixed Equipment:	• LCD Display.....1 • Short Throw Projector.....1 • Refer to equipment list for details

COMMENTS:

Avoid adjustable furniture for students

ACTIVITY AREA: Architecture

DESCRIPTION: Sophomore Drafting Lab

Brief Instructional Objectives:

- Continuation of drafting skills learned in freshman drafting.
- Introduction to Computer Aided Drafting (CAD) and 3D modeling

Users of this Activity Area:

- Sophomores

Activities Conducted in this Space:

- Computer Aided Drafting (CAD)
- Small and medium group instruction
- Display of material such as student work
- Storing books, learning materials
- 3D Printing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Print/Plot/Layout Room/Storage
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Junior/Senior Architecture Lab
- Freshman Drafting Classroom
- Pin-up/Presentation/Small Classroom/Project
- Storage
- Restrooms
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24 students/class

Number of Aides (or Volunteers): Up to 2 student T.A.s

Meets Daily? ..... Yes

Floor Area ..... 980 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–

	2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting. • Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control. • Control stations will provide continuous range illumination dimming. • The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder
Power/ Communications:	• Power will be provided via 20 Ampere duplex receptacles set flush in new walls • The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system. • The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity • Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling. • The cabling will route from wall cable whip boxes or floor whip boxes. • Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough. • Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• Sink with Bubbler.....1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F

	• Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish (preferred). • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white boards (18' x 4' on focus wall, 12' x 4' on side wall)
Tack Boards:	• Tack boards (12' x 4' – 20' x 4')
Display Case:	• Display space needed for full size construction/architecture detail models
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies • Additional learning materials • Student portfolios • Student files

FURNITURE AND EQUIPMENT:

Furniture:	• Computer tables with CPU holder under table top (72" x 24") .....12 (2 students/table) • Student Stools .....26 • Teacher table: (30" x 72" able to adjust 38-42" from floor).....1 • Teacher drafting chair (adjustable with wheels) .....1 • Lesson and equipment staging tables (72" x 24").....2
Storage:	• Lockable storage cabinets with adjustable shelves (84" tall, 42"wide, 24" deep).....2 • Bookshelves (36" x 60" x 14") .....1 • File cabinets, 4 drawer (1'6"x2'6") .....3 • Base cabinet with drawer and door next to sink
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone.....1 • Document camera (connected to projector).....1 • Speakers .....1 • Laptop docking station.....1

Fixed Equipment:

- LCD Display 1
- Short Throw Projector.....1
- Refer to equipment list for details

COMMENTS:

ACTIVITY AREA: Architecture

DESCRIPTION: Junior/Senior Architecture Lab

Brief Instructional Objectives:

- Incorporation of more advanced computer drafting skills and drawing production, materials information, and project collaboration.

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

- Instruction in various computer programs including Revit, AutoCAD and Sketchup
- Residential design and construction
- Development of graphic presentations and construction documents
- Building Information Modeling (BIM), including Revit
- Class pin-up and presentations
- Model making

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Pin-up / Presentation / Small Classroom / Project
- Print / Plot / Layout Room / Storage
- Storage
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Freshman Drafting Classroom
- Sophomore Drafting Lab
- Storage
- Restrooms
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24 students/class

Number of Aides (or Volunteers):..... up to 2 student T.A.s

Meets Daily? ..... Yes

Floor Area..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements

	and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting. • Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control. • Control stations will provide continuous range illumination dimming. • The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder
Power/ Communications:	• Power will be provided via 20 Ampere duplex receptacles set flush in new walls • The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system. • The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity • Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling. • The cabling will route from wall cable whip boxes or floor whip boxes. • Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough. • Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• Utility Sink (Wall mounted, single-basin).....1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing

	30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish (preferred). • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white boards (18' x 4' on focus wall, 12' x 4' on side wall)
Tack Boards:	• Tack boards (12' x 7' – 20' x 7')
Display Case:	• Display space needed for full size construction/architecture detail models • Digital display for computer models
Other:	•
Items to be Stored in this Space:	• Materials • Equipment • Student work

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Computer workstations..... 26 students • Stools (18" tall)..... 26 students • Lesson and equipment staging tables (60" x 24") .....2 • Teacher table: (30" x 72" able to adjust 38-42" from floor) .....1 • Teacher drafting chair (adjustable with wheels).....1 • Lesson and equipment staging tables (72" x 24") 2
Storage:	• Bookshelves (36" x 60" x 14") .....4 • Flat file cabinet (3'10" x 2'10") .....1 • Drafting Board storage (moveable 30"x24").....2 • Student flat file storage cabinet with wheels and 50 fixed shelves (84" tall, designed to hold 18" x 24" paper) 1
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone .....1 • Document camera (connected to projector) .....1 • Speakers.....1 • Laptop docking station 1

Fixed Equipment:

- Refer to equipment list for details
- Short Throw Projector 1
- LDC Display 1

COMMENTS:

ACTIVITY AREA: Architecture

DESCRIPTION: Pin-Up / Presentation / Small Classroom / Project Room

Brief Instructional Objectives:

- Functional space where multiple students can pin up work and discuss each other's work
- Extended work area for model making and layout

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

- Presentations and pin ups by teachers and students, individually and in groups;
- Model and presentational poster making
- Class presentations
- Group work

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior/Senior Architecture Lab
- Print/Plot/Layout Room/Storage
- Storage

Activities that should be NEAR this Activity Area:

- Freshman Drafting Classroom
- Sophomore Drafting Lab

Number of Teachers: 1

Number of Students:..... up to 24 students/class

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 600 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.

- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:

- Power via 20 Ampere duplex receptacles set flush in new walls.
- Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
- Power available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems in all classrooms.
- VOIP telephone capability for staff communication.

Plumbing:

- None required

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows
- Thermal System: DOAS with heat recovery, radiant heating and cooling

Doors and Hardware:

-

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:

- Minimum: 9'-0"
- Maximum: 12'-0"

FINISHES:

Floor/Base:

- Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.

Walls:

- Gypsum wall board/ paint with magnetic surface for pin-up

Ceiling:

- Suspended acoustical ceiling or exposed structure with acoustical finish.
- Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white boards (4'x8' or 48 linear feet).....6
Tack Boards:	• No tack boards desired, all magnetic boards preferable
Display Case:	• One display space needed for full size construction/architecture detail models • Digital display for computer models
Other:	•
Items to be Stored in this Space:	• Materials • Drawings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Tables (60" x 24").....14 • Seating.....24 students • Large flat files ..... 2 stacked • Blue Cabinet on wheels (3'11" x 1'10" x 6').....2
Storage:	• Book cases (36" x 60" x 14") .....2 • Locking storage cabinet (48 x 18 x 72).....1
Moveable Equipment:	• No requirements
Fixed Equipment:	• Short Throw Projector.....1

COMMENTS:

- This room will be embedded in the Jr./Sr. Architecture Lab and will be primarily used by them.

ACTIVITY AREA: Architecture

DESCRIPTION: Print / Plot / Layout Room / Storage

Brief Instructional Objectives:

- Support projects with printing and model making technologies.
- Provide hands-on experience with industry standard tools.

Users of this Activity Area:

- Junior - Senior

Activities Conducted in this Space:

- Small and large format printing, plotting, scanning, and copying
- Layout, and mounting of boards
- 3D printing
- Large format scanning
- Paper cutting
- Material, supply, and equipment storage

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior/Senior Architecture Lab
- Pin Up/Presentation/Small Classroom
- Sophomore Drafting Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Freshman Drafting Classroom

Number of Teachers: 0

Number of Students:.....up to 6 students at a time

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....225 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended

	accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided.. • VOIP telephone capability for staff communication.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	• 180° open
Interior and Exterior Windows:	• Operable relites into classroom
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards preferred.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Gypsum board hard ceiling / paint or exposed structure.

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	• Countertop for layout

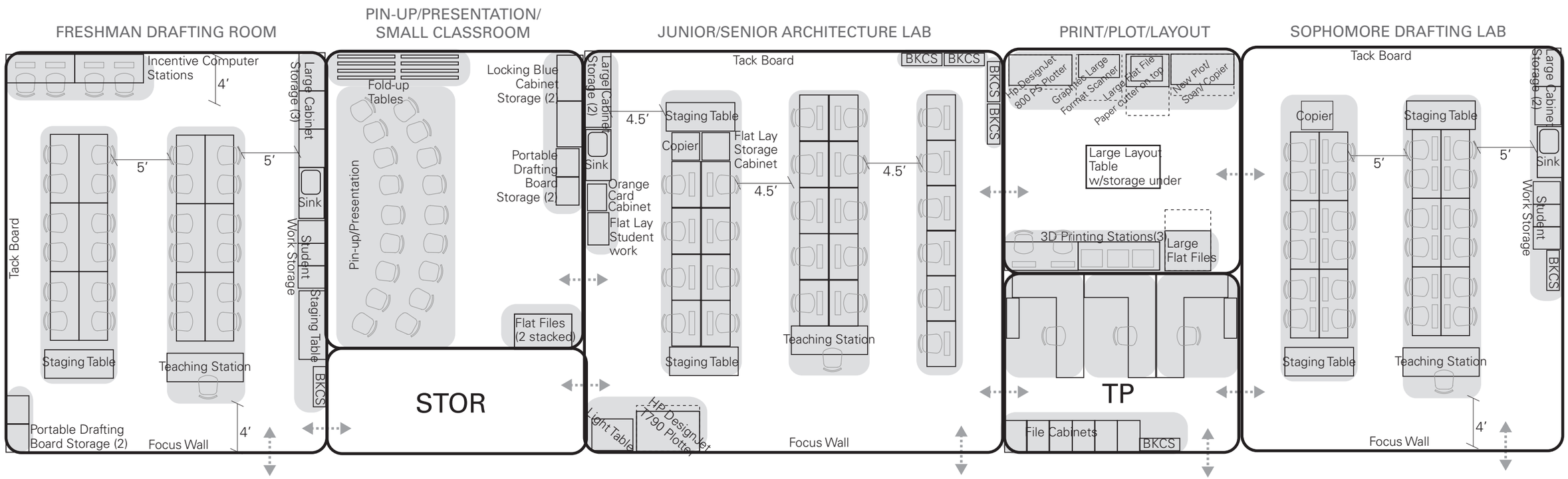
Items to be Stored in this Space:	• Materials • Supplies • Projects in progress

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• Flat lay file cabinet .....2 • Cabinets with adjustable shelves and open shelving for paper and material storage below countertop • Tall cabinets with adjustable shelves for department supplies (42" x 24" x 84").....2
Moveable Equipment:	• 42" Plotter/copier/scanner combo.....1 • HP DesignJet T790 Plotter .....1 • Graphtec Large Format Scanner.....1 • 3D Printer.....3 • Paper cutter .....1 • Refer to equipment list for details
Fixed Equipment:	• Refer to equipment list for details

COMMENTS:

- This room will be embedded in the Jr./Sr. Architecture Lab and will be primarily used by them.



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

bassetti architects

PPS

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes	Teacher Remarks
ACE	Drafting	C139	Freshman Drafting Room								
			Book storage	1			2'10" x 1'1"				
		See Note	Mini laptop cart	1			2'4" x 2'	2'4" x 2.5'	Connected to power	Cart belongs to college and careers class held in this classroom at this time	
			Flat lay storage cabinet	1			2'5" x 2'5"				Place near teacher's desk.
		See Note	Flat lay storage cabinet - large	2			3'10" x 2'10"				Place in Architecture room or shared space
		See Note	Paper cutter	1			2'2" x 2'9"			On top of large flat lay storage cabinet	Place in Architecture room or shared space
		See Note	Light table	1			3'7" x 2'9"		Connected to power		Place in Architecture room or shared space
			Drawing supplies shelf	1			1'2" x 3'				
			Teaching station	1			2'6" x 6'8"			Includes desk and storage cabinet	
			Large cabinet storage - Built In	4			3'2" x 1'5"				Only need to have 3 built-in cabinets for this area
		See Below	Mobile Drafting table storage	2			6' x 2'6"			Two tables that the tables sit stacked on top of	Replace with mobile carts
			File cabinets 4-drawer	4			1'6" x2'5"				Two of the 4 cabinets are used
			Incentive Computer Stations Tables (3-stations per table)	3			72 x 30				6 to 8 computers and laser printer
			Laser Printer for 8.5 x 11	1							
			Student Stations - Drafting	25			30 x 24				
		See Note	Flat File Cabinet White	1			3'10" x 2'10"				Replace with new flat file that can be stack on top of another in the shared space.
			Drafting Board Storage (replaces (2) 72x30 tables)	2			30 x 24 x36 tall				Similar to cabinets in C141
			Equipment and Lesson Staging Tables	2			72x24				
			Sink								
			Student stools	33							
			Room for recycling and garbage stations								

ACE	Architecture	C141	Computer Lab								
			Rotary Paper cutter	1			3'10" x 1'10	4'1" x 3' ta	None	sitting on top of flat lay storage cabinet	
			Flat file storage cabinet	1			4'1" x 3'		None	paper cutter on top	
			Computer stations	26			2'6" x 4'				CPU hangs under worktop
			Supply cabinet-orange	1			1'8" x 2'4"				
			Tall Flat lay student work	1			1'10" x 2'10"				
			Student binder bookshelf	1			2'4" x 1'				
			Portable drafting board storage	3			2'6" x 2'			3 cabinets on wheels pushed together	
			Bizhub 223 printer	1	Konica Minolta	F3156	2' x 2'2"	3'4" x 2'2"	Connected to power		
			Blue storage cabinet	2			3'11" x 1'10'			On wheels	Can be removed if replaced with stationary cabinet; however mobile means department is easier to move if necessary. There are actually 2 of these in the drafting department. The other is in the small storage room off of C139 which is used when computer stations must be put away for the summer.
			Book storage	3			2'10" x 1'1"				
			3D printer with computer station	1	MasterBot Replicator		1'10" x 1'6"	4' x 1'9" table		Working area includes computer station to operate printer	Place in shared space outside of classroom. Noisy.
			Graphtec large format scanner	1	Graphtec		3'7" x 2'	4' x 4'	Connected to power		Connect to same computer as 3D Printer
			Flat lay storage cabinet	1			2'5" x 2'5"				Place near teacher desk. Drawing examples.
			HP DesignJet T790 plotter	1	HP		4' x 3'6"	4' x 4'	Connected to power		
			HP DesignJet 800 ps plotter	1	HP		5'6" x 2'8"	5'6" x 3'	Connected to power		Replace with updated equipment that prints 42" wide
			Student stools	26							
			Lockable Storage Cabinet	3			48 x 24 x 72				To replace blue rolling cabinets and for new materials library.
			Teacher Station capable of accommodating a drafting board	1			30 x 72				
			Work / Meeting / Staging Tables	2			24 x 60				One located in front of room and other by printer
			Sink								
			Room for recycling and garbage stations								
			Tack Boards								16 to 20 feet of length by 4 feet tall. Above casework or student stations?
			Magnetic Marker Boards - 2-walls								Space needed in front of each board. Total of 24 to 30 feet length. Located in front of room and side wall.
			Storage to replace shelving in small storage room off of C139				60 x 18 x 72				This shelving is used to store department supplies, toner cartridges, replacement equipment, and large rolls of paper.

ACE	Architecture	C145	Large Project Room / Pin-up Space 600 SF								
		Current	Work / Meeting tables	14			24 x 60				
		Current	Bookcase	1			34 x 13 x 72				
		New	Lockable Storage Cabinet	1			48 x 18 x 72				
			Student stools	24							
		New	Magnetic marker boards - 3 walls	1							Space needed in front of each marker board. Pin-up and team design work.
ACE	Architecture	Office	Office Space 2-teachers (3 teachers for 1700 students)								
			Teacher Desks	2			30 x 72				1 for each teacher
			File Cabinets - 4 drawer	4			18 x 28				1 for each teacher
			Bookcase	3			36 x 13				
			Computer Stations	2							
			Laser Color Printer	1							
			Office Chairs	3							
ACE	Architecture	Future	Sophomore Drafting Lab								
			Teacher Station	1			30 x 72			Include file drawers	
			Student Computer Station Tables (2-stations per table)	13			24 x 72			2 students with computers per station	
			Bookcase	1			36 x 13				
			3D Printer with computer station	2						Working area includes computer station to operate printer	
			Printer - BizHub	1							
			Lockable Storage Cabinet	2			48 x 18 x 72				
			4-Drawer Lockable File Cabinet	1			18 x 28				
			Work / Meeting / Staging Tables	2			60 x 24				
			Marker Boards - 2 walls								
			Tack Boards								
			Student stools	26							

AUTOMOTIVE/AVIATION CTE PROGRAM

Industry and Engineering Academy

Summary

The Automotive/Aviation CTE program provides hands-on learning opportunities for the automotive and transportation-based industries. Projects include engine technology and rebuild, general and advanced automotive technologies, diesel and hybrid systems, small vehicles, and aviation technologies.

All of the shop spaces need ground-level, exterior access for a clear drive path from one or both ends of the spaces. Furthermore, it is required that the access roads to the entry and exit of the entry points can accommodate the turning radius of various types of cars and trucks.

The following rooms are outlined in this document:

Automotive – Junior/Senior - Diesel Shop
Automotive – Junior/Senior Shop
Automotive – Sophomore Shop (x2)
Automotive – Freshman Classroom
Automotive – Equipment and Tool Storage (x2)
Aviation – Aviation Design Lab
Aviation – Test Lab

Please reference the indicated section of the following rooms:

Teacher Planning – Reference Section 2.4
Small Classroom – Reference Section 2.7

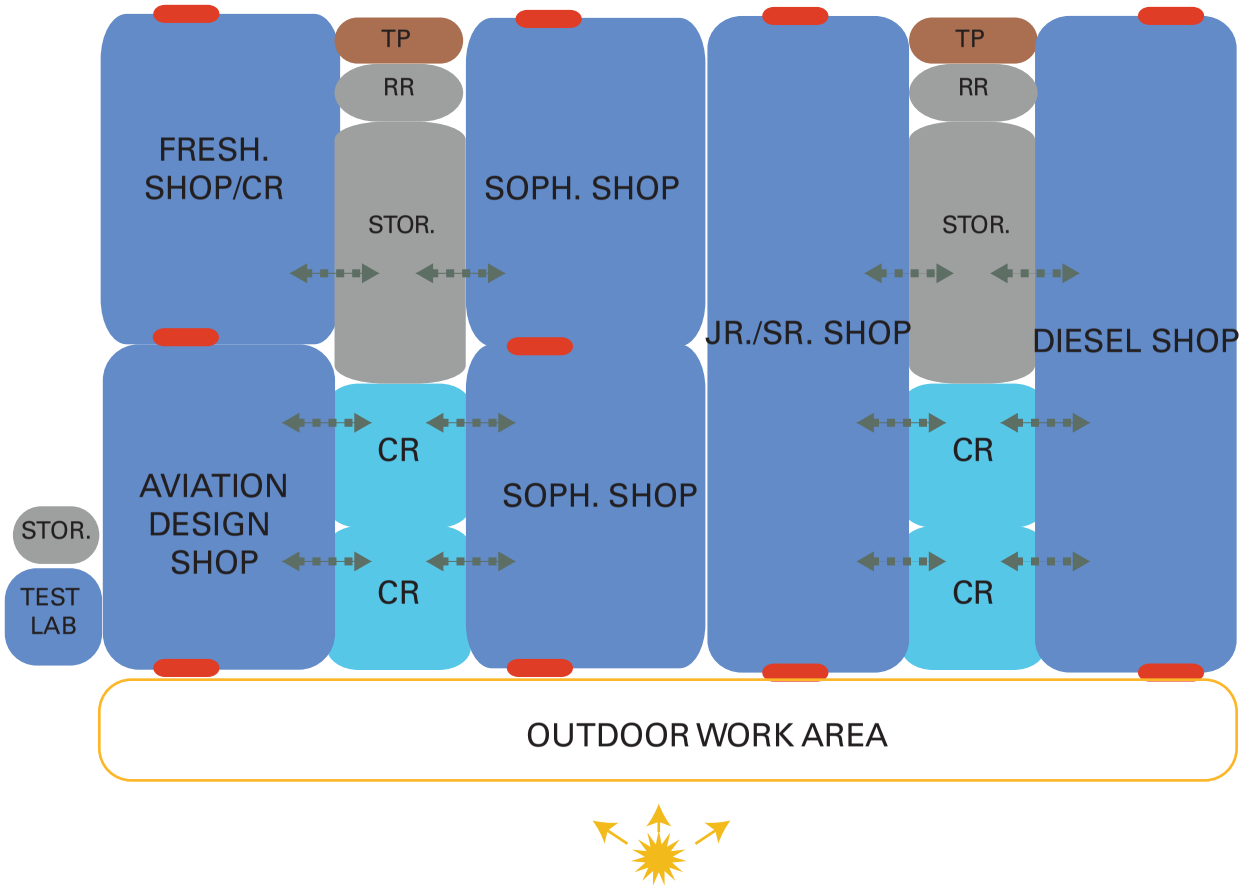
Other Program Adjacencies

+ Computer Engineering
+ Manufacturing
+ Engineering

Future Trends

+ Hybrid Cars
+ Self-Driving Cars
+ Aerospace Engineering
+ Neurotech (Sensor, command, control systems)
+ Unmanned aerial, terrestrial, orbital platforms
+ Rail Systems
+ Grid Control
+ 100% electrical vehicles
+

AUTOMOTIVE & AVIATION / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects

PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Automotive

DESCRIPTION: Junior/Senior - Diesel Shop

Brief Instructional Objectives:

- Students explore the diesel sector of the automotive industry

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

- Diesel engine/equipment repair

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom (Shop Support)
- Student Toilets
- Student Lockers
- Storage

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Junior/Senior Shop

Number of Teachers: 1

Number of Students:.....20-24

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....4,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop,

automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:
- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:
- Large cleanup sink (Wall mounted, 3-basin) 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:
- Roll-up door for exterior loading access
-

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites

Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement.
Other:	
Items to be Stored in this Space:	• Tools • Equipment • Backpacks & personal belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ACTIVITY AREA: Automotive

DESCRIPTION: Junior/Senior Shop

Brief Instructional Objectives:

- Advanced level automotive shop

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

- Engine Deconstruction and Reconstruction
- Brakes and Suspension
- Engine Systems
- Motorcycle Repair
- Fuel and Electrical Systems

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom (Shop Support)
- Student Toilets
- Student Lockers
- Storage

Activities that should be NEAR this Activity Area:

- Sophomore Shop
- Teacher Planning

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 4,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas

with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:
- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:
- Large cleanup sink (Wall mounted, 3-basin) 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:
- Roll-up door for exterior loading access

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites

Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement.
Other:	•
Items to be Stored in this Space:	• Tools • Equipment • Backpacks & personal belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ACTIVITY AREA: Automotive

DESCRIPTION: Sophomore Shop 1
Sophomore Shop 2

Brief Instructional Objectives:

- Intermediate level automotive shop

Users of this Activity Area:

- Sophomores

Activities Conducted in this Space:

- Vehicle Maintenance
- Engine Evaluation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom (Shop Support)
- Teacher Planning
- Student Toilets
- Student Lockers
- Storage

Activities that should be NEAR this Activity Area:

- Freshman Classroom

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 2,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.

- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin) 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:

- Roll-up door for exterior loading access
-

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites

Ceiling Height:

- Minimum: 12'-0"

- Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement.
Other:	•
Items to be Stored in this Space:	• Tools • Equipment • Backpacks & personal belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Both shops to be directly adjacent and able to open up into one larger shop
- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling.

ACTIVITY AREA: Automotive

DESCRIPTION: Freshman Classroom

Brief Instructional Objectives:

- Beginner level automotive classroom, introducing transportation, automotive vocabulary, measuring, tool usage, and hands on mechanical skills

Users of this Activity Area:

- Freshman

Activities Conducted in this Space:

- Classroom Instruction
- Small Gas Engine Repair

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Aviation Design Lab
- Teacher Planning
- Storage

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student lockers

Number of Teachers: 1

Number of Students:.....up to 24

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....2,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring

environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided..

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin) 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:

- Roll-up door for exterior loading access
- Roll-up door to Aviation Design Shop

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites

Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• Magnetic white board (4'x8') 2
Tack Boards:	• Covering all walls where possible
Display Case:	• No requirement.
Other:	•
Items to be Stored in this Space:	• Tools • Equipment • Backpacks & personal belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Workstation tables ..... 12 (2 students/table) • Chairs ..... 24 • Teacher desk ..... 1 • Teacher chair 1
Storage:	• No requirement
Moveable Equipment:	• Refer to equipment list for details
Fixed Equipment:	• Short Throw Projector ..... 1 • Refer to equipment list for details

COMMENTS:

- Transparency to hallway is desired

ACTIVITY AREA: Automotive

DESCRIPTION: Equipment and Tool Storage

Brief Instructional Objectives:

- To store materials and tools pertaining to the Automotive and Aviation programs

Users of this Activity Area:

- Automotive and Aviation students and teachers

Activities Conducted in this Space:

- Storage of tools and materials

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Diesel Shop
- Jr/Sr Shop
- Sophomore Shop
- Freshman Shop
- Aviation Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Small Classrooms

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....1200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- No requirements

Lighting:

- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical

array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Suspended acoustical ceiling, gypsum ceiling with paint, or exposed structure.

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	• None
Items to be Stored in this Space:	• Tools and equipment

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• Tool storage cabinets
Moveable Equipment:	• Refer to equipment list for details
Fixed Equipment:	• Refer to equipment list for details

COMMENTS:

•

ACTIVITY AREA: Aviation

DESCRIPTION: Aviation Design Shop

Brief Instructional Objectives:

- Aviation education and aeronautical engineering

Users of this Activity Area:

- Freshman
- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Take apart and reconstruct airplane engines
- Aeronautical engineering history

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Aviation Testing Lab
- Freshman Classroom
- Small Classroom

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 2,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and

	suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
	• The luminaires in these potentially, light source obscuring environments are recommended:
	  • To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
	  • Linear light output (reduced shadow casting on work surfaces)
	  • Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
	  • Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
	• Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement. • Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design. • General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity provided. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided. • VOIP telephone capability for staff communication provided.
Plumbing:	• Large cleanup sink (Wall mounted, 3-basin) .....1 • Eyewash and emergency shower.....1 • Compressed air spigot where applicable
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	• Roll-up door for exterior loading access • Roll-up door to Freshman Classroom •
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High operable exterior windows for air circulation.

	• Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• Magnetic white board (4'x8') 2
Tack Boards:	• No requirement.
Display Case:	• Multiple display cases to showcase aviation engines and other tools
Other:	•
Items to be Stored in this Space:	• Aviation artifacts

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Work tables ..... 6 (4 students/table) • Chairs ..... 24 • Teacher desk ..... 1 • Teacher chair 1
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ACTIVITY AREA: Aviation

DESCRIPTION: Aviation Test Lab

Brief Instructional Objectives:

- Provide tools and equipment to observe and test aeronautic principles in real world conditions.

Users of this Activity Area:

- Freshman
- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Aeronautics testing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Aviation Design Lab
- Outdoor Work Space

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 0

Number of Students:.....up to 12

Number of Aides (or Volunteers):.....

Meets Daily? .....No

Floor Area.....300

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 70 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 70 or greater.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
- To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).

- Linear light output (reduced shadow casting on work surfaces)
- Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
- Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin) 1

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:

- Roll-up door for exterior loading access

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites

Ceiling Height:

- Minimum: 12'-0"
- Maximum: 25'-0"

FINISHES:

Floor/Base:

- Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.

Walls:

- Concrete or CMU

Ceiling:

- Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

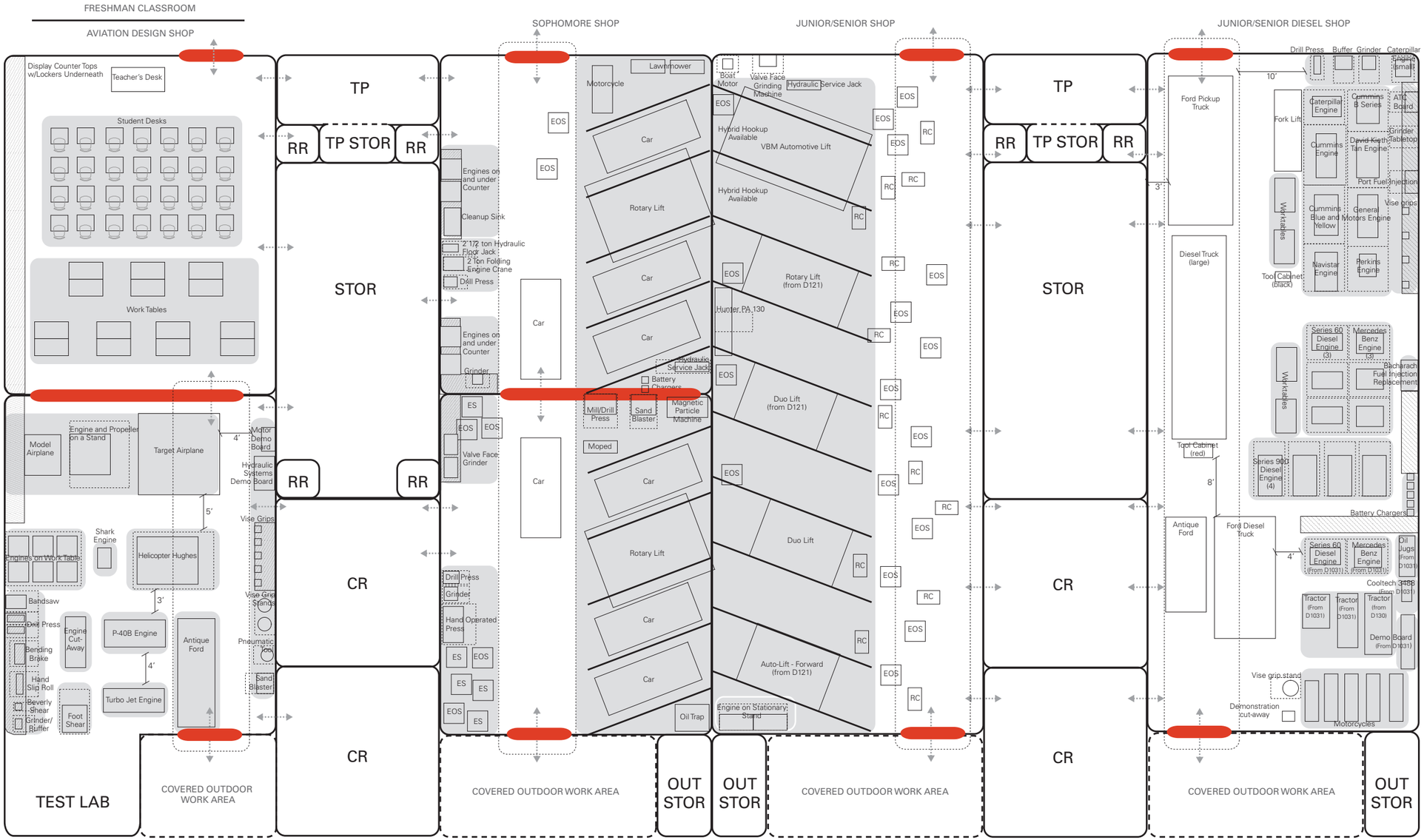
White Boards:	• No requirement.
Tack Boards:	• No requirement.
Display Case:	• No requirement.
Other:	• None
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS: •

AUTOMOTIVE / AVIATION / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- COUNTER TOP
- RR (REST ROOM)
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR
- EOS (ENGINE ON STAND)
- RC (ROLLING CART)

BENSON POLYTECHNIC HIGH SCHOOL / 2017.05.26

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PPS

Benson Polytechnic High School										
If any equipment can be removed, please highlight in rec										
If any equipment needs to be added, please highlight in yellow										
Feel free to add any remarks in the Teacher Remarks columr										
Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
Auto	Sophomore Shop	D101								
			1/2 HP Grinder	1	Sears	397.19591	1.5' x 1.5'	2' x 3.5'	115/230 V, 5.2/2.6 Ar	On north counter, connected to power
			2 1/2 Ton Hydraulic Floor Jack	1			2'4" x 1'2"	5' x 2'		
			2 Ton Folding Engine Crane	1	Titan	21008	2' x 3'	2' x 5'		
			3 Ton Car Stand	multiple	Car quest		8" x 8"			
			Battery charger	2	Snap-on		1' x 1'		Continuous Duty Charge Ratings: 120 VAC, 60 Hz, 12.2 Amp; 70 Amps 7.2 Volts, 60 Amps 14.6 Volts	
			Cars	8						
			Circular sink	1						
			Drill Press	1	Rockwell delta	15-660	1.5' x 2'	2' x 3.5'		Connects to Power
			Engines on ground and counter	7						
			Engines on stand	2			3' x 3'			
			Hydraulic Service Jack	1	Stinger		5' x 1'5"	8' x 2'		
			Lawnmower	2	Excello (1), Goodall (1)		5' x 2'			
			Lockers	90	Lyon		10" x 22"			
			Motercycle	1	Honda		7' x 3'			
			Rotary Lift	1	Rotary	SM7N000	16' x 9'	16' x 12'		
			Snap-on Tool Cabinets	3	Snap on		2'10" x 2'1" x 6"			On west wall
			Tool cabinet	1	Craftsmen		1'6" x 2'3"			
			Vise grips	6	Columbine		1' x 1'	3' x 3'		
			This shop has 8 cars in it, one on an auto lift. Similar to D107, the cars are crammed in tight and there does not seem to have much room around them to work. There is ample cabinetry above the west wall counter and two large storage cabinets on the east wall. The locker space is not in use for lockers.							

Auto	Sophomore Basic Engineering	D107	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
			Ball Bearing Grinder	1	Albertson & co		2' x 1.5'			Connected to power
			Boring machine	1	Kwik-way		4' x 2.5'			Connected to power
			Circular sink	1			5' Round			
			Demagnetixing Unit	1	Magnaflux	SB 1416	3' x 2'4"		440 V, 45 Amps, 60 hz	Connected to power
			Drill press - standalone	1	Rockwell	15-665	1' 10" x 2'4"	2' x 4'		Connects to power
			Engine stand	5	Banner		3' x 3'		None	Multiple throughout room, sone with engines on, some without
			Engine stand with engine	4			3' x 3'		None	
			Grinder - standalone	1	Rockwell	438-02-314-0186	2' x 2'	2.5' x 4'	115/230 V, 6.6/3.3 Ar	Connects to power
			Hand operated press	1	F.A. Nugier co.	H60-7	5'4" x 3'	6' x 5'	None	No power
			Head and Block Grinder	1	DCM TECH. Inc.	Scledum RT 17 PA	8' x 4'	10' x 6'	220/380 v, 16,9/9.8 a	Connected to power
			Heavy Duty Cap and Rod Grinder	2	Sunnen	CRG-300 and CRG-77	1' x 2'	2' x 4'	116 V, 6.3 amps, 60 h	On countertop and connected to power
			Heavy Duty Precision Honing Machine	2	Sunnen	LBB-1699	3.5' x 2'8"	4' x 5'	115/230 V, 7.0/3.5 Ar	Connected to power, doesn't appear to be in use, access restricted by parked car
			Honing Machine	1	Axe equipment	CH-A2	5' x 4'			Connected to power - Does not appear that it is being used for original purpose- wood tabletop has been put over the work area
			Hydraulic Service Jack	2	Stinger		5' x 1'5"	8' x 2'		
			Lathe	1	Star machines		6' x 2'	6' x 4'		Connected to power, doesn't appear to be in use, access restricted by parked car
			Lockers	30	Lyon		10" x 22"			Lockers do not appear to be in use.
			Magnetic Particle Machine	1	Magnaflux corporation	ANQ.484.5	6' x 3'		440 V, 75,Amps, 60 hz	In locker bay area, does not appear to be in use
		* Name?	Mill/Drill Press	1	DCM TECH. Inc.		4'8" x3'	5' x 5'	208-230/460 V, 60 Hz	Connected to power
			Moped	1	Milano	TN'G	5' x 1'10"			
			Parts cleaner	2	Sioux	710	2.5' x 1'8"			Connected to power
			Perfect Circle Nurilizer	1	Perfect circle Corp	2807- serial number	3' x 2'	3' x 4'		No power? Doesn't appear to be in use, access restricted by parked car
			Sand Blaster- Blast-N-Peen	1	Zero		3'8" x 3'	4' x 5'		Connected to power and exhaust, In locker bay area, does not appear to be in use
			Snap-on Tool Cabinets	8	Snap on		2'10" x 2'1" x 6"			On west wall
			Storm power cleaning machine	1	Storm Vulcan	SP-125	8' x 4'		230 V, 18.2 Amps,60 h	Connected to power and water?
			Valve face grinder	2	Sioux	2001	3' x 2'		115 V, 6 Amps, 60 hz	Connects to power, on countertop
			This shop space has 4 cars and 1 100% electric car. There are countertops against the south wall and other counter areas throughout the rest if the space. All of these counters have cabinets underneath. Many of the machines in this space don't appear to be in use. Space is not layer out well for machines and cars ... I.e. There are not car stalls. They are just parked in the open space. There is a permanant structure built particularly in front of the rolling door, making it hard to get cars in and out.						

Auto	Freshman Classroom	D112	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
			Circular sink	1						
			Desks and chairs	27			3' x 2'			
			Drill press	1			1.5' x 2'			
			Lockers	120						
			Misc car parts on south wall shelves							
			Snap-on Tool Cabinets	2	Snap on		2'10" x 2'1" x 6"			On west wall
			Under cabinet lockers	40			1'8" x1'1			
			Work tables	14			2.5' x 5'			Two tables are pushed together throughout the room
			This shop is more of a classroom setting than an auto shop setting.There are individual desks for students and work tables throughout the room. There are small engines(?) and car parts on the south counter top for display and observation. There is an overhead projector facing the desk area. There is a small fenced in sotrage area in the back.							

Auto	Main Diesil	D140	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
			Antique Ford	1	Ford		6' x 14'			License plate 01792
			Automatic Temperature Control Board	1	Chrysler-ATech		3' x 2'	4'6" x 3'		On east wall counter
			Bacharach Fuel Injection Replacement	1		Model 10 specialist s	2.5' x 4.5'			
			Battery charger	3	Super charge	BC5500	1' x1'		Input: 120 VAC, 14.5 A	On wheels
			Battery charger	2	Schumacher	She series	1x1			
			Buffer standalone	1	Baldor		2.5' x 2'	3' x 4'	208-220/440 V, 3.6-3.	Connected to power
			Caterpillar Engine	1	Caterpillar	3126	4' 3" x 3'	6' x 5'		
			Caterpillar Engine-small	1	Caterpillar	30240	2'3" x 2.5'			
			Cummins B Series Engine	1	Cummins	B series	4' x 3'4"	6' x 6.5'		
			Cummins Blue and Yellow Engine	1	Cummins	N11220IF	6' x 3.5'	6' x 8'8"		
			Cummins Engine	1	Cummins	NTC-444	6.5' x 3'	6' x 8'10"		
		* name?	David Kieth Tan engine	1			5.5' x 3'4"	6' x 8'		
			Demonstration cut-away	1			1'10" x 1'6"			
			Diesel Truck - Large	1		Business class M2	8' x 30'			
			Drill press	1	Boice Crane		2'8" x 1'	3.5' x 2'		Connected to power
			Ford Diesel Truck	1	Ford	7000	9' x 18'			
			Ford pickup truck	1	Ford	F350 XLT	9.5' x 22'			
			Fork lift	1	Hyster	60	12' x 4'			
			General Motors Diesel Engine	1	General Motors	5115791	6'4" x 3'	6' x 8'8"		
			Grinder standalone	1			2' x 2'			Connected to power
			Grinder- table top	1	Sioux	2017	1.5' x 1'	4'6" x 3'	115 V, 8 Amps, 60 Hz	
			Lockers	40						
			Mercedes Benz Engine	3	Mercedes Benz		4' x 3'	6' x 5'		
			Navistar Engine	1	Navistar		5'9" x 3'4"	6' x 7'		
			Perkins Engine	1	Perkins		2.5' x 3'4"	6' x 6'8"		
			Port Fuel Injection	1	ATech		3.5' x 2'	4'6" x 3'4"		On east wall counter
			Series 60 Diesel Engine	3	Detroit Diesel	60	4.5' x 2.5'	6' x 4'		
			Series 900 Diesel engine	4 (5 total,	Detroit Diesel	900	6' x 3.5'	4'8" x 8'		On wheels
			Snap-on Tool Cabinets	3	Snap on		2'10" x 2'1" x 6"			On west wall
			Tool cabinet Black	1	Craftsman		2'3" x 1.5'			On wheels
			Tool cabinet Red	1	Mac		4'3" x 2'			On wheels
			Vise grip	4			6" x 1.5'			On east wall counter
			Vise grip -standalone	1	Wilton		2'4" diameter			
	Small side room D1031		CoolTech 3488	1	Robin air	34288	1.5' x 3'			On wheels
			Demonstration Board	1			2' x 8'			On wheels
			Mercedes Benz Engine	1	Mercedes Benz		4' x 3'			Not in use
			Motorcycle	1	Yamaha	250	6' x 2'			
			Oil Jugs	3			2'4" diameter			
			Series 60 Diesel Engine	1	Detroit Diesel	60	4.5' x 2.5'	6' x 4'		Not in use
			Tractor	1	John Deer	4100	3' x 8'			
			Tractor -small	1	McCormick Farmall Cub		4' x 5'			
	Tool storage area connecting to RM D130		Snap-on Tool Cabinets	8	Snap on		2'10" x 2'1" x 6"			On west wall
			This shop space is split into two main areas. The first area is the driveway that connects the two rolling doors, which has multiple trucks in its path. The area to the side of the driveway is filed with different engines on wood palletes. There is a counter against the east wall that has a variety of parts and tools on it. There are a few small work tables around the edge of the engine area, as well as a bookshelf.						

Auto	Automotive Jr./Sr.	D130	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
			Boat Motor	1	Johnson Seahorse		1.5' x 1.5'			On west counter
			Car stalls	8			9' x 25'			On West side of shop
			Circular sink	1						
			DuoLift	1	Duo lift		13' x 9'			
			Engine on Rolling Stand	17			3' x 3'			Scattered around room, varying in size,
			Engine on Stationary Stand	2			5' x 2'4"			South wall
			Hunter PA 130	1	Hunter	PA130	10' x 2.5'			On wheels, connected to power
			Hydraulic service jack	1	Stinger		5' x 1'5"			
			Ignition Simulator	2	Snap on		2'2" x 1'8"			On west countertop
			Lockers	66						
			Motorcycles	4	Honda, kawasaki		7' x 2'			should be in diesel
			Rolling cart	12			2' x 3'4"			
			Series 900 Diesel Engine	1	Detroit Diesel	900	6' x 3.5'			On wheels , should be in diesel
			Tractor	1	Kubota	B2100	4' x 9'			should be in diesel
			Valve Face Grinding Machine	1	Sioux	645 LC	2.5' x 1'9'		115 V, 7.8 Amps	On wheels, connects to power
			VBM Automotive Lift	1	VBM corporations	26,000	12' x 25'		230 V, 11Amps, 60 hz	
			This shop space has 8 bays and an alleyway connecting the rolling doors at each end of the room. There are multiple engines on stands around the room. There is a counter on the west wall. There is a fenced storage room that connects D140 and D130. This space mostly had tools and some machinery. There is a small area on the north side if the shop that houses motercycles, tractors, and some engines that belong in the diesel shop						

Auto	Automotive Jr./Sr.	D121	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
			4 column Auto lift (black)	1	4 column	PP9PY11BK	10' x 22'			Not in stall alignment, set up I front of rolling door
			Auto Lift-Forward (blue)	1	Forward	DP 10A	6' x 12'	15' x 14'		
			Car lifts -4 total, see below							
			DuoLift (blue)	1	Hofmann		13' x 9'	15' x 13'		
			Rotary lift (blue)	1	Rotary	SM7N000	16' x 9'	16' x 12'		
			2 1/2 Ton Hydraulic Floor Jack	1			2'4" x 1'2"			
			3 ton vehicle stands	multiple	Varies		8" x 8"			
			Circular sink	1			5' round			
			Computer wheel balancer	1	Snap-on	WB250	2.5' x 1.5'			Connects to power
			Drill press -Tabletop	1	Delta Milwaukee		2.5 x 1'			On east counter
			Engines on counters	3			2.5' x 2.5			On floors and counters
			Engines on Rolling Stands	3			3' x 3'			Scattered around room, varying in size, see pics
			Engines on Stationary Stands	2			5' x 2'4"			South wall
			Grinder - Tabletop	1	Driver		1' x 2'			On east counter
			Hand operated press	1	F.A. Nugier Co.	H60-7	3.5' x 5.5'			
			Hydraulic Service Jack	1	Napa	91-655	5' x 1'5"			
			Investigator Gas/Diesel Analyzer	1	Sun		4' x 2'4"			Connects to power
			Lawn Mower	1	Cub Cadet		5' x 2'			
			Lockers	96	Lyon		10" x 13"			In sink bay
			Oil jugs	4			8' x 2.5'			Oil area needed
			Powermate P1582019	1	Power mate		1.5' x 1.5'		120v, 15a, 60 hz	
			Snap-on Tool Cabinets	7	Snap on		2'10" x 2'1" x 6"			On west wall
			Tire changer	1		FMC 8600	5' x 2.5'			Connects to power
			Tire inflators	1	Coats		4.5' x 1.5'			Connects to power
			Tool cabinet	1	Home tool storage		2'3" x 1'8"			On wheels
			Transmission jack (hydraulic)	1	Wudel	711	3.5' x 3.5'			On wheels
			Vise grip	4	Wilton		1' x 1'			On east counter
			Work table with axel setup	4			5' x 2'8"			Spread throughout room
			Notes: this shop space has 8 shop bays, 7 of which are being used. The long ally space adjacent to the bays is being occupied by 3 cars and 1 car lift. This ally-way is the path from the rolling door in one end of the shop to the rolling door on the other end of the shop. There is a work counter around the north, east, and south walls with a variety of car parts and tools on the counter. There are a few engines on stands around the room and a few tables with instructional car part set ups to work on and learn from. There is an adjacent fenced room with more tools and machinery.							

Aviation	Aviation	D115	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
			Antique Ford	1	Find		5.5' x 16'			
			Bandsaw	1	Delta Milwaukee		3' x 2'			Connected to power
			Bending brake	1	Chicago		3' x 1.5'			On work table
			Beverly shear	1			1' x 1'	1' x 3'		On work table
			Drill press- tabletop	2	Delta Milwaukee		2.5' x 1'			Connected to power
			Engine and propeller on a stand	1	Teledyne continental motors		6' x 6'			
			Engine cut away	1			7.5' x 3'			On wheel cart
			Engines on Counter	6	Various		3' x 3'			Multiple engines on work table around room
			Foot Shear	1	PEXTO		LOOK AT OTHERS			
			Grinder/buffer tabletop	1			1.5' x 1'			Connected to power
			Hand Slip Roll	1	Berkroy		3' x 1'			On work table
			Helicopter Hughes TH55A 269	1	Hughes	TH55A	9' x 7'			
			Hydraulic Systems Demonstration Board	1	Dupar Dynamics		5' x 3'			
			J35A21A F89-J Turbo Jet Engine	1	Allison engineering		9' x 3.5'			On wheel cart
			Model airplane	1			5'4" x 6'			Tan and maroon, on step stairs in NW corner
			Motor Demonstration Board	1	N/A		3.5' x 2'			On stationary stand
			P-40B Engine	1	Allison engineering		9' x 4'			On wheel cart
			Pneumatic Tool	1	Chicago		1'10" round			Connected to power
			Sand blaster	1	Trinco		3' x 2.5'			
			Shark engine	1			3' x 2'			
			Target Airplane	1	OQ-19B		12' x12'			On work table
			Vise grip	5	Columbian		1' x 1'			On work tables and counters around shop
			Vise grip stands	2	Parke		2' x 2'			
			Wind Tunnel Operator	1			7' x 3'10'			Operates wind tunnel engine
			This shop space is largy filled with engines and planes without much work room (in it's current set up). There is a wind tunnel in the south west corner.							

COMPUTER ENGINEERING CTE PROGRAM

Industry and Engineering Academy

Summary

The Computer Engineering CTE program instructs students in a variety of computer specialties, including programming, software engineering, and hardware configuration.

The following rooms are outlined in this document:

Computer Engineering – Junior/Senior Lab
Computer Engineering – Freshman/Sophomore Lab
Computer Engineering – Server Room

Please reference the indicated section of the following rooms:

Storage – Reference Section 2.9

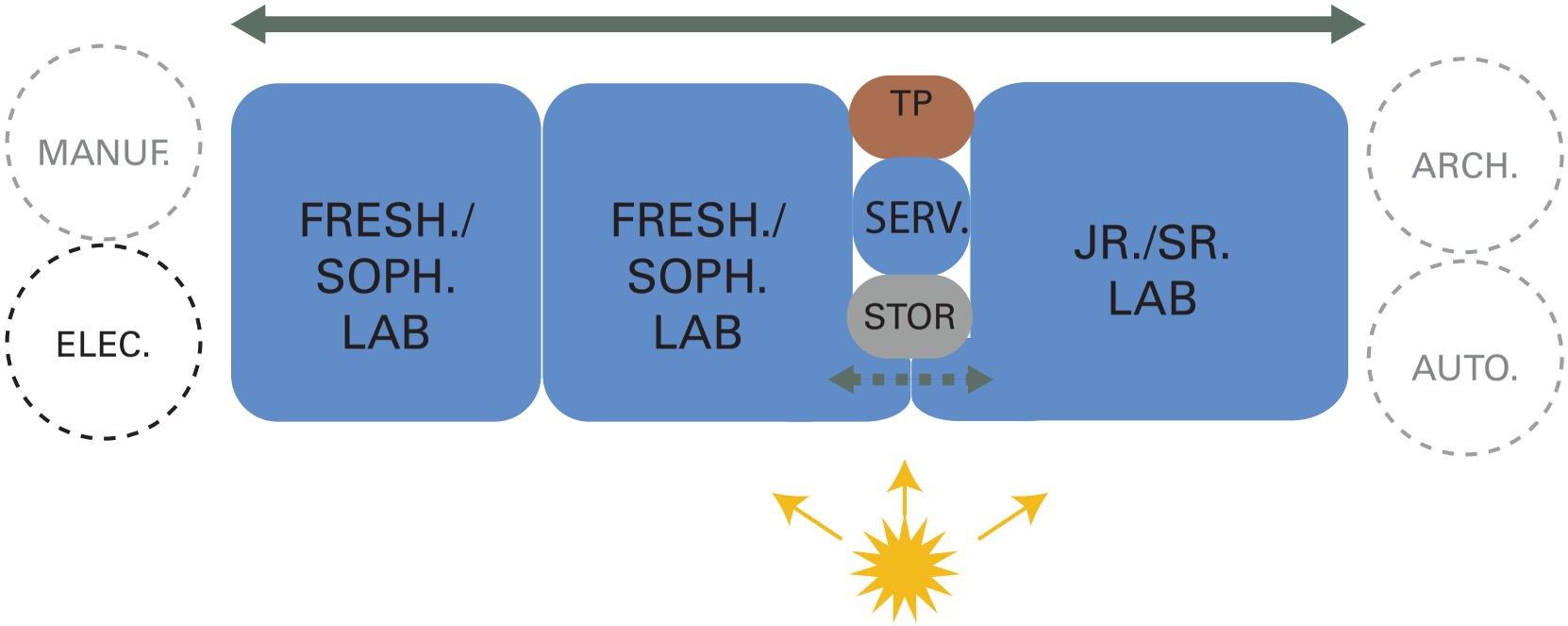
Other Program Adjacencies

- Electric
- Manufacturing
- Engineering
- Automotive

Future Trends

- Virtual Reality
- Artificial Intelligence
- Quantum AI
- Hybrid Systems (Biological and technological systems)
- Neurotechnology
-

COMPUTER ENGINEERING / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

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PROGRAM DATA SHEET

ACTIVITY AREA: Computer Engineering

DESCRIPTION: Junior/Senior Lab

Brief Instructional Objectives:

- Enable students to master skills in the systems of computer programming and computer maintenance

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

Junior Level

- Computer fundamentals for computer engineering, microprocessors, mathematics, and programing
- Introduction to theoretical concepts using C++, C#, and other programming languages in Windows and Linux
- Design and implement projects using embedded microcontrollers

Senior Level

- Computer "tear-downs" – individual stations for each student around the perimeter of the room with storage space to keep their projects
- Object Oriented Programming
- Polymorphism
- Peripheral Networking
- Hardware and Software Troubleshooting
- Database Management

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Server Room
- Teacher Planning
- Storage

Activities that should be NEAR this Activity Area:

- Freshman/Sophomore Labs
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 1,800 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural light – high clerestory windows to reduce glare on computer screens
- Task Lighting: Around room perimeter at "tear-down" stations
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting.
- Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- Control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder

Power/ Communications:

- Power will be provided via 20 Ampere duplex receptacles set flush in new walls
- The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system.
- The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity
- Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling.
- The cabling will route from wall cable whip boxes or floor whip boxes.
- Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough.
- Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.

	• LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4' x 8') 2
Tack Boards:	•
Display Case:	• Tear-down stations should have a clear plexi top that can be pulled down over works in progress and locked so that the student work spaces become a display to other students without risking the safety of their work.
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies • Additional learning materials • Student portfolios

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:
- Computer tables ..... 12 (2 students/table)
- Stools/chairs..... 24
- Workstations..... 16

Storage:
- Cabinetry above and below each tear-down space is required (Input needed on size requirements of student storage cabinetry)

Moveable Equipment:
- Refer to equipment list for details
- VIOP Telephone 1

Fixed Equipment:
- Refer to equipment list for details
- Short Throw Projector..... 1
- LDC Display 1

COMMENTS:

- This computer lab should have computer workstations (all facing forward) at the center of room with workstations at the perimeter of the room where students can build and tear down computer towers and parts.

ACTIVITY AREA: Computer Engineering

DESCRIPTION: Freshman Lab
Sophomore Lab

Brief Instructional Objectives:

- Enable students to master skills in the systems of computer programming and computer maintenance

Users of this Activity Area:

- Freshman
- Sophomores

Activities Conducted in this Space:

Freshman Level
- Introductory programming techniques
- Fundamental computer hardware operations
- Basic skills in MS office

Sophomore Level
- Fundamentals for exploring computer engineering, programming, and creative problem solving
- Write code in C++
- Introduction to computer hardware architecture

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Teacher Planning

Activities that should be NEAR this Activity Area:

- Junior/Senior Lab
- Storage
- Server Room
- Student Toilets
- Student lockers

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the

reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight – high clerestory windows to reduce glare on computer screens
- Task Lighting: Around room perimeter at "tear-down" stations
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting.
- Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- Control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder

Power/ Communications:

- Power will be provided via 20 Ampere duplex receptacles set flush in new walls
- The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system.
- The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity
- Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling.
- The cabling will route from wall cable whip boxes or floor whip boxes.
- Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough.
- Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- LCD screen for display
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.

	• Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4' x 8') 2
Tack Boards:	•
Display Case:	•
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Computer tables ..... 12 (2 students/table) • Stools/chairs..... 24
Storage:	• No requirement
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone 1
Fixed Equipment:	• Refer to equipment list for details • Short Throw Projector..... 1 • LDC Display 1

COMMENTS:

•

ACTIVITY AREA: Computer Engineering

DESCRIPTION: Server Room

Brief Instructional Objectives:

- Store servers that are used as a teaching tool

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

- Server storage for program
- Server maintenance and reconfiguration

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior/Senior Lab

Activities that should be NEAR this Activity Area:

- Storage
- Freshman/Sophomore Labs
- Student Toilets
- Student lockers

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....150 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- No requirements

Lighting:
- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting.
- Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- Control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a

	significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder
Power/ Communications:	• Power will be provided via 20 Ampere duplex receptacles set flush in new walls • Power will be available around perimeter of closet • Communication cabling to support technology interconnectivity • The cabling will route from wall cable whip boxes or floor whip boxes. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling, gypsum ceiling with paint, or exposed structure.

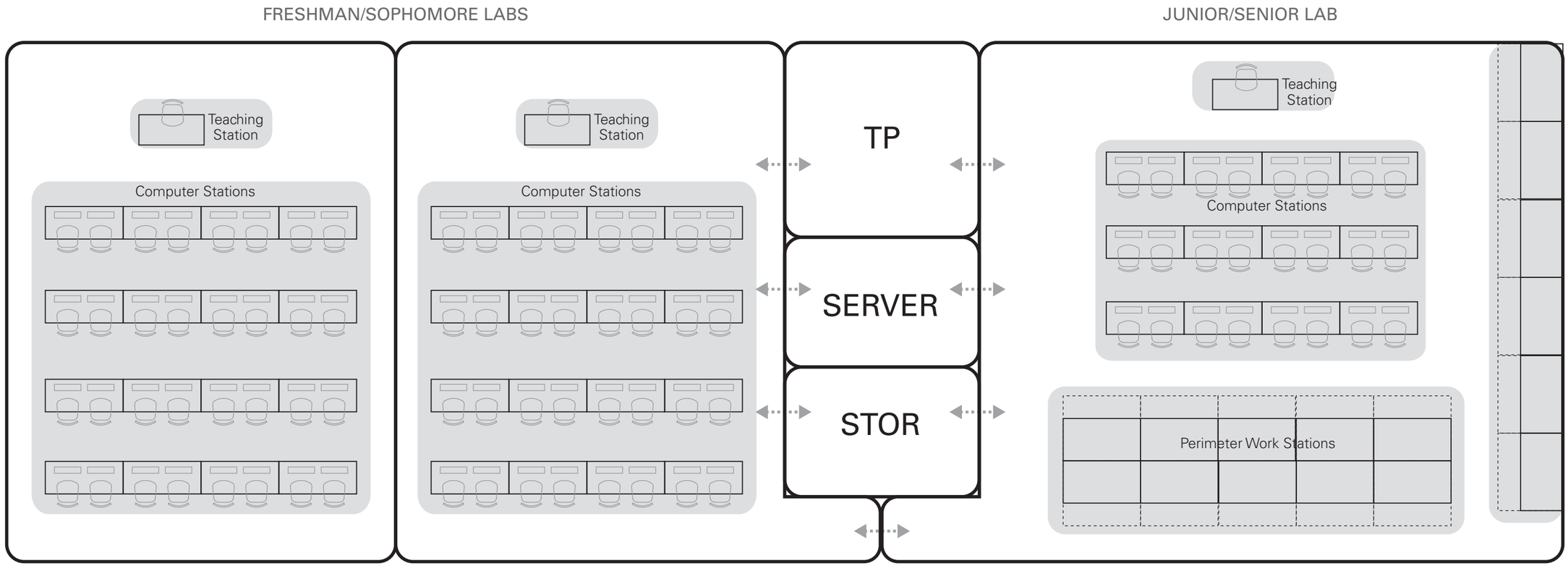
SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	• None
Items to be Stored in this Space:	• Computer servers • Cabling • Tools

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

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PPS

Benson Polytechnic High School										
If any equipment can be removed, please highlight in red										
If any equipment needs to be added, please highlight in yellow										
Feel free to add any remarks in the Teacher Remarks column										
Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
Comp Eng	Computer Engineering	E131								
			Computer stations	24			3.5' x 3'	3.5' x 4'		Includes 1 hp computer
			Perimeter work stations	10			6' x 3'2"		5 outlets at each station	
	Computer Science	E123								
			Computer workstations	25			7' 11" x 2'8"	3'4" inbetween rows		3 stations/computers per 1 table

CONSTRUCTION CTE PROGRAM

Industry and Engineering Academy

Summary

The Construction CTE program provides students with hands-on experience in woodworking, cabinetry, rough framing and finish carpentry. Students gain experience in proper tool usage techniques, fabrication techniques, including pre-fabrication. Juniors and seniors gain real world experience constructing projects both on- and off-site. Traditionally, the off-site project has been the construction of the Benson House, however the long term availability of this program is not anticipated, so alternatives must be considered in the planning of the spatial needs of the program. Integration with the Math Tech program for freshman and sophomore offerings is also planned into the program and reflected in the program adjacency diagram.

Adjacent outdoor space, providing areas for work, loading and material storage should be provided near the exterior access doors in shop spaces for easy loading and unloading of supplies and products. This space should also be adjacent to the CTE courtyard for shared access with other CTE programs.

The following rooms are outlined in this document:

Construction – Junior/Senior Shop
Construction – Sophomore Shop
Construction – Tool Storage
Construction – Material Storage
Construction – Finish Room/Booth

Please reference the indicated section of the following rooms:

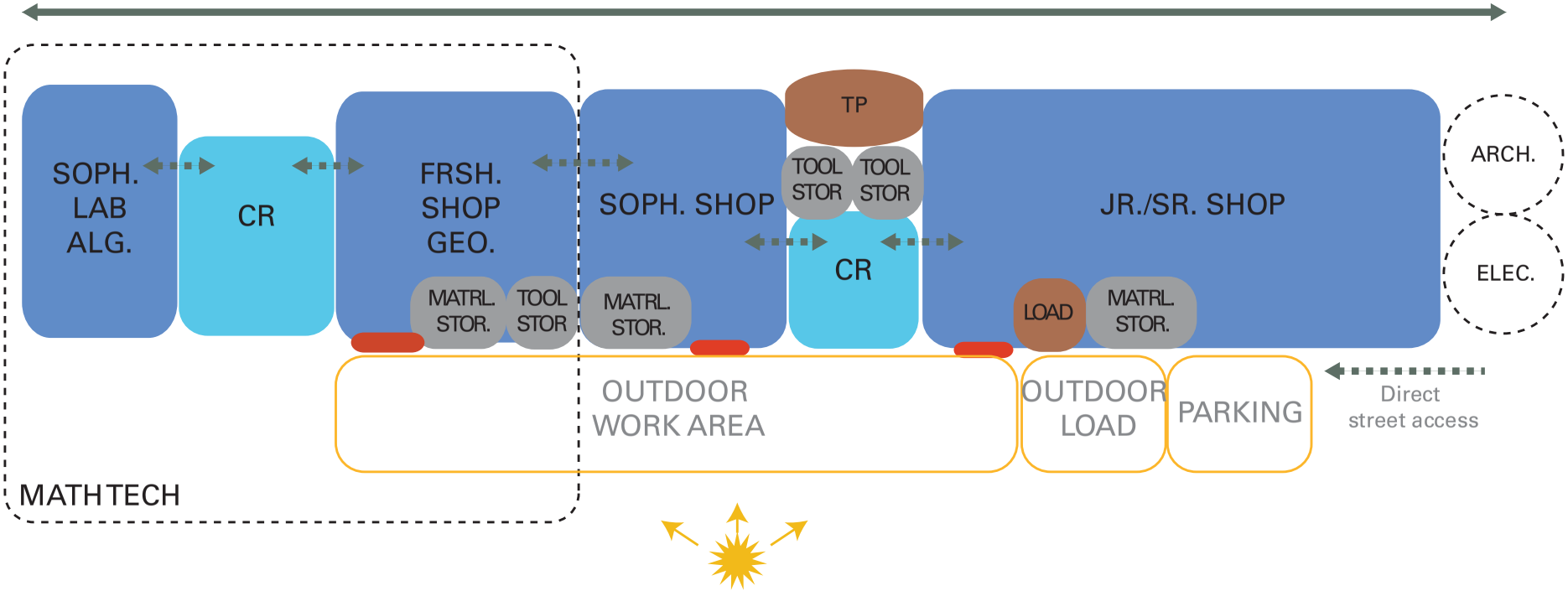
Small Classroom – Reference Section 2.7
Teacher Planning – Reference Section 2.4

Other Program Adjacencies

+ Math Tech
+ Electric
+ Architecture

Future Trends

+ CNC and Multi-Axis CNC Machinery
+ BIM compatible production
+ PTP Machining Center
+ Large format 3D printing
+ Pre-fabrication
+ Construction Material Lab
+



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

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PROGRAM DATA SHEET

ACTIVITY AREA: Construction

DESCRIPTION: Junior/Senior Shop

Brief Instructional Objectives:

- Experience with wood working tools and materials on a wide range of projects, including cutting boards, CNC routing projects, and projects related to the Benson House.

Users of this Activity Area:

- Juniors
- Seniors

Activities Conducted in this Space:

- Woodworking
- Cabinetry construction
- Finishing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom
- Outdoor Work Area
- Material Storage
- Tool Storage
- Student Toilets
- Student Lockers

Activities that should be NEAR this Activity Area:

- Sophomore Shop
- Teacher Planning

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 4,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements

	and Guidelines for Schools.

Lighting:	• Provide ample natural daylight.
	• Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
	• The luminaires in these potentially, light source obscuring environments are recommended:
	  • To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
	  • Linear light output (reduced shadow casting on work surfaces)
	  • Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
	  • Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
	• Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement. • Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design. • General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity provided. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided. • VOIP telephone capability for staff communication provided.
Plumbing:	• Large cleanup sink (Wall mounted, 3-basin)..... 1 • Eyewash and emergency shower ..... 1 • Compressed air spigot where applicable
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	• Roll-up door for exterior loading access •

Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement in shop space (see CR)
Tack Boards:	• No requirement in shop space (see CR)
Display Case:	•
Other:	•
Items to be Stored in this Space:	• Project materials • Tools • Student work

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• Project storage • Built-in work benches
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ACTIVITY AREA: Construction

DESCRIPTION: Sophomore Shop

Brief Instructional Objectives:

- An introductory course to construction, students learn construction safety and safe use of tools and materials through individual and group projects.

Users of this Activity Area:

- Sophomores

Activities Conducted in this Space:

- Group construction/woodworking projects
- Individual construction/woodworking projects

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom
- Outdoor Work Area
- Material Storage
- Tool Storage
- Teacher Planning
- Student Toilets
- Student Lockers

Activities that should be NEAR this Activity Area:

- Junior/Senior Shop

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 2,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:

- Roll-up door for exterior loading access

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.

	• Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement in shop space (see CR)
Tack Boards:	• No requirement in shop space (see CR)
Display Case:	•
Other:	•
Items to be Stored in this Space:	• Project materials • Tools • Student work

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• Large casework needed in material storage area.
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ACTIVITY AREA: Construction

DESCRIPTION: Tool Storage

Brief Instructional Objectives:

- Provide access to hand tools needed for projects in adjacent shops.

Users of this Activity Area:

- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Storage of hand tools

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior/Senior Shop
- Sophomore Shop

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Small Classroom

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....400 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- No requirements

Lighting:
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops. A deposition obscured vacancy

	sensor could turn off the illumination when it is needed most.
Power/ Communications:	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling, gypsum ceiling with paint, or exposed structure.

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	• Construction hand tools

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirements
Storage:	• Shelving and cabinetry to organize tools • Provide peg board for hand tools •
Moveable Equipment:	• No requirements
Fixed Equipment:	• No requirements

COMMENTS:

•

ACTIVITY AREA: Construction

DESCRIPTION: Material Storage

Brief Instructional Objectives:

- Provide access to materials needed for projects in adjacent shops.

Users of this Activity Area:

- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Storage of materials

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Loading
- Outdoor work area
- Junior/Senior Shop
- Sophomore Shop

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Small Classroom

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....300 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- No requirements

Lighting:
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical

	array housing (Easy to dust off from the floor with a pole duster. • Use manual control lighting in shops. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.
Power/ Communications:	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling, gypsum ceiling with paint, or exposed structure.

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	
Items to be Stored in this Space:	• Construction materials

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirements
Storage:	• Lumber storage racks • Panel storage racks
Moveable Equipment:	• No requirements
Fixed Equipment:	• No requirements

COMMENTS:

- This space may be open to the Junior/Senior construction shop. It will not have casework but might have space separator cubbies and shelves to organize materials

ACTIVITY AREA: Construction

DESCRIPTION: Finish Room/Booth

Brief Instructional Objectives:

- Provide a space with controlled exhaust for application of finishes on construction projects.

Users of this Activity Area:

- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Spray Painting
- Varnishing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior/Senior Shop

Activities that should be NEAR this Activity Area:

- Sophomore Shop

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- No requirements

Lighting:

- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirements
HVAC/Mechanical:	•
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 9'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling, gypsum ceiling with paint, or exposed structure.

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	• Construction materials

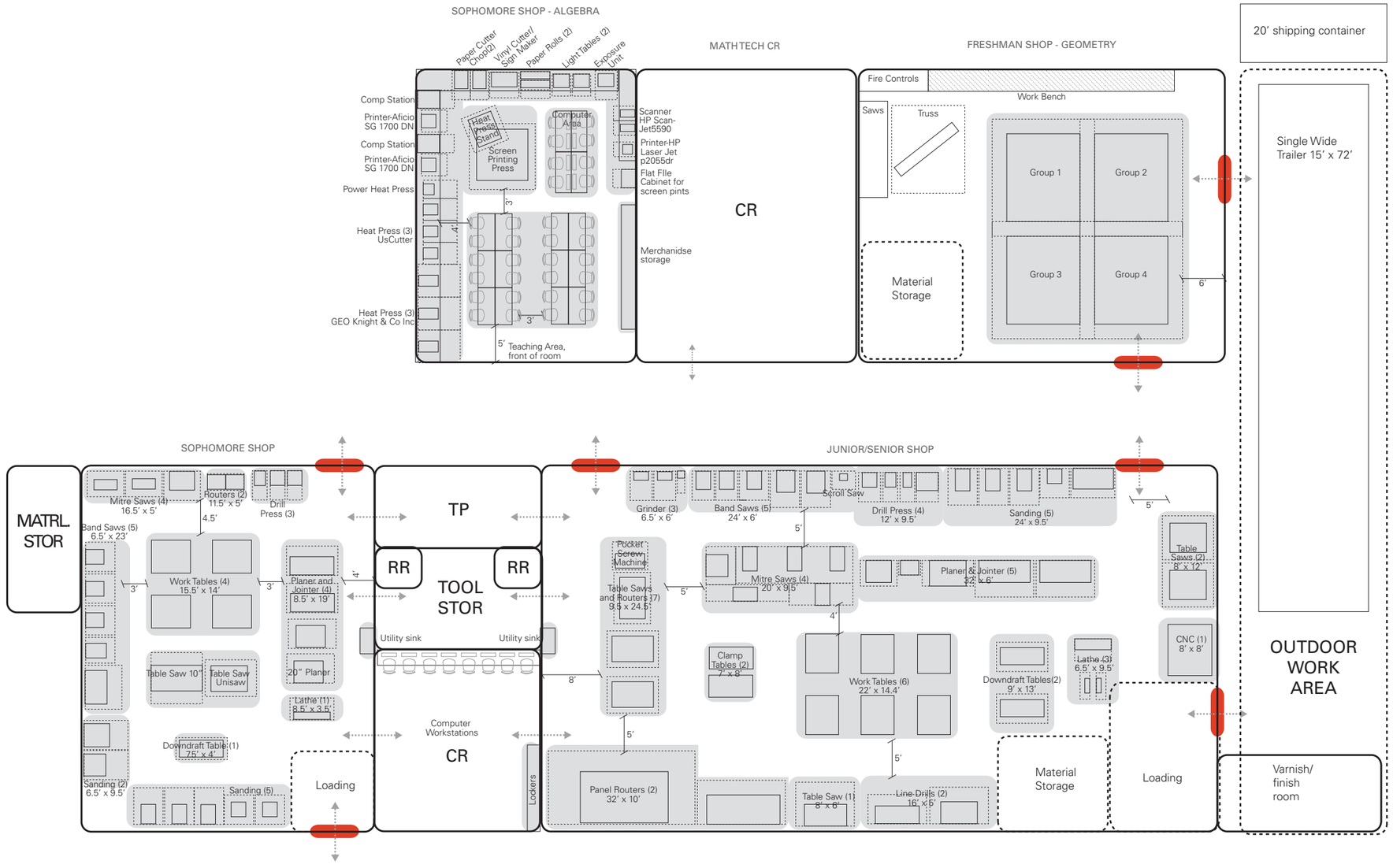
FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•
Storage:	• No requirement
Moveable Equipment:	• No requirements
Fixed Equipment:	• No requirements

COMMENTS:

•

BUILDING CONSTRUCTION - MATH TECH / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column
Equipment that is present but missed in inspection is highlighted in orange

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Survey Notes	Teacher Remarks
ACE	Building Construction	E110									
			13" Three Knife, Two Speed Thickness Planer	1	DeWalt	DW735	2.5' x 2'	3' x 2' cart	120 V, 14 Amps, 60 Hz	Connects to power, south side of room, does not appear to be in use, on wood rolling cart	
			15" Planer with Helical Head	1	JET	JWP-15HH	4' x 3'	6.5' x 4'	230 V	Connected to power and exhaust	
			20" Planer	1			4'x3'	6.5'x4'	230 V	Connected to power and exhaust	Replace head with Helical
			8" Jointer	2	Powermatic	60/60 B	6' x 2.5'	7' x 4'	230 V, 8.4 Amps,	Connected to power and exhaust	Replace old green 8" Powermatic with new 6" jointer
			18" Band Saw	1	Jet	JWBS-18	2'10" x 2'	3.5' x 4'	115 Volts	Connected to power	add exhaust connection
			Billy Band Saw	1	Walker Turner Div., Kearney & Trecker Corp.		4'7" x 3'	6' x 5'		Connected to power and exhaust	Replace with new
			14" Band Saw	3	Rockwell	28-200	2.5' x 2'	4' x 4'		Connected to power, lacking exhaust, only 1/3 appears to be in use	One of these is in need of replacement
			Drill Press	1	Powermatic	1100	1'2" x 2'	2' x 4'	115/230 V, 15/7.5 Amps	Connected to power	
			Drill Press	1	Rockwell		2'x2'	2'x4'	115/230 V, 15/7.5 Amps	Connected to power	
			Drill Press	1	General		2'x2'	2'x4'	115/230 V, 15/7.5 Amps	Connected to power	
			Miter Saw0815	1	Makita	LS0815F	1.5' x 3'2"	3.5' x 5'	120 V, 10.5 Amps, 50-60 Hz	On south countertop, connected to power	add exhaust connection
			Miter Saw1016	1	Makita	LS1016L	2'7" x 3'5"	4' x 5'	120 V, 15 Amps, 50-60 Hz	On south countertop, connected to power	add exhaust connection
			Miter Saw1040	1	Makita	LS1040	1'7" x 2'8"	3.5' x 5'	120 V, 15 Amps, 50-60 Hz	On south countertop, connected to power	add exhaust connection
			Lathe	1	Rockwell/Delta		1' x 5'	Unknown		South side of room, does not appear to be in use	Currently missing some parts, this shop should have one working lathe
			Benchtop Router	1	Bosch	RA1180	2'3" x 1'7"	Unknown	15 Amps	Connects to power, south side of room, mounted on rolling cart, appears to not be in use	
			Multi-router	2	JDS Company	101L	2' x 2.5'	Unknown, 2 on a 2'3" x 5' table	10 Amps	Connects to power, both on one metal rolling cart	These should be located near CnC router in other shop, it is a similar effect
			Router Table	1	Wolfcraft	540	3'4" x 1'10"	3.5' x 3'	120 V, 8 Amps, 60 Hz	Connects to power, south side of room	
			Table Saw (10" industrial cabinet saw)	t	Saw Stop		3.5' x 7'	7' x 7'	230 V, 12 Amps, 60 Hz	Table pushed against table saw for material extension support, Router on end of table, See pictures	
			Table Saw 10"	1	Powermatic		3.5' x 7'	7'x7'	230 V, 12 Amps, 60 Hz		Replace thise machine with new Sawstop and located back to back with other
			Table Saw Unisaw	1	Delta		3.5 x 5'	5'x7'			Conver this to table router with two Jess 'em lift routers as in other shop.
			Downdraft Table	1	Denray Downdraft Tables, Barbo Machinery	2872	6' x 2'4"	7' x 3'	115 V, 20/10 Amp, 60 Hz	Connected to power, south side of room	
			Belt and Disc Sander	3	Rockwell/Delta		2' x 2'8"	4' x 5'	230 V	1 appears to be broken/out of commission. Connects to power and exhaust	
			Drum Sander	1	Seco	SK-A724WP	3'2" x 3'6"	4' x 6'	220/440V, 10/20 Amp, 60 Hz	Connects to power, lacking exhaust system, using trash can instead	
			Oscillating Spindle Sander	2	JET	JOVS-10	2' x 2'	4' x 4'	115 V	Connects to power	add exhaust connection
			Vertical Spindle Sander	1	Max		2' x 2'	4' x 4'		Connects to power, appears to not be in use	
			Sander	1	Apex		3' x 3'	6'x4'	208/220/426/440 V, 5/4.8/2.54/2.4 amps	Connected to power and exhaust	
			Work Table A	4	n/a		4'6" x 5'4"	n/a	none	(3/4) have 2 vise grips, (1/4) has 3 vise grips. All have 6 lockers underneath.	
			Work Table B	1	n/a		4'6" x 2'9"	n/a	none	2 lockers underneath	
			Work Table C	1	n/a		6' x 2'6"	n/a	none	8 lockers underneath	
			Work Table D	1	n/a		7'8" x 3'2"	n/a	none	Nothing underneath	
			Work Table E	1	n/a		6' x 3	n/a	none	Storage underneath	
			Sink								
			This shop has machinery around the perimeter with work tables in the middle. There is a large storage area on the north wall.								

ACE	Jr./Sr. Construction	E116									
			14" Band Saw	2	Powermatic	PWBS-14	2.5' x 2'	3' x 4'	115/230 V (Prewired for 115 V)	Connected to power	add exhaust connection
			14" Band Saw-Rockwell	1	Rockwell	28-200	2.5' x 2'	4' x 4'		Connected to Power	replace with model similar to above with blade brake, add exhaust connection
			20" Band Saw	1	Delta		3' x 2.5'	5' x 4'	230 V, 15 Amps, 60 Hz	Connected to power	add exhaust connection
			Bandsaw-General International	1	General international	90-360M2	3' x 2.5'	5' x 4'	220 V, 5.4 Amps, 60 Hz	Connected to power	Replace with model more appropriate for resawing lumber, add exhaust connection
			Drill press- small tabletop	1	General international	75-075MI	2' x 2'	4' x 3'	110/220 V, 10/5Amps	Connected to power	This is a mortice+tenon machine
			Drill Press-General International	1	General international	75-200M1NC	1'6" x 2'	2' x 4'	110/220 V, 12/6 Amps, 60 Hz	Connected to power	Replace with new
			Drill Press-Powermatic	1	Powermatic	1100	1'2" x 2'	2' x 4'	220/240 V, 2.3/1.4 Amps, 60 Hz	Connected to power	
			Mini Drill	1	Blum	2002	3' x 2.5'	3' x 4'	3 x 220 V, 5 Amps, 60 Hz	Connected to power	This is a hinge boring machine for cabinet doors
			CNC	1	Forest Scientific		6' x 7'	6' x 7'		Connected to power and exhaust	
			24' Planer	1	Unknown		3.5' x 3'	3.5' x 5'		Connected to power and exhaust	We have already replaced this with a helical head and it works fantastic
			13" Three Knife, Two Speed Thickness Planer	1	DeWalt	DW735	2.5' x 2'	3' x 2' cart	120 V, 14 Amps, 60 Hz	Connected to power and exhaust	This small size is very loud and not ideal, replace with 16-20" model with helical head
			Kingwood Drum Sander	1	Kingwood		3.5' x 5'	3.5' x 7'		Connected to power and exhaust	
			Jointer	2	Powermatic	1285-3HD	7' x 3'	10' x 5'	230/460 V, 8.4/4.2 Amps	Connected to power and exhaust	
			16" Disc Sander	1	Reuland Electric	ML	3' x 2'	5' x 4'	208/220/416/440 V, 5.08/4.8/2.54/2.4 Amps	Connected to power and exhaust	
			Belt and Disc Sander	2	General international	15-035DCM1	3' x 2'	5' x4'	110/220 V, 16/8 Amps. 60 Hz	Connected to power	
			Edge Belt Sander	1	Ritter	R7C1	5.5' x 2'10"	6' x 4'	115/230	Connected to power and exhaust	
			Oscillating Spindle Sander	1	JET	JOVS-10	2' x 2'	4' x 4'	115 V	Connected to Power	Add one more of these machines
			Downdraft Table	2	Denray Machine, Barbo machinery company	2872 B	6' x 2'4"	7' x 4'	115 & 220 V, 1 PH -OR- 230,460, & 575 V, 3 PH	Connected to power	
			Clamp table	2	Ritter	R-1475	3' x 6'	3' x '6'		Connected to air	
			7" Grinder	1	Rockwell/Delta	23-200	2' x 1'2"	3' x 4'	115/230 V, 6.6/3.3 amps	Connected to power	
			Grinder Buffer	1	Baldor		2' x 1.5'	3' x 4'	115/230 V, 3.8/1.9 Amps	Connected to power	
			Grinder-Super Grind 2000	1	Tormek	SE-711 23	1' x 1'	1' x 3'	115 v, 60 ha, 200 watts	Connected to power	
			Lathe	1	Delta	88C18103	5'x 1'6"	5' x 3'	Unknown	Connected to power	Should add 2nd big lathe
			Mini Lathe	2	Jet	JML - 1014	2' x 8"	3'8" x 1'4"	115 volts 5 Amps, 60 Hz	Connected to power, sitting on a cabinet	No dedicated space required, can be put away or placed on workbench as required seasonally
			Miter Saw0714	1	Makita	LS0714	3' x 3'	4'6" x 6' table	120 V, 10 Amps, 50-60 Hz	Connected to power, sits on work table with locker underneath	This smaller size model miter saw is what all but one of the miter saws should be. They aren't as intimidating to use and just as or more accurate. Should be connected to exhaust system
			Miter Saw1013	3	Makita	LS1013	2' x 3'4"	11'4" x 2'3" table	120 V, 13 Amps, 50-60 Hz	Connected to power,(1/3) sits on long work table,(2/3),sits on a long work table with wood storage underneath (same dimensions)	Replace with above model
			Miter Saw1016	1	Makita	LS1016L	2' x 3'	8.5' x 2'11"		Connected to power, separate from all other miter saws	add exhaust connection
			Miter Saw1212	1	Makita	LS1212	1'11" x 3'4"	16'x5'	120 V, 15 Amps, 50-60 Hz	material support work space. Metal cabinet and drawer	add exhaust connection
			Panel Saw - Large	1	Grigio		18' x 7'	20' x 10'		Connected to power and exhaust	
			Panel Router - Small	1	Her-Saf	145	10' x 4'	12' x 6'		Connected to power and exhaust	
			Single Row Line Drill	1	Ritter and Barbo Machinery		6' x2'5"	8' x 4'	115 V, 208-230 Amps, 60 ha	Connected to power	
			Single Row Line Drill-Spindle	1	Ritter and Barbo Manufacturing inc		5' x 3'	8' x 5'		Connected to power	
			Benchtop Router	1	Bosch	RA1180	2'3" x 1'7"	4.5' x 2.5' wheeling table	15 Amps	Connected to power	This is a portable machine that can be used at the House as required.
			Table saw "10" industrial cabinet saw"	3	Saw stop		3.5' x 5'8"	5' x 7'		Connected to power and exhaust	Missed one, there are actually four
			Unisaw ~~10" Tilting Arbor Saw~~-2 routers	1	Delta		5' x 4'	7' x 6'		Connected to power, 2 routers on either side of main saw(currently no main blade in machine)	
			Unisaw-2 Routers	1	Delta		5' x 4'	7' x 6'		Connected to power, 2 routers on either side of main saw(currently no main blade in machine)	
			12-14" Tilting Arbor Saw	1	Rockwell/Delta		6.5' x 3.5'	8' x 6'		Connected to power and exhaust	
			Work Table A	6	n/a		4'6" x 5'4"	n/a	none	(3/4) have 2 vise grips, (1/4) has 3 vise grips. All have 6 lockers underneath.	
			Pocket Screw Machine	1			2' x 4'				Connected to power and needs compressed air
			Scroll Saw				1' x 1.5'	1.5' x 1.5'			Replace with new
			Sink				1.5' x 2'				
			Spray Booth								
			Gender Neutral Restroom								

This shop has machinery around the perimeter and down the middle of the space. There are work tables between the center and south wall machinery rows. The north shop area has longer tables with miter saws along with a large storage area.

MATH TECH CTE PROGRAM

Industry and Engineering Academy

Summary

The Math Tech CTE program is composed of two programs:

+ Tech Geometry, where freshman learn project-based math skills through construction activities.
+ Tech Algebra, where sophomores learn project-based math skills through screen printing and business activities.

The Tech Geometry curriculum currently includes building tiny homes for the homeless, but the long term funding and viability of this program is not a given, and they plan to transition into a Habitat for Humanity program that includes building a single-wide trailer home.

The Sophomore Lab is focused on heat press printing and screen printing and provides Benson swag and merchandise for the school, the sports teams, and other clubs and organizations.

Both programs require a proximate classroom space and tool and material storage.

The Math Tech program has a strong desire to be adjacent to the Construction CTE program as they share many tools and materials. A large outdoor work area for a Tech Geometry Shop is required for their 16' x 72' singlewide trailer and 20' x 8' shipping container. Loading and material storage should be directly adjacent to the exterior rolling door for easy loading and unloading of supplies and products.

The following rooms are outlined in this document:

Math Tech – Freshman Shop – Geometry
Math Tech – Sophomore Lab – Algebra
Math Tech – Classroom

Please reference the indicated section of the following rooms:

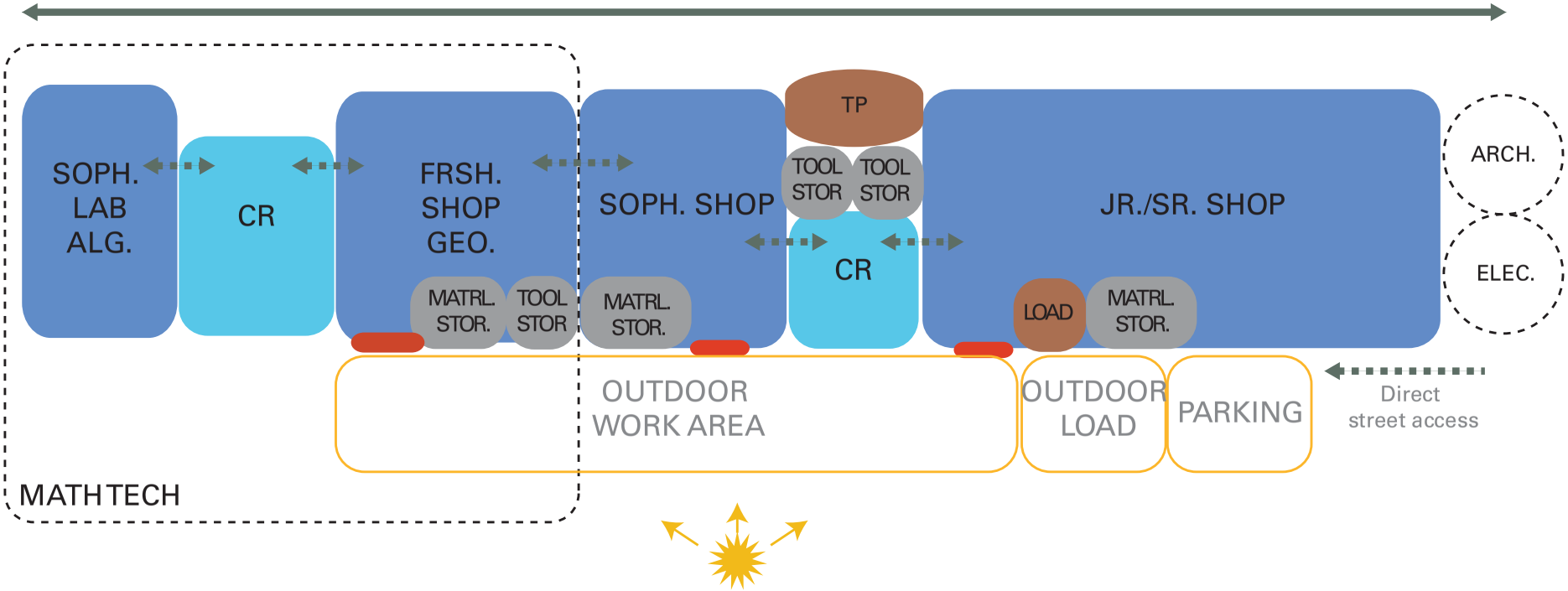
Material Storage – Reference Section 3.5 Construction Material Storage with 400 sf
Tool Storage – Reference Section 3.5 Construction Tool Storage with 200

Other Program Adjacencies

+ Construction
+ Math

Future Trends

+ Habitat for Humanity – Single wide house construction
+



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects / PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Math Tech

DESCRIPTION: Freshman Shop – Geometry

Brief Instructional Objectives:

- Students build mini house pods for the homeless and may transition to building homes on singlewide trailers with Habitat for Humanity.

Users of this Activity Area:

- All Freshman

Activities Conducted in this Space:

- Truss Construction
- Wall Construction

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Outdoor work area
- Teacher Planning
- Material Storage
- Tool Storage

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student Lockers
- Classroom
- Sophomore Lab – Algebra

Number of Teachers: 2

Number of Students:.....up to 48

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....2,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.

- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:

- Roll-up door for exterior loading access

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior

windows and to provide privacy for lockdown purposes at interior relite

Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• Magnetic white board (4' x 8') 2
Tack Boards:	•
Display Case:	•
Other:	•
Items to be Stored in this Space:	• Project materials • Tools

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• Project storage • Built-in work benches • Teaching station storage with doors for dust protection
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Wall projector • LCD Display • Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Math Tech

DESCRIPTION: Sophomore Lab – Algebra

Brief Instructional Objectives:

- Students focus on heat press printing and screen printing and provides Benson swag and merchandise for the school, the sports teams, and other clubs and organizations.

Users of this Activity Area:

- Sophomores

Activities Conducted in this Space:

- Heat Press Printing
- Screen Printing
- Digital design production

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Classroom

Activities that should be NEAR this Activity Area:

- Freshman Shop – Geometry

Number of Teachers: 1

Number of Students:..... up to 40

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires

	are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
	• Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/	• 1800 Watts needed for Heat press
Communications:	• Small computer lab area in back of classroom..... 15 stations
	• Power via 20 Ampere duplex receptacles set flush in new walls.
	• Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
	• Power available at countertops, teaching instructor display and whiteboard locations.
	• Communication cabling to support technology interconnectivity.
	• Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
	• Short throw projector access to both the network and HDMI equipped instructional computers.
	• LCD screen for display
	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
	• Audio reinforcement systems in all classrooms.
	• VOIP telephone capability for staff communication.
Plumbing:	• Sinks (Wall mounted, 3 basin).....2
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
	• Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
	• Local Control: Thermostat per space, operable windows
	• Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior	• Interior relites for transparency between corridor and learning space.
Windows:	• High and low operable exterior windows for air circulation.
	• Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0"
	• Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
	• FRP panel or wall finish at sink backsplash

Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic White Board (4' x 8') 2
Tack Boards:	•
Display Case:	• Cases in hallway with digital display.....2
Other:	•
Items to be Stored in this Space:	• Benson brand clothing and other merchandise

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Worktables • Chairs/Stools • Computer stations • All furniture required to be mobile for flexibility
Storage:	• Merchandise storage cabinets required around the perimeter of the room and/or under work counters
Moveable Equipment:	• VIOP Telephone.....1 • Refer to equipment list for details
Fixed Equipment:	• LCD Display .....1 • Short Throw Projector.....1 • Refer to equipment list for details

COMMENTS:

•

ACTIVITY AREA: Math Tech

DESCRIPTION: Classroom

Brief Instructional Objectives:

- Provide principles and instruction of math that will apply to Tech Geometry and Tech Algebra

Users of this Activity Area:

- All Freshman
- Sophomores

Activities Conducted in this Space:

- Direct instruction
- Small group activities

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Tech Algebra Lab
- Tech Geometry Shop

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Restrooms
- Student Lockers

Number of Teachers: 2

Number of Students:.....up to 48

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.

- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:

- Power via 20 Ampere duplex receptacles set flush in new walls.
- Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
- Power available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- LCD screen for display
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems in all classrooms.
- VOIP telephone capability for staff communication.

Plumbing:

- Utility Sink (Wall mounted, single-basin).....1

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows
- Thermal System: DOAS with heat recovery, radiant heating and cooling

Doors and Hardware:

-

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relite

Ceiling Height:

- Minimum: 9'-0"
- Maximum: 12'-0"

FINISHES:

Floor/Base:

- Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.

Walls:

- Gypsum wall board/ paint.
- FRP panel or wall finish at sink backsplash

Ceiling:

- Suspended acoustical ceiling or exposed structure with acoustical finish.
- Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

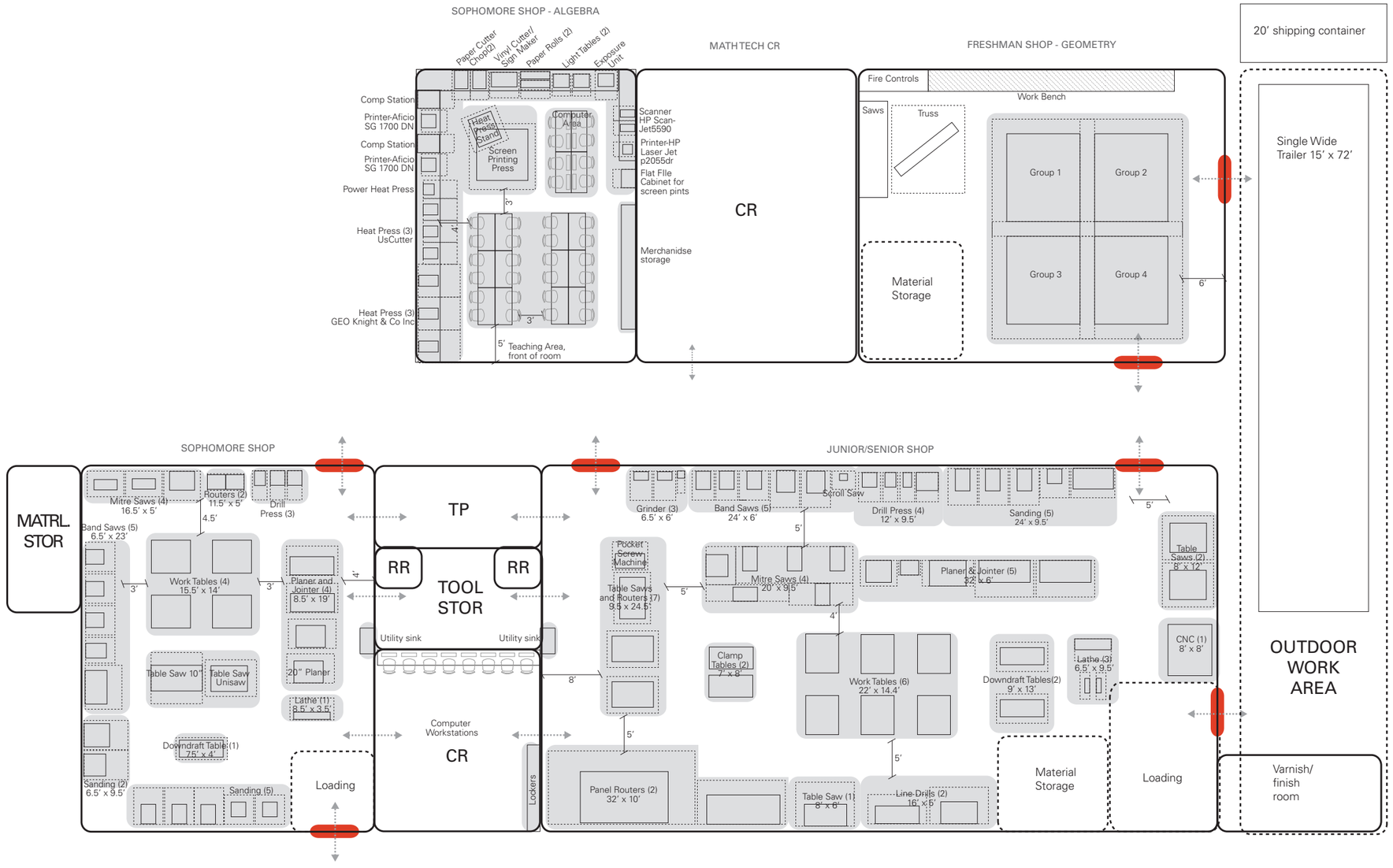
White Boards:	•	Magnetic marker boards.....2
Tack Boards:	•	No tack boards desired, all magnetic boards preferable
Display Case:	•	
Other:	•	
Items to be Stored in this Space:	•	Textbooks, office supplies

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•	Tables.....24 (2 students/desk)
	•	Student chairs.....48
	•	Teacher desk.....1
	•	Teacher chair.....1
Storage:	•	No requirement
Moveable Equipment:	•	VIOP Telephone.....1
	•	Refer to equipment list for details
Fixed Equipment:	•	LCD Display 1
	•	Short Throw Projector.....1
	•	Refer to equipment list for details

COMMENTS:

BUILDING CONSTRUCTION - MATH TECH / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Existing or New	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Survey Notes
	Math Tech-Algebra	229									
			Heat Press	3	E	UsCutter	IT9100	2' x 1.5'	3.5' x 3'	110 V, 13 A, 1.5 kW, 50/60 Hz	
			Power Heat Press (small)	1	E	Power Heat Press		1.5' x 1.5'	3.5' x 2.5'		
			Printer - Aficio SG 7100 DN	2	E	RICOH	7100 DN	1'10" X 2'	3' X 3.5'		
			Computer Stations	2	E	HP	L1710	2.5' x 3'	2.5' x 5'		Footprint includes tower
			Vinyl Cutter/sign maker	1	E	Roland	Versa Studio Sign	3.5' x 2'	4' x 3.5'	100-240 V, 50/60 Hz	
			Heat Press	2	E	GEO Knight & Co Inc.	16 x 20 K20S	2'8" x 1'6"	4.5' x 6'	120 V, 1800 W, 60 Hz, 15 Amps	Distance between work counters is 4.5'
			Paper Cutter - Chop	2	E			1' 10" x 2.5'	2.5' x 4'	none	
			Paper Roll	2	E			4' x 1'	4' x 2.5'	none	
			Light Tables	2	E	GRADCO		2' 2" x 1'10"	2.5' x 3'		
			Screen Printing Press	1	E	Hopkins	MR D-5 200	7' x 7'	9' x 9'	none	
			Heat Press Stand	1	E	Ryonet	EF1600	3'4" x 4'	5' x 5'	120 VAC, 1575 W, 13.3 A 50/60 Hz	
			Exposure Unit	1	E	silkscreeningsupplies.com	RXP exposure unit	2'2" x 1'9"	3' x 4'	120 W, 60 Hz, 1.9 A	
			Flat File Cabinet	1	E			2.5' x 2'			
			Scanner - HP ScanJet 5590	2	E	HP	Scan Jet 5590	2' x 1'	2' x 3'	In computer lab area	
			Printer - HP LasreJet P2055dn	1	E	HP	LaserJet P2055dr	1'4" x 1'4"			
			Computer Station Area	1	E	HP	Compaq LE1711	2'6" x 2'	2'6" x 4'	3 computers in the computer area	

DIGITAL MEDIA CTE PROGRAM

Arts and Communications Technology Academy

Summary

The Digital Media CTE Program exposes students to a production environment working in video production, website graphics and development, graphic design, and photography. Studio spaces support the production of these subject areas, while computer labs and classrooms support the editing and execution of their projects.

The following rooms are outlined in this document:

Digital Media – Photo/Web Lab
Digital Media – Video/Graphic Design Lab
Digital Media – Freshman/Sophomore Lab (x2)
Digital Media – Printing/Plotting/Layout
Digital Media – Photo Prep
Digital Media – Video/Sound Studio
Digital Media – Studio/Presentation
Digital Media – Storage/Checkout Room

Please reference the indicated section of the following rooms:

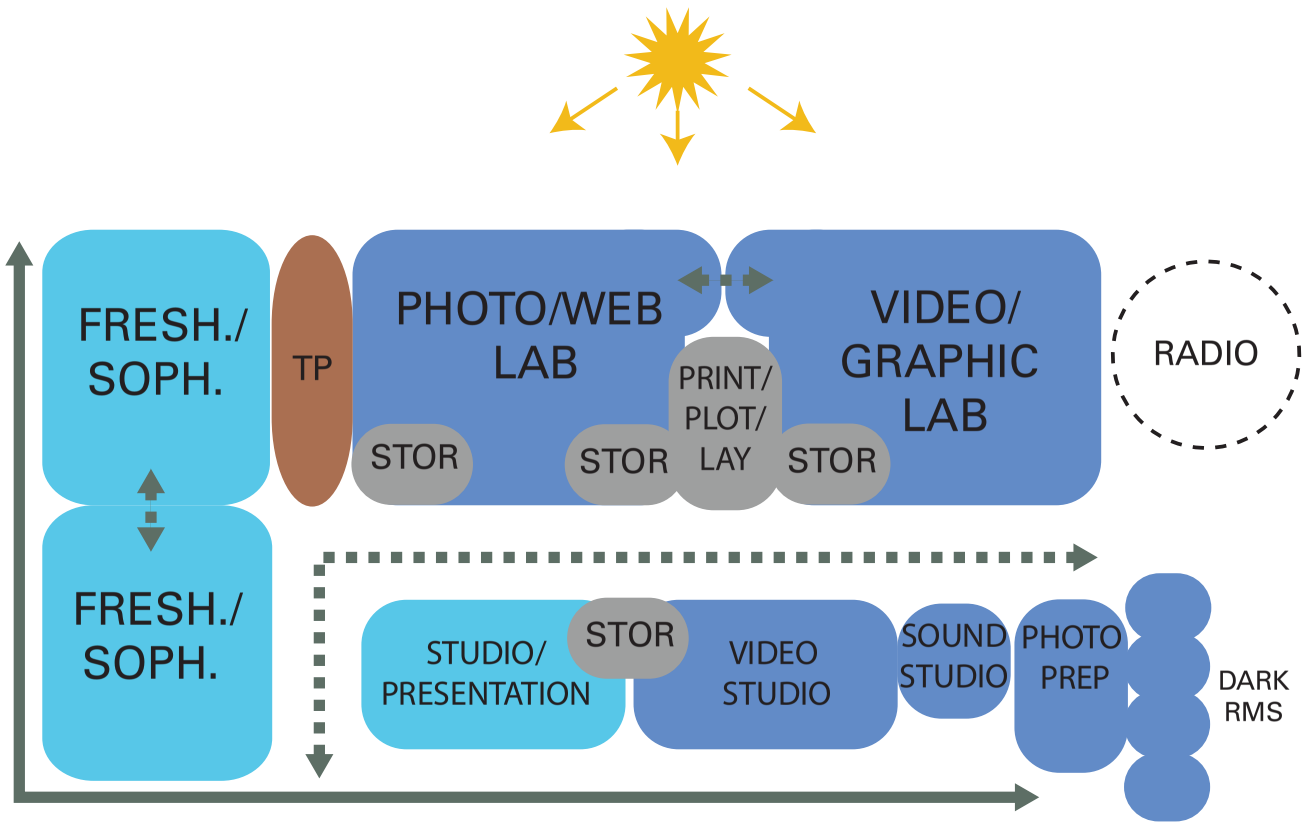
Digital Media – Storage– Reference Section 2.9
Digital Media – Teacher Planning – Reference Section 2.4

Other Program Adjacencies

+ Radio

Future Trends

+ Animation
+ Virtual Reality
+



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects / PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Digital Media

DESCRIPTION: Photo/Web Lab

Brief Instructional Objectives:

- Learn different coding languages (such has HTML, CSS, & Javascript) that will allow students to code websites and games.
- Explore different ways to take pictures and use different cameras

Users of this Activity Area:

- Juniors/Seniors

Activities Conducted in this Space:

- Printing, matting, and formatting photos
- Film scanning
- Photography Techniques
- Photography Design
- Photoshop
- Web Mockups
- Website Creation
- Using Cascading Style Sheets
- Web Basics – xHTML Structure

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Photo Prep Studio
- Film Dark Rooms (film developing)
- Pin Up Flex Space

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Equipment Check-Out
- Video Sound Studio
- Student Lockers
- Student Toilets

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting.
- Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- Control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder

Power/ Communications:

- Power will be provided via 20 Ampere duplex receptacles set flush in new walls
- The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system.
- The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity
- Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling.
- The cabling will route from wall cable whip boxes or floor whip boxes.
- Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough.
- Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- LCD screen for display

	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic White Board (4' x 8') 2
Tack Boards:	•
Display Case:	• In hallway with digital display
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Computer tables (on wheels)..... seating for 30 • Teacher table ..... 1 • Teacher chair..... 1 • Teacher stool 1

Storage:	• Storage Cabinet • Lockers • Lateral files (3 ft. wide, 5 drawers) ..... 2 • Paper storage unit ..... 1 • Bookshelves (3 ft. wide, 3 ft. high) 4
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone 1
Fixed Equipment:	• Refer to equipment list for details • Short Throw Projector ..... 1 • LDC Display 1

COMMENTS:

•

ACTIVITY AREA: Digital Media

DESCRIPTION: Video/Graphic Design Lab

Brief Instructional Objectives:

- Students learn video production from concept to completion including graphic design, film history, camcorder operation, animation, and editing.

Users of this Activity Area:

- Juniors/Seniors

Activities Conducted in this Space:

- Film History and Genres
- Script Writing
- Camcorder Operation
- Video and Audio Shooting Techniques
- Lighting Techniques
- Video Editing
- Adobe Suite
- Graphic Design
- Animation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Video/Sound studio
- Changing rooms/film dark rooms
- Equipment checkout
- Team Flex Space.

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Pin Up Flex Space

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating,

ventilating, and air-conditioning (HVAC) systems.

- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting.
- Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- Control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder

Power/ Communications:	• Power will be provided via 20 Ampere duplex receptacles set flush in new walls • The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system. • The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity • Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling. • The cabling will route from wall cable whip boxes or floor whip boxes. • Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough. • Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Theater projector with HIFI sound and access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided • VOIP telephone capability for staff communication.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No windows required
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.

Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic White Board (4 x 8).....2
Tack Boards:	•
Display Case:	• In hallway with digital display
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Computer tables (on wheels).....seating for 24 • Teacher table .....1 • Teacher chair.....1
Storage:	• No requirement
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone 1
Fixed Equipment:	• Refer to equipment list for details • Short Throw Projector.....1 • LDC Display 1

COMMENTS:

•

ACTIVITY AREA: Digital Media

DESCRIPTION: Video/Sound Studio

Brief Instructional Objectives:

- Studio space for video and sound production

Users of this Activity Area:

- Photo/Web Lab and Video/Graphics Lab

Activities Conducted in this Space:

- Green Screen/White screen photo and video backdrop
- Sound booth
- Videography
- Photography

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Photo/Web Lab
- Video/Graphics Lab
- Changing Rooms/Dark Rooms

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: ..... Shared

Number of Students:..... Shared

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 600 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in

	the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Significant lighting variation control is required
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available spaced equally at the perimeter of the room • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	•
Display Case:	• No requirement
Other:	•

Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• Blue and Orange storage cabinet 2
Moveable Equipment:	• Light Reflectors
Fixed Equipment:	• Green Screen/White Screen pull down • Sound Booth

COMMENTS:

•

ACTIVITY AREA: Digital Media

DESCRIPTION: Photo Prep

Brief Instructional Objectives:

- Prepare photos to be developed

Users of this Activity Area:

- Students using the Photo/Web Lab

Activities Conducted in this Space:

- Photo processing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Photo/Web Lab
- Film Dark Rooms

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... Shared

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 460 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no

	occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• Large photo processing sinks
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Photo processing chemicals • Photo paper

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• Blackout casework to store chemicals
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Digital Media

DESCRIPTION: Freshman/Sophomore Lab (x2)

Brief Instructional Objectives:

- Students are introduced to digital design, editing, and production of photos, video, and graphic design.

Users of this Activity Area:

- Freshman
- Sophomores

Activities Conducted in this Space:

- Graphic Design
- Page Layout Software
- Digital Photo Manipulation
- HTML and web page design
- Digital Video Editing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Storage
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:.....24

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Desired Floor Area .....850 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.

- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting.
- Relay controlled lighting from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- Control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder

Power/ Communications:

- Power will be provided via 20 Ampere duplex receptacles set flush in new walls
- The power receptacles for the individual student computer stations will be provided via the student computer desk table integral wiring system.
- The student computer desk table integral wiring system will be plug in cord connected to either wall or floor power outlets. Positioning of power outlets will be coordinated with the Architectural design.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity
- Individual student and staff computer work stations will be connected to the IT rack patch panels in the telecom room via dedicated category 6 cabling.
- The cabling will route from wall cable whip boxes or floor whip boxes.
- Individual student and staff computer work station 358B jacks will have the category 6 cable routed via the student computer desk table, cable management trough.
- Patch cables will be used to connect the individual computers to the 358B jacks in the student computer desk table.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- LCD screen for display
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided
- VOIP telephone capability for staff communication.

Plumbing:

- No requirement

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows
- Thermal System: DOAS with heat recovery, radiant heating and cooling

Doors and Hardware:	•
Interior and Exterior Windows:	• Exterior windows: clerestory • Interior windows: transparency to hallway
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• At front of room (4 x 8) 2
Tack Boards:	•
Display Case:	•
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Computer tables and chairs .....24 • Teacher desk and chair 1
Storage:	• No requirement
Moveable Equipment:	• Refer to equipment list for details • VIOP Telephone 1
Fixed Equipment:	• Refer to equipment list for details • Short Throw Projector.....1 • LDC Display 1

COMMENTS:

•

ACTIVITY AREA: Digital Media

DESCRIPTION: Printing/Plotting/Layout Room

Brief Instructional Objectives:

- Print, mat, frame, prepare photos for presentation

Users of this Activity Area:

- Students from Photo/Web Lab

Activities Conducted in this Space:

- Photo matting, mounting, and framing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Photo/Web Lab (this space is part of the photo web lab with no walls)
- Photo prep studio

Activities that should be NEAR this Activity Area:

- Teacher Office/Preparation/Storage, Student Toilets and Student lockers.

Number of Teachers: 1

Number of Students:.....24

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Desired Floor Area .....300 sf embedded into Photo/web lab room

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic

	vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement

Other:	• No requirement
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Tables for mounting presses and photo matting (4'x8') 2
Storage:	• Reference attached equipment inventory
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory
COMMENTS:	•

ACTIVITY AREA: Digital Media

DESCRIPTION: Studio/Presentation

Brief Instructional Objectives:

- Open flex space to present and critique the work of the digital media program

Users of this Activity Area:

- Students in Digital Media

Activities Conducted in this Space:

- Student work presentation and display

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Photo/Web Lab
- Video/Graphic Design Lab
- Freshman/Sophomore Classrooms
- Storage

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: ..... Shared

Number of Students:..... Shared

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... No

Desired Floor Area ..... 600 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control

	stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	• Large sliding door or moving wall to open up space to hallway
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	•
Tack Boards:	•
Display Case:	•
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	• Mobile Computer Cart 1
	• VIOP Telephone 1
	• Wall partitions for pin-up
Fixed Equipment:	• LCD Display 1
	• Short Throw Projector 1

COMMENTS:

•

ACTIVITY AREA: Digital Media

DESCRIPTION: Equipment Checkout/Storage Room

Brief Instructional Objectives:

- Storage space with checkout window for digital media students to checkout cameras, videos, and other equipment for class projects.

Users of this Activity Area:

- Digital Media students and teachers

Activities Conducted in this Space:

- Storage and check out of digital media equipment

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Photo/Web Lab
- Video/Graphic Design Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning

Number of Teachers: 0

Number of Students:.....0

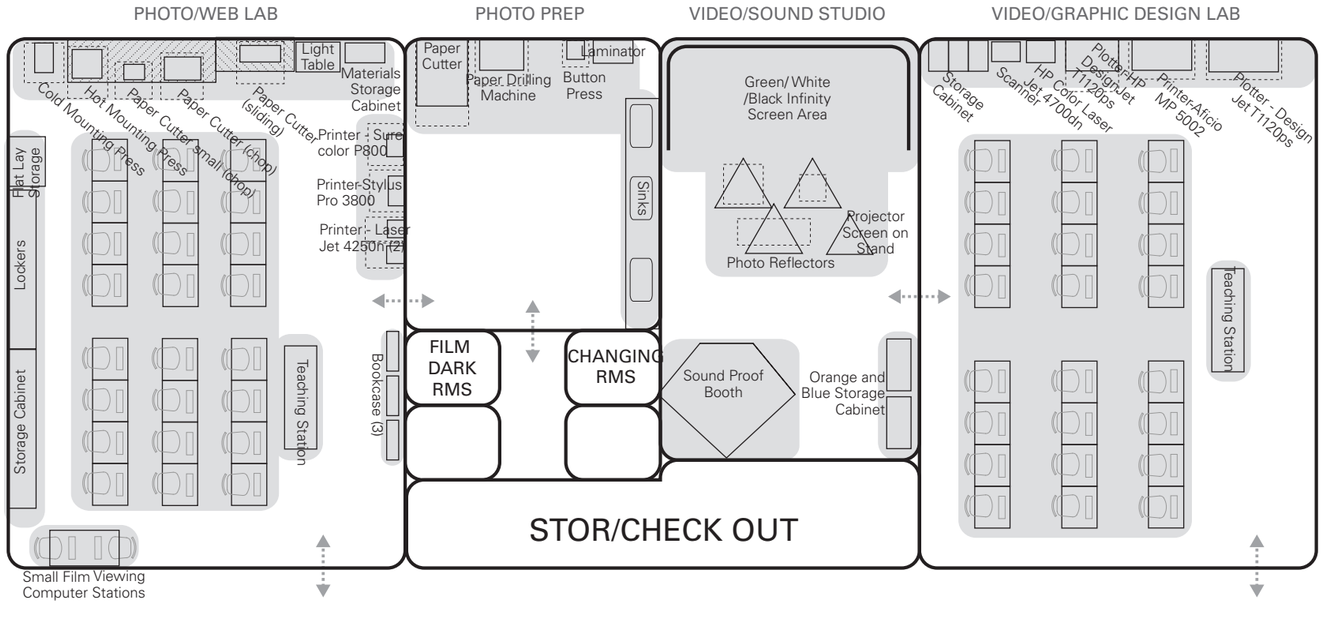
Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Desired Floor Area .....450 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• No requirement
Lighting:	• General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation
Power/ Communications:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Plumbing:	• No requirements
HVAC/Mechanical:	•
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
Digital Media	Photo/Web Lab	E102								
			Paper cutter (sliding)	1	Rotatrim	Mastercut II	3' 1" x 1'3"	8' x 4'2" table		In the cutting, matting photo prep table area
			Paper cutter (chop)	1	Premier		2'9" x 1'9"	8' x 4'2" table		
			Paper cutter small (chop)	1	Premier		1'7" x 1'2"	8' x 4'2" table		
			Hot mounting press	1	Seal	Commercial 210 M	2'2" x 2'3"	8' x 4'2" table	Connected to power	
			Cold mounting press	1			1'5" x 2'3"	3'x 3'		
			Printer- SureColor P800	1	Epson	SureColor P800	1'8" x '3"	3'2" x 2'8" table	Connected to power	
			Printer-stylus pro 3800	1	Epsom	Pro 3800	2'3" x 1'3"	3'2" x 2'8" table	Connected to power	
			Computer workstations	23			3'2" x 2'8"		Connected to power	
			Lockers	60	Lyon		10" x 1'2"	12' x 3' block of lockers total		
			Storage cabinet	1			12' x 2'			
			Flat lay storage	1	Lyon		3'9" x 2'10.			
			Small film viewing computer stations	1			5'3" x 2'8"		Connected to power	Station has two computers, two film viewers
			Printer-laser jet 4250n	1	hp	laser jet 4250n	1'4" x 1'5"	2' x3'	Connected to power	Working area includes table the printer sits on
			Bookcase	3			3' x 11"			
			Materials storage cabinet	1			3' x 1'6"			
Digital Media	Photo/video/sound Studio	E105								
			Paper cutter	1	Challenge	HA	3' 10" x 5'	4' x 6.5'	Connected to power	
			Paper drilling machine	1	Challenge	JF 33193	3'4" x 2'4"	4' x 3.5'	Connected to power	
			Printer- Aficio MP 5002	1	Ricoh	Aficio MP 5002	4' 6" x 2'4"	5' x 3'	Connected to power	
			Button press	1			1'4" x 1'5"	2' x 2'		On tabletop
			Paper and misc. storage	1			4'4" x 2'			
			Laminator	1	GBC	Heat Seal Ultima 65	3' x 1'9"		Connected to power	
			Orange and blue storage cabinet	2			3'11" x 1'10"			
			Sound proof booth	1			4', 5', 7' 7',5' pentagon		Connected to power	
			Green screen area	1			9' x1'	9' x 9'		
			Photo reflector	4-different sizes			3' x 3', 2' x 2', 5.5 x 2'	2'9" stand round		
			Projector Screen on Stand	1			3.5' x 3.5' triangle			
			White screen area	1			9' x 1'	9' x 9'		
		Freshman Mac lab	Computer stations	23			3'2" x 2'6'	2 computers on a 6' x 2.5'	Connected to power	
Digital Media	Photo Studio	E109								
			Photo processing sinks	2			2.5' x 1'7"	2.5' x15' countertop		On counter with large storage space and cabinetry
			Light table	1	Gradco		2'3" x 3'4"		Connected to power	
			Plotter -Design Jet 1050C	1	Hp	Design Jet 1050C	2.5' x 5'3"		Connected to power	
			Lockers	70			10" x 1' 2	Around perimeter of room		
	Video/Graphic Lab	E103								
			Printer-laser jet 4250n	1	hp	laser jet 4250n	1'4" x 1'5"		Connected to power	
			Hp color laser jet 4700dn	1	hp	laser jet 4700dn	1'8" x 2'2'		Connected to power	
			Computer stations (Mac)	22			3'2" x 2'8"		Connected to power	
			Storage cabinets around 2 walls of room	30			3' x 1'			
			Plotter- hp DesignJet T1120ps	1	Hp	DesignJet T1120ps	4' x 3'	4' x 4'	Connected to power	
			Storage cabinets	3			1'6" x 2'4"			
			Scanner	1	Epson	Expression 11000XL	2'2" x 1'6"		Connected to power	

ELECTRIC CTE PROGRAM

Industry and Engineering Academy

Summary

The Electric CTE program provides students with hands-on electric experience in residential and commercial applications. Students gain experience in equipment and tool safety, and codes and regulations within projects including circuit board wiring, house wiring, security system installation, fire alarm wiring, industrial automation, robotics, and motor control.

Adjacent outdoor space, providing areas for work, loading and material storage should be provided near the exterior access doors in shop spaces for easy loading and unloading of supplies and products. This space should also be adjacent to the CTE courtyard for shared access with other CTE programs.

The following rooms are outlined in this document:

Electric – Senior Automation Shop
Electric – Junior Res/Comm Shop
Electric – Sophomore Shop
Electric – Freshman Shop

Please reference the indicated section of the following rooms:

Small Classroom – Reference Section 2.7
Teacher Planning – Reference Section 2.4
Storage – Reference Section 2.9

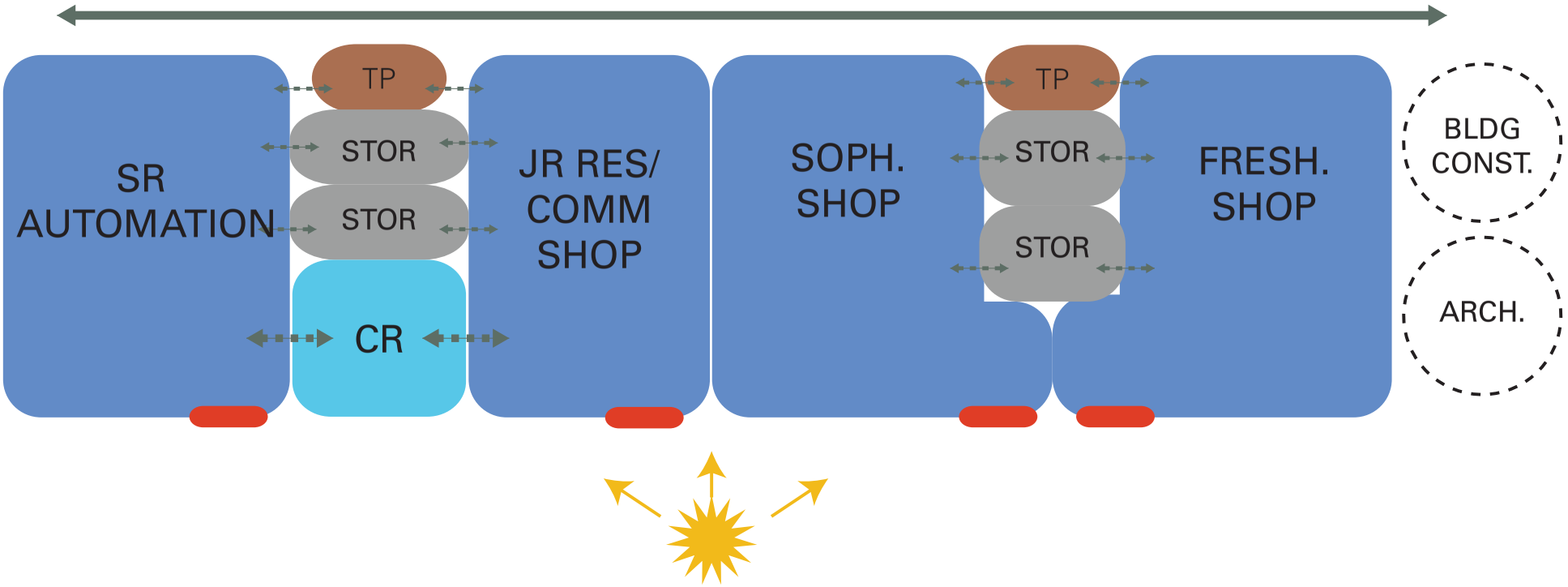
Other Program Adjacencies

- Construction
- Architecture
- Robotics
- Computer Engineering

Future Trends

- Alternative Energy Sources – Solar PV, Wind, Etc.
- Battery Technology
- Electric Bikes and Scooters
- Electric vehicle charging station

ELECTRICAL / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects / PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Electric

DESCRIPTION: Freshman Shop

Brief Instructional Objectives:

- Students are introduced to Electronic theory and practice including soldering and basic circuit construction.

Users of this Activity Area:

- Freshman

Activities Conducted in this Space:

- Classroom Instruction
- Lab work

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Sophomore Shop
- Storage
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student lockers

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 1,800 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop,

automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:
- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:
- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
- Exhaust hoods for soldering.....2

Doors and Hardware:
- Roll-up door for exterior loading access

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:	• Minimum: 12'-0" • Maximum: 14'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• 1-2 layers of GWB in a spring suspended ceiling system with insulation in the cavity

SPECIALTIES:

White Boards:	• Magnetic White Board (4' x 8') 2
Tack Boards:	•
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (2 person).....seating for 28 • Student chairs.....28 • Teacher table .....1 • Teacher chair.....1 • Student workstations.....16
Storage:	• No requirement
Moveable Equipment:	• Classroom furniture • Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- This space is 75% lab use and 25% classroom use

ACTIVITY AREA: Electric

DESCRIPTION: Sophomore Shop

Brief Instructional Objectives:

- Students further analyze and learn electric theory and practice.

Users of this Activity Area:

- Sophomores

Activities Conducted in this Space:

- Electrical house wiring power supplies
- Amplifier and alarm projects
- Circuit board assembly

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior Res/Comm Shop
- Freshman Shop
- Storage
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 1,800 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop,

automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:
- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided
- Provide dedicated power supply with excess capacity for fluctuations in power requirements of program.
- Provide connection to alternative energy systems – PV and wind, for example, to allow incorporation into projects.

Plumbing:
- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:
- Roll-up door for exterior loading access

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.

	• Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 12'-0" • Maximum: 14'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• Magnetic White Board (4'x8') 2
Tack Boards:	•
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	• Storage furniture • Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Electric

DESCRIPTION: Junior Res/Comm Shop

Brief Instructional Objectives:

- Students are introduced to systems of electric technology.

Users of this Activity Area:

- Juniors

Activities Conducted in this Space:

- Electric safety
- Industry tools and equipment
- Mechanical systems
- Commercial wiring methods
- Codes and regulations
- Mirco house wiring
- Fire alarm and security system installation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Senior Automation Shop
- Storage
- Teacher Planning
- Classroom
- Sophomore Shop

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 1,800 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements

and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided
- Provide dedicated power supply with excess capacity for fluctuations in power requirements of program.
- Provide connection to alternative energy systems – PV and wind, for example, to allow incorporation into projects.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust

	systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	• Interior: Minimal transparency to hallway required • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows.
Ceiling Height:	• Minimum: 12'-0" • Maximum: 14'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement – will be accommodated in small classroom
Tack Boards:	•
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Mini-house stations

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ACTIVITY AREA: Electric

DESCRIPTION: Senior Automation Shop

Brief Instructional Objectives:

- Students advance in commercial electric systems and techniques.

Users of this Activity Area:

- Seniors

Activities Conducted in this Space:

- Semiconductor technology
- Three phase electrical systems
- Motor control
- Programmable controllers
- Robotics
- Variable frequency drives
- Industrial automation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Junior Electric
- Storage
- Classroom
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 2,400 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided
- Provide dedicated power supply with excess capacity for fluctuations in power requirements of program.
- Provide connection to alternative energy systems – PV and wind, for example, to allow incorporation into projects.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin) 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future

flexibility.

Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	• Interior: Minimal transparency to hallway required • Exterior: Operable within reach, horizontal mini-blinds
Ceiling Height:	• Minimum: 12'-0" • Maximum: 14'0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement – will be accommodated in small classroom
Tack Boards:	•
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	•

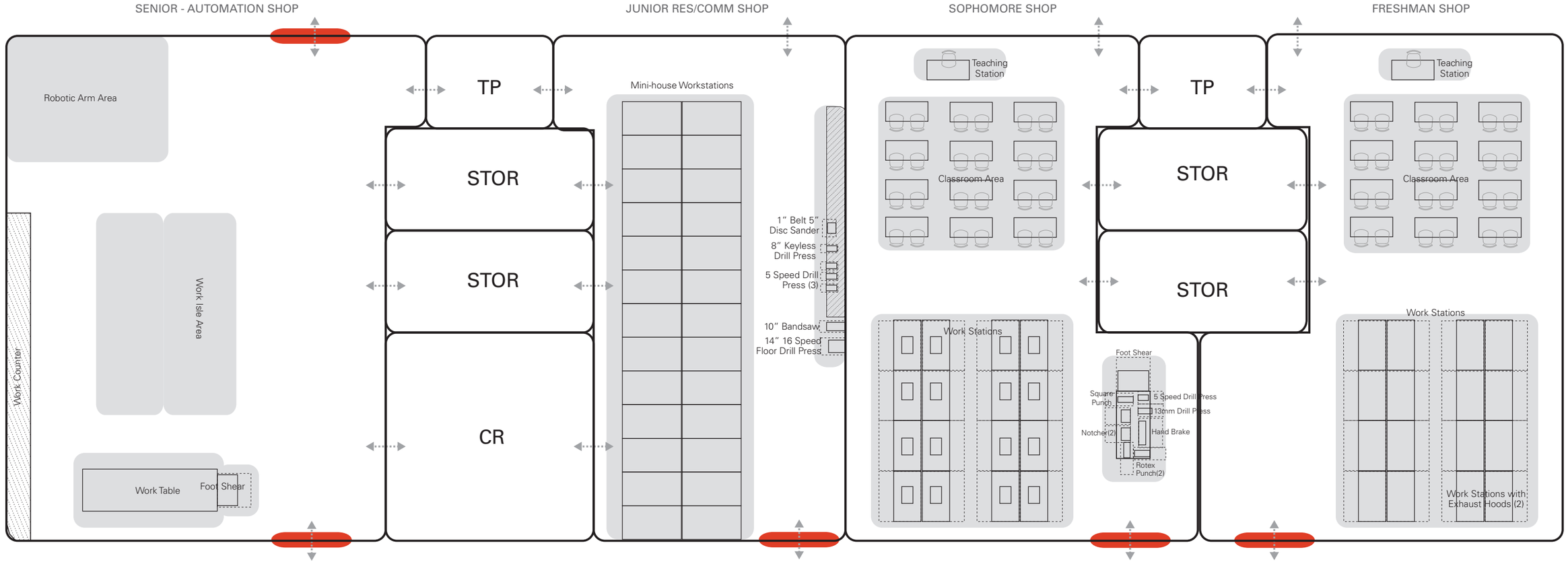
FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

- Adjacent classroom requires DOAS thermal system with heat recovery, radiant heating and cooling

ELECTRICAL / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- COUNTER TOP
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in rec
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks columr

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements	Notes
ACE	Sr. Electric	E149								
			Robotic arm area	1			15' x 16'			
			Work isle area	2			10' x 24'			
			Mill	1	Bridgeport					
			Work table	1			5' x 16'			
			Foot shear	1	Pexto	137-L	3' 8" x 2'5"	4' x 4'		No power
			PLC (Programmable logic controller	1			3' x 3'	3'x3'		Small computer workstation
			Motor Control Lab	1			4' wall space			Logic controller system installed on the wall
ACE	Jr. Electric	E143								
			Mini house workstations	18			7' x 4' x 8.5' tall			
			Countertop workstations	24			2'6" x 2'8"			
			Parts area	1			North wall			
			10" Bandsaw	1	Jet		2' x 1.5'	3' x 2'	120 V, 3.4 Amps, 60hz	Connected to power
			14" 16 speed floor drill press	1	Tradesman	8100S	2' 2" x 1'	3' x 1.5'		Connected to power
			5 speed drill press	3	Target machinery	813B	8" x 1'3"	1' x 2'		Connected to power
			8" keyless drill press	1	Central Machiner	44595	8" x 1'3"	1' x 2'	110 V, 3.6 Amps,60 ha	Connected to power
			1" belt 5" disc sander	1	Delta	P2001	1'3" x 1'	2' x 2'	120 V, 2.6 Amps, 60 Hz	Connected to power
			Lockers	60	Lyons		10" x 14"			Along south wall
ACE	Soph. Electric 2	E136								
			Foot shear	1	Pexto	138-k	3' 8" x 2'5"	4' x 4'		No power
			5 speed drill press	1		ZJ4113	8" x 1'3"	1.5' x3'	Connected to power	Connected to power
			Square punch	1	Roper Whitney in	218	8" x 1'10"	1.5' x 4.5'	No power	
			Hand Brake	1	Berkroy	B 924	2'10" x 10"	3.5' x 2'10"	No power	
			Rotex punch	2	Thor	1210	9" x 1'10"	1.5' x 3'10'		
			Notcher	2	Roper Whitney co	100	1'6" x 1'1"	2' x 3'		
			13 mm drill press	1	Target machinery	TT-6P	8" x 1'8"	1.5' x 3'		
			Work table 8' x 4'	1						
		only 14 fit in new space	Perimeter counter work stations	24			6' x3'3"	6' x5'	4 outlets	Includes 4 outlets, 2 upper cabinets, and a shelf
			Desks and chairs-	28						
			Wiring mock ups	13			2' x 1'4"			

ENGINEERING CTE PROGRAM

Industry and Engineering Academy

Summary

The Engineering CTE program is transitioning from a complimentary elective for numerous majors to a full CTE program that can integrate with almost all of the other majors.

Students can engineer and develop a variety of projects. Currently, the focus is in developing skateboard parts, gaining design and problem solving skills through 3D Modeling and 3D Printing. The program includes design, drafting, and fabrication using high tech tools and machinery with a variety of materials including wood, metal, and plastic.

The following rooms are outlined in this document:

Engineering – Classroom/ Design Lab
Engineering – Fabrication Shop

Please reference the indicated section of the following rooms:

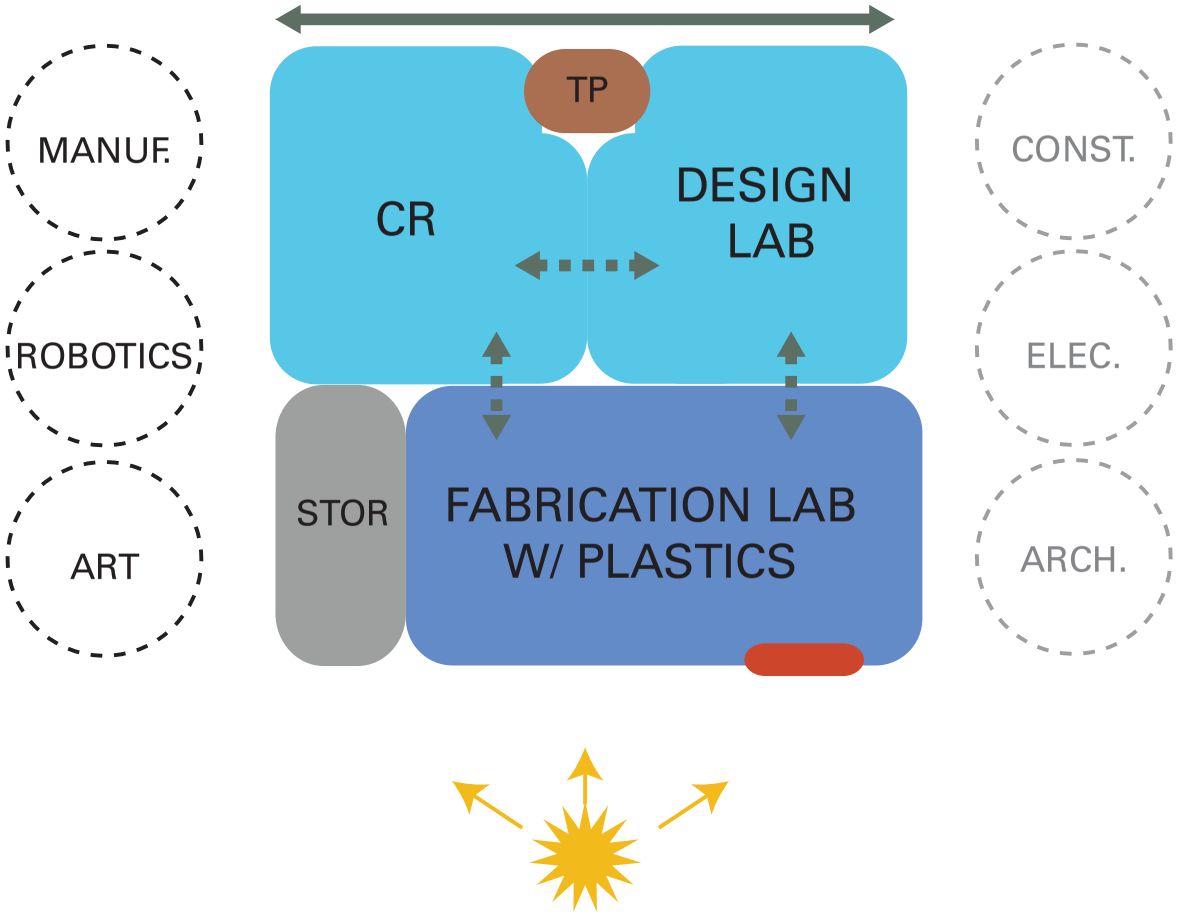
Teacher Planning – Reference Section 2.4
Storage – Reference Section 2.9

Other Program Adjacencies

+ Manufacturing
+ Robotics
+ Architecture
+ Electrical
+ Digital Media
+ Art

Future Trends

+ High resolution wax and resin castings
+ Next generation CNC and laser cutting machines
+ Biological Materials Science
+ Hybrid Technology (Artificial and Biological)
+ Neurotechnology (Sensor, Command, Control Systems)
+ Social Robots/Artificial Intelligence
+ Merged Reality Systems
+ Nano/Picotechnology
+ Mota Materials and smart materials



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects / PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Engineering

DESCRIPTION: Classroom / Design Lab

Brief Instructional Objectives:

- Classroom instruction, planning and drafting of products to be produced in the fabrication shop

Users of this Activity Area:

- Freshman/Sophomores
- Juniors/Seniors

Activities Conducted in this Space:

- Classroom Instruction
- 3D Modeling
- 3D Printing
- Drafting
- Vinyl Cutting

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Fabrication Shop
- Classroom

Activities that should be NEAR this Activity Area:

- Teacher Prep
- Student Toilets
- Student lockers

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 950 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	•
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and design lab, and fabrication shop and design lab • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 12'-0" • Maximum: 15'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4'x8') 2
Tack Boards:	•
Display Case:	• Display case desired in hallway
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Work tables ..... 6 (4 students/table) • Stools/chairs 24
Storage:	• Lockers under work tables
Moveable Equipment:	• 3D printers ..... 5 • Sign Maker ..... 1 • Drafting table ..... 1 • VIOP Telephone ..... 1 • Laptop carts (30 laptops) 2
Fixed Equipment:	• Short Throw Projector ..... 1 • LCD Display 1

COMMENTS:

•

ACTIVITY AREA: Engineering

DESCRIPTION: Fabrication Shop

Brief Instructional Objectives:

- Develop design and problem solving skills by 3D Modeling and 3D Printing solutions.

Users of this Activity Area:

- Juniors and Seniors

Activities Conducted in this Space:

- Skateboard component development and production
- MasterCAM CNC toolpathing
- Plastics Machinery
- Injection molding
- Sanding
- Lost wax casting

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Engineering Design Lab

Activities that should be NEAR this Activity Area:

- Teacher Prep
- Storage
- Student Toilets
- Student lockers.

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 2,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Sound Transmittal Coefficient (STC): 65-70
- Sound absorption meeting LEED Silver requirements

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced

maintenance).
- Linear light output (reduced shadow casting on work surfaces)
- Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
- Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.

- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin).....1

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:

- Rollup door for exterior loading access

Interior and Exterior Windows:

- Interior relites for transparency between fabrication shop and the design lab.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:

- Minimum: 12'-0"
- Maximum: 15'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

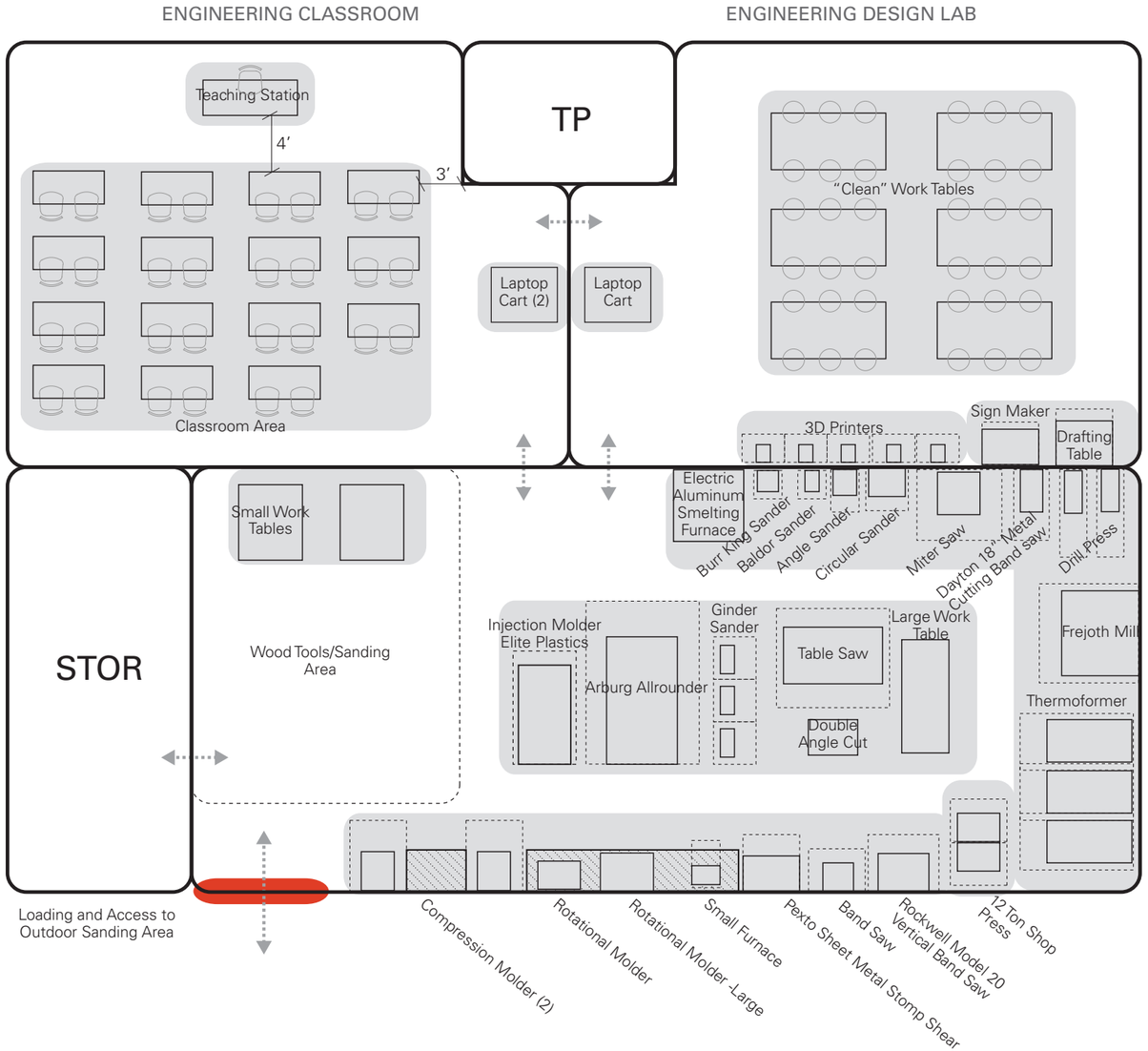
White Boards:	• Magnetic white board (4'x8') 1
Tack Boards:	• No requirement – will be accommodated in the design lab and classroom
Display Case:	• Display case in hallway is desired
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- COUNTER TOP
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
Engineering	Engineering/Plastics	C138								
			"Clean" Work Table	3	N/a		4' x 8'1"			24 small lockers under each table, 12 on each side
			"Dirty" Work Table-Large	1	N/a		3'4" x 8'			Flat wood storage underneath
			"Dirty" Work Tables-Black	4	N/a		4' x 2'			On south side of room behind thermoforming
			"Dirty" Work Table-Small	2	N/a		5'4" x 4'6"			Flat wood storage under 1/2 tables
			12 Ton Shop Press	2	Dynamo		2' x 3'	3' x 4'		On wheels
			30 Ton Injection Molder	1	Newbury industries inc.	H1-30RS	5.5' x 7.5'	6' x 8'	Heater Circuit: 208 V, 18 Amps, 60 Hz. Motor Circuit: 208 V, 21 Amps, 60 Hz. Control Circuit: 115 V, 4 Amps, 60 Hz.	Lots of connections,see pictures
			3D printers	5	Mod-t, MakerBot		1' x 1'3"	3' x 2' - includes 2 on a desk with computer and sitting area		2 3D printers/desk area, see pictures
			Angle Sander	1	Unknown		1'8" x 1'10"	2' x 3'		Connected to power and exaughst
			Arburg Allrounder	1	Arburg	221-55-250	9' x 5'	12' x 8'	230 V, 60 Hz, 10 kW	Connected to power and exhaust, other connections see pictures
			Baldor Sander	1	Baldor		1' x 1.5'	2' x 2'	115/208-230 V, 7.4/3.9-3.7 Amps, 60 Hz	Connects to power (not currently connected)
			Band Saw	1	Rockwell/ Delta	28-200	2'2" x 2'	4' x 3'		Connected to power
			Blow Molder	1	Rocheleau		6.5' x 3.5'	Unknown	220 V	Multiple connections, see pictures
			Burr King Sander	1	Burr-King	562	1.5' x 1.5'	2' x 2'		Connects to power (not currently connected)
			Circular Sander	1	Chawn		2'7" x 2'	3' x 3'		Connected to power and exhaust
			Compression molder	2	DAKE	44250	2'4" x 2'9"	4' x 5'	240 V, 4800 W	Power and other connections,see pics, small work table between 2 machines
			Dayton 18" Metal Cutting Band Saw	1	Dayton	6Y952	1'7" x 3'	2.5' x 5'		Connected to power
			Double Angle Cut	1	Polymer machinery Corp		3.5' x 2.5'	Unknown		On wheels, Baldor motor, Connects to power (not currently connected)
			Drafting table	1	Unknown		4' x 3'2"	4' x 4'		Standalone.
			Drill press	2	Powermatic Houdaille	1150A, 1100	3' x 1'3"		203 V	Connected to power
			Frejoth Mill	1	Frejoth	980273	6' x 5.5'	7' x 7'		Doesn't appear to be in use, connects to power
			Grinder sander	3	Baldor		2' x 1'	3' x 3'	220/440 V, 1.3/0.65 Amps	2 Baldor, one unknown,1 Baldor connected to large exhaust
			Injection Molder	1	Stein Equipment co		2.5' x 7'	3' x 8'		Connected to power, has 1 exhaust hood over part of the machine
			Lockers	See notes	N/a		See notes			28 lockers under west wall counter (10" x 12" x 20" deep), 72 lockers under 3 clean work tables (10" x 14" x 20" deep), 1 locker under counter on south wall (3' x 2' x 20" deep)
			Miter Saw	1	Bosch		3' x 3'	3' x 5'		Connected to power, on rolling machine table
			Pexto Sheet Metal Stomp Shear	1	Peck, stow, & Wilcox co	137-L	4' x 2.5'	4' x 4'	None	Bolted to wood on ground
			Rockwell Model 20 Vertical Band Saw	1	Rockwell	28-3X5	3'7" x 2'8"	5' x 4'		Connected to power and exhaust
			Rotational Molder	1	EM Co		3' x 2'	3' x 2'	115 V, 20 Amps	On counter connected to power
			Rotational Molder-Large	1	EM Co		3'9" x 3' x 5' tall	3'9" x 3' x 5' tall	110 V, 25 Amps	Stand alone
			Sign Maker	1	Roland		4' x 2.5'	4' x 3'		Standalone on wheels
			Small Furnace	1	K.H. Huppert co	D.0v	1'4" x 2'	1'4" x 2'	110 V, 10 Amps	On counter connected to power
			Table saw	1	Saw stop		7' x 4'	8' x 7'		Con need to power and exhaust
			Thermoformer	3	AAA Plastics Equipment Co.	MB 5	6' x 3'	8' x 4'	220 V, 45 Amps	Connected to power
			Vise Grip	4	Morgan Chicago		1' x 1'	1' x 3'	None	4 on counter throughout room
			Wall mounted Wood Storage Cabinet	1	N/a		4' x 4' x 1' deep		None	On east wall by bathroom and sink
			Wood Storage Cabinets	1	N/a		2.5' tall x 6' long x 1' deep		None	On south wall counter top
			Sink	1	N/a		5' x 5'			circular sink with foot pedal
			Electric Aluminum Smelting Furnace	1			5' x 5'			
			Lap Top Carts	4						2 carts in each clean lab
			Injection Molder	1	Elite Plastics Donation		4'8'			Dimensions not exact-please verify

HEALTH OCCUPATIONS CTE PROGRAM

Health Science Academy

Summary

The Health Occupations CTE program combines in-school coursework with real-world clinical experience to prepare students for assistant positions in nursing, dentistry, first responding, and medical fields.

The following rooms are outlined in this document:

Health Occupations – Nursing Lab
Health Occupations – Dental Lab
Health Occupations – Medical Lab
Health Occupations – Medical Scenario Clinic
Health Occupations – Medical Sim Lab
Health Occupations – First Responder Classroom

Please reference the indicated section of the following rooms:

Anatomy Lab – Reference Section 2.2 (Science Lab)
Anatomy Lab Prep – Reference Section 2.5 (Science Lab Prep)
Freshman Classroom – Reference Section 2.1
Teacher planning – Reference Section 2.4
Storage – Reference Section 2.9
Extended Learning Area – Reference Section 2.3
Conference Room – Reference Section 2.6

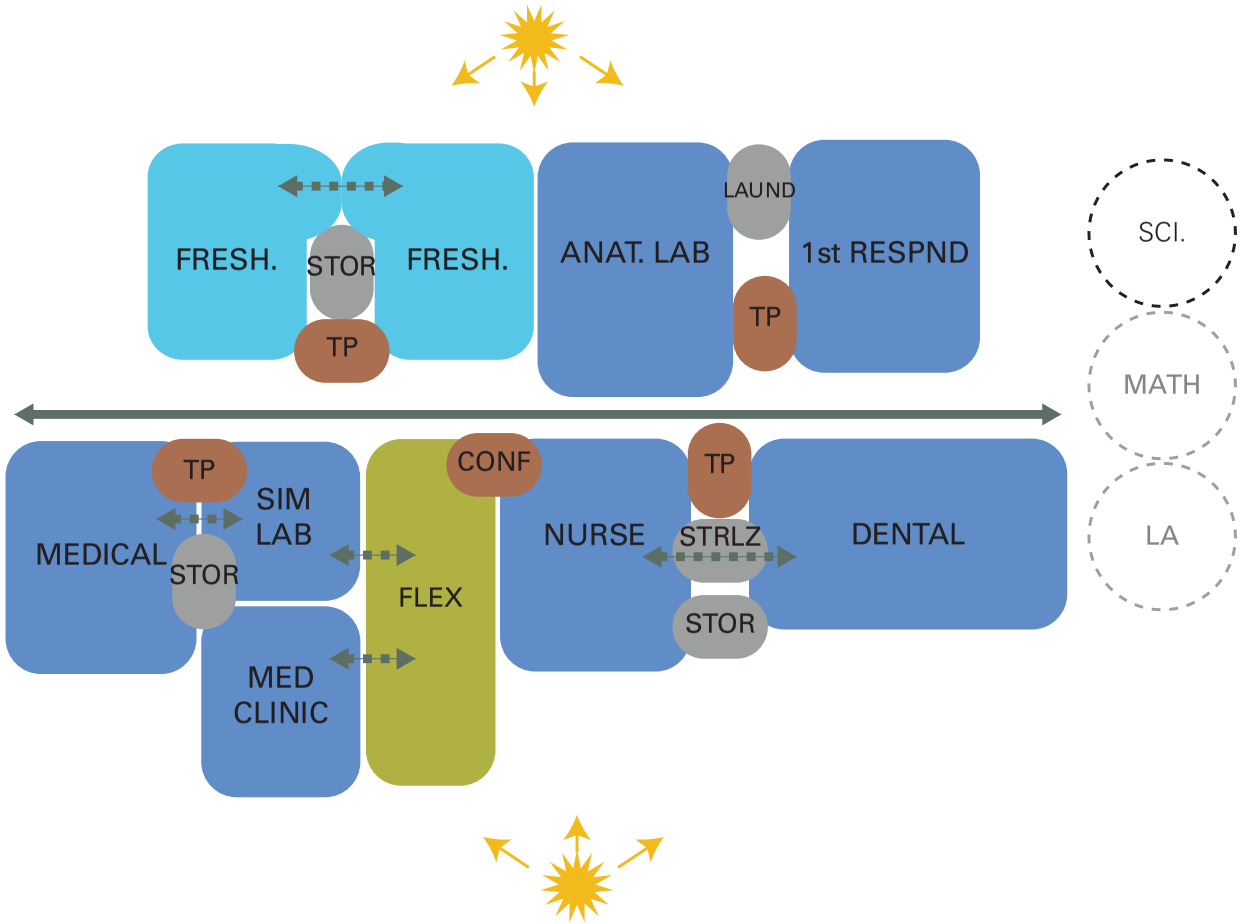
Other Program Adjacencies

+ Science

Future Trends

+ Handheld, portable x-ray system (Dentistry)
+ Bioinformatics
+ Smart Medicine (Pharmaceuticals, devices, materials)
+ Theragnostic Medicine (technology that diagnoses and treats)
+ Robots (surgical and social)
+ Metamaterials
+ AI and Quantum AI
+ Regenerative Medicine
+ Neuroprosthetics

HEALTH OCCUPATIONS / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects

PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Health Occupations

DESCRIPTION: Nursing Lab

Brief Instructional Objectives:

- Students learn instruction in nursing assistance and human development.

Users of this Activity Area:

- Nursing students and teachers

Activities Conducted in this Space:

- Presentations by teachers and students, individually and in groups;
- Small and medium group instruction;
- Display of material such as student work;
- Watching DVDs;
- Patient health records
- Lab instruction at nursing beds

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Sterilization Room
- Dental Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers
- Flex area

Number of Teachers: 1

Number of Students:..... up to 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 1,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:

- Computer area.....6 computers
- Kitchen Area .....fridge, oven, other kitchen appliances
- Power via 20 Ampere duplex receptacles set flush in new walls.
- Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
- Power available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers.
- LCD screen for display
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems in all classrooms.
- VOIP telephone capability for staff communication.

Plumbing:

- Sinks in lab.....4
- Sink in kitchen 1
- Dish washer.....1

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat, operable windows, Local control of dedicated exhaust systems
- Thermal System: DOAS with heat recovery, radiant heating and cooling
- Fume hood exhaust where applicable

Doors and Hardware:

-

Interior and Exterior Windows:

- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4' x 8') 2
Tack Boards:	• Yes, on available wall space
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (2 person).....seating for 24 • Student chairs .....24 • Computer tables (on wheels).....seating for 10 • Teacher table .....1 • Teacher chair.....1 • Teacher stool .....1 • Book rack (paperbacks).....1 • Nursing Beds .....6 • See attached equipment inventory for more details
Storage:	• Storage cabinetry under sinks in lab • Bookshelves (3 ft. wide, 3 ft. high).....4
Moveable Equipment:	• TV/DVD .....1 • Computers .....6 • ....Printer .....1 • ....Overhead projector .....1 • ....VIOP Telephone.....1
Fixed Equipment:	• LCD Display .....1 • ....Short Throw Projector.....1

COMMENTS:

- Classroom layout has classroom at one end of the room and lab space and kitchen at the other end of the room. Reference the detailed program diagram with draft furniture layout.

ACTIVITY AREA: Health Occupations

DESCRIPTION: Dental Lab

Brief Instructional Objectives:

- Students learn entry-level job skills as a dental assistant.

Users of this Activity Area:

- Dental students and teachers

Activities Conducted in this Space:

- Presentations by teachers and students, individually and in groups;
- Small and medium group instruction;
- Display of material such as student work;
- Watching DVDs;
- Patient Health Records
- Lab instruction and practice at dental chairs

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Sterilization Room
- Nursing Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:.....20

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....1,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–

	2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• Sinks (located between two dental chairs) 4
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows, Local control of dedicated exhaust systems • Thermal System: DOAS with heat recovery, radiant heating and cooling • Fume hood exhaust where applicable • Air suction at each dental chair
Doors and Hardware:	• Doors to adjacent spaces 4-5
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4' x 8') 2
Tack Boards:	• On walls where available
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (2 person).....seating for 24 • Student chairs.....24 • Teacher table .....1 • Teacher chair.....1 • Dental Chairs (one at front of classroom).....9
Storage:	• Storage casework desired where available • Book rack (paperbacks).....1 • Bookshelves (3 ft. wide, 3 ft. high).....4
Moveable Equipment:	• TV/DVD .....1 • Computers .....4 • ....Printer .....1 • ....Overhead projector 1
Fixed Equipment:	• LCD Display .....1 • ....Short Throw Projector.....1 • ....Dental Chairs • ....See equipment inventory for more details

COMMENTS:	• Classroom layout has classroom at one end of the room and lab space at the other end of the room.

ACTIVITY AREA: Health Occupations

DESCRIPTION: First Responder Classroom

Brief Instructional Objectives:

- Instruct students on first responding

Users of this Activity Area:

- Juniors and Seniors

Activities Conducted in this Space:

- Presentations by teachers and students, individually and in groups;
- Small and medium group instruction;
- Display of material such as student work;
- Watching DVDs;
- First Aid Skills
- Blood Typing
- CPR

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Anatomy Lab
- Teacher Planning
- Storage

Activities that should be NEAR this Activity Area:

-

Number of Teachers: 1

Number of Students:.....20

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....950 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements

	and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	•
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4'x8') 2
Tack Boards:	•
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional learning materials. • Student portfolios. • Teacher files and belongings.

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• All furniture must be moveable to clear space for CPR demonstration and practice • Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory • VIOP Telephone 1
Fixed Equipment:	• Reference attached equipment inventory • LCD Display ..... 1 • Short Throw Projector 1

COMMENTS:

- General Classroom layout with moveable furniture to practice CPR

ACTIVITY AREA: Health Occupations

DESCRIPTION: Medical Lab

Brief Instructional Objectives:

- Classroom and lab instruction

Users of this Activity Area:

- Medical Professions students and teachers

Activities Conducted in this Space:

- Presentations by teachers and students, individually and in groups;
- Small and medium group instruction;
- Display of material such as student work;
- Watching DVDs;
- Patient Health Records
- Lab instruction at medical beds

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Simulation Lab
- Medical Scenario Clinic
- Anatomy Lab
- Storage

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Flex Space

Number of Teachers: 1

Number of Students:..... 20-24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended

	accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• Deep sink for surgical scrub instruction ..... 1 • Regular sinks 2-4
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows, Local control of dedicated exhaust systems • Thermal System: DOAS with heat recovery, radiant heating and cooling • Fume hood exhaust where applicable
Doors and Hardware:	• Doors to adjacent spaces 4-5
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white board (4'x8') 2
Tack Boards:	• On walls where available
Display Case:	•
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student tables (2 person).....seating for 24
	• Student chairs 24
	• Teacher table 1
	• Teacher chair.....1
	• Medical Beds 4
	• Computers 8
	• Reference attached equipment inventory
Storage:	• Storage cabinetry desired where available
Moveable Equipment:	• TV/DVD 1
	• Computers 4
	• ....Printer 1
	• ....Overhead projector 1
	• ....VIOP Telephone.....1
	• ....Reference attached equipment inventory
Fixed Equipment:	• LCD Display 1
	• ....Short Throw Projection 1
	• ....Reference attached equipment inventory

COMMENTS:

- Classroom layout has classroom at once end of the room and lab space at the other end of the room.

ACTIVITY AREA: Health Occupations

DESCRIPTION: Medical Scenario Clinic

Brief Instructional Objectives:

- Simulate real clinic setting for student instruction

Users of this Activity Area:

- Medical Professions students and teachers

Activities Conducted in this Space:

- Medical appointments
- General checkups

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Simulation Lab
- Medical Lab
- Flex space

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Storage

Number of Teachers: 1

Number of Students:.....

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 750 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires

	are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• Sink..... 1/checkup room
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	• 1 door/checkup room (4 total) • Doors to adjacent spaces..... 2
Interior and Exterior Windows:	• No interior windows required
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	•
Display Case:	• No requirement
Other:	• Counter with sink
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Exam Bed..... 1/room
	• Patient chair 2/room
	• Doctor stool 1/room
	• Wall mounted computer 1/room
	• Wall mounted vitals machine..... 1/room
Storage:	• Tall storage cabinetry along hallway opposite checkup rooms
	• Storage cabinetry above and below sink in checkup room
Moveable Equipment:	• Patient chairs
	• Doctor's stools
	• VIOP Telephone 1
Fixed Equipment:	• Wall mounted computer
	• Wall mounted vitals machine
	• LCD Display 1
	• Short Throw Projector..... 1

COMMENTS:	• This space should include 4 closed exam rooms with one hallway that leads out to the scenario waiting area in the flex space.

ACTIVITY AREA: Health Occupations

DESCRIPTION: Medical SIM Lab

Brief Instructional Objectives:

- Simulate real clinic setting for student instruction

Users of this Activity Area:

- Medical Professions students and teachers
- Nursing students and teachers

Activities Conducted in this Space:

- Medical Simulation

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Medical Scenario Clinic
- Flex space
- Medical Lab

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Storage

Number of Teachers: 1

Number of Students:..... 1-4 at one time

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Floor Area ..... 600 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in

	the suspended ceiling. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers. • LCD screen for display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• Lab sink as needed
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.

Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

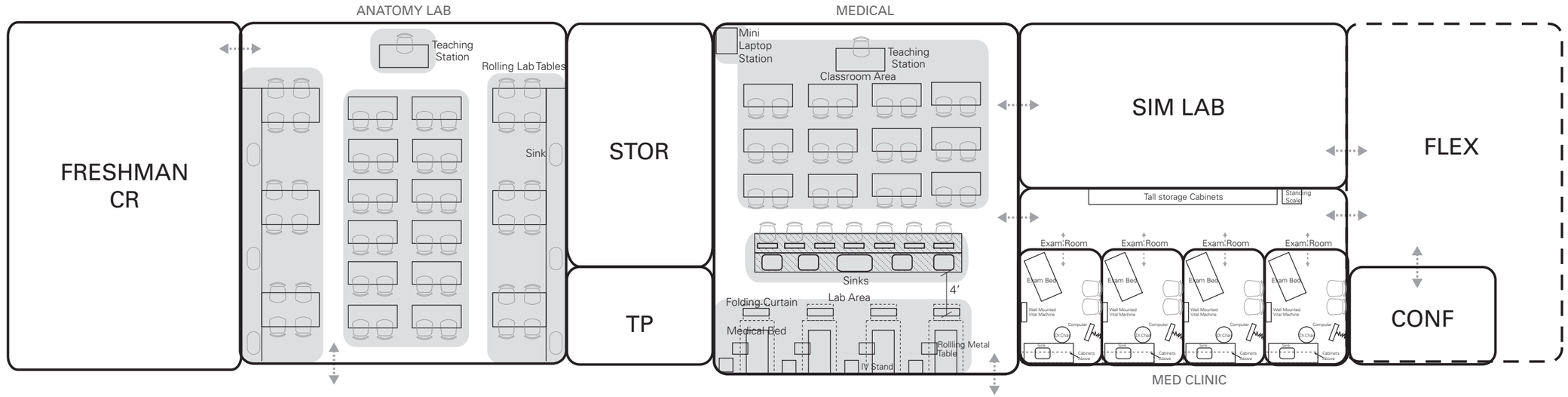
FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory • VIOP Telephone 1
Fixed Equipment:	• Input required –include SIM Lab equipment breakdown • Reference attached equipment inventory • LCD Display ..... 1 • Short Throw Projector..... 1

COMMENTS:

•

HEALTH OCCUPATIONS / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

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Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements
Health Occ.	1st Responder	239							
			General classroom						
Health Occ.	Nursing Classroom	232							
			General classroom						
Health Occ.	Nursing Lab	234							
			Nursing bed	4	Unknown	Unknown	3' 3" x 7'4"	8' x 9'	Connected to power, on wheels, working area reflects curtain track area
			Rolling food table	7	Unknown	Unknown	2'6" x 1'3"		On wheels
			IV stand	3	Unknown	Unknown	1'5" x 1'5"		On wheels
			Vitals stand	1	WelchAllyn	Spot Vital Signs LXi	1'10" round		On wheels
			Folding Curtain stands	2	Unknown	Unknown	2'8" x1'8"	6'8" x 1'8"	On wheels, folds out to working area
			Toilet seat	2	Drive,Lumex		1'9" x 1'6"		
			Baby carriers	5	Costco		2'4" x1'4"		
			Baby bed rolling cart	2	Unknown		1'4" x 2'6"		On wheels
			Bedside table	8	Unknown		1'9" x 1'5"		Some on wheels, not all
			Wheel chairs	1-3 in storage?	Unknown		2' x 2'8"		
			Scale -counter	1	Health o meter		1'8" x 1'4"		
			Laundry baskets	3	Unknown		1'6" x 1'6"		On wheels
			Sinks	3	Unknown		1'10" x 1'10"		On west wall counter
			Linen storage cabinet	1			4' x 1'10"		Stores: towels, bibs, washcloths, blankets, bath towels, draws, bed linens, fitted sheets, bath blankets, sheets, pillow cases
		Kitchen area							
			Double Sink	1	Unknown		2'8" x 1'10"		
			Double hot plate	1			1'6" x 1'		
			Washing machine	1			2' x2'		
			Fridge	1	Kenmore		2.5' x 2.5'		
			Sterilizing unit	1	Porter	SES 2000E	1'6" x1'4"		
			Oven	1	Unknown		2'6" x2'		
			Printer	1	HP	Laser jet p3005dn	1'5" x1'4"		
			Computers	4	HP	L1710	2' x1.5'		
			Cabinetry	Various					
			Standing Scale	1	Detecto	Detecto	1'6" x 1'10"		
			Skillet	1	Unknown		1' x 2'		
			Waffle maker	1					

Health Occ.	Dental Classroom	236	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements
			Demo dental chair	1	Unknown	Unknown	6.5' x 4'	8.5' x 10'	At front of room, dimension includes adjacent arm with light,suction, etc
			Computer stations	11	HP	Compaq LE1711	2' x2'	3.5' x 2'	Standing counter height stations around perimeter on room
			Large cleanup sink	1	Unknown		2'6" x 1'8"		
			Cabinetry	Various	Unknown		2'9" x 2'8 (lower) 2'7" x 2' (upper cab)		Upper and lower around perimeter of room
			White board	1					
			Overhead	1					
			Light board	1			4'1" x 2'		For X-rays?
Health Occ.	Dental Lab	235	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements
			Dental patient chairs	7 (2 in X-ray room)	Various		3' x 6'	6' x 8' or as large a	Connected to power, and air suction
			Dental dentist chair	15	Various		2' x 1'8"		On wheels
			Dental Trimmer Grinder	2	Torit by Chayes Virginia		1'4"'x 1'	3' x 4'	On counter top
			Station tool set	8 (2 in sterilization room, 2 in each xray room)	Plastic cabinet		1' x 1'2"		
			Cabinetry (see pics)	Various					
			Sinks	5			1'10" x 1'10"		
			Chalk board	1					
	Sterilization	H2016							
			Automatic sterilizer	1	Midmark	M9 UltraClave	1'4" x 1'8"		
			Sink	1			2' x 2'		

Health Occ.	Medical Professions	238	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements
			Computer stations	6					
			Medical bed	1			2'3" x4'6"	3.5' x 5.5'	Connected to power
			Folding Curtain stands	1	Unknown	Unknown	2'8" x1'8"	6'8" x 1'8"	On wheels, folds out to working area
			Mini laptop station	1			2' x 1'10"		
			Metal rolling cart	2			1'7" x1'2"		
			IV stand	2	Unknown	Unknown	1'5" x 1'5"		On wheels
			Sinks	3			1'10" x 1'10"		
			Desk and Chairs	18			1'2" x 1'7"		
			Props. Skeleton, muscles, etc						
			Cabinetry						
			Scale	1	Detecto	Detecto	1'6" x 1'10"		
	Science Classroom	237	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements
			Work tables (1sink, gas, 4 chairs)	7 (3 freestanding, 4 peninsula)			7'1" x 3'6"		

MANUFACTURING CTE PROGRAM

Industry and Engineering Academy

Summary

The Manufacturing CTE program provides students with hands on learning to design and manufacture products. Students work with various materials and learn safety of equipment and tools including lathes, CNC mills, drill presses, grinders, and band saws.

The following rooms are outlined in this document:

Manufacturing – Freshman Shop
Manufacturing – Sophomore/Junior Metals Shop
Manufacturing – Senior Machining Shop
Manufacturing – Foundry
Manufacturing – Pattern Shop
Manufacturing – Flammable Storage

Please reference the indicated section of the following rooms:

Manufacturing – Small Classroom – Reference Section 2.7
Manufacturing – Teacher Planning – Reference Section 2.4
Manufacturing – Storage – Reference Section 2.9
Manufacturing – Large Computer Lab – Reference Section 7.1
Manufacturing – Small Computer Lab – Reference Section 7.2

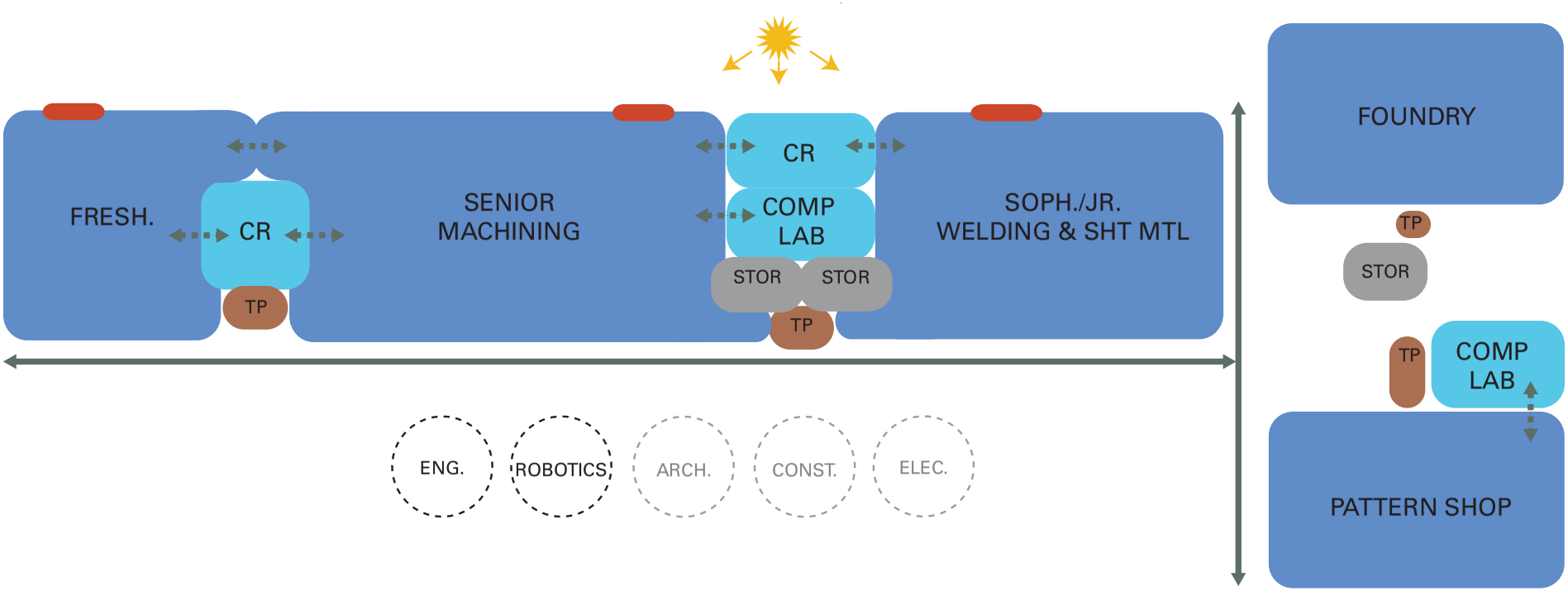
Other Program Adjacencies

+ Engineering
+ Robotics
+ Architecture
+ Construction
+ Electric

Future Trends

+ 3D Printing
+ Prosthetic Limbs
+ Nano/Pico Sciences
+ Social robotics, nanobots
+ Green Energy Technologies
+ Metamaterials
+ Neurotechnology (Sensor, command, control)

MANUFACTURING / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

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PROGRAM DATA SHEET

ACTIVITY AREA: Manufacturing

DESCRIPTION: Senior Machining

Brief Instructional Objectives:

- Students focus on precision machining, quality control, and production processes in creating a product with multiple moving parts.

Users of this Activity Area:

- Seniors

Activities Conducted in this Space:

- Manufacturing
- Shop Work
- CNC
- Milling
- Lathe
- Mill
- EDM
- 3-D Printing
- Laser Printing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom
- Teacher Planning
- Computer

Activities that should be NEAR this Activity Area:

- Sophomore Shop
- Freshman Shop
- Foundry
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):..... 1

Meets Daily? ..... Yes

Desired Floor Area ..... 5,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable
- Oil waste piping

HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility. • Metal dust collection required
Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• Whiteboards will be accounted for in small classroom
Tack Boards:	• No requirement
Display Case:	• Display case in hallway desired
Other:	•
Items to be Stored in this Space:	• Tools • Materials • Student work

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• Project lockers
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Manufacturing

DESCRIPTION: Sophomore/Junior Metals

Brief Instructional Objectives:

- Students increase basic skills in designing and manufacturing products with various tools and materials, specifically sheet metal and plate stock.

Users of this Activity Area:

- Sophomores
- Juniors

Activities Conducted in this Space:

- Design Layout
- Forming
- Joining
- Welding (Tig, Gas, Mig, Arc)
- CNC Plasma
- Soldering
- Oxygen Acetyleme Cutting

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom
- Teacher Planning
- Tool Storage
- Foundry

Activities that should be NEAR this Activity Area:

- Senior Machining Shop
- Pattern Shop/Foundry
- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 5,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.

- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
    - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
    - Linear light output (reduced shadow casting on work surfaces)
    - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
    - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:

- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:

- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable
- Oil waste piping

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems

	• Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility. • Welding exhaust/metal dust collection
Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• White boards will be accounted for in small classroom
Tack Boards:	• No requirement
Display Case:	• Display case in hallway
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• Project lockers
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Manufacturing

DESCRIPTION: Freshman Shop

Brief Instructional Objectives:

- Student are introduced to manufacturing basics and work on individual and group projects to manufacture products.

Users of this Activity Area:

- Freshman

Activities Conducted in this Space:

- Product Manufacturing – Screw Driver or Bottle Opener
- Lathe work
- Furnace

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Small Classroom
- Tool Storage
- Teacher Planning

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... 24

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 2,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust

	and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
	• The luminaires in these potentially, light source obscuring environments are recommended:
	  • To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
	  • Linear light output (reduced shadow casting on work surfaces)
	  • Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
	  • Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
	• Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement. • Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design. • General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity provided. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided. • VOIP telephone capability for staff communication provided.
Plumbing:	• Large cleanup sink (Wall mounted, 3-basin)..... 1 • Eyewash and emergency shower ..... 1 • Compressed air spigot where applicable • Oil waste piping
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility. • Metal dust collection required
Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High operable exterior windows for air circulation.

	• Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• White boards will be accounted for in small classroom
Tack Boards:	• No requirement
Display Case:	• Display case in hallway
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• Project lockers
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Manufacturing

DESCRIPTION: Foundry

Brief Instructional Objectives:

- Students learn the safety and use of tools, equipment, and processes in the foundry

Users of this Activity Area:

- Sophomores
- Juniors

Activities Conducted in this Space:

- Metal pouring and casting
- Green sand casting

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Pattern Shop
- Large Computer Lab

Activities that should be NEAR this Activity Area:

- Teacher Office/Preparation/Storage, Student Toilets and Student lockers.

Number of Teachers: 1

Number of Students:..... Up to 16

Number of Aides (or Volunteers):.....

Meets Daily? ..... Yes

Desired Floor Area ..... 2,592 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.

	• The luminaires in these potentially, light source obscuring environments are recommended:
	  • To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
	  • Linear light output (reduced shadow casting on work surfaces)
	  • Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
	  • Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
	• Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement. • Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design. • General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment. • Power will be available at countertops, teaching instructor display and whiteboard locations. • Communication cabling to support technology interconnectivity provided. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided. • VOIP telephone capability for staff communication provided.
Plumbing:	• Large cleanup sink (Wall mounted, 3-basin)..... 1 • Eyewash and emergency shower ..... 1 • Compressed air spigot where applicable
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	• Roll-up door for exterior loading access
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 12'-0" • Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• Display in hallway
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

•

ACTIVITY AREA: Manufacturing

DESCRIPTION: Pattern Shop

Brief Instructional Objectives:

- Shop space adjacent to foundry and computer lab to produce patterns

Users of this Activity Area:

- Sophomores
- Juniors

Activities Conducted in this Space:

- Wood and metal work
- Lost Wax Casting
- Wood Lathe

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Foundry
- Large Computer Lab
- Teacher Planning
- Storage

Activities that should be NEAR this Activity Area:

- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:.....24

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Desired Floor Area .....4,293 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop,

automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops with large, potentially dangerous machines or potentially dangerous processes. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:
- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:
- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:
- Roll-up door for exterior loading access

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites

Ceiling Height:
- Minimum: 12'-0"

- Maximum: 20'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Concrete or CMU
Ceiling:	• Gypsum board hard ceiling/ paint in a spring suspended ceiling system with insulation in the cavity. Sound absorptive panels.

SPECIALTIES:

White Boards:	• Magnetic White Board.....2
Tack Boards:	• Not required
Display Case:	• Display in hallway
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Reference attached equipment inventory
Storage:	• No requirement
Moveable Equipment:	• Reference attached equipment inventory
Fixed Equipment:	• Reference attached equipment inventory

COMMENTS:

-

ACTIVITY AREA: Manufacturing

DESCRIPTION: Flammable Storage Room

Brief Instructional Objectives:

- Store flammable materials

Users of this Activity Area:

- Manufacturing teachers

Activities Conducted in this Space:

- Storage

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Sophomore/Junior Metals

Activities that should be NEAR this Activity Area:

- Senior Machining Shop
- Foundry

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? 0

Desired Floor Area .....100 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- No special requirements

Lighting:
- Even with exhaust dust collection systems, long term airborne dust and suspended vapors deposition is expected. The lighting in areas with dust and vapor presence (i.e., wood shop, foundry, machine shop, automotive, etc.) will utilize luminaires that are easy to keep clean.
- The luminaires in these potentially, light source obscuring environments are recommended:
  - To be 4000 Kelvin, Light Emitting Diode, (LED) (for reduced maintenance).
  - Linear light output (reduced shadow casting on work surfaces)
  - Pendant mounted (to locate level with the bottom of ducts, pipes and conduits).
  - Equipped with a permanently sealed, vapor tight Led optical array housing (Easy to dust off from the floor with a pole duster.
- Use manual control lighting in shops. A deposition obscured vacancy sensor could turn off the illumination when it is needed most.

Power/ Communications:	• Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems • Thermal System: Unit ventilators and Make-up air units • Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete meeting requirements of PPS Design Standards.
Walls:	• Fire rated to meet building codes
Ceiling:	• Fire rated to meet building codes

SPECIALTIES:

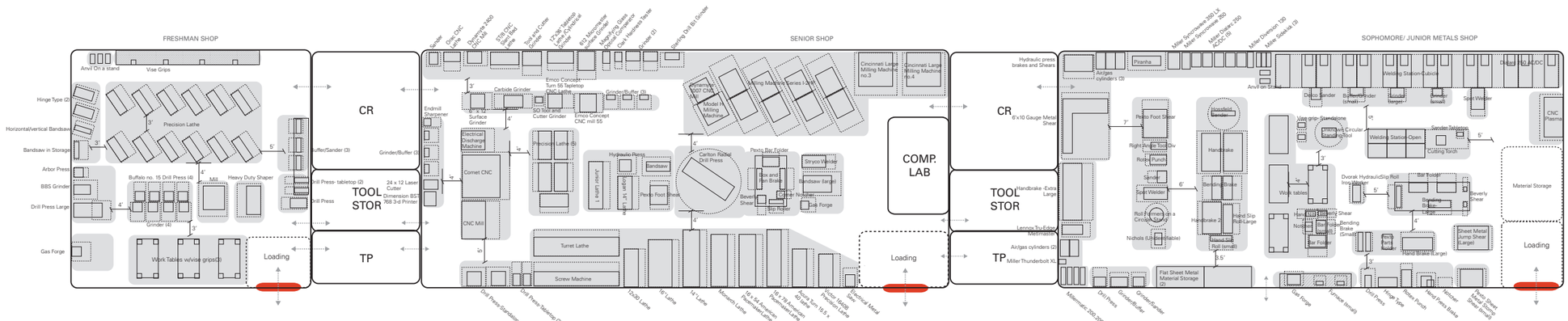
White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	•

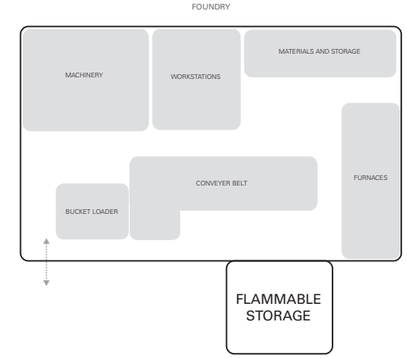
FURNITURE, STORAGE, AND EQUIPMENT:

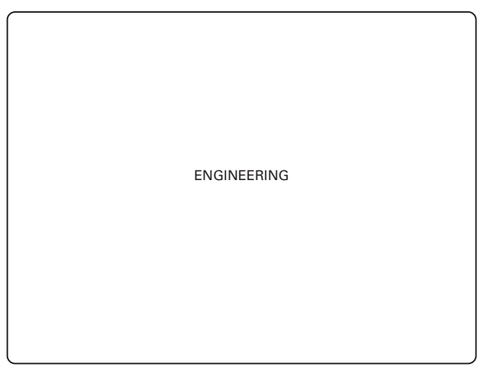
Furniture:	•
Storage:	• No requirement
Moveable Equipment:	•
Fixed Equipment:	•

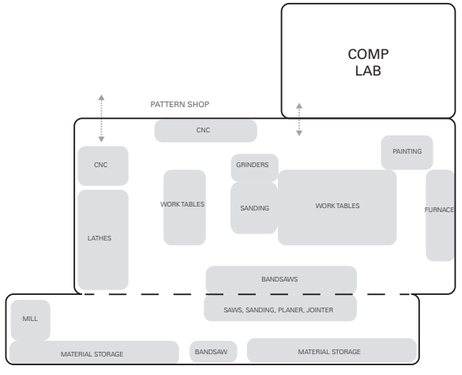
COMMENTS: •

MANUFACTURING / OVERALL DIAGRAM









LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- COUNTER TOP
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

BENSON POLYTECHNIC HIGH SCHOOL / 2017.05.26

bassetti architects

PPS

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please highlight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
Manufacturing	Freshman Manufacturing	C122								
			16" Heavy Duty Shaper	1	Cincinnati shaper co		3' x 6'	5' x 7'		Runs on a delco motor
			Anvil on a Stand	3	Unknown		2' x 1'	Unknown	none	Moveable and dispersed around room
			Arbor Press	1	Unknown		2' x 2'	2' x 3'	none	Could be by Gorton as well, looks similar
			Bandsaw in Storage	1	Wilton		1' x 3.5'	3' x 4'		Currently not used, considered to be in storage
			BBS Grinder	1	Acme manufacturing co.	BBS	2' x 3.5'	4' x 5'	115/230 V	Connected to wall power
			Buffalo no. 15 drill press	4	Buffalo		2' x 2'	2.5' x 4'		
			Buffer/sander	3	1/3 is Stanley, others unknown		1' x 3' on counter edge	3' x 3'		3 on counter in back right corner of room from door
		** Name?	Circular thing with rolling pin on top, small, moveable	2	Unknown		1.5' x 1.5'	Unknown	None	Moveable on floor
			Drill Press	1	Delta	14-040	2' x 3.5'	2.5' x 5.5'	115/130 V	Connected to power
			Drill Press-Large	1	Unknown		3'x 6'	4'x 4'		Back of machine is enclosed in metal cage
			Drill Press-Tabletop	2	(1) Rockwell Delta (2) Boice Crane	(1) V4892	1' x 3' on counter edge	1.5' x 5'	115/203-230 V	Connected to wall power
			Gas Forge	1	Johnson gas appliance co		2' x 2'	4' x 4'		Large 5x5 hood above
			Grinder	4	Cincinnati electrical tool co		2' x 2'	3' x 4'		Connected to exhaust
			Hinge Type	2	W.F. Wells and sons inc. and beaver state machinery company	AC7	2' x 4'	3' x 5'	115/208/230 V	Connected to wall power
			Horizontal/vertical Bandsaw	1	Jet equipment and tools	HVBS-463	1' x 3.5'	3' x 4'	110/220 V	Connected to power
			Lockers	See notes	See notes		See notes	n/a	None	112 small under counter lockers, 1 long lock per 28 lockers, LYON (10"x12"), 5 under counter lockers,LYON (3'x3'), 30 wall lockers, double height, Republic steel Corp. Berger Division (10"x3')
			Metal rack material storage	1			2' x 10'	n/a	None	In back left corner from door
			Metal storage cabinet	1			2.5' x 4'	n/a	None	In back left corner from door
			Mill	1	Gorton	17803	4.5' x 5'	6' x 7'	220/440 V	Connected to power
			Precision Lathe	12	South bend	Model A	5' 3" x1'10"	5.5' x 3'		Connected to power
			Sink	1	Bradley Washfountain co.		5' x 5'	8' x 8'		Circular with foot pedal
		** name?	Triangular stand thing	1	Unknown		1.5' x 1.5'	Unknown	None	Moveable on floor
			Vise Grip	17	Wilton		1' x 1' on counter edge	1' x 3'	None	4 on corners of large work table, 13 on south counter top along room edge
			This shop space is largly designed around the large area of lathes in the center. There is storage below the counter on east wall which is locked in groups (and preffered that way by the teacher). There is other machinery on the countertops around the perimeter of the room and to the south between the lathes and the locker/sink area.							

Manufacturing	Soph. Weld	C149	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
			Anvil on a stand	1	Unknown		2'2" x 1'	Unknown	None	No power
			Bar Folder	2	Wilcox	(1) 358 (2) 63 F	2' x 4'	4' x 4'	None	On counter edge no power
			Bending Brake-Large	1	W. Whitney Stueck inc	422	4'8" x 1'6"	5' x 3'	None	On counter edge no power
			Bending Brake-Small	2	Unknown		4' x 1'	table	None	No power
			Beverly shear	2	Chicago 55 and hand nib model 4		2'10" x 8"	3' x 1'	None	No power
			Buffer / Grinder-Small	1	Baldor		2'8" x 1'8"	3' x 3'	208-220/440	Connected to power
			Cutting Torch	1	Victor	2400	2' x 2'	(table top is a	115 V	Multiple connections, see pictures
			Delco Sander	1	Delco		2' x 2.5'	2' x 4'		Connected to power
			Dialarc 250 AC /DC	13	Miller		1'7" x 2'4"		175 Amps at 27 V	1), connects to power
			Drill Press	1	Rockwell / Delta	15-655	1'4" x 2'7"	3' x 4'	120 V	Connected to power
			Dvorak Hydraulic Iron Worker	1	Little Scotchman Industries	314	3'6" x 1'8"	4' x 3'		Connected to power
			Furnace-Small	2	Johnson		9" x 1.5'	2' x 2.5'		On counter, has small hood
			Grinder-Large	1	Unknown		2'10" x 2'	3' x 2.5'		Connected to power
			Grinder-Small	1	Rockwell/Delta		2' x 1.5'	2.5' x 3'	115/230	Connected to power
			Hand Brake-Large	1	Chicago	416	3.5' x 6'4"	4' x 7'	None	No power
			Hand Press Brake	1	Di-Acro Houdaille	J-1788	2'2" x 2'3"	4' x 3'	None	No power, standalone
			Hinge Type	1	W. F. Wells and Sons Inc		4' x 2'	Unknown		Connects to power
			Lockers	See notes	N/a		See notes		None	double stacked lockers
			Notcher	1	Di-Acro Houdaille	A-3805	1.5' x 1.5'	3' x 2'	None	On counter edge no power
			Pexto Parts Holder	1	Pexto		3'2" x 2'	N/a	None	Storage
			Pexto Sheet Metal Stomp Shear-Small	1	Peck, stow, & Wilcox	137-L	3'9" x 4'9"	4' x 6'	None	No power
			Rotex Punch	1	Rotex	18-A	2'1" x 3'8"	2.5' x 5'	None	No power
			Sander-Tabletop-Small	1	Kalamazoo industries		1'4" x 10"	table	115/208-230	Connected to power
			Sheet Metal Jump Shear-Large	1	Peck, stow, & Wilcox	152-J	5' x 6.5'	5' x 8'	None	No power
			Slip Roll	1	Peck, stow, & Wilcox	381-D	1' x 4.5'	3' x 5'	None	On counter edge no power
			Spot Welder	1	ACME	2-24-30	4'6" x 2'9"	6' x 3'	208 V	Multiple connections, see pics
			Unknown Circular Standing Tool	1	Unknown		3' x 2'	3' radius	None	Bolted to ground, hand tool no power
			Vise grip-Standalone	2	Wilton		1.5' x 1'	2' x 2'	None	No power
			Vise grip-Tabletop	1	Wilton		1.5' x 1'	2' x 2'	None	No power
			Welding station-Cubicle	14	N/a		3' x 7'	8.5' x 7'		welding stations together with room
			Welding Stations-Open	6	N/a		One station: 4' x 3'	12' x 8'		connections, see pictures
			Work tables	3	N/a		4' x 8'		None	table has 4 large lockers underneith

Manufacturing	Sr. Manufacturing	C111	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
			12"x36" Tabletop Lathe /Cylindrical Grinder	1	Unknown	95871	5.5'x2.5'	5.5' x 4'		In front CNC lathe area, connected to power, not currently in working order
			12x30 Lathe	1	Hendey machine co.	44091A	8' x 3'	8' x 4.5'	600 V	Connected to power
			14" Lathe	1	Lodge & Shipley		12' x 3.5'	12' x 5'		Connected to power
			16" Lathe	1	Lodge & Shipley		10' x 5'	10' x 6.5'		Connected to power
			16x54 American Pacemaker Lathe	1	The Chase A Strelinger Machinery, Supplies, Tools, & The American Toolworks Co		11' x 3.5'	11' x 5'		Connected to power
			16x78 American Pacemaker Lathe	1	The American Tool Works Co.		12' x 3'	12' x 4.5'		Connected to power
			24x12 Laser cutter	1	Epilogue mini		3' x 2'	3' x 2'	30 Watts	Connected to power
			6"x12"Surface Grinder	1	Central Machinery	33732	3'x3'	3' x 5'	110 V, 60 Hz	In front CNC lathe area, connected to power
			612 Micromaster Surface Grinder	1	Brown and Sharpe	612	3'6"x4'	4' x 6'		In front CNC lathe area, connected to power
			Acra Turn 15.5x40 Lathe	1	Blount Inc.	28572	8' x 3'	8' x 4.5'	220 V, 3.22 KW, 4.8 P (Not completely sure on these numbers, plate is hard to read)	Connected to power, has digital screen and lamp
			Anvil on a stand	2	Unknown		2' x 1' x 2'8"	Unknown	None	2 on floor by bandsaw and gas forge in back corner by loading
			Arbor press	1	Dake	2 1/2	2' x 1'	4' x 2'	None	Bolted to floor, no other connections
			Bandsaw	1	Wellsaw	613	5' x 2'	6' x 4'		Connected to power
			Bandsaw - Large	1	Coal Metalmaster		6' x 3.5'	8' x 5'		Connected to power
			Beverly Shear	1	Beverly	B-2A	1'x9" x 3'	Unknown	None	On work table in back of room, not bolted down,no power connections
			Box & Pan Brake	2	Jet	HB-2248 and BP-2248	4'4" x 1'1"	4.5' x 3'	None	On work table in back of room, not bolted down,no power connections
			Carbide Grinder	1	Hammond	WD-10-C	4' x 2.5'	8' x 3'	208/ 350 V	In front CNC lathe area, connected to power
			Carlton Radial Drill Press	1	Carlton		11' x 3.5' x 12-15' tall	11' x 11' x 12-15' tall		Connected to ground power, see pictures
			Cincinnati Large Milling Machine No.3 & 4	2	Cincinnati	3 and 4	8' x 8'	10' x 10'		Connected to power
			Clark Hardness Tester	1	Clark Instrument area	US 12	2' x 1.5'	3.5' x 1.5'		In front CNC lathe area
			CNC Mill	1	Bridgeport	J29203	8' x 5'	8' x 8'		Connected to power
			Comet CNC	1	Comet		8' x 9'	10' x 10'		Connected to power and air, working area includes computer area
			Computer lab area	19 comp	PC					
			Coolant mixer	1	Dema		8" x 8"			Box mounted on wall with tubes into bucket
			Dimension bst 768- 3-d Printer	1	StrataSYS	Dimension bst768	2.5' x 3'	2.5' x 3'	100-240 V, 12-6 Amps, 50-60 Hz	Connected to power
			Drill press - Standalone	2	Boice Crane		3' x 3'	4' x 5'	208 V, 5.6/4.6 Amps	Connected to power
			Drill press - Tabletop	2	(1) Jet (2) Rockwell/Delta	(1) OR-1758 (2) 15-655	1.5' x 2.5' On counter edge	2' x 5'	(1) 115 V	On counter against north wall, connected to power
			Dynamyte 1007 CNC Mill	1	Dynamyte	1007	4' x 4'	6' x 5'		On tabletop, working area accommodates computer space, large power source on back, see pics
			Dynamyte 2400 CNC Mill	1	Dynamite	2400	2'6" x 3'	3' x 5'		Connected to power
			Electric Metal Saw	1	Everett Industries Inc	12A	2.5' x 2'	4' x 3'		Connected to power, sits on a metal enclosure, see pictures
			Electrical Discharge Machine (EDM)	1	XLO Lectra-Form		5' x 4'	7' x 5'		Connected to power and air
			Emco Concept CNC Mill 55	1	Emco	Concept Mill 55	3.5' x 3'10"	6' x 4'	110/230 V, 50/60 Hz	On tabletop, Working footprint accommodates computer space
			Emco Concept Turn 55 Tabletop CNC Lathe	1	Emco	Concept Turn 55	3'x3'	3' x 6'	110/230 V, 50/60 Hz	On tabletop, working area accommodates computer space
			Endmill Sharpener	1	Darex	E-85/90	1'6"x1'6"	2' x 4'	115 V, 3.2 Amps, 50/60 Hz	In front CNC lathe area, connected to power and air

			Gas forge	1	Johnson Gas Appliance co	142-5	5' x 2.5'	7' x 3'		Large exhaust hood, Multiple hookups, see pics
			Grinder	2	(1)Unknown (1) Baldor		3' x 2'	3' x 4'	208-220/440 V, 3-2.8/1.4 Amps	No manufacturer identity for 1, 2nd Grinder is on North wall by stair exit, Connected to power
			Grinder Buffer-Tabletop	6	(2) Baldor, (1) Stanley (1) Darex (1) Central Machinery (1) unknown		1'10" x 1' On counter edge	3' x 3'	115 V, 60 Hz, 6.3 Amps	2 On counter against north wall, 2 on counter against north wall by CNCs, connected to power
			Hydraulic Press	1	Jet	HP-70	2.5' x 2.5'	4' x 4'		Bolted to floor, no external connections
			Junior Lathe	1	Menziken Machine Works LTD.		10' x 3'	10' x 4.5'		Connected to power
			Precision Lathe	5	South Bend	14602 TKX	6' x 2.75'	6' x 4'	206 V, 60 Hz	Connected to power
			Lift	1	Walker	J-816 E	7' x 2'	Unknown, dependent on what is being carried from loading dock		By loading dock
			Lockers	3 types, see notes	Various, see notes					90 small under counter lockers, LYON (10"x12"), 6 under counter lockers,LYON (3'x3'), 30 wall lockers, double height, Republic steel Corp. Berger Division (10"x3')
			Logan 14" Lathe	1	Logan Engineering Co	6561H	7' x 3'	7' x 4.5'		Connected to power
			Magnifying Glass-Optical Comparator	1	MicroVu	400	2'6" x 1'6"	4' x 1'6"	117 V, 3 Amps, 50-60 CPS	In front CNC lathe area
			Milling machine- Series I-2HP	8	Bridgeport		4' x 5'	6' x 8'		Connected to power,1 without serial #
			Model H Milling Machine	1	Milwaukee	H	5' x 5'	7' x 7'		Connected to power
			Monarch Lathe	1	Monarch Machine Tool co	14" C	11' x 3.5'	11' x 5'		Connected to power
			Orac CNC Lathe	1	Orac		3'5"x2'	3'5" x 4'		In front CNC lathe area, connected to power
			Pexto Bar Folder	1	Peck, Stow & Wilcox co.	63F	3.5' x 2'	3.5' x 3'	None	On work table in back of room, not bolted down,no power connections
			Pexto Corner Notcher	1	Peck, Stow & Wilcox co.	PS-66	1'8" x 1'6" x 3'	1'8" x 3'	None	On work table in back of room, not bolted down,no power connections
			Pexto Foot Shear	1	Peck, Stow & Wilcox co.	137-L	3'8" x 4'	4' x 6'	None	Working space could extend longer than 6', there is a large amount of space behind the piece of equipment
			Sander - Tabletop	1	Burr King		1'10" x 2'6" On counter edge	3' x 3'	115/230 V, , 13.4/ 8.4 Amps	On counter against north wall, connected to power
			Screw machine	1	Brown & Sharpe Manufacturing. Co		18' x 3'	18' x 5'	440 V	These two mAchines are nested so the work areas are not back to back, one is in the front and one is at the back. The worker stands with their back to the material holding of the machine behind it
			Shop Vacuums	5	Various					scattered throughout shop
			Sink	1	unknown		5' x 5'	8' x 8'		Next to computer lab area and kitchnette, circular with foot pedal
			Slip roller	1	Berkroy	R-624	3' x 10"	3' x 2'10"	None	On work table in back of room, not bolted down,no power connections
			SO Tool and Cutter Grinder	1	Feinme Chanik Michael Deckel	87-23367	1'6 x1'3"	2' x 2'		In front CNC lathe area, connected to power
			ST/8 CNC Slant Bed Lathe	1	Rhino		6'x2'8"	6' x 3.5'		In front CNC lathe area, connected power and air
			Sterling Drill Bit Grinder	1	McDonough		3' x 1'6"	5' x 2'		Stand alone by north wall lower exit stairs
			Storage/miscellaneous	See pictures and notes						Includes metal and plastic material storage, storage units, and tool racks
			Stryco Welder	1	Stryco		1.75' x 1.75'	3 x 3	320 V, 18 Amps	Connected to power
			Tool and Cutter Grinder	1	K.O. Lee Co.	B2062BB	4'x3'	4' x 5'		In front CNC lathe area, connected to power
			Turret Lathe	1	Colcord-Wright Machinery & Supply co.		18' x 4'	18' x 5.5'	440 V	These two mAchines are nested so the work areas are not back to back, one is in the front and one is at the back. The worker stands with their back to the material holding of the machine behind it
			Victor -1640B Precision Lathe	1	Victor	1640B	7' x 3'	7' x 4.5'		Connected to power, has digital screen
			Vise grips	8	Wilton		1 x 1 On counter edge	1' x 3'	None	5 on counter against north wall, 2 on standalone work table,1 on south wall counter
			CNC Plasma Cutter				4' x 8'			

Manufacturing	Jr. Metal Manufacturing	C127	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
		** name?	**UNIDENTIFIABLE	1	Whitney Metal Tool Co		2.5' x 2'			See pics to name, bolted to floor
			6' x 10 Gauge Metal Shear	1	Pexto	10-U-6A	9.5' x 11.5'	10' x 14'		Connected to power,see pics
			Air/gas cylinders	5	Unknown		3.5' x 2'			
			Anvil on a stand	1	Unknown		1' x 2'	Unknown		
			Bar Folder	1	Pexto	63-G	3.5' x 2.5'	4' x 4.5'	None	On counter edge , no power
			Bar Folder-Small	1	Niacara		2'8"x 2'	3' x 4'	None	On counter edge,no power
			Bending Brake	2	Connecticut	U422	5 'x 2'	5' x 4'	None	No power
			Beverly Shear	1	Beverly Shear		3'8" x 11"	4'x 4'	None	Free standing, no power
			Drill press	1	Wilton	20600	2.5'x2'	3' x 4'	220 V, 3.8/3.1 Amp	Connected to power
			Gas forge	1	Johnson gas co	133-B NAT	3.5'x2'	4' x 3'		Connected to gas
			Grinder/buffer	1	The standard electric tool co		3'2" x 2'	3.5 'x 3'		Connected to power
			Grinder/Sander	1	Cutler hammer		2'4" x 2'	3' x 3'		
			Hand Brake	2	Chicago Dreis & Krump	BP0.412-6	8' x 4'	9' x 5'	None	Not connected to power, one blue, one green
			Hand Brake 2	1	Whitney Jensen	414	6'8" x 4'	7'x 5'	None	Not connected to power
			Hand Brake-Extra Large	1	Chicago	S-816	12'x4'	12' x 6'	None	No power
			Hand Nib	1	Heinrich		3'x1'	4'x 3'	None	On counter edge,no power
			Hand Slip Roll-Large	1	Pexto		6'x2'	6.5' x 3.5'	None	No power
			Hand Slip Roll-Small	1	Roper whitkey	381 D	4'6"x1'2"	5' x 3'	None	No power
			Hossfeld Bender	1	Hossfeld		5' x 1'	5'x 4'	None	Radius dimension
			Hydraulic Press Brakes and Shears	1	Pacific	40-6	6' x 3.5'			Connected to power
			Lennox Tru-Edge Metlmaster	1	Lennox Metlmaster-Portland machinery co	TE-100	4'4" x 2'	6' x 3'		Attached to power
			Lockers	2 types, see notes	Unknown		See Notes			28 double stacked lockers (10"x3') -- 24 small under table lockers (10"x12")
			vise grip	6	Wilton/1 Reed		1' x 2'	2' x 3'		On counter edge , no power, 2freestanding
			Miller Dialarc 250 AC/DC	5	Miller	250	3'x2'	unknown	200/230/460 V, 103,90,45 Amps, 60 Hz	On counter edge,all connected to large breaker boxes
			Miller Diversion 130	1	Miller	130	3'3"x1'3"	unknown		Power
			Miller Sidekick	3	Miller		1' x 3'	unknown	115 V, 26 Amps, 2.17 KW, 60 Hz	Attached to air and power
			Miller Syncrowave 250	1	Miller	250	1'8" x 3.5'	unknown	200/230/460 V, 110.4/96/48 Amps, 60 Hz	Attached to power
			Miller Syncrowave 350 LX	1	Miller	350	3.5'x2.5'	unknown		Power
			Miller Thunderbolt XL	1	Miller		1.5'x1'	unknown	25 V, 225 Amps	Power
			Millermatic 200,200,35,252	4	Miller		1' x 3'8"	unknown	200/230 V, 46/40 Amps, 8.3 KW, 60 Hz	Attached to air and power
		** name?	Nichols-Unidentifiable	1	Nichols		1.5' x 2.5'	3'x 4'	None	Not connected to power
			Notcher	1	Whitney metal tool co		1.5' x 2'	2'x3'	None	On counter edge,no power
			Pexto Foot Shear	1	Pexto	152	5 'x 6	5.5' x 8'	None	Could need more space behind with large pieces of metal
			Piranha	1	Piranha		6'x2'	8' x 4'		Connected power
			Right Angle Tool Div	1	Unknown		3'4" x 1'6"	5'x2.5'	None	No power. Bolted to ground
			Roll Formers on a Circular Stand	4 rollers, one stand	Pexto	5.44-A	3' x 3'	5'x 5'	None	Not connected to power
			Rotex punch	1	Unknown		3'6" x 2'	4.5x2.5'	None	No power
			Sander	1	Westinghouse electric co		2.5' x 2'	2.5' x 4'	208-220/440 V, 3.4-4/1.7 Amps	
			Storage and misc							
			Stryco Spot Welder	1	Stryco	D24-30 FT	5'x2.5'	6.5'x3.5'	208 V, 144 Amps	Connected to a lot of things see pics
			Work tables	7	Unknown		8' x 4'			3 for classroom, others scattered around room for dirty area
			Yellow Sheet Storage racks	2	Unknown		4.5' x 10' and 4.5' x 3'7"			
			CNC Plasma	1			4'x8'			

Manufacturing	Foundry	F116	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
			Abrasive Belt Grinder	2	MAX		3' x 2'	5' x 4'	208-220/440 V, 6/3 Amps	Connected to power
			Bandsaw	1	Rockwell		3.5' x 2.5'	4' x 4'		
			Bucket Loader	1	National engineering		9' x 7'			Lots of connections. See pics
			Buffer	1	Clark		5.5' x 2.5'	6' x 4'		Connected to power
			Combination Abrasive Cut Off	1	MAX	CAC-16	5.5' x 3.5'	7 x 4'		
			Conveyer Belt	1	Rapistan	351-20-1816-3/4	44' x 2'	50' x 6'		Working dimension includes wheel conveyer
			Furnace-large	1	Inducto inductotherm co.		6' x 3'	6' x 3'		
			Furnace-small	1	Inducto		2.5 x 2'	2.5' x 5'		See pics
			Furnace-small rounf	1	Speedy-melt		2'7" round	2'7" x 6'		See pics
			Grinder	1	Unknown		3' x 2.5'	4' x 3'		
			Half circle sink	1			4.5' x 3'			
			ITE Switchboard	1	Unknown	FC-1	3'2" x 2'	3'2" x 2'		
			Mix Muller	1	Simpson		4' x 5'	4' x 6'		Connected to power
			Sand barrel	2	None		3'2" x4'3"			Rolling cart-moveable
			Sand blaster	1	Unknown		5.5' x 4'	5.5' x 6'		
			Sand Press	1	Osborn	213-PJ	3.5' x 3.5'	3.5' x 5'		No visible connections
			Sand Sifter	1	Foundry supplies fg co.- universal	12 1 66	2' x 2'			Handing from ceiling beam and connected to table
			Workstations	16	None		4' x 2.5'	4' x 3.5'		
Manufacturing	Computer lab	F107	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
			Computer stations	24	HP Compaq LE171 (21), Acer AL1515 (2), dell (1)		1.5 x 3' station			
			Printer							
			Teaching station	1	HP					
			White board and chalkboard							

Manufacturing	Pattern Shop	F102	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
			20" disc sander and grinder	1	MAX		2'3" x 4'2"	5' x4.5'	230/460 V, 8.5/4.3 Amps	Connected to power and exhaust
			7" grinder	2	Chawn		2' x 1.5'	3' x 2'	115/230 V, 6.6/3.3 Amps	Connected to power
			Apex grinder	1	Apex	16-SDD	3.5' x 2'	3.5' x 5'	220/440 V, 4.8/2.4 Amps	Connected to power and exhaust
			Ball Bearing Grinder	2	Stanly (1), Blue Point (1)	677 (s) , BG333(bp)	1'10" x 2' (s),1'8" x 1' (bp)	2' x 3.5'	11 V, 5 Amps (s), 115 V, 4 Amps (bp)	Stanley is stand alone, blue point is on tabletop. Both connected to power
			Bandsaw	2	Northfield foundry and machine do	34B7	2'1" x 4'8"	3' x 6'	208 V, 60 ha	Connected to power and exhaust
			Bandsaw 36	1	Crescent	7694	2'8" x 5'	3.5' x 7'		Connected to power
			Buffer-small	2	Delta (1), baldor(1)	438-02-314-0204	2'4" x 1'2" (d), 1'10" x 10" (b)	3'x 3'	115/230 V, 6.6/3.3 Amps	Baldor is stand alone, delta is on tabletop. Both connected to power
			CNC	1	Dyna	EM 3116	6' x 7.5'	7' x 9'		Connected to power
			CNC techno 1 and 2	2	Isle-automation	242525 0001	2.5' x 2'8"	3.5' x 6.5'		Working area includes computer station
			Drill press- tabletop	1	Rockwell delta	15-665	1'2" x 2'	2' x 4'	115/230 V, 11.2/5.6 Amps	Connected to power, on top of small work table
			Drill press-standalone	1	Powermatic	1100	1'2" x 2.5'	3' x 4.5'		Connected to power
			Furnace -small	1	Neycraft pro		1'3" x 1'3"			On tabletop
			Glider Trim Saw	1	Hammond	G 100	1'8" x 3'	2' x 4.5'	208-220/440 V, 4.3-42/2.1 Amps	Connected to power
			Hydraulic Ram	1	DAKE		2' x 2'	4' x 2'	44-251	Connected to power
			ITE Switchboard	1			3'2" x 2'	3'2" x 2'	120/208 V	
			Jointer	1	Powermatic	60	5.5' x 2'3"	7' x 3.5'		Connected to power and exhaust
			Lathe	8	Rockwell Delta (7), Yates American (1)		5' x 2'	5' x 4'	Unknown	Connected to power
			Lockers	1	LYON		10" x 14" x 1'9"			
			Mill	1	Lagun-Republic	3620	5' x 7'	6' x 9'		Connected tompower
			Mitre Saw	1	Makita	LS1011	1'8" x 2'6"	2' x 4'		
			Orange cylinder	1			2'8" diameter			On tabletop
			Oscillating Spindle Sander	2	MAX (1), Master (1)		2' x 2'	4' x 4'	115 V	Connects to power and exhaust
			Painting station	1	N/a		5.5' x 4'8"			One table separated into 4 sections
			Planer	1	Powermatic	160	4' x 3.5'	4' x 5'		Connected to power and exhaust
			Precision Lathe	1	South bend	Model A	5' 3" x1'10"	5.5' x 3'		
			Radial Arm Saw	1	Dewalt- black and decker		2'8" x 3'3"	3' x 4'		Connected to power and exhaust
			Radial Sander	1	Rockwell delta		1.5' x 1'8"	2' x3'		Connected to power
			Table saw	1	Unknown		4'8" x 3.5'	5' x 5'		Connected to power and exhaust
			Unidentifiable	1	Grob inc	RW-A	1'2" x 1'2"	Unknown	230 V, 20'Amps	Connected to power
			Vacuum sealer-CentraCaster	1	Vaniman		2' x 1'3"			On tabletop
			Work tables	7	N/a		5'4" x 4' 6"			All tables have 4 vise grips attached
			Work tables large	2			9'8" x 3'			

RADIO CTE PROGRAM

Arts and Communications Technology Academy

Summary

The Radio CTE program, also known as KBPS, is licensed by the Federal Communications Commission for a 24-hour broadcast day. Students learn the basics of radio broadcasting and create audio content including commercials and news that is broadcast live. Students obtain communication and announcing skills and learn digital audio production.

The following rooms are outlined in this document:

Radio – AM Radio Production Studio
Radio – AM Radio Air Booth
Radio – AM Studio / Digital Station
Radio – Comm Tech TV/ Digital Media Studio
Radio – Comm Tech Office/Streaming Station
Radio – Comm Tech Control Room
Radio – Practice Studio
Radio – Engineering Office
Radio – IT Office

Please reference the indicated section of the following rooms:

Classroom – Reference section 2.1
Conference Room – Reference section 2.6
Storage – Reference section 2.9
Teacher Planning – Reference section 2.4

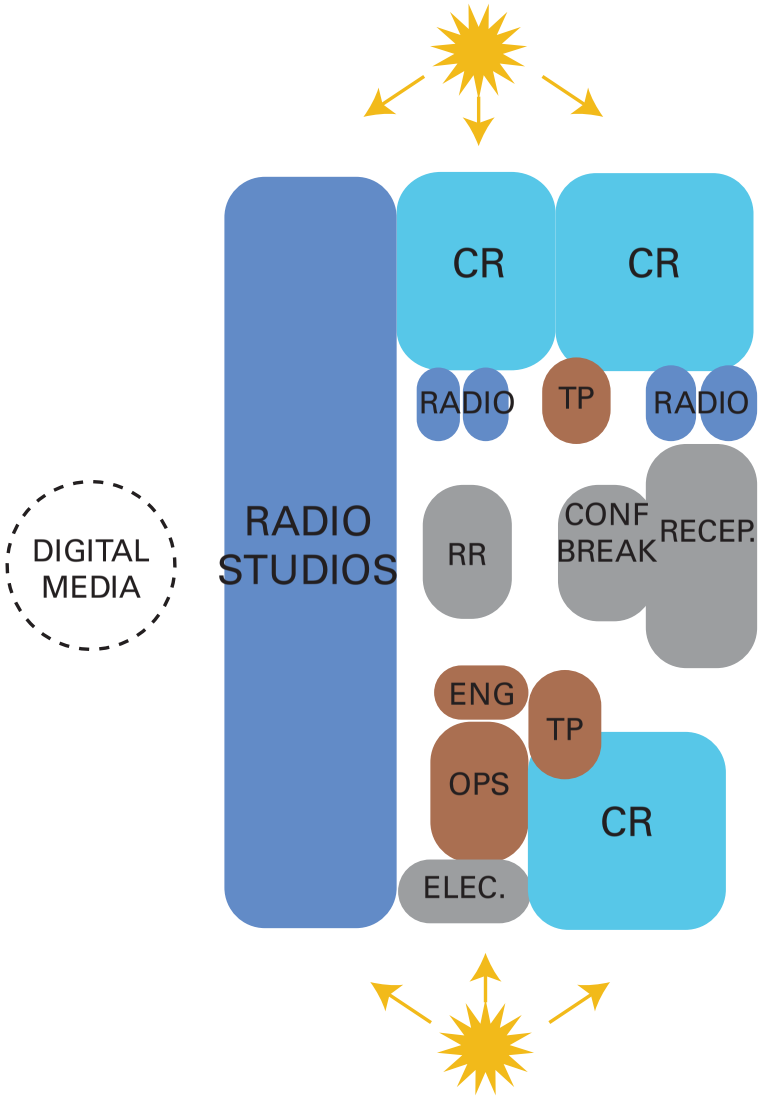
Other Program Adjacencies

+ Digital Media

Future Trends

+

RADIO / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects / PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Radio

DESCRIPTION: AM Radio Production Studio

Brief Instructional Objectives:

- Provide students with a production studio where assignments can be completed and prepared for broadcasting

Users of this Activity Area:

- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Radio production
- Reading of news and commercials
- Completing assignments

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- AM Studio
- AM Air Booth

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:.....2

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....146 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting will utilize automatic vacancy sensing control. The luminaires

	are turned on automatically when one enters the room. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.
Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power radio equipment • Room is hooked up to go on-air if needed
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • Operable window shades to provide privacy for lockdown purposes at interior relites. • Interior relites to AM air Booth and AM Studio and Digital Work Stations
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Acoustic wall board
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	•
Display Case:	• No requirement
Other:	• P.lam countertop
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Chair.....2
Storage:	• Casework below work countertop

Moveable Equipment:

- AM Control Board 1
- Programming Monitor 1
- Computer 2
- Computer Monitor 3
- Keyboard 3
- CD players
- Cart Players
- Compact disc players/caset players
- Microphone 2
- CD Storage
- Turn Table ..... 1 (locked in cabinet)
- Reel to Reel Tape Machine 1

Fixed Equipment:

-

COMMENTS:

- AM production Room should be inbetween the AM Air Booth and AM Studio and Digital Work station Room with transparency between these spaces

ACTIVITY AREA: Radio

DESCRIPTION: AM Radio Air Booth

Brief Instructional Objectives:

- Provide students with the opportunity to do on-air broadcasting shifts for AM 1450 KBPS

Users of this Activity Area:

- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Radio broadcasting
- Reading of news and commercials

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- AM Production Studio

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:.....2

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....115 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting will utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.

Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power radio equipment
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • Operable window shades to provide privacy for lockdown purposes at interior relites. • Interior relite to AM Production studio
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. Sound absorptive panels.
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	• P.lam countertop
Items to be Stored in this Space:	• CDs

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Chair
Storage:	• CD storage shelving
Moveable Equipment:	• AM Control Board ..... 1 • Programming Monitor ..... 1 • Computer ..... 1 • Keyboard ..... 1 • Monitor ..... 2 • Microphones ..... 2 • CD Player ..... 1 • Clock 1
Fixed Equipment:	•

COMMENTS:

•

ACTIVITY AREA: Radio

DESCRIPTION: AM Studio/Digital Station

Brief Instructional Objectives:

- Provide a music production room for students to record and create music to be broadcast.

Users of this Activity Area:

- Sophomores
- Juniors
- Seniors

Activities Conducted in this Space:

- Music production
- Music recording

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- AM Air Booth, AM Production Studio

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets

Number of Teachers: 1

Number of Students:..... 6

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 254 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting will utilize automatic vacancy sensing control. The luminaires are turned on automatically when one enters the room. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.

Power/ Communications:

- Room can plug into both adjacent control rooms

Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • Operable window shades to provide privacy for lockdown purposes at interior relites. • Interior relite to adjacent AM production studio
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Acoustic wall board
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Chairs ..... 6 • Tables 3
Storage:	• No requirement
Moveable Equipment:	• iMac computers ..... 6 • Keyboards ..... 6 • Musical keyboards 6
Fixed Equipment:	•

COMMENTS:

•

ACTIVITY AREA: Radio

DESCRIPTION: Comm Tech TV/Digital Media Studio

Brief Instructional Objectives:

- Provide students with a digital media studio where Tech News can be produced and recorded

Users of this Activity Area:

- Sophomores-Seniors

Activities Conducted in this Space:

- Tech News production and recording

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Comm Tech Control Room
- Comm Tech Office/Streaming Station

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets

Number of Teachers: 1

Number of Students:..... up to 8

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 412 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
Lighting:	• The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting will utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.
Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power radio equipment
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F

	• Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	• Heavy sound proof doors required
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Acoustic wall board
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Television news anchor desk (7.5' x 4').....1 • Cushioned chairs 1
Storage:	• No requirement
Moveable Equipment:	• Video Camera.....1 • Video Camera Stand 1
Fixed Equipment:	• Stage/set backdrop

COMMENTS:

- This room is shared with the Digital media CTE Program

ACTIVITY AREA: Radio

DESCRIPTION: Comm Tech Office/Streaming Station

Brief Instructional Objectives:

- Provide a second on-air production studio – KBPS.am

Users of this Activity Area:

- Sophomores-Seniors

Activities Conducted in this Space:

- On-air broadcasting on KBPS.AM Internet Stream

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Comm Tech Control Room
- AM Studio/Digital work stations

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets

Number of Teachers: 1

Number of Students:..... up to 3

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 165 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
Lighting:	• The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting will utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.
Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power radio equipment
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F

	• Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Acoustic wall board
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Desk (Wide U Shape – 4' x 8') ..... 1 • Cushioned high office chairs 2
Storage:	• No requirement
Moveable Equipment:	• Microphones ..... 2 • Monitors ..... 2 • Control Board ..... 1 • DAT player ..... 1 • CD Player ..... 1 • Keyboards ..... 2 • Headphones ..... 2 • Clock 1
Fixed Equipment:	• No requirement

COMMENTS:

•

ACTIVITY AREA: Radio

DESCRIPTION: Comm Tech Control Room

Brief Instructional Objectives:

- Provide a control room for the Comm Tech TV/Digital Media Studio

Users of this Activity Area:

- Sophomores-Seniors

Activities Conducted in this Space:

- Control of Comm Tech TV Studio

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Comm Tech TV Studio
- Comm Tech Office/Streaming station

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets

Number of Teachers: 1

Number of Students:..... up to 3

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Yes

Floor Area ..... 264 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
Lighting:	• The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling. • Lighting will utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.
Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power radio equipment
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F

	• Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirements
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Acoustic wall board
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Desk (Wide U Shape – 4' x 8') ..... 1 • Cushioned high office chairs 2
Storage:	• No requirement
Moveable Equipment:	• Microphones ..... 2 • Monitors ..... 2 • Control Board ..... 1 • DAT player ..... 1 • CD Player ..... 1 • Keyboards ..... 2 • Headphones ..... 2 • Clock 1
Fixed Equipment:	• No requirement

COMMENTS:

•

ACTIVITY AREA: Radio

DESCRIPTION: Practice Studio (x4)

Brief Instructional Objectives:

- Provide a room off of the classroom space for students to complete computer assignments and broadcast audio assignments.

Users of this Activity Area:

- Freshman-Seniors

Activities Conducted in this Space:

- Group computer work
- Watching videos and listening to music for assignments

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Classroom (2 practice studios /classroom)

Activities that should be NEAR this Activity Area:

- Teacher Planning
- Student Toilets

Number of Teachers: 0

Number of Students:.....Up to 3

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....60 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.

Lighting:

- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting will utilize automatic vacancy sensing control. The luminaires are turned on automatically when one enters the room. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.

Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power radio equipment
Plumbing:	• No requirements.
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • Operable window shades to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • Acoustic wall board
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Small Table (3x4)..... 1 • Rolling stools without backs.....3/ practice room
Storage:	• No requirement
Moveable Equipment:	• Computer..... 1 • Monitor ..... 2 • Keyboard..... 1
Fixed Equipment:	• No requirement

COMMENTS:

•

ACTIVITY AREA: Radio

DESCRIPTION: Engineering Office

Brief Instructional Objectives:

- Provide office space for the Radio Engineer

Users of this Activity Area:

- Radio Engineer

Activities Conducted in this Space:

- Fixing radio equipment
- Preparing radio equipment for use

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- All studios and production studios

Activities that should be NEAR this Activity Area:

- Classrooms
- Teacher Planning
- Student Toilets

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....1

Meets Daily? .....Yes

Floor Area .....90 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- No requirements.

Lighting:
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting will utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.

Power/ Communications:
- Power and data outlets provided and spaced sufficiently at perimeter of room

Plumbing:
- No requirements.

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat

	• Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • Operable window shades to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	• Work counter on two walls
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Work desk.....1 • Chair.....1
Storage:	• Wire shelving with 6" height separation on 2 walls • Shelving with 12" height separation on 1 wall • Tool cabinet.....1 • Storage cabinets under work counter.....2
Moveable Equipment:	•
Fixed Equipment:	•

COMMENTS:	• 6" shelving for nuts and bolts parts storage • 12" shelving for books

ACTIVITY AREA: Radio

DESCRIPTION: IT Office

Brief Instructional Objectives:

- Provide office space for IT manager

Users of this Activity Area:

- IT manager

Activities Conducted in this Space:

- IT support
- Storage

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Equipment Rack

Activities that should be NEAR this Activity Area:

- Classrooms
- All Radio Program Spaces

Number of Staff:.....1

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....72 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- No requirements.

Lighting:
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting will utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 10 minutes.

Power/ Communications:
- Power and data outlets provided and spaced sufficiently at perimeter of room

Plumbing:
- No requirements.

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat
- Thermal System: DOAS with heat recovery, radiant heating and

		cooling
Doors and Hardware:	•	
Interior and Exterior Windows:	•	Interior relites for transparency between corridor and learning space.
	•	Operable window shades to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	•	Minimum: 8'-0"
	•	Maximum: 10'-0"

FINISHES:

Floor/Base:	•	Provide carpet flooring meeting requirements of PPS Design Standards.
Walls:	•	Gypsum wall board/ paint.
Ceiling:	•	Suspended acoustical ceiling.

SPECIALTIES:

White Boards:	•	No requirement
Tack Boards:	•	Tack board (3 x 4) 1
Display Case:	•	No requirement
Other:	•	
Items to be Stored in this Space:	•	Equipment
	•	Packages

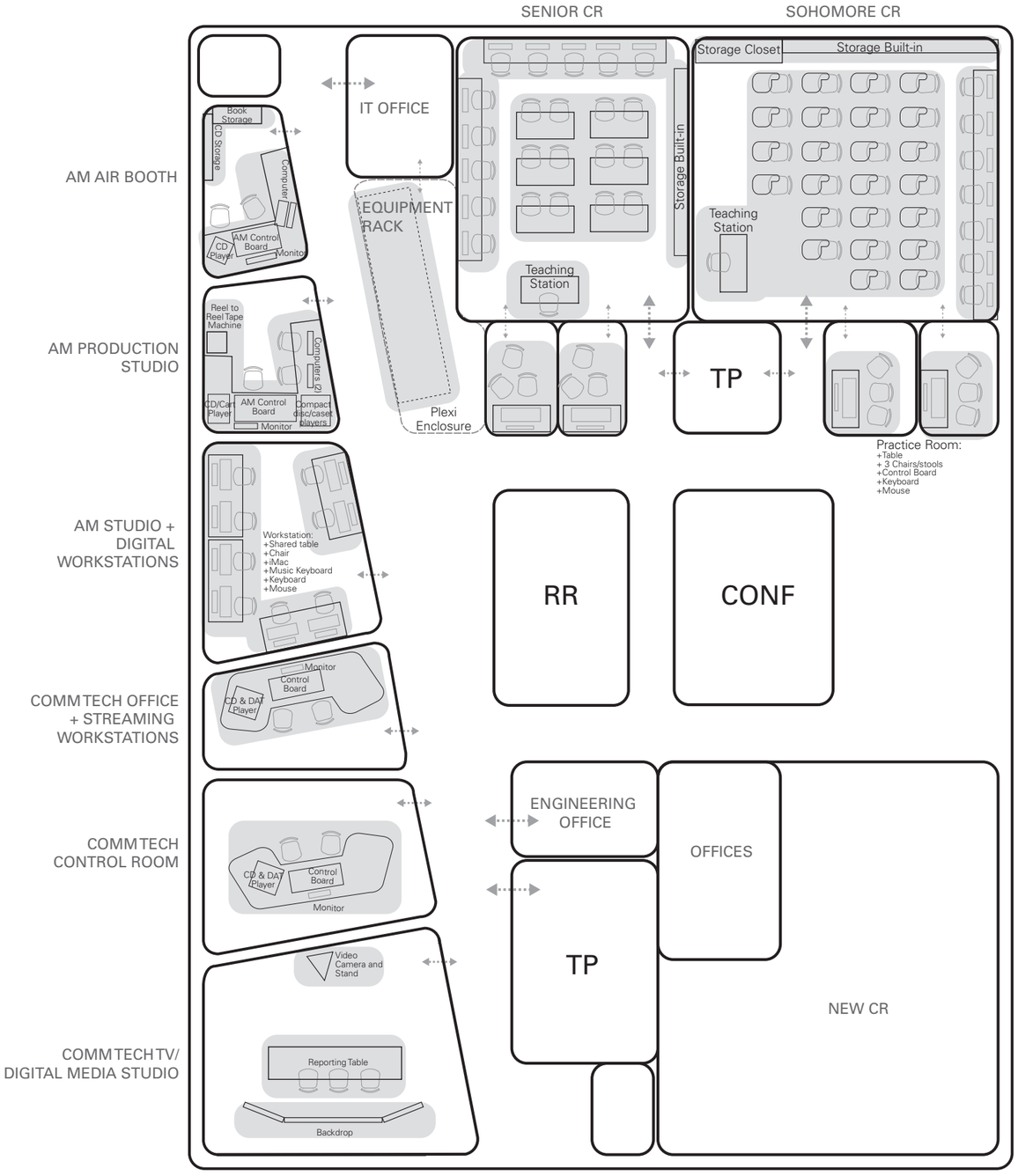
FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•	Desk 1
	•	Chair 1
Storage:	•	18" cabinet sets above counter 8
Moveable Equipment:	•	Computer 1
	•	Monitor 2
	•	Keyboard 1
	•	Laptop 1
	•	Microwave 1
	•	Mini Fridge 1
Fixed Equipment:	•	

COMMENTS:

•

RADIO / OVERALL DIAGRAM



LEGEND:

- EQUIPMENT FOOTPRINT
- EQUIPMENT WORKING AREA
- GENERAL EQUIPMENT AREA
- CR (CLASSROOM)
- TP (TEACHER PLANNING)
- ROLL-UP DOOR

Benson Polytechnic High School

If any equipment can be removed, please highlight in red
If any equipment needs to be added, please hihglight in yellow
Feel free to add any remarks in the Teacher Remarks column

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
RADIO	Comm Tech TV Studio	11								
			Reporting Desk	1			7.5' x 4'	8' x 5'	none	
			Video Camera	1			1' x 1'			
			Video Camera Stand	1			2.5' x 2.5'	3.5' x 3.5'	none	
			Chairs	5					none	
			Benson Tech News is recorded in this mock-reporting setting and is shared with the digital media students.							
RADIO	Comm Tech Control Room	12								
			Storage right now, in process of connecting to the comm tech tv studio. Oince finished, it will include:							
			New Wheatstone control board is desired - $10,000							
			Control Board	1	Wheatstone	Audioarts Engineering IP-16 Digital	2' x 2'	2' x 3'	yes	
			Monitors	2						
			Keyboards	2						
			Microphones	2						
			Chairs	2						
			CD Player	3						
			Headphones	2						
			Clock and timer	1						
			Desk (wide u shape)	1			8' x 4'			
RADIO	Comm Tech Office/Streaming Work Station	13								
	KBPS.AM									
			Control Board	1	Wheatstone	Audioarts	2' x 2'	2' x 3'	yes	
			Computer Monitor	1						
			Programming Monitor	1						
			Keyboards	2						
			Microphones	2						
			Chairs	2						
			CD Player	3			1.5 x 1.5'			
			DAT Player	1						
			Headphones	2						
			Clock and timer	1						
			Desk (wide u shape)	1			8' x 4'			
			CD storage -not needed in room - no storage needed in this space-takes away from acoustics							

Academy	Room Name	Room Number	Item	# of items	Manufacturer	Item/Model Number	Footprint	Working space footprint	Power Requirements (watts?)	Notes
RADIO	AM Studio and Digital Work Stations	14								
			iMac Compuers	6- see notes	Apple	iMac	2' x 1'		yes	8 additional computers are desired
			Musical Keyboards	6 - see notes						8 additional musical keyboards are desi
			Computer Keyboards	6 - See ntoes	Apple		1.5' x 6"			8 additional keyboards are desired
			Tables	3 - see notes						4 additional tables are desired (2 stations per table)
			Chairs	6 - See notes						8 additional chairs desired
			Room must be able to plug into both adjacent control rooms							
RADIO	AM Production									
			AM Control Board	1			3' x 2.5'			
			Programming Monitor	1						
			Computer Monitor	2						
			Keyboard and mouse	3						2 for computers, 1 for programming
			Computers	2						
			Microphones	3						
			Turn Table	1						Locked in cabinet
			Reel to Reel Tape Machine	1			2' x 2'			
			CD Players	3			2' x 2' block			
			Cart Players	2			In block above			
			Compact Disc Platers	1			2' x 2' block			
			Caset players	2			In block above			
			For students completing assignments-not in air, in an emergency, can be put on air							
RADIO	AM Air Booth	18								
			AM Control Board	1			2.5' x 2'			Needs to updated
			Programming Monitor	1						
			Computer Monitor	1						
			Keyboard and mouse	2						
			Computers	1						
			Microphones	2						
			CD Players	2						Only used for emergencies
			Clock and timer	1						
			Storage shelf for CDs	1			4' x 6"			
			Storage shelf for books	1			2' x 10"			
RADIO	IT Office	21								
			Workstation	1						
			Storage shelves around room							
RADIO	Engeneering Office									
			Workstation	1						
			Storage shelves around room							
			Work Counter							
RADIO	Practice Rooms									
			Mini Control Board	1						
			Computer	1						
			Microphone	1						
			Table	1						
			Chairs	3						

4.0 OTHER PROGRAMS

ROBOTICS – MAKER SPACE

Summary

The Robotics program is an after school club that makes robots and competes with other schools and clubs. This space will support the robotics program while also providing other maker space utilities.

The following rooms are outlined in this document:

Robotics – Robotics Room

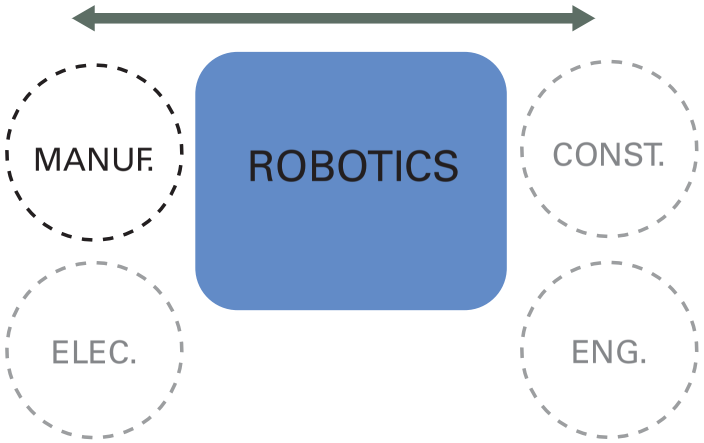
Other CTE Program Adjacencies

- Electrical
- Engineering
- Manufacturing

Future Trends

- Prosthetic Limbs
- 3D Printing

ROBOTICS / PROGRAM STUDY



LEGEND:

- SPECIALTY SPACES
- TEACHER PLANNING (TP)
- FLEX LEARNING
- CORRIDOR CIRC.
- DAYLIGHT
- PRIMARY ADJACENCY
- CLASSROOM (CR)
- SUPPORT SPACES
- OUTDOOR LEARNING
- INTERIOR CIRC.
- ROLL-UP DOOR
- SECONDARY ADJACENCY

NOTE:
FINAL AREA TO BE CONFIRMED BASED ON EQUIPMENT NEEDS AND LAYOUT

bassetti architects / PPS

PROGRAM DATA SHEET

ACTIVITY AREA: Maker Space

DESCRIPTION: Robotics

Brief Instructional Objectives:

- A place for students to experiment, discover, model, construct, and design with the support of tools and technology not found in typical classrooms.
- Project based learning
- Robotics team and testing space

Users of this Activity Area:

- Benson students and robotics teams

Activities Conducted in this Space:

- Team projects
- Robotics building and testing

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

-

Activities that should be NEAR this Activity Area:

- Commons
- CTE learning spaces
- Student Toilets
- Student Lockers

Number of Teachers: 1

Number of Students:..... 20

Number of Aides (or Volunteers):..... 2-3

Meets Daily? ..... Yes

Floor Area ..... 1,400 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple

switching options for energy conservation
- Display lighting.

Power/ Communications:
- Power to free standing equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Positioning of power drops and equipment connections will be coordinated with the School District Equipment Layout design.
- General use Power via 20 Ampere duplex receptacles set flush in new walls. The power receptacles to support the space's equipment.
- Power will be available at countertops, teaching instructor display and whiteboard locations.
- Communication cabling to support technology interconnectivity provided.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided.
- VOIP telephone capability for staff communication provided.

Plumbing:
- Large cleanup sink (Wall mounted, 3-basin)..... 1
- Eyewash and emergency shower 1
- Compressed air spigot where applicable

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 80°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows, local control of dedicated exhaust systems
- Thermal System: Unit ventilators and Make-up air units
- Specialized Systems: General exhaust and dedicated local exhaust systems as needed. Provide shaft space at regular intervals for future flexibility.

Doors and Hardware:
-

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:
- Minimum: 9'-0"
- Maximum: 12'-0"

FINISHES:

Floor/Base:
- Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.

Walls:
- Gypsum wall board/ paint.
- FRP panel or wall finish at sink backsplash

Ceiling:
- 1-2 layers of GWB in a spring suspended ceiling system with insulation in the cavity

SPECIALTIES:

White Boards:	•	Magnetic White Board (4' x 8').....2
Tack Boards:	•	On wall where available (4'x8').....2
Display Case:	•	Display in hallway
Other:	•	
Items to be Stored in this Space:	•	Equipment will support makerspace functions, specifically robotics.

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•	Robotic work tables (2 person, 3' x 4').....10 (in sets of 2 back to back)
	•	Student chairs.....20
	•	Computer tables (on wheels).....seating for 4
	•	Teacher table 1
	•	Teacher chair.....1
Storage:	•	Cabinetry for storing tools, materials, and student projects
Moveable Equipment:	•	Equipment will support makerspace functions, specifically robotics.
Fixed Equipment:	•	

COMMENTS:

- The room should be organized with one main area for robotics building and test field while the remaining space can will provide other maker space tools, machinery, supplies, and materials.

PROGRAM DATA SHEET

ACTIVITY AREA: Community Room / Alumni / Boosters

DESCRIPTION: Meeting Space

Brief Instructional Objectives:

- Provide a community space where industry partners, community members, alumni, and boosters can meet.

Users of this Activity Area:

- Community members
- Students
- Staff
- Teachers
- Alumni
- Boosters

Activities Conducted in this Space:

- Meetings
- School "living room"
- Events

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Admin Offices
- Front of school/main entry

Activities that should be NEAR this Activity Area:

- The Commons

Number of Teachers: .....30 person capacity in room

Number of Students:.....30 person capacity in room

Number of Aides (or Volunteers):.....30 person capacity in room

Meets Daily? .....Yes

Floor Area.....1,200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Ceilings separating space from rooms above to have an STC Rating of 65 or greater.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceilings. In general, suspended accessible, acoustical tile ceilings are expected. • 4000Kelvin, Light Emitting Diode, (LED) downlight luminaires, set flush in the suspended ceiling are expected. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. • The control stations will provide continuous range illumination dimming. • The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power provided via 20 Ampere duplex receptacles set flush in new walls. The power receptacles will be positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power will be available at countertop locations. • Communication cabling to support technology interconnectivity. Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Short throw projector access to both the network and HDMI equipped instructional computers • LCD Display • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier is recommended to also provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems will be provided • A Theater intercom station will allow remote notification of an impending cue. • Music reproduction and recording systems will be provided as required and requested by the school district • VOIP telephone capability for staff communication will be provided
Plumbing:	• Sink..... 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	• Interior Entry door: Double glass door to provide transparency into and through space
Interior and Exterior Windows:	• Interior relites for transparency between corridor and meeting space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• 1-2 layers of GWB in a spring suspended ceiling system with insulation in the cavity

SPECIALTIES:

White Boards:	• Spaced throughout room for simultaneous instruction, magnetic 2-3
Tack Boards:	• On available wall space
Display Case:	• If possible, re-locate the historic display cases from the main hallway to showcase student work and achievements
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Conference table .....1 • Conference chairs.....6 • Small tables.....4
Storage:	• Upper and lower cabinetry around sink to provide storage for event and meeting supplies
Moveable Equipment:	• All furniture
Fixed Equipment:	•

COMMENTS:

•

5.0 PERFORMING ARTS

PROGRAM DATA SHEET

ACTIVITY AREA: Performing Arts

DESCRIPTION: Theater

Brief Instructional Objectives:

- Fixed seating for 1700 people

Users of this Activity Area:

- All students, teachers, and staff
- Community
- Organizations renting the space

Activities Conducted in this Space:

- Performances
- Instructional venue for Drama and music curriculum
- Large lecture and presentation venue

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Stage/Orchestra pit
- Theater support and storage
- Equipment, lighting, and costumes

Activities that should be NEAR this Activity Area:

- Large school meeting room/overflow waiting area for users renting the space for non-school related functions

Number of Teachers: .....1700 total capacity

Number of Students:.....1700 total capacity

Number of Aides (or Volunteers):.....1700 total capacity

Meets Daily? .....No

Floor Area.....13,122 sf existing

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Acoustical treatment on walls and ceiling for maximum effect
- Shape room for maximum effect
- Flown reflectors: Curved reflector panels, supported on the stage rigging, provide proper acoustic environment for rehearsal and performance by band, choral and orchestral musicians.
- Portable Towers: Curved, vertical reflector panels, supported by a weighted roller base, provide a critical complement to the flown reflectors, with regard to proper acoustic environment for rehearsal and performance by band, choral and orchestral musicians.

Lighting:

Performing Arts Lighting Controls:

- General and Work Lighting: Controls shall be simple digital preset with processor, with integration over sACN network. Human interface devices shall be easy for non-skilled users, and shall be software based. System shall equally serve solid state and tungsten sources.
- Production Lighting: Configured to equally serve solid-state lighting and tungsten. Shall include sACN and RDM distribution and control. Processor shall integrate with house lighting controls.
- BASIS of Concept: ETC Paradigm, NET3, Sensor3 ThruPower, ION console

General Lighting for Performing Arts

House Lighting:

- To the maximum extent practical, all existing lighting fixtures should be renovated or replaced as is appropriate to the fixture (functional, historical, practical) to operate with solid-state LED light engines and drivers.
- All house lighting fixtures must be able to perform a smooth, 16-bit resolution fade from full to zero output, emulating an incandescent, square-law dimming curve.
- Color reference shall be 2700 Kelvin with a CRI rating of not less than 80.
- L70 should occur at no less than 50,000 hours.
- Chandeliers and other existing ornamental fixtures should be cleaned, restored, and have internal wiring and sockets replaced with new equipment, by a shop that can provide an acceptable label from an independent, approved testing laboratory.

Work Lighting

- To the maximum extent practical, all existing lighting fixtures should be renovated or replaced as is appropriate to the fixture (functional, historical, practical) to operate with solid-state LED light engines and drivers.
- Color reference shall be 2700 Kelvin with a CRI rating of not less than 80.
- Shielding shall be considered a high priority.

Production Lighting:

- Include a mixture of 40% tungsten-halogen source and 60% solid-state monochromatic / RGBA sources. All solid-state lighting shall be fully digital and have resolution at not less than 16-bit for full, deep and smooth fades.
- Cabling and accessories included to allow adaptation, adjustment and creative flexibility with lighting.

Power/ Communications:

- Power located at catwalks, galleries, stage wall, floor pockets, and on selected motorized rigging hoist assemblies.
- Fed by panelboards, relay cabinets, and dimmers
- UL Listed and Labeled for Theater Hard Service Usage

Plumbing:

- No requirements

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat
- Thermal System: VAV system with underfloor displacement where possible. Separate system or zone for the stage

Doors and Hardware:

-

Interior and Exterior Windows:	• Exterior: High clerestory, existing historical windows with blackout shades
Ceiling Height:	• Minimum: 30' from top of sloped seating to underside of structure (existing) • Maximum: 33'4" from orchestra level to underside of structure (existing)

FINISHES:

Floor/Base:	• Stage floor: Durable sprung floor system that complies with ANSI and ESTA standards for educational performing arts sages
Walls:	• Acoustic treatment appropriate for room use
Ceiling:	• Acoustic treatment appropriate for room use

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• Outside of main entry to display upcoming events
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE AND EQUIPMENT:

Furniture:	• Seating includes:
	  • Self-rising seats
	  • Ornamental end panels at aisles
	  • Upholstery rated for 3 hour comfort and 40 year durability
	  • Damage resistant materials
	  • Armrests
	  • Minimum 21" seat width
	  • 18 degree seatback angle on orchestra level, 14 degree seatback on balcony level

Storage:	• No requirement
Moveable Equipment:	•
Fixed Equipment:	• Seating

COMMENTS:

•

PROGRAM DATA SHEET

ACTIVITY AREA: Performing Arts

DESCRIPTION: Concessions

Brief Instructional Objectives:

- Provide light refreshments and snacks to those using the theater

Users of this Activity Area:

- Groups using the theater, whether for Benson or non-Benson related programs

Activities Conducted in this Space:

- Selling light refreshments and snacks, Benson merchandise

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Box Office
- Theater entry
- Theater

Activities that should be NEAR this Activity Area:

- Theater storage

Number of Teachers: 0

Number of Students:.....1

Number of Aides (or Volunteers):.....1

Meets Daily? .....No

Floor Area.....61 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:
- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation.

Power/ Communications:
- Power and data outlets provided and spaced sufficiently at perimeter of room to power equipment

Plumbing:
- Sink..... 1

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing

	30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: VAV System
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	• Non-perishable snacks and drinks

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• Cabinetry with multiple shelving and door options for storage of snacks and other merchandise
Moveable Equipment:	•
Fixed Equipment:	• Fridge

COMMENTS: •

PROGRAM DATA SHEET

ACTIVITY AREA: Performing Arts

DESCRIPTION: Multiuse / Green Room / Music

Brief Instructional Objectives:

- Large meeting area for general school use
- Overflow area for users renting the theater space
- Future music room if/when Benson creates a music program

Users of this Activity Area:

- All students, teachers, and staff
- Community
- Organizations renting the space

Activities Conducted in this Space:

- Performances
- Instructional venue for Drama and music curriculum
- Large lecture and presentation venue
- Large Meeting space

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Theater support and storage

Activities that should be NEAR this Activity Area:

- Theater

Number of Teachers: 1-2

Number of Students:..... Maximum capacity: 50

Number of Aides (or Volunteers):..... N/A

Meets Daily? ..... No

Floor Area 2,400

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceilings. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000Kelvin, Light Emitting Diode, (LED) downlight luminaires, set

flush in the suspended ceiling are expected.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control.
- The control stations will provide continuous range illumination dimming.
- The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:
- Power provided via 20 Ampere duplex receptacles set flush in new walls. The power receptacles will be positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
- Power will be available at countertop locations.
- Communication cabling to support technology interconnectivity. Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Short throw projector access to both the network and HDMI equipped instructional computers
- LCD Display
- Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier is recommended to also provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems will be provided
- A Theater intercom station will allow remote notification of an impending cue.
- Music reproduction and recording systems will be provided as required and requested by the school district
- VOIP telephone capability for staff communication will be provided

Plumbing:
- Sink..... 1

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows
- Thermal System: DOAS with heat recovery, radiant heating and cooling

Doors and Hardware:
-

Interior and Exterior Windows:
- Interior relites for transparency between corridor and learning space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:
- Minimum: 9'-0"
- Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

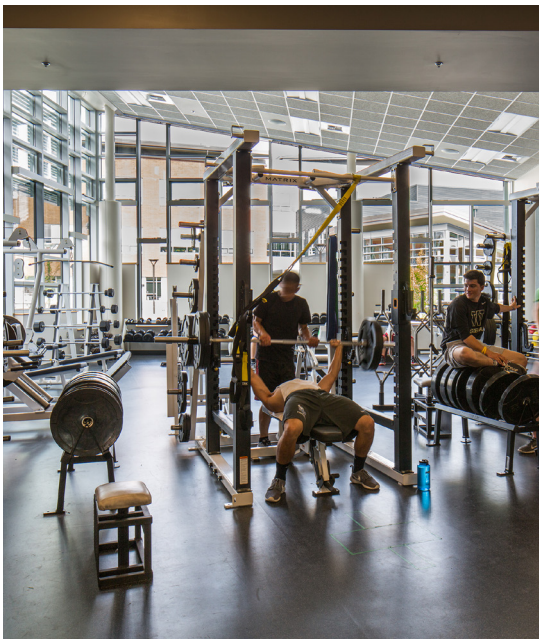
White Boards:	• Magnetic White Board and projection surface (4' x 8') 2
Tack Boards:	• Outside of main entry to display upcoming events.....1
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Moveable, flexible, and easy to store seating for up to 50 people
Storage:	• Robust cabinetry system that provides storage for instruments of different sizes
Moveable Equipment:	• VIOP Telephone.....1
Fixed Equipment:	• LCD Display .....1 • Short Throw Projector.....1

COMMENTS:

- This space should be flexible and adaptable to fulfil the requirement of a multi-purpose space for Benson Tech that provides many setting options and accommodates a large number of people



6.0 PE/ATHLETICS

PROGRAM DATA SHEET

ACTIVITY AREA: PE / Athletics

DESCRIPTION: Circuit

Brief Instructional Objectives:

- Large, flexible space used for aerobics and dance in the PE department. Non-athletic feel with a focus on lifelong health and wellness

Users of this Activity Area:

- All students

Activities Conducted in this Space:

- Aerobics
- Dance
- Health and Wellness

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- PE storage

Activities that should be NEAR this Activity Area:

- Locker Rooms
- Athletics Office Teacher Planning
- Main Gym
- Aux Gym
- Student Toilets

Number of Teachers: 1

Number of Students:.....30

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....1,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended

accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.
- Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes.
- Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.

Power/ Communications:
- Power provided via 20 Ampere duplex receptacles set flush in new walls. The power receptacles will be positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design.
- Power will be available at exercise equipment locations.
- Power to free standing exercise equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement.
- Communication cabling to support technology interconnectivity.
- Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access.
- Fire alarm visual and voice evacuation warning provided in each space. The fire alarm speaker and supervised audio amplifier is recommended to also provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content.
- Audio reinforcement systems provided in all classrooms.
- VOIP telephone capability for staff communication.

Plumbing:
- Drinking fountain 1

HVAC/Mechanical:
- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1
- Local Control: Thermostat per space, operable windows
- Thermal System: VAV system.

Doors and Hardware:
-

Interior and Exterior Windows:
- Interior relites for transparency between corridor and aerobics space.
- High and low operable exterior windows for air circulation.
- Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.

Ceiling Height:
- Minimum: 12'
- Maximum: 15' (input needed)

FINISHES:

Floor/Base:
- Provide rubber or resilient sports flooring

Walls:
- Interactive walls (monitors, TV screens)
- Mirrors on at least 2 walls

Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic White Board (4 x 8) 2
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• TV Screens/Monitors • Free weights • Refer to PPS Comprehensive Ed Spec Room Equipment Matrix
Storage:	• Lockable cabinet for stereo system storage 1
Moveable Equipment:	• Refer to PPS Comprehensive Ed Spec Room Equipment Matrix
Fixed Equipment:	• Refer to PPS Comprehensive Ed Spec Room Equipment Matrix

COMMENTS:

•

PROGRAM DATA SHEET

ACTIVITY AREA: PE / Athletics

DESCRIPTION: Cardio

Brief Instructional Objectives:

- Large, flexible space used for cardio in the PE department

Users of this Activity Area:

- All students

Activities Conducted in this Space:

- Cardio activities, biking

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- PE storage

Activities that should be NEAR this Activity Area:

- Athletics Office Teacher Planning
- Main Gym
- Aux Gym
- Locker Rooms
- Student Toilets

Number of Teachers: 1

Number of Students:.....30

Number of Aides (or Volunteers):.....0

Meets Daily? .....No

Floor Area.....1,500 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected.
- 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling.

	• Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. The luminaires are turned on manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power provided via 20 Ampere duplex receptacles set flush in new walls. The power receptacles will be positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Power will be available at exercise equipment locations. • Power to free standing exercise equipment is recommended to be fed from overhead cordset drops. This provides additional ease of relocation or equipment replacement. • Communication cabling to support technology interconnectivity. • Wireless access points, as well as 358B data jacks and device plates with Category 6 cable for network access. • Fire alarm visual and voice evacuation warning provided in each space. The fire alarm speaker and supervised audio amplifier is recommended to also provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided in all classrooms. • VOIP telephone capability for staff communication.
Plumbing:	• Drinking fountain 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: VAV system.
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and cardio space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 12' • Maximum: 15' (input needed)

FINISHES:

Floor/Base:	• Provide rubber or resilient sports flooring
Walls:	• Interactive walls (monitors, TV screens) • Mirrors on at least 2 walls
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	•	Magnetic White Board (4 x 8) 2
Tack Boards:	•	No requirement
Display Case:	•	No requirement
Other:	•	
Items to be Stored in this Space:	•	

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•	
Storage:	•	Lockable cabinet for stereo system storage 1
Moveable Equipment:	•	Cardio Bikes
Fixed Equipment:	•	

COMMENTS:

•

PROGRAM DATA SHEET

ACTIVITY AREA: PE / Athletics

DESCRIPTION: Auxiliary Gym with Indoor Track

Brief Instructional Objectives:

- Auxiliary gym for PE / Athletics use and after hours accessibility.

Users of this Activity Area:

- All students

Activities Conducted in this Space:

- PE / Athletics activities
- Running on upper track

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- PE storage
- PE classrooms

Activities that should be NEAR this Activity Area:

- Main Gym
- Student Toilets
- Student Lockers
- Locker Rooms
- Outdoor Field

Number of Teachers: 1

Number of Students:.....30

Number of Aides (or Volunteers):.....

Meets Daily? .....Yes

Floor Area.....10,505 sf existing

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- The lighting will be coordinated with the ceilings. In general, suspended accessible, acoustical tile ceilings are expected.

	• 4000Kelvin, Light Emitting Diode, (LED) downlight luminaires, set flush in the suspended ceiling are expected. • Lighting is relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control. • The control stations will provide continuous range illumination dimming. • The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder.
Power/ Communications:	• Power provided via 20 Ampere duplex receptacles set flush in new walls. The power receptacles will be positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier is recommended to also provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems will be provided • A Theater intercom station will allow remote notification of an impending cue. • Music reproduction and recording systems will be provided as required and requested by the school district
Plumbing:	• Drinking fountain 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: VAV system.
Doors and Hardware:	•
Interior and Exterior Windows:	• High operable windows for air circulation • Ability to control natural light when necessary
Ceiling Height:	• Minimum: 27' from finished ground floor to underside of ceiling existing • Maximum: 30'

FINISHES:

Floor/Base:	• Hardwood gym flooring • Floor striping for basketball and volleyball
Walls:	• Wall padding on all walls • Acoustical wall treatment
Ceiling:	• Exposed structure with acoustical finish

SPECIALTIES:

White Boards:	•	Magnetic White Board (4 x 8) 2
Tack Boards:	•	No requirement
Display Case:	•	In hallway to display awards, trophies, etc.
Other:	•	
Items to be Stored in this Space:	•	Gym equipment

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	•	No requirement
Storage:	•	No requirement
Moveable Equipment:	•	
Fixed Equipment:	•	

COMMENTS:

- Existing upper indoor track to remain with structural/seismic upgrades

7.0 EDUCATIONAL SUPPORT

PROGRAM DATA SHEET

ACTIVITY AREA: Education Support – Technology Access

DESCRIPTION: Computer Lab – Large

Brief Instructional Objectives:

- Provide access to technical equipment and instruction in support of core academic programs

Users of this Activity Area:

- All students and teachers

Activities Conducted in this Space:

- Small and large group instruction
- Technology access
- Computer based assessment

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Shared computer labs will be spread throughout the building, adjacencies will vary

Activities that should be NEAR this Activity Area:

- Shared computer labs will be spread throughout the building, adjacencies will vary
- Media Center

Number of Teachers: ..... Shared

Number of Students:..... 30

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Use varies and is based on demand

Floor Area ..... 1,100 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation and note taking during screen viewing.
- Display lighting.

Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power computing devices and equipment • Wifi provided within room • LCD screen for display • Wall projector at teaching wall
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light and reduce glare on computer screens as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• Magnetic white boards (4'x8') 2
Tack Boards:	• Tackable surface on a minimum of 2 walls
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student chairs .....30 • Computer tables (on wheels).....15, 2 students/table
Storage:	• Mobile file cabinets.....2 • Computer carts or secure storage cabinets for 1700 mobile devices in summer • Tall storage cabinets for smaller devices • Adjustable shelves • Lower and upper cabinets with lockable doors
Moveable Equipment:	•
Fixed Equipment:	•
COMMENTS:	• This is a shared computer lab for any teacher to reserve unless lab is within a specific CTE program space

PROGRAM DATA SHEET

ACTIVITY AREA: Education Support – Technology Access

DESCRIPTION: Computer Lab – Small

Brief Instructional Objectives:

- Provide access to technical equipment and instruction in support of core academic programs

Users of this Activity Area:

- All students and teachers

Activities Conducted in this Space:

- Small and large group instruction
- Technology access
- Computer based assessment

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Shared computer labs will be spread throughout the building, adjacencies will vary

Activities that should be NEAR this Activity Area:

- Shared computer labs will be spread throughout the building, adjacencies will vary
- Media Center

Number of Teachers: ..... Shared

Number of Students:..... 15

Number of Aides (or Volunteers):..... 0

Meets Daily? ..... Use varies and is based on demand

Floor Area ..... 580 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation and note taking during screen viewing.
- Display lighting.

Power/ Communications:	• Power and data outlets provided and spaced sufficiently at perimeter of room to power computing devices and equipment • Wifi provided within room • LCD screen for display • Wall projector at teaching wall
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between corridor and learning space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light and reduce glare on computer screens as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9'-0" • Maximum: 12'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for ex, soffits)

SPECIALTIES:

White Boards:	• Magnetic white boards (4'x8') 2
Tack Boards:	• Tackable surface on a minimum of 2 walls
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Student chairs .....30 • Computer tables (on wheels).....15, 2 students/table • Mobile file cabinets.....2
Storage:	• Mobile file cabinets.....2 • Computer carts or secure storage cabinets for 1700 mobile devices in summer • Tall storage cabinets for smaller devices • Adjustable shelves • Lower and upper cabinets with lockable doors
Moveable Equipment:	•
Fixed Equipment:	•
COMMENTS:	• This is a shared computer lab for any teacher to reserve unless lab is within a specific CTE program space

PROGRAM DATA SHEET

ACTIVITY AREA: Education Support – Miscellaneous

DESCRIPTION: Lobby

Brief Instructional Objectives:

- Provide a space that welcomes and accommodates traffic of students, teachers, staff, community, and alumni

Users of this Activity Area:

- All users of the school and community

Activities Conducted in this Space:

- Entering the school
- Socializing
- Direction to admin offices
- Providing information

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Admin offices
- Community room

Activities that should be NEAR this Activity Area:

- Learning clusters - vertically
- Commons

Number of Teachers: .....40 people maximum capacity

Number of Students:.....40 people maximum capacity

Number of Aides (or Volunteers):.....40 people maximum capacity

Meets Daily? .....Yes

Floor Area.....1,000 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Typical acoustical requirements appropriate to classrooms.
- "Acoustics should be designed to increase the ability to hear well throughout the space"

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation.
- Display lighting.

Power/ Communications:	• Power via 20 Ampere duplex receptacles set flush in new walls. • Power receptacles positioned to support the space equipment. Positioning of power outlets will be coordinated with the Architectural design. • Fire alarm visual and voice evacuation warning in each space. The fire alarm speaker and supervised audio amplifier will provide zoned paging capability. The general paging content would be prioritized below the fire Alarm System's Evacuation warning notification use. A fire alarm system warning or instruction would take precedence over general paging content. • Audio reinforcement systems provided
Plumbing:	• Drinking Fountain 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat per space, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	• Existing exterior double doors with glass windows..... 3 sets
Interior and Exterior Windows:	• Clerestory windows above entry doors. • Interior relites in surrounding admin spaces for passive supervision into the lobby. • Operable window shades to control natural light and reduce glare on computer screens as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 12'-0" • Maximum: 15'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• No requirements
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	•
Fixed Equipment:	•

COMMENTS: •

8.0 WRAP AROUND SERVICES

WELLNESS CENTER

Introduction

The Health Clinic is a partnership between Oregon Health and Sciences University Family Medicine (OHSU Family Medicine), Portland Public Schools (PPS), Multnomah County, and Multnomah Education Service District (MESD). It provides Benson students with a school nurse, mental health resources, and medical resources. The Health Clinic will be adjacent to the Counseling office and vertically adjacent to the Health Occupations CTE program.

The following rooms are outlined in this document:

Health Clinic – Lobby/Waiting
Health Clinic – Office – Social Worker
Health Clinic – Office – OHSU Family Medicine
Health Clinic – Exam Room
Health Clinic – Restroom
Health Clinic – Lab
Health Clinic – Mental Health/Therapy Room
Health Clinic – Nurse Office
Health Clinic – Nurse Office – Sick Room
Health Clinic – Nurse Office – Sick Toilet

Please reference the indicated section of the following rooms:

Storage - Reference PPS Comprehensive High School Education Specification

PROGRAM DATA SHEET

ACTIVITY AREA: Wellness Center

DESCRIPTION: Lobby/Waiting

Brief Instructional Objectives:

- Provide a space that welcomes and greats students, teachers, staff, and community to the clinic while preserving privacy

Users of this Activity Area:

- Benson Students
- OHSU Family Medicine volunteers
- Benson Tech Nurse
- PPS Social Worker
- Multnomah County Therapist

Activities Conducted in this Space:

- Entering the clinic, signing in, waiting for appointment

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Nurse Room
- Therapy Room
- Exam Rooms
- Restroom

Activities that should be NEAR this Activity Area:

- Admin
- Counseling Office

Number of Teachers: ..... N/A

Number of Students:..... 1-5 at one time

Number of Aides (or Volunteers):..... 1-4

Meets Daily? ..... Yes

Floor Area ..... 400 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the

	reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • The lighting will be coordinated with the ceiling. In general, suspended accessible, acoustical tile ceilings are expected. • 4000 Kelvin, Light Emitting Diode, (LED) troffer luminaires, set flush in the suspended ceiling are expected as the workhorse, area lighting. • The lighting controls are expected to be relay controlled from low voltage switch and control stations, and utilize automatic vacancy sensing control • The control stations will provide continuous range illumination dimming • The luminaires are turned on and level controlled manually via switch stations at the doors. The automatic vacancy sensors will turn off the power to the luminaires when no occupant is sensed for 20 minutes. • Luminaires located near windows and that can be expected to have a significant daylight contribution will be fitted with feedback dimming controls. These controls will automatically dim the luminaires with a daylight contribution to maintain the minimum acceptable illumination with the daylight illumination supplying the remainder. •
Power/ Communications:	• The power and communications equipment required by the clinic will be defined by Multnomah County • The infrastructure will be provided within the school project scope. • The communications IDF area for the Health Clinic is independent of the school Telecom Rooms. The incoming Health Clinic communications backbone is part of the building MDF service entrance cable plant.
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites with fritted or frosted glass for privacy transparency between corridor and Wellness Center Lobby • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 9’-0” • Maximum: 12’-0”

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.

Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirements
Tack Boards:	• On one wall of lobby (4 x 6) 1
Display Case:	• No requirements
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Waiting chairs ..... 4 • Coffee table ..... 1 • Side Table 2
Storage:	• Casework required at front desk for patient files
Moveable Equipment:	• All furniture
Fixed Equipment:	• Front desk

COMMENTS: •

PROGRAM DATA SHEET

ACTIVITY AREA: Wellness Center

DESCRIPTION: Office – Social Worker

Brief Instructional Objectives:

- Provide social worker with a private office for work and confidential meetings.

Users of this Activity Area:

- Wellness Center Social Worker
- Students meeting with social worker
- Other staff/counselors meeting with social worker

Activities Conducted in this Space:

- Appointment preparation
- Meetings
- Office work

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Exam rooms
- Lab

Activities that should be NEAR this Activity Area:

- Restroom
- Lobby/waiting room

Number of Staff:.....1

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....80 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Daylighting
- General room lighting: artificial light with multiple switches

Power/ Communications:	• Computer ..... 1 • Phone 1
Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• Tack Board (4' x 6') 1
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional research materials. • Patient files • User files and belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Desk ..... 1 • Chair ..... 1 • Small meeting table ..... 1 • Meeting chairs 2-4
Storage:	• File cabinet 1
Moveable Equipment:	• All furniture is moveable
Fixed Equipment:	

COMMENTS:

•

ACTIVITY AREA: Wellness Center

DESCRIPTION: Office – OHSU Family Medicine

Brief Instructional Objectives:

- Provide OHSU Family Medicine volunteers with a shared office space to work, prepare for appointments, and store files.

Users of this Activity Area:

- OHSU Family Medicine volunteers

Activities Conducted in this Space:

- Appointment preparation and research
- Meetings
- Medical files

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Lab
- Exam rooms

Activities that should be NEAR this Activity Area:

- Restroom
- Lobby/waiting room

Number of Staff:.....4

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....150 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation

Power/ Communications:

- Computer 4
- Phone 1

Plumbing:	• No requirements
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat, operable windows • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• Tack Board (4' x 6') 1
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional research materials. • Patient files • User files and belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Desk.....4 • Chair.....4
Storage:	• Storage cabinets at desk
Moveable Equipment:	• All furniture is moveable • Printer 2
Fixed Equipment:	

COMMENTS:

•

ACTIVITY AREA: Wellness Center

DESCRIPTION: Exam Room (x2)

Brief Instructional Objectives:

- Provide a room to exam patients and give a diagnosis

Users of this Activity Area:

- OHSU Family Medicine volunteers
- Student patients

Activities Conducted in this Space:

- Examination and meeting with patient

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Lab
- OHSU Office

Activities that should be NEAR this Activity Area:

- Restroom
- Lobby/waiting room

Number of Staff:.....1

Number of Students:.....1

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....130 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation
Power/ Communications:	• Computer 1
Plumbing:	• Sink.....1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing

	30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior: None • Exterior: Operable within reach, horizontal mini-blinds.
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash • Ceiling track curtain around entrance door
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• Tack Board (4' x 6') 1
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Medical Supplies • Linens

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Medical Exam Bed.....1 • Chairs.....2 • Nurse/Doctor stool.....1
Storage:	• 18" Storage cabinets above sink.....3 • 18" Storage cabinets under sink .....2 • 18" Drawers under counter.....1
Moveable Equipment:	• Stool and chairs • Supply cart (rolling) 1
Fixed Equipment:	• Medical Exam Bed • Wall mounted vitals panel (heart rate, ear/nose , temperature) 1

COMMENTS:

•

ACTIVITY AREA: Wellness Center

DESCRIPTION: Restroom

Brief Instructional Objectives:

- Provide a restroom for users of the wellness center and for patients to give samples

Users of this Activity Area:

- All wellness center staff
- Students
- Community

Activities Conducted in this Space:

- Provide samples for nurse/doctor
- Toilet use
- Washing hands

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Lab
- OHSU Office

Activities that should be NEAR this Activity Area:

- Lobby/waiting room
- Exam Rooms

Number of Staff:.....0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....60 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation
Power/ Communications:	•

Plumbing:	• Sink..... 1 • Toilet 1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	• Specimen pass-through cabinet to lab
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirements
Storage:	• Storage cabinets under and above the sink • Drawers under sink counter to store medical supplies, etc.
Moveable Equipment:	• None
Fixed Equipment:	• Toilet • Sink • Hand dryer

COMMENTS:	• Restroom must be adjacent to the Lab for specimen pass-through cabinet capabilities

ACTIVITY AREA: Wellness Center

DESCRIPTION: Lab

Brief Instructional Objectives:

- Provide a space to test urine, blood, and other patient samples.

Users of this Activity Area:

- OHSU Family Medicine volunteers

Activities Conducted in this Space:

- Testing samples

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Restroom
- OHSU Office

Activities that should be NEAR this Activity Area:

- Exam rooms
- Lobby/waiting room

Number of Staff:.....1

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....65 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation

Power/ Communications:

-

Plumbing:

- Sink.....2

HVAC/Mechanical:

- Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F
- Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1

	• Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling • Specialized Systems: Exhaust hood vent where needed
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirement
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	• Specimen pass-through cabinet to lab
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• Sets of two upper 18" cabinets.....4 • Lower cabinets (18") .....1 • Drawer beneath counter.....1
Moveable Equipment:	•
Fixed Equipment:	• Sanyo Medicool Medical Refrigerator.....1

COMMENTS:	• Lab must be adjacent to restroom for specimen pass-through cabinet capabilities

ACTIVITY AREA: Wellness Center

DESCRIPTION: Mental Health/Therapy Room

Brief Instructional Objectives:

- Provide private meeting room for mental health and therapy appointments.

Users of this Activity Area:

- Multnomah County Therapist

Activities Conducted in this Space:

- 1 on 1 meetings
- Group and family meetings

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- No Immediate adjacencies required

Activities that should be NEAR this Activity Area:

- Restroom
- Lobby/waiting room

Number of Staff:.....1

Number of Students/patients:.....1-4

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....200 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation
Power/ Communications:	•
Plumbing:	• No requirement
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing

	30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	•
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Small table .....1 • Meeting Chairs.....2-4 • Therapist Cushioned Chair.....1 • Patient Cushioned Chair .....2 • Therapist desk.....1 • Desk Chair.....1
Storage:	• Storage cabinetry above and below sink and counter space for cleaning supplies and food storage
Moveable Equipment:	• All furniture is moveable
Fixed Equipment:	•

COMMENTS:

•

ACTIVITY AREA: Wellness Center

DESCRIPTION: Nurse Office

Brief Instructional Objectives:

- Provide Nurse with an office space separate from the nurse treatment room

Users of this Activity Area:

- School Nurse
- Students

Activities Conducted in this Space:

- Appointment preparation
- Meetings
- Medical files

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Nurse Sick Room
- Nurse Sick toilet

Activities that should be NEAR this Activity Area:

- Lobby/waiting room

Number of Staff:.....1

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....80 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation
Power/ Communications:	• Computer .....1 • Phone 1
Plumbing:	• No requirements

HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• Interior relites for transparency between lobby and office space. • High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint.
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• Tack board (4' x 6')....1
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Textbooks, office supplies. • Additional research materials. • Patient files • User files and belongings

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Desk....1 • Chair....1 • Meeting chairs....2
Storage:	• File cabinet....1
Moveable Equipment:	• All furniture is moveable
Fixed Equipment:	

COMMENTS:

•

ACTIVITY AREA: Wellness Center

DESCRIPTION: Nurse Office – Sick Room

Brief Instructional Objectives:

- Provide nurse with sick room to treat students and provide a quiet space for sick students separate from nurse's office.

Users of this Activity Area:

- School Nurse
- Students

Activities Conducted in this Space:

- Treatment for sick students
- Resting

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Nurse Offices
- Sick Toilet

Activities that should be NEAR this Activity Area:

- Lobby/waiting room

Number of Staff:.....1

Number of Students:.....Up to 2

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....120 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:	• Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater. • Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems. • Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.
Lighting:	• Provide ample natural daylight. • General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation
Power/ Communications:	•
Plumbing:	• Sink.....1
HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F

	• Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• High and low operable exterior windows for air circulation. • Operable window shades to control natural light as needed at exterior windows and to provide privacy for lockdown purposes at interior relites.
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	• Medical supplies

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• Cushioned cot.....2 • Cushioned chair.....2
Storage:	• 18" cabinets above and below sink for medical supplies.....6 • 18" Drawer below counter.....1
Moveable Equipment:	• All furniture is moveable • Wheel chair
Fixed Equipment:	• Fridge with ice maker and lockable drawer for medications

COMMENTS:

•

ACTIVITY AREA: Wellness Center

DESCRIPTION: Nurse Office – Sick Toilet

Brief Instructional Objectives:

- Provide a quick access restroom for students visiting the nurse or the sick room

Users of this Activity Area:

- Nurse
- Students

Activities Conducted in this Space:

- Toilet use
- Washing hands

Activities that should be IMMEDIATELY ADJACENT to this Activity Area:

- Sick Room
- Nurse Office

Activities that should be NEAR this Activity Area:

- Lobby/waiting room

Number of Teachers: 0

Number of Students:.....0

Number of Aides (or Volunteers):.....0

Meets Daily? .....Yes

Floor Area.....60 sf

SPECIFIC ENVIRONMENTAL CHARACTERISTICS:

Acoustics:

- Provide acoustic isolation between rooms. Walls directly separating teaching spaces to have an STC Rating of 50 or greater.
- Achieve a maximum background noise level of 40 dBA from heating, ventilating, and air-conditioning (HVAC) systems.
- Include sufficient sound-absorptive finishes for compliance with the reverberation time requirements specified in ANSI Standard S12.60–2010, Part 1, Acoustical Performance Criteria, Design Requirements and Guidelines for Schools.

Lighting:

- Provide ample natural daylight.
- General Room Lighting: Direct/Indirect LED lighting with multiple switching options for energy conservation

Power/ Communications:

- Hand Dryer 1

Plumbing:

- Toilet 1
- Sink.....1

HVAC/Mechanical:	• Occupied Temp Setpoints- Cooling: 75°F ±2°F, Heating 68°F ±2°F • Ventilation: Provide Code required ventilation rates. Consider providing 30% above minimum ventilation rates required by ASHRAE 62.1 • Local Control: Thermostat • Thermal System: DOAS with heat recovery, radiant heating and cooling
Doors and Hardware:	•
Interior and Exterior Windows:	• No requirement
Ceiling Height:	• Minimum: 8'-0" • Maximum: 10'-0"

FINISHES:

Floor/Base:	• Provide hard surface flooring. Exposed concrete or resilient flooring meeting requirements of PPS Design Standards.
Walls:	• Gypsum wall board/ paint. • FRP panel or wall finish at sink backsplash
Ceiling:	• Suspended acoustical ceiling or exposed structure with acoustical finish. • Gypsum board hard ceiling/ paint, (at limited areas, for example, soffits)

SPECIALTIES:

White Boards:	• No requirement
Tack Boards:	• No requirement
Display Case:	• No requirement
Other:	•
Items to be Stored in this Space:	•

FURNITURE, STORAGE, AND EQUIPMENT:

Furniture:	• No requirement
Storage:	• No requirement
Moveable Equipment:	•
Fixed Equipment:	

COMMENTS:

•