



Board of Education
Meeting Materials Cover Sheet May 22, 2018

- A. Staff Report
 - a. Master Plan Report: Updated
 - b. Capacity Calculations
 - c. Stakeholder Engagement Plan
 - d. Graph: Risk Management
- B. PowerPoint Presentation
- C. Resolution: Madison Master Plan



Board of Education

Recommendation to the Board

Board Meeting Date:

May 22, 2018

Department:

Office of School Modernization

Presenter/Staff Lead:

Dan Jung, Senior Director, OSM

Agenda Action: Resolution

SUBJECT: Staff Recommendation for Madison High School Master Plan

BRIEF SUMMARY AND RECOMMENDATION

Staff is proposing the Board accept the Master Plan Design for Madison High School (MHS).

Staff is proposing the District:

- Approve the Madison High School's Master Plan which will be built to accommodate an enrollment capacity of 1700 students.
- Utilize the current Madison High School Area Program Summary as a guide to construct the modernized Madison High School to an approximate size of 298,000 square feet.

BACKGROUND

Staff is utilizing the Madison High School Area Program Summary, which is a component of the Comprehensive High School Educational Specifications, as a guide to construct the modernized Madison High School.

Approval of the Master Plan for MHS is required for the Design Team to proceed with Design and is critical to deliver the project on schedule.

SCOPE

The PPS Comprehensive High School Educational Specifications along with information on current MHS programming, was used as the basis for programming of the modernized Madison High School.

Using these documents as the foundation for the Madison program, the Design Team met with over 20 internal focus groups over several months and developed a Master Plan Report for MHS that presents the desired room requirements, the interrelationships of spaces, specific room requirements and square footages, and most importantly, represents the core educational values of PPS.

As part of the MHS Programming Report, the design team developed an Area Program Summary that refines the PPS High School Ed Specs so that it meets the specific requirements for MHS, based on input from internal focus groups.

Additionally, the Design Team developed a Preferred Site Plan for MHS in coordination with internal focus groups and as part of a larger community engagement process.

PROCESS / COMMUNITY ENGAGEMENT

From January 2016 thru August 2017, the Design Team undertook a Pre-Design Concept Planning process followed by a Due Diligence process that concluded in January 2017. The resulting pre-design plan and building modernization was the basis of the 2017 bond.

Post bond approval, the planning process continued in October 2017 to further develop the pre-design concept plan and develop a complete Master Plan. Through stakeholder, Design Advisory Group and community meetings, the concepts were refined to develop a plan that incorporates the programmatic and educational goals of PPS while meeting all current building codes to ensure the life, safety, and welfare of all students and faculty.

Throughout the Master Planning Process community and stakeholder engagement has occurred in several fashions:

First, in collaboration with PPS Community Involvement and Public Affairs (CIPA), Madison's Public Engagement Consultant reached out to many different organizations and individuals to both participate in the Design Advisory process and to engage with the project as members of the broader public. This Consultant focused on engaging with a culturally diverse group of individuals who could best represent the community surrounding the Madison site.

Second, the Design Advisory Group (DAG) was formed in November, 2017. The purpose of the DAG is to encourage interaction between a variety of stakeholders, provide input regarding the priorities to be addressed within the school design, and report on the work that was taking place to their various constituencies. There have been five DAG meetings to date and additional meetings are planned through 2018. In total, the Design Team anticipates at a minimum:

1. Seven (7) Design Advisory Group meetings
2. One (1) Open House.
3. Two (2) Neighborhood Association Meetings.

SCHEDULE

Following approval of the Master Plan for Madison High School, the Design Team will proceed with the Design and Documentation Phases of the project through June 2019. The Conditional Use process will take place from July through December 2018, and the Building Permitting process will take place from February through July 2019. Abatement

and demolition of parts of the existing building will take place starting in June 2019 and construction (including commissioning/start-up) of the modernized building will be complete in June 2021. Fixtures, furnishings and equipment (FFE) will be installed from April 2021 through August 2021. MHS teachers and administrators will be trained to use the new building in August 2021 before the start of the school year.

BUDGET

The current total project budget for the Madison High School modernization is \$146 million.

As information and discussion in recent months have concluded, the approved budget was inadequate to deliver the full comprehensive high school program, a revised total project budget is in the process of being developed. The most recent cost information from the General Contractor / Construction Manager (CMGC) has estimated a preliminary project cost of approximately \$206 million.

The Office of School Modernization (OSM) is engaging in a budget alignment strategy for the project, using third-party estimates reconciled against a 100% Schematic Design estimate generated by the CMGC.

The Design Team, along with input from the PPS steering committee, DAG, and by comparing other high school space programs, has already incorporated into the design the following permanent program reductions in order to control costs:

- Reduce average classroom size from 980 SF to 900 SF, saving approximately 3000 SF
- Reduce average lab size from 1500 SF to 1320 SF, saving approximately 2000 SF
- Delete four dedicated computer labs, saving approximately 4000 SF

OSM anticipates a Schematic Design target for MHS to be within the range of \$185M-\$200M.

OSM will return to the Board of Education with a reconciled total project budget at the completion of Schematic Design. OSM anticipates returning to the Board of Education in early July 2018.

ATTACHMENTS

Attachment A: PPS High School Ed Specs

Attachment B: MHS Master Plan Update Final Report Cover

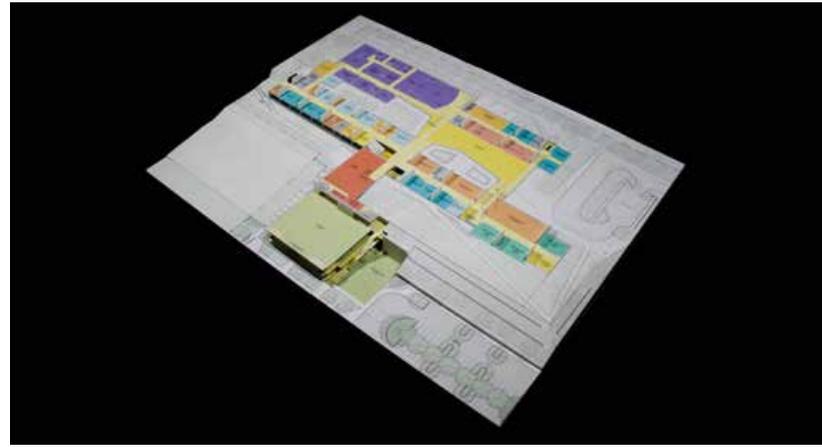
Attachment C: MHS Capacity Calculations

Attachment D: MHS Stakeholder Engagement Plan

Attachment E: "Cone of Uncertainty" Graph of Risk Management

MADISON HIGH SCHOOL

Master Plan Update



FINAL REPORT

05.22.2018

DRAFT 05.22.2018

opsis architecture | dao architecture



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PARTICIPANTS

DAG Committee

Raymond Cheng, Co-Chair - City of Portland resident.

Ana Muñoz, Co-Chair - Program partners

Doug Pruitt, Co-Chair - High school cluster parents, Parents / PTA / PTSA, Teachers

Eric Bennett, Alumni, Boosters, High school cluster parents, Neighborhood Association, Program partners, Students

Brian Butenschoen, High school cluster parents, Neighborhood Association, Parents / PTA / PTSA, Students

Yolanda Cabrera

Elena Collazo-Santiago, Parents / PTA / PTSA, Students, Migrant Parent Advisory Committee

Kelly Dwight, Teachers

Laura Gifford, Alumni, High school cluster parents

Maria Paz Herrera, Program partners

Jim Holstein, High school cluster parents, Parents / PTA / PTSA

Sue House, Students, Teachers

Chuck Jones, Parents / PTA / PTSA, Students, Teachers

Amber Lamadrid, High school cluster parents

Kathryn Lindstrom, Community Members, PPS Parents

Anita Lord, Alumni, Business Association, High school cluster parents, Parents / PTA / PTSA

Taylor Marrow III, High school cluster parents

Kelly McCombs, Neighbor – Dharma Rain

Nicolas Meneses, Former MPC

Lucy Nobles, High school cluster parents, Parents / PTA / PTSA

Tamara O'Malley, High school cluster parents, Neighborhood Association, Teachers

Jennifer Piper, Community College Partner

Mark Robb

Laura Spidell, Neighborhood Association, Parents / PTA / PTSA

Nancy Sullivan, Teachers

Thao Duc Tu, Vietnamese Community leader

David Valenzuela, High school cluster parents, Teachers

Chad Whipple, Parents / PTA / PTSA

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Randall Heeb, Project Manager

Steven Nelsen, Project Manager

Kirsten Justice, Interior Designer

Bryce Tolene, Architect

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DAO Architecture

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David Horsley, Associate Architect

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Randall Toma, ABHT Structural Engineers

Andy Frichtl, Interface Engineering

Brain Butler, Interface Engineering

Flaviano Reyes, Reyes Engineering

Bert Klawa, Reyes Engineering

Cathy Corliss, Angelo Planning Group

Frank Angelo, Angelo Planning Group

Graham Roy, RLB Cost

Daniel Junge, RLB Cost

Peter Meijer, Peter Meijer Architect

Halla Hoffer, Peter Meijer Architect

Geoff Larsen, BHE Group

01 EXECUTIVE SUMMARY

Vision Statement

The new Madison High School will be a welcoming, safe and secure place that builds upon the diversity and resiliency of everyone in the Madison High School community – students, parents, teachers and neighbors alike.

In the 21st Century, teaching and learning happens everywhere. As such, the new Madison High School will serve as a rigorous and engaging learning atmosphere that helps students embrace the future and solve real world problems by utilizing flexibility, creativity and the strength of a diverse community.

Master Plan Update

This Master Plan Update for the Modernization of Madison High School represents the conclusion of the conceptual design process that was initiated as part of the 2017 bond. The concept design aligns the program scope and budget and will serve as the basis of design for the rest of the project. The process to reach this plan has included reviews by the District Steering Committee and the Madison High School project Leadership Team, along with extensive stakeholder engagement.

2016 Master Plan Update

In the spring of 2016, PPS undertook the master planning of Benson, Lincoln and Madison high schools. This document summarizes the activities of the master plan for the future of Madison High School in northeast Portland Oregon. The vision and key design themes presented in the August 2016 Draft Master Plan document reflected the collaborative effort of the Madison High School Master Plan Committee (MPC) and the input received by Madison High School students, teachers, staff, parents, and community members.

Due Diligence Study

The MPC was re-assembled in late 2016 / early 2017 for a due-diligence review of the Draft Master Plan. The study included more detailed engineering reviews of the existing building and an updated cost estimate. The committee established a prioritization of program elements that might be considered to achieve needed cost reductions. The revised cost estimate for the Draft Master Plan was \$105M in December 2017 (not escalated to mid-point of construction).



DAG Concept Design / Master Plan Updated

Beginning in November 2017 programming and concept design phase was initiated with the newly formed DAG (Design Advisory Group) to refine the Master Plan based on the project budget established after the passage of the Bond. This updated Final Master Plan will set the stage for the further development of a design that balances the specific needs of the school, the budget realities in a volatile construction market and the Ed Spec standards recently updated by PPS.

While details of the plan vary from the preferred Draft Master Plan Concept Design, the design continues to address the challenges of the existing facility and the guiding principles developed by the MPC in the Master Plan as described below:

Existing Challenges

- » A Diverse Community with an antiquated school building that creates a barrier between cultures.
- » Existing building is an opaque space that is not inviting or welcoming, discouraging future students from considering attending MHS
- » The building systems are well beyond their life-cycle and are in need of replacement to increase efficiency, reduce operating costs, and improve occupant comfort
- » A Lack of “maker space” that enhance innovative learning programs, including urban agriculture, Career Technical Education (CTE), computer science, sustainability and textiles
- » Disjointed places of learning that make it difficult to integrate the site and building, thereby hindering community connections and safety
- » Building does not meet current seismic, ADA or safety codes
- » A significant lack of athletic facilities for students who are not on formal MHS teams
- » Insufficient facilities for the student and community valued, wrap-around services.

Guiding Principles

- » **Create State-of-the-Art 21st century learning environments** – Transform the school’s facilities to stimulate learning.
- » **Community Connections** – Make the school the heart of the Neighborhood and a “beacon” to 82nd Street.
- » **Social and Academic Connections** – Reflect the diversity of the students, teachers and neighborhoods surrounding MHS
- » **Indoor / Outdoor Connections** – Create stronger connections between the school’s interior and its outdoor courtyards and gardens.
- » **Example of Sustainability** – Create safe and convenient access points for students on foot, bike, bus, and car
- » **Access and Security** – Create safe and convenient access points for students on foot, bike, bus, and cars.
- » **Improve connectivity within the building** – Create visual landmarks and open sightlines and improve access and flow.
- » **Site Environment** – Optimize the school’s topography and adjacent amenities and views, while enhancing the building’s use of solar energy.
- » **Building’s Systems** – Modernize the school’s structural, mechanical, electrical, and technological systems.



DAG 01

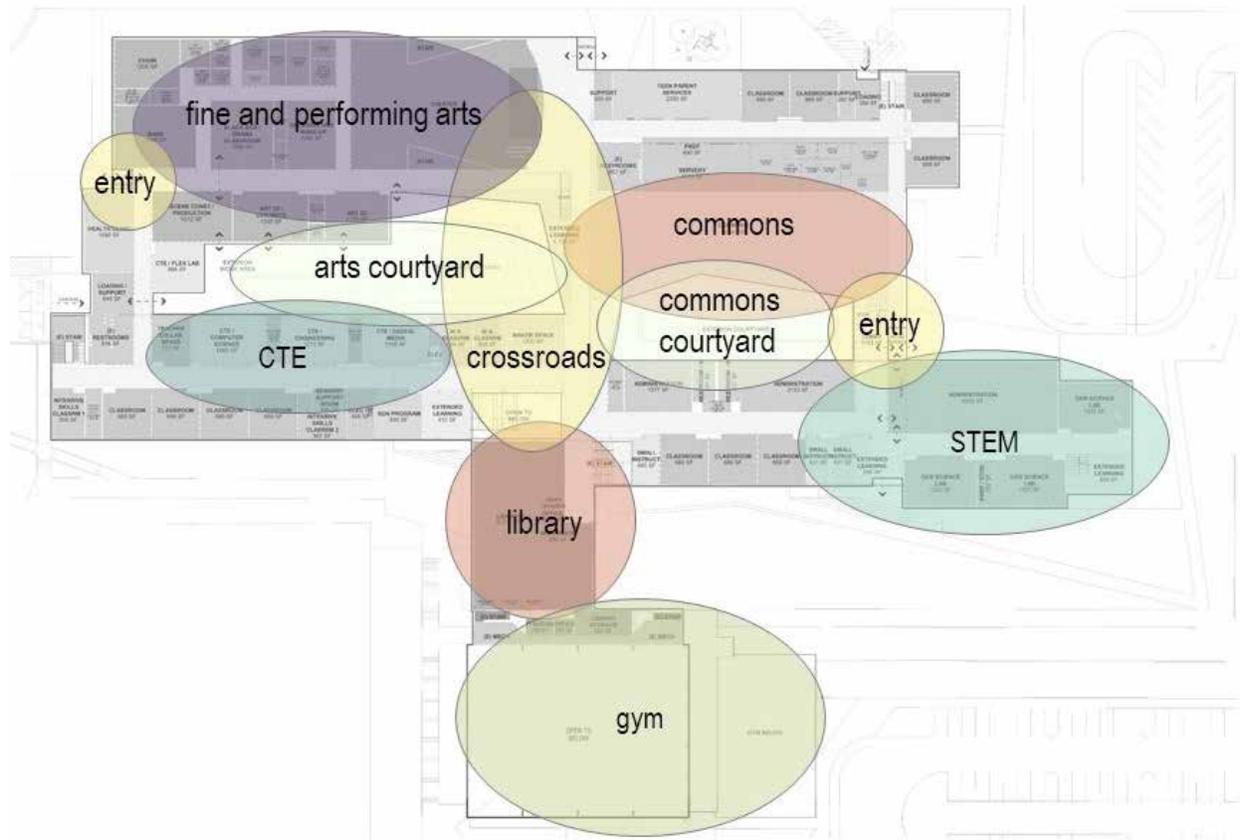
DAG Process / Master Plan Refinement

The DAG committee was convened in December 2017 and included many of the original MPC members providing a strong continuity of understanding of the Master Plan principals and goals. The DAG committee through a series of hands-on workshops developed a deeper understanding of the specific details of how the learning spaces defined in the Master Plan could be developed. Members of the committee toured the completed Roosevelt and Franklin High School projects.

In early 2018, the design and engineering team created a number of revised master plan options for reducing the project scope to better align with the overall project budget. These options were tested through a series of cost estimates that included revised projected construction cost escalation rates and construction contingencies based on recent regional bid data, including the Grant High School project bids.

Master Plan Refinements:

- » Reducing risk and decreasing building floor area by demolishing the existing very large theater and rebuilding a smaller (to Ed Spec size) and much improved new performing arts wing.
- » Reduction of Circulation space by decreasing corridor width by elimination of un-used locker space and excessive corridors and lobbies around the large existing theater
- » Reduction of area allocated to non-teaching spaces including Teacher Collaboration spaces and Extended Learning spaces
- » Reduction in general classroom size to fit within the existing structural grid while maintaining the 32 student capacity



Master Plan update Existing Conditions

The existing Madison High School is a classic mid-century design with a large central theater and radiating wings of classrooms. The placement of the “solid” theater creates a series of circulation “off-sets” that in turn make the wayfinding through the school difficult. Views through the school typically dead-end into the theater or to the end of the classroom wings. Additionally the dead-end wings do not allow for any loop circulation through the building. This results in longer paths between classes and a fragmentation of the school. The location of the existing cafeteria on the far west end of the building exacerbates this discontinuity and does not create a place for building connections and community. The interior hard surfaces and dated finishes create an institutional character that don’t support a 21st century learning environment.

From the outside, the building is not distinguished by any landmark space or architectural feature. One of the primary goals of the project is to create a new Madison that presents a dynamic, recognizable and welcoming face to the neighborhood. The existing vehicle and pedestrian circulation around Madison creates a number of safety conflicts and accessibility restrictions that will be addressed in the project. The existing original building MEP systems are at the end of their life and will be replaced. To meet the PPS seismic design goals, all areas of the building will need structural upgrades. Lastly the building envelope of walls and roofs was not designed to meet existing energy codes and will require major improvements.



Concept Design

The updated concept plan reorients the Commons to an east / west orientation that connects the Commons to the center of the school. The major deviation from the original masterplan is to replace the existing large auditorium with a theater that meets the Ed Spec program and is better suited to the teaching needs. This approach significantly reduces the area of the building needing renovation and also eliminates the high risks of associated with renovation and seismic upgrades with the existing large, long-span structure. Additionally the removal of the existing auditorium opens up the center of the building to create much improved connectivity, visibility and natural light: all primary principles of the Master Plan goals.

The updated Master Plan concept design represents a project of approximately 298,145 SF that is significantly reduced in size from the original masterplan concept size of 315,000 SF. The reduction in floor area was the result of an extensive review of the specific Madison High School program needs and the recognition of the rapid escalation of construction costs during the last year and the expected

continuation of this trend through to the bidding time for this project. The plan preserves the core teaching space needs including the EdSpec 41 general classrooms and CTE labs. Classroom sizes were reduced 10%, however they are designed to still meet the programmed student capacity. Teacher Collaboration spaces were reduced by 50% from the EdSpec. Additionally based on the feedback from the completed Roosevelt and Franklin projects, the extended learning spaces were reduced in area and placed to be most effectively utilized by the students. The plan includes a number of Add Alternates for expanding the area to bring the program closer to the EdSpec for Teacher Collaboration spaces and Science Labs. Other Add Alternates include improved grandstand facilities and fields.

The total construction cost for the project is estimated at \$129,400,000 dollars. Add alternates total \$10,600,000 dollars. These costs include approximately 19.5 % projected escalation in construction costs to the mid-point of construction in mid 2020.

02 PROCESS



An interactive exercise to explore a key area of the building design

DAG 01

Meeting Date: December 12, 2017

The goal of the first Design Advisory Group Meeting was to welcome back members from the original MPC and to introduce the project to new DAG members. The Design Team and PPS staff introduced themselves. The DAG was tasked with selecting co-chairs and those interested indicated their desire and relevant experience. The Design Team described the purpose of the Master Plan Update, what it is and what it is not. A schedule for the Master Plan Update was presented and PPS staff reviewed how the Madison High School Master Plan fits within the overall planning process. The design team reviewed program area relationships being explored in the predesign phase, as well as key areas for potential cost savings.

Following the review of the committee's responsibilities, the members split into 6 groups to begin its work with an interactive exercise, focused on exploring learning possibilities in key areas of the program:

- » Career and Technical Education (CTE)
- » Science
- » Visual and Performing Arts

Note: All MPC meeting presentations, agendas, meeting minutes, and graphic presentation boards can be found in the Appendix of this document.





DAG 1 TAKEAWAYS

CTE SCIENCE

- » Make it interesting to attract students not already engaged
- » Transparent and active – not looking like a typical classroom
- » Place to demonstrate – visible to public or visitors
- » A “home-base” for teachers where teachers can get together within their department is important to create a community – this could have a fridge, printers, coffee, restroom...
- » Labs that open to the outside and a garden / Natural Light
- » Small group learning areas if they are highly transparent and visible
- » Open space for students to work so they are not on the floor in the hallway
- » Flexible and Modular work tables / Overhead retractable power

FINE AND PERFORMING ARTS

- » More accessible and visible art and performance space to the public (hard to find now) – Use Commons as a lobby and access point to auditorium
- » Open gallery space
- » Flexible work space that could be used by different groups – scene shop is a dirty makerspace
- » Open student work areas for projects – need mobile white boards, work tables etc – not sitting on the floor
- » Group student work rooms – would they reserve them?
- » Greater connectivity between arts –scattered now
- » Outdoor work area for theater and fine arts



Discussing the desires and needs of the Commons and Crossroads spaces

DAG 02

Meeting Date: January 22, 2018

The goal of the second DAG meeting was to bring the members up to speed on developments in the building organization and program layout. Cost reduction options were also discussed. The design team presented a fly-through of the 3D model visualization, which sparked an open discussion within the group.

The DAG members broke off into four groups - two to discuss the Commons/Crossroads and two to discuss a typical Classroom and Extended Learning area.

DAG 2 TAKEAWAYS

CLASSROOM/EXTENDED LEARNING:

- » Flexible furniture is important, allow for break outs of small group work
- » Classrooms should accommodate multiple layouts and after school programs
- » If Extended Learning areas are immediately outside of classroom and visible from classrooms, they would more likely be used.
- » Informal study and work areas would get used often by after school programs that currently are always searching for areas to meet.

COMMONS/CROSSROADS:

- » Commons should accommodate a variety of functions.
- » Furniture needs to be flexible and should be varied in size and scale.
- » Glass, views and connection to the outdoors are a positive
- » Current cafeteria is undersized for the student population and new Commons should be sized to allow for greater number of students.
- » Acoustics in the large space should be considered carefully.

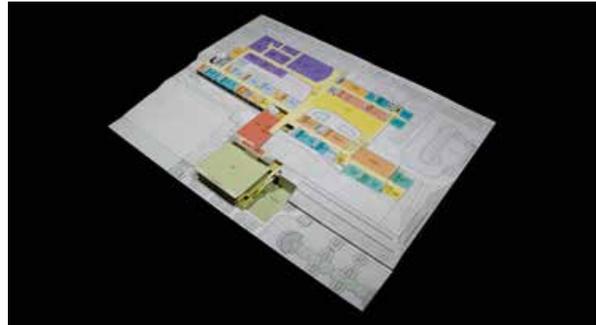


Roosevelt Commons

DAG Voluntary Tour : Roosevelt HS

Meeting Date: February 12, 2018

A voluntary tour of Roosevelt was held in between the regularly scheduled DAG meetings for those member who were interested and available.



Entrance / Front Office

- » Anti-social and closed off
- » There were no windows to view what is actually going on inside the school – a safety concern

The Commons

- » Nice view once you get through the main doors.
- » Stairs that students can sit on or walk down. They can sit and chat, study or watch mini performances
- » Below is the “commons” which also feeds into the Cafeteria seating area.
- » The “exterior windows” are the counselor’s area, again shades drawn, no one checking on





Hallways

- » Did not feel open and you can get lost in the school. Perhaps a result of existing building?
- » Limited stair compared to what Madison has. In the main hall there were stairs at each end of the hall, behind closed glass doors.
- » Security Concerns The doors do not lock for security at the end of the night. When an event is being hosted in the Auditorium, or Gym or even the Commons / Cafeteria area, people have access to the rest of the building.

Library

- » A lot of “conference” rooms created in a “learning” facility.
- » Usable / display space not easily accessible.
- » Small book cases in the middle of the room and tables places against the walls.
- » Projector and screens are not easily seen from those sitting at the tables.

Music / Choir Rooms

- » A Music/ Band room but no separate Choir room. This makes for a very crowded room, not to mention the moving of equipment when needed.
- » The storage for instruments is wonderful and airy.

Collaborative Spaces

- » Perhaps too many and not visible by all classrooms/teacher’s/Staff.
- » Would be great “work spaces” if they were set up as such and less as sitting areas for students to hang out in.



Teacher's Spaces

- » Seemed smaller and more crowded than Franklin teacher spaces.

Auditorium / Theater Areas

- » The "Little Theater" feels spacious and not claustrophobic at all – a better shape than Franklins
- » Roosevelt's auditorium was very nice, small, and sat up to 500 people.
- » The handicapped/ wheelchair seating was evenly spread around.
- » It is not designed for all school assemblies (those happen in the Gym).

Gym

- » The gym looked great - closed bleachers showing R-H-S and their design.

Concessions

- » A double use concessions. Since Roosevelt's gym is on the ground floor, they are able to use their concessions for both indoor events and outdoor events at the same time.

Science Labs

- » Science class rooms, set up for 6 students per science table (although they are really only designed for 4 per table).
- » No space for books or backpacks while in class as you work on a science experiment.

Art on display

- » Beautiful art work displaying the school history placed in hallways that have very little use.



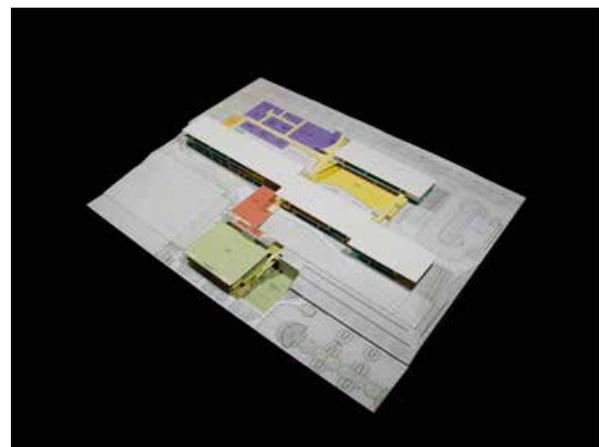
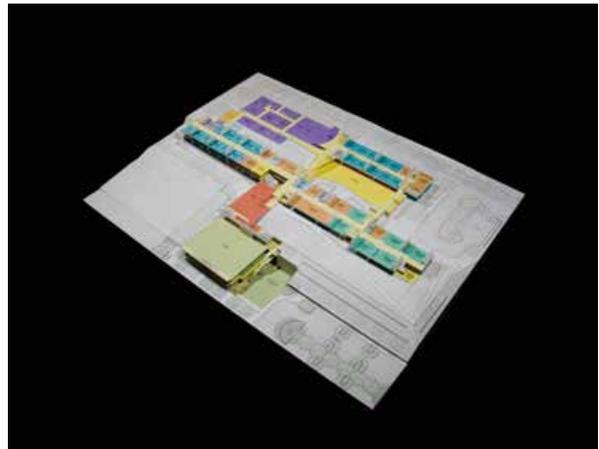
Discussion in the new Franklin Choir room

DAG 03 : Franklin HS Tour

Meeting Date: February 26, 2018

The third DAG meeting occurred at the completed Franklin High School. The design team provided an overview of updates to the conceptual plans, including modifications to the building organization or program layouts updated since the last DAG Meeting in January. Revisions included the following:

- » Relocation of the CTE program spaces to a centralized location near the performing arts
- » Relocation of the Auxiliary Gym to the East side of the existing Main Gymnasium, including improved after hours and ADA access
- » Demolition of the existing Theater, and reconstruction aligning with PPS Ed Spec requirement. Reconstruction will help mitigate costs associated with seismic improvements. The new layout will improve visual and functional connections between the theater to the Commons, and strengthen the connection to the Crossroads.





Franklin CRE Computer Lab

Commons / Cafeteria:

- » Use of flexible seating in multiple arrangements
- » Large windows daylighting the space during school hours

Main Entry

- » A gracious entry that is a gathering place for students (has snack cart)

General Classroom space

- » Transparency between instructional spaces, with the ability to provide some privacy with window coverings
- » Furnishings allow for a flexible learning environment
- » Access to technology, including projection and access to WIFI

Science Labs

- » Seating arrangement at island counters provide ample room for students
- » Utilities (water, gas) are provided at instructional stations
- » Ample flow allowing students to move around

Gym / Athletics

- » Exterior windows are providing natural light and connection to outdoors
- » Space provides support for a variety of uses beyond athletics
- » The space is usable after non-school hours maximizing use of space without having the whole school open
- » Re-use of materials (flooring) from old school into the new design
- » Access to technology appropriate for instruction



Franklin Auditorium

SPED

- » Mobile furnishings allowing for flexible learning arrangements
- » Access to appropriate equipment to allow for life skills

Theater and Black Box

- » Flexible seating arrangements in the Black Box
- » Good public access to the theater and black box without having to navigate through the whole school

Band and Choir

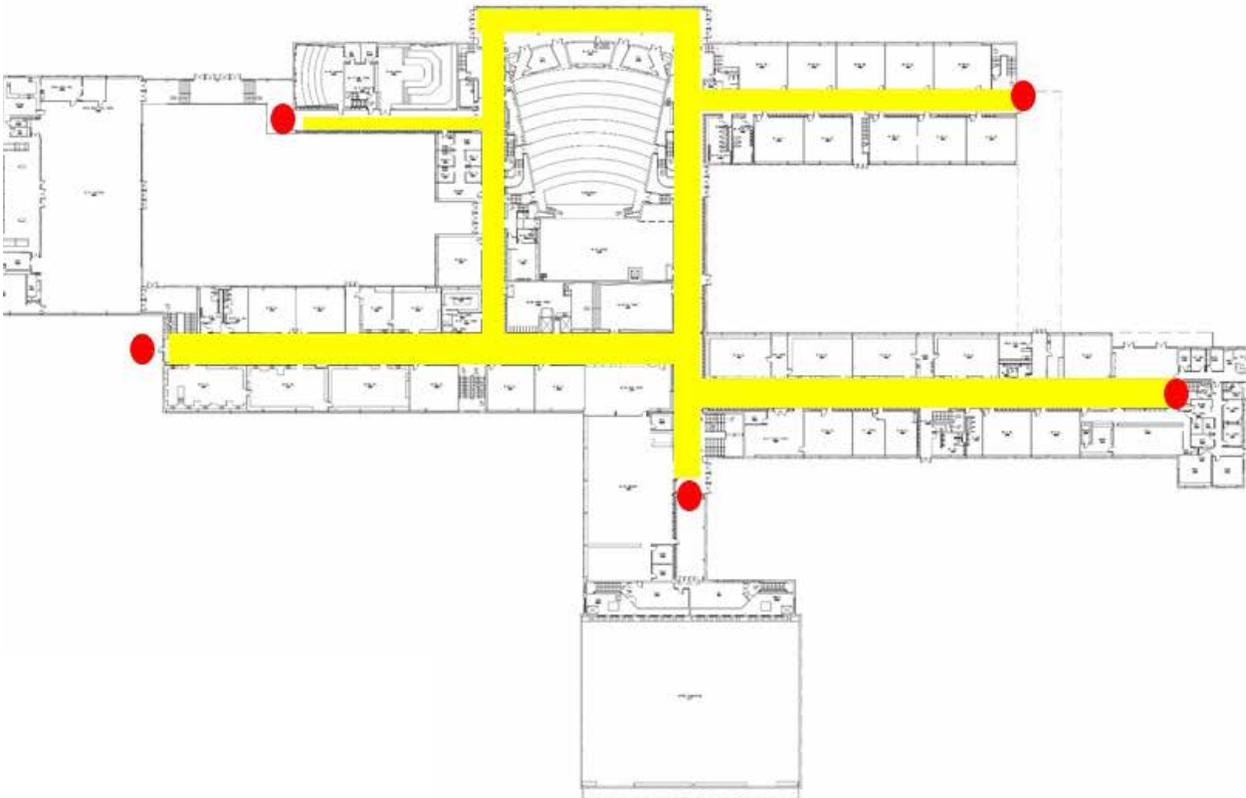
- » Adequate secure storage for equipment and instruments
- » Well equipped with current technology
- » Acoustically separated between instructional spaces and practice rooms

03 PLANNING CONCEPT

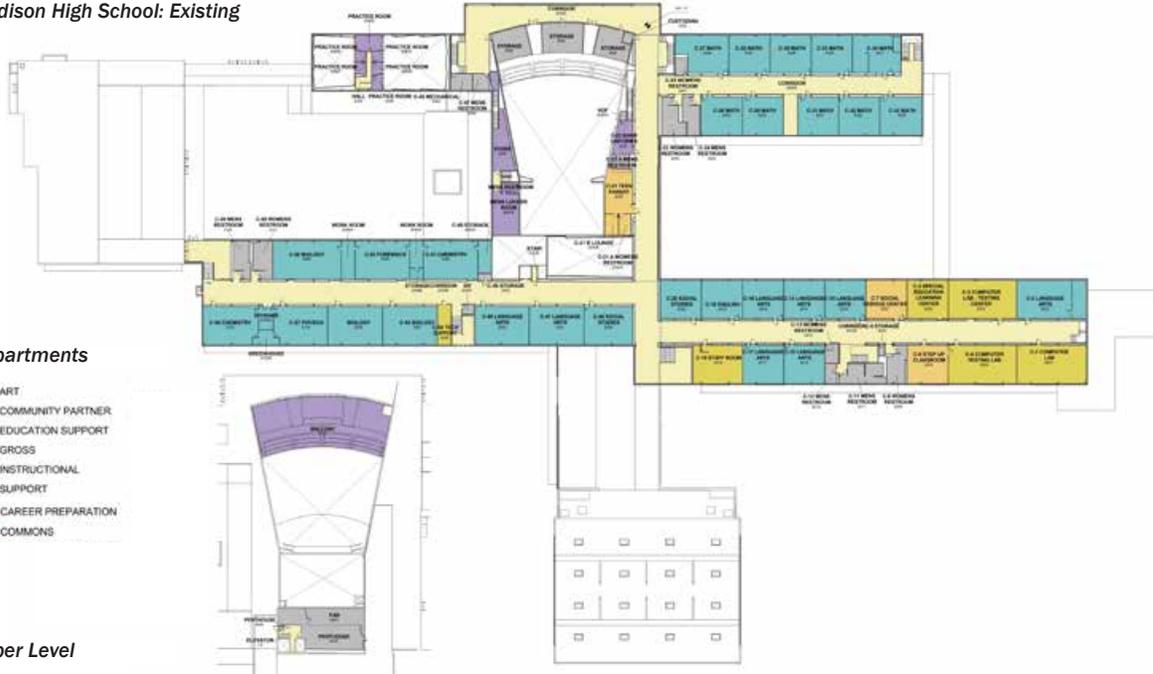
Existing Conditions

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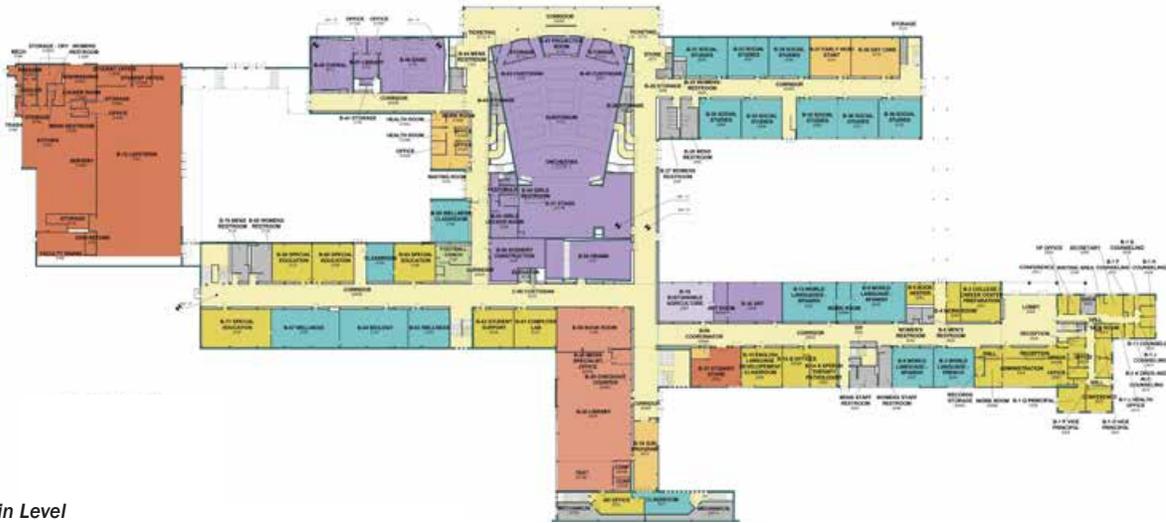
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Madison High School: Existing



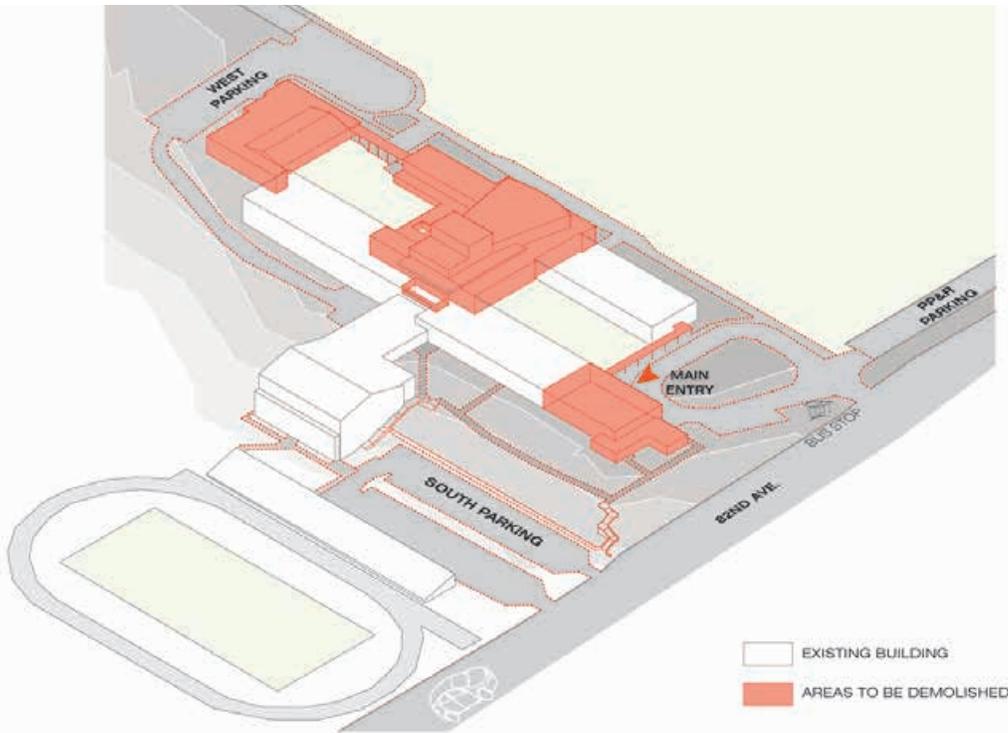
Upper Level



Main Level

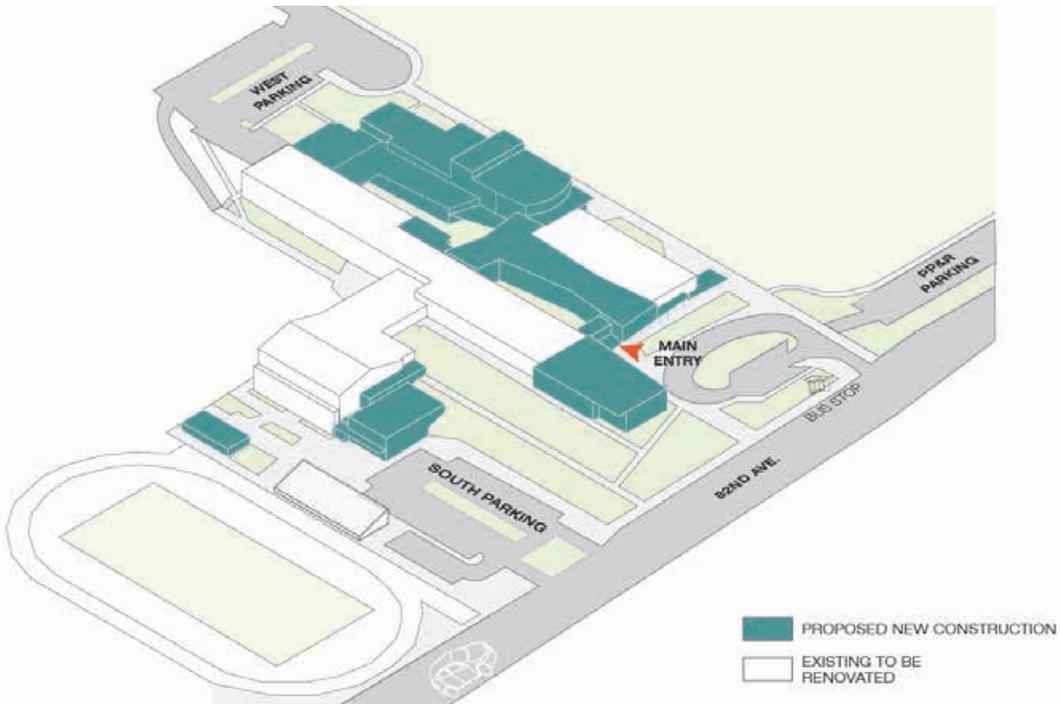






Demolition Diagram

Areas of demolition occur in perimeter zones, to be addressed with modernized new construction areas.



Areas of Proposed New Construction

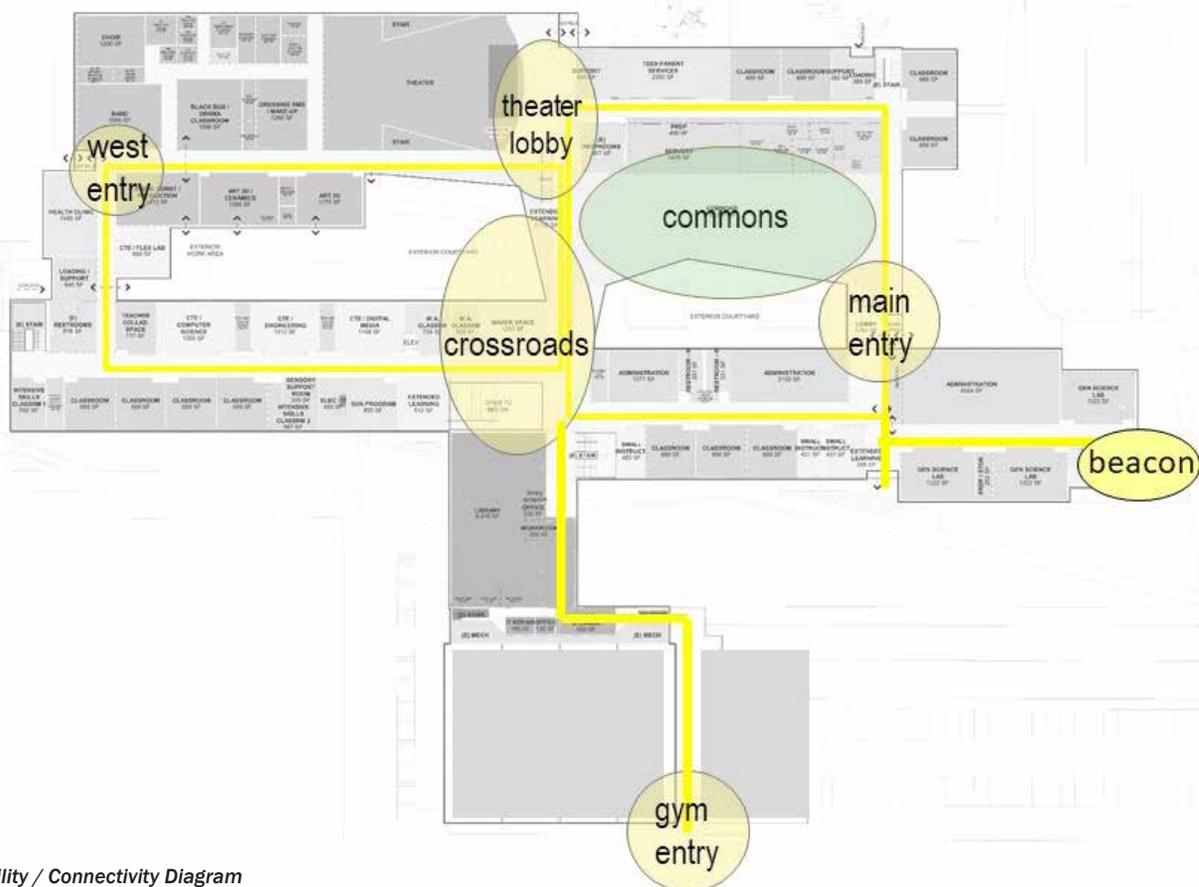
The areas of proposed new construction are located to efficiently address as many modernization goals as possible.

Concept Design

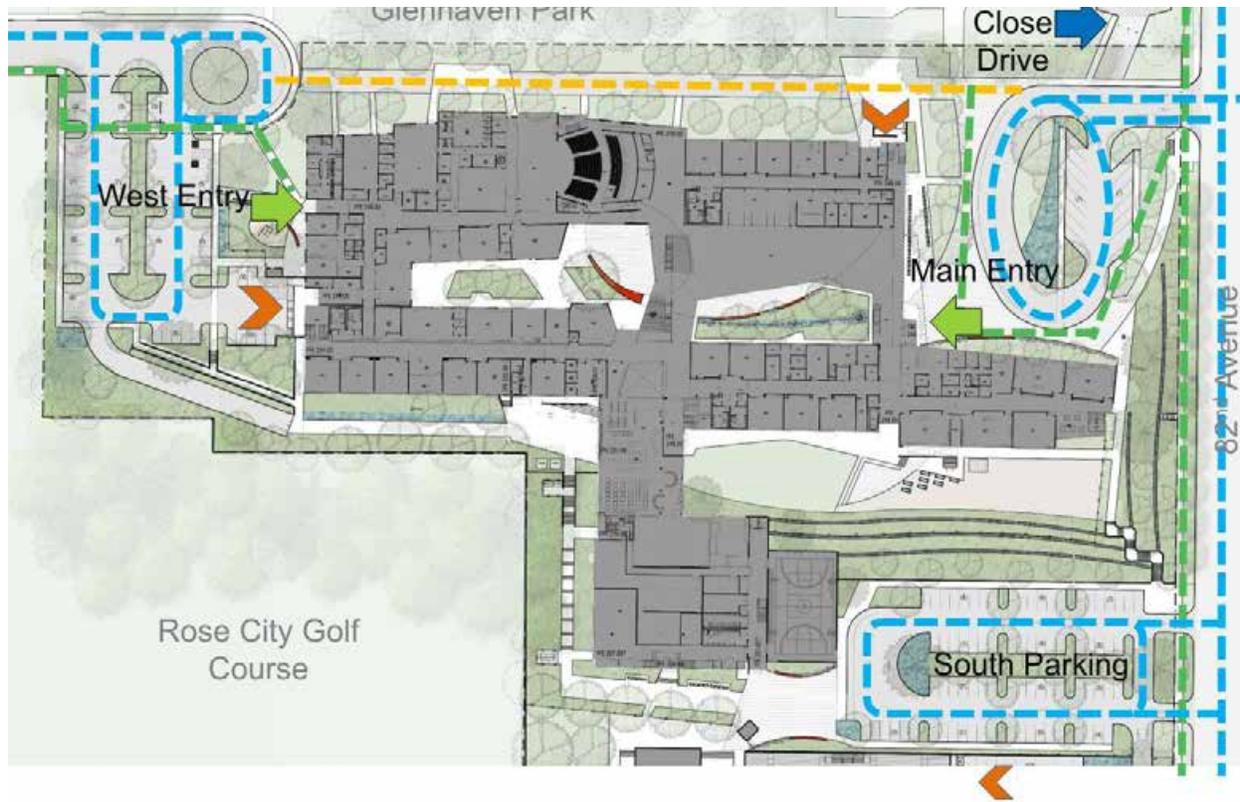
The concept design continues to reinforce the key design principles of the masterplan to create a dynamic, connected 21st century learning environment that builds on the strong diverse community of Madison HS. The plan has continued to refine the specific needs of each program area and how they are placed in relationship to each other to reinforce existing synergies and support the development of new connections. Overall the plan results in a building area of 279,000 SF with add alternates that would increase the area by up to 10,000 SF.

Site Redevelopment

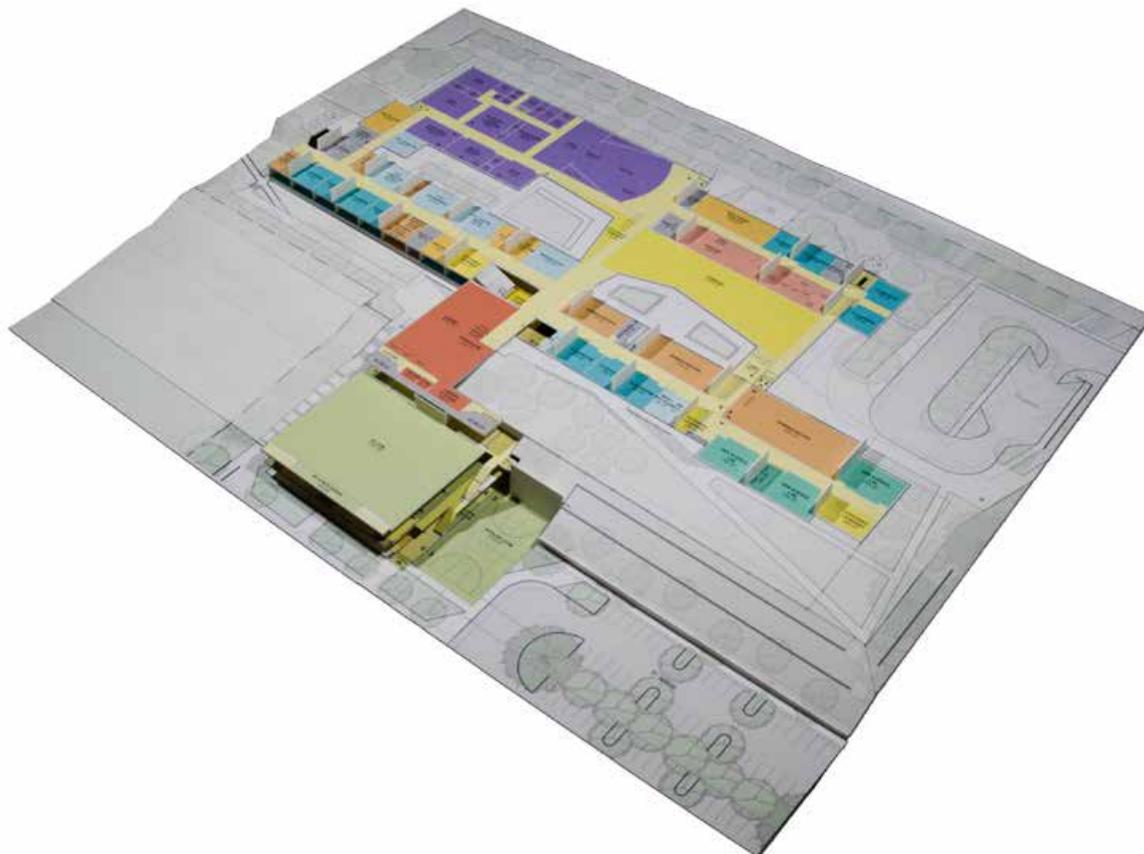
The new entry loop drive will create a safer and more attractive front door to the community through realignments of the roadways, improved short-term parking and the elimination of access to the parking lot to reduce vehicular circulation conflicts at the main entry/exit point. Around the site pedestrian paths are improved for better connectivity. The south parking lot will be reconfigured for an improved bus drop-off location and to accommodate the new Auxiliary Gym located to the east of the existing gym building. The new Aux Gym building three level lobby will create a new fully accessible south entry connection by a new elevator and stairs connecting the school through all 5 levels. Add alternates to the plan include a new stadium concessions / restroom building, upgrades to the grandstand and a field turf renovation to the south sport field to accommodate soft ball.



Visibility / Connectivity Diagram



Site Circulation Diagram





Upper Level Commons

Commons / East Courtyard

The new Madison Commons will be a highly transparent welcoming front door to the school facing 82nd street. The light filled space stretches west to connect to the center of the school Crossroads. Along the south edge the space will open out to a garden courtyard and outdoor dining opportunities. Second floor extended learning spaces overlook the Commons to create a dynamic sense of community and allow for additional lunch time seating. The new kitchen servery is placed the existing northeast classroom wing. The Commons is designed to be able to be separated from the rest of the school for after hour events and can become an extension of the theater lobby space. Together the Commons and new Theater create a new community asset easily accessible to the public.

Crossroads / Loop Circulation

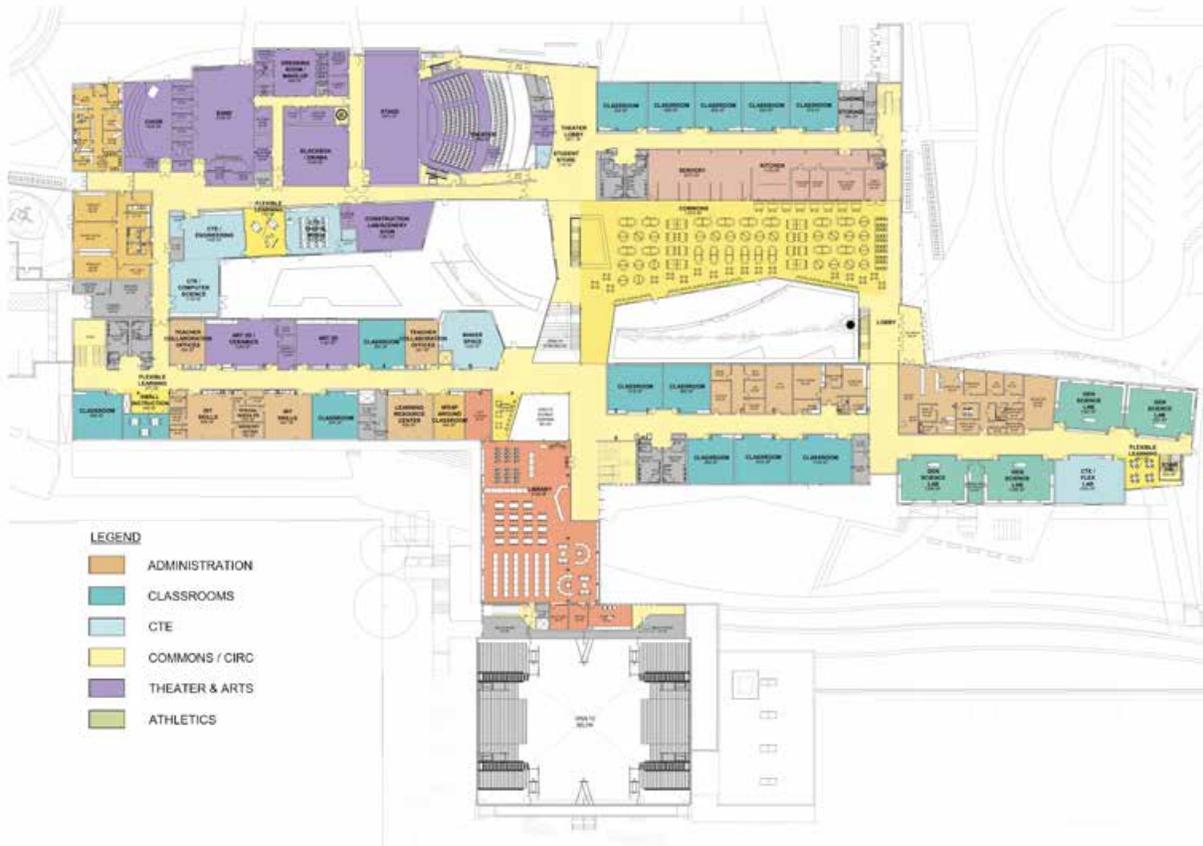
The updated plan expands the concept of the Crossroads from the multi-story atrium space adjacent to the library to connect into the center of the school currently occupied by the existing auditorium. This will dramatically improve the north / south connectivity within the school. The Crossroads will now open out to the West Courtyard bringing in substantial natural light. Standing at the center of the school one will be able to see all four quadrants making it ideal for wayfinding and efficient movement of students. The tiered theater like seating connecting the Crossroads to the lower level will provide a place for informal student events and bring activity and natural light to this partially below-grade level. The new northwest arts wing will connect around to the existing southwest classroom wing to create the new west circulation loop to compliment the east loop created by the new Commons.

Madison High School: Preferred Design

Upper Level



Main Level



- LEGEND**
- ADMINISTRATION
 - CLASSROOMS
 - CTE
 - COMMONS / CIRC
 - THEATER & ARTS
 - ATHLETICS

West Arts Courtyard

The new west courtyard is planned to include a large outdoor gathering space connected to the west end of the Commons. The courtyard will also connect to the new Theater lobby providing a spill over space during evening performances. The west half of the courtyard is envisioned as a hands-on learning classroom / work area with direct connections to CTE labs, Art Labs and the Scene Shop.

Science Wing Beacon

The new southeast science wing creates a new two story “beacon” to 82nd Avenue in the form of an extended learning space surrounded by new science labs. The new construction of the addition will allow for the new infrastructure required for the labs to be efficiently integrated. On the ground floor a new administration front office area will create a new reception lobby that is accessed through the main entry vestibule providing a fully secure visitor entry sequence.

CTE / Maker Space Labs

The CTE labs are located along the existing southwest wing and open out to the courtyard and adjacent fine arts labs. This community of CTE and Fine Arts reinforces one of the unique aspects of the existing Madison CTE program that connects art, design and technology. A Flex lab has been included to accommodate changing program needs over the life of the building.

Library renovation

The library will now connect directly and visually to the Crossroads through a glass wall, eliminating the current hidden entry location. With the adjacent extended learning areas surrounding the Crossroads it is anticipated this central hub will be a major focus for student informal learning opportunities.

General Classrooms

The seismic renovation upgrades require removing most of the interior corridor walls which opens up the opportunity of capturing under-utilized locker spaces. This will allow the ability through clerestory upper windows to bring natural light to the corridors.

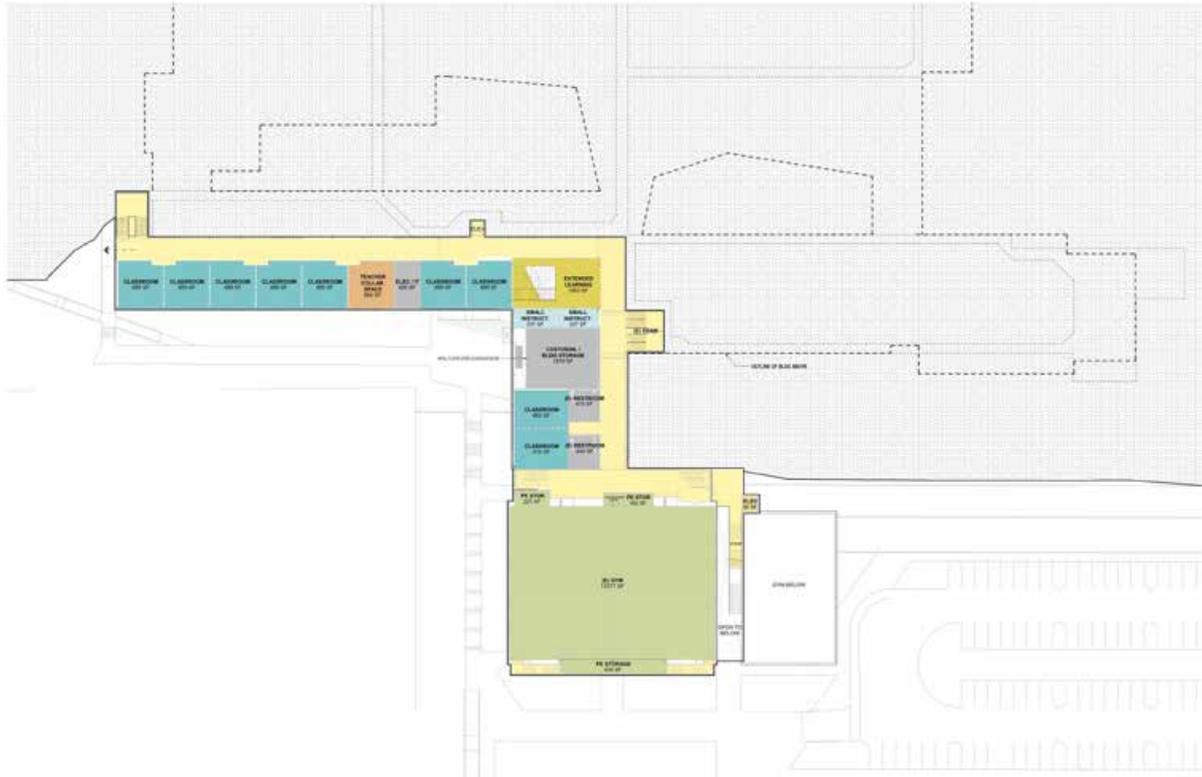
SPED Programs

The SPED programs have been distributed around the school to integrate with the full school and support students ‘where they are’. New SPED spaces at the recently completed high schools will provide a model for their development.

Wrap Around Services

With the greatest diversity of students in the District, Madison is home to a number of specialized services. The plan provides these spaces in key locations in the center of the school where they will be easily visible and accessible to students on a daily basis. The health clinic has been located in the new west addition where it can have a separate outside entry and be easily accessed from the west parking area.

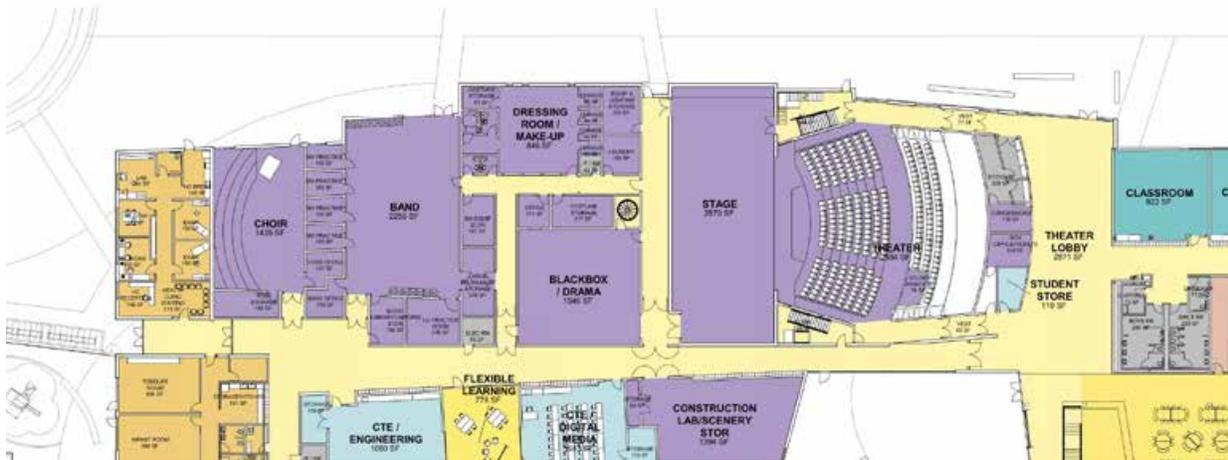
Lower Level



Crossroads Stair

Connecting the circulation loops throughout the building and activating these with open, daylit, common centers will improve flow, wayfinding, and enhanced orientation.

Enlarged Fine & Performing Arts



500 seat Theater examples

500 seat Theater examples

Performing / Fine Arts

The new wing allows for the planning of ideal relationships between the scene shop, stage and black box for the flow of materials and scenery. Dressing rooms will be designed to accommodate gender-neutral design criteria and be located with full accessibility to the stage level. New music and choir rooms will provide greatly improved acoustics and accessibility in the band room with a flat floor. The wing will include new art rooms (currently located in the lower level) that will open out to exterior covered work areas.



Roosevelt High School Performing Arts



LCC Rose Center Performing Arts



Franklin High School Performing Arts



Basement 01



Main Gym / Auxiliary Gym

The Main gym building will go through a full renovation necessitated by seismic upgrades throughout. The locker room floor renovations will allow a separation of coaches and shared use spaces to be isolated from the locker rooms. The current mid-floor inaccessible mat room will be raised to the second floor level and be renovated as multi-purpose room. The addition of the new Aux Gym to the east creates a multi-level lobby space that will now for the first time provide a fully accessible route through all five levels of the school.

Open stair connecting levels



Basement 02



SPACE USE	ED SPEC REQ'D			MADISON CONCEPT		
	Quantity	Room Area	Area	Quantity	Room Area	Area
CORE PROGRAM						
<i>CTE Classrooms / Labs</i>	4	1,200	4,800	4	1,175	4,700
<i>Maker Space</i>	1	1,200	1,200	1	1,200	1,200
	5		6,000	5		5,900
<i>General Education Classrooms</i>	41	980	40,180	41	890	36,500
	41		40,180	41		36,500
<i>Science Labs</i>	11	1,500	16,500	9	1,320	11,880
<i>Prep Rooms / Chem Storage</i>	5		980	4		780
	11		17,480	9		12,660
<i>Extended Learning Areas</i>	8	1,000	8,000	7	915	6,410
	8		8,000	7		6,410
<i>Sub-Total Core Program</i>	65		71,660	62		61,470
<i>Small Instructional Spaces</i>	10	500	5,000	6	405	2,430
<i>Sub-Total Small Instructional Spaces</i>	10		5,000	8		2,430
FINE & PERFORMING ARTS						
<i>Visual Arts - 2D & 3D Art</i>	2		3,080	2		2,950
<i>New Band Room & Support Spaces</i>	1		3,470	1		3,580
<i>New Choir Room</i>	0		200	1		1,200
<i>New 500 seat Theater & Back of House</i>	1		14,600	1		15,000
<i>Sub-Total Fine & Performing Arts</i>	4		21,350	5		22,730
PHYSICAL EDUCATION / ATHLETICS						
<i>Large Gym / Locker Rooms / Weight Room</i>	3		28,380	3		32,000
<i>New Auxiliary Gym</i>	1		7,200	1		6,100
<i>Sub-Total Physical Education / Athletics</i>	4		35,580	4		38,100
EDUCATION SUPPORT						
<i>Administration Spaces / Counseling / Career Center</i>			8,195			11,400
<i>Teacher Collaboration Spaces / Offices</i>	10	980	9,800	7	640	4,500
<i>Computer Labs</i>	5		5,500	1		1,200
<i>SPED</i>	2		5,900	2		4,900
<i>Commons / Kitchen & Servery Spaces</i>	1		12,620	1		15,500
<i>Library / Media Center</i>			10,220			7,630
<i>Support - Mechanical / Custodial / Miscellaneous</i>			13,895			13,860
<i>Sub-Total Education Support</i>	8		67,400	4		58,990
PARTNER & COMMUNITY USES						
<i>Sub-Total Partner & Community Uses</i>			1,200			600
WRAP AROUND SERVICE PROVIDERS						
<i>Sub-Total Wrap Around Service Providers</i>			4,700			6,800
TOTAL HIGH SCHOOL - NET AREA	91		206,890	83		191,120
TOTAL HIGH SCHOOL - GROSS AREA			281,370			278,900

The total Gross Floor Area and Net Floor areas exclude the existing 9,750 SF Basement level 2 storage / mechanical spaces which is currently leased to School House Supplies. Long term use of this underground space that has no exterior access to natural light is assumed to be for storage for Madison or general PPS use. Renovation of this space is limited to seismic improvements required for the gym spaces above.

Footnotes

#1 - General Ed Classroom size is at 890 SF a reduction from Ed Spec size of 980 SF due to structural bay spacing of the existing building structure and for budget alignment. The room data sheet analysis with furniture indicates that the reduced size still allows for a capacity of 30-32 students in both group and row formats.

#2 - (9) Science Labs have been provided, a reduction of (2) from the Ed Spec quantity of (11). Site area for (2) additional future Science Labs are shown in the masterplan site plan.

#3 - Science lab typical size is at 1,320 SF, down from Ed Spec size of 1,500 SF based on the fix bench labs recently built at Roosevelt and Franklin High Schools.

#4 - Flex/Extended Learning space is at a total of 6,410 SF, reduced from Ed Spec size of 8,000. Where possible extended learning spaces have been sized for flexible conversion to classroom or small instruction spaces.

#5 - Small Instruction Space is at a total of 2,430 SF reduced from Ed Spec size of 5,000 SF. Where possible small instruction spaces are grouped together for future flexible conversion to standard classroom sizes.

#6 - Choir room (optional in Ed Spec) is included in program per current High School program. The DAG committee emphasized the need to provide core program spaces for the Arts based on a long-term planning view. Franklin High Schools late in the process conversion of a classroom into a choir space reinforced the need to anticipate increased student participation with a newly renovated high school.

#7 - Locker Room / Gym total SF is at a total of 32,000 SF an increase from Ed Spec size of 28,320 SF due to utilizing of existing building enclosure. The schematic design phase will study further programming of this floor area that with the new Auxiliary Gym / vertical

circulation core will be better connected to the rest of the school and may allow for additional program spaces to be located at this level.

#8 - Computer Lab quantity has been reduced to (1) General Purpose Computer Lab at 1,200 SF w/ Mobile Computer Cart storage, down from the Ed Spec quantity of (5) Computer Labs at 5,500 SF. The school goal is to convert general computer lab use to mobile carts and the specific Madison CTE programs for Engineering, Digital Arts and Computer Science are discipline dedicated computer labs.

#9 - Student Center/Commons is at 15,500 SF, up from Ed Spec size of 12,260 SF due to projected higher utilization of Commons (above the PPS average) during breakfast/lunch and after school.

#10 - Library is at 7,630 SF an increase from the current library area of 7,200 SF but reduced from Ed Spec size of 10,220 SF. The current library is extensively used for student study during the day and after hour meetings. The inclusion of Extended Learning spaces and small instruction spaces throughout the school should reduce the day to day student seat demand. After hour meeting spaces will now include the Commons and the new Theater.

#11 - Food/Clothing Closet is reduced to 600 SF reduced from Ed Spec size of 1,200 SF per user group discussions that Food Pantry is only use and there is no Clothing Closet currently. As this space is located on the lowest level of the Gym building where Schoolhouse supplies currently exists there is substantial space for expansion of this use if needed in the future.

#12 - Wrap Around Service SF is at 6,800 SF increased from the Ed Spec size of 4,700 SF due to having optional spaces included for the SUN program & ESL Classroom.



Add Alternate - Stadium Bleachers / Concessions



Add Alternate - Soft Ball / South Turf Fields

04 IMPLEMENTATION

Cost Estimating

The updated Master Plan phase included a detailed cost estimating effort to compare the updated plan cost assumptions to the original Master Plan cost estimate. New detailed narrative were created by each discipline sub-consultant (see appendix) to further describe the expected new systems. Cost information from the recent bidding process for the Grant High School project was also provided to the cost estimator. The plan was initially estimated with the existing auditorium in place and renovated. After the concept of a new theater was developed a second preliminary estimate was developed to test its cost viability. The results of that effort indicated that the new much smaller theater would be a cost “wash” to the full seismic renovation of the existing large auditorium. The planning for the concept of the new theater was further developed and a new full cost estimate for the final masterplan was completed. This estimate (see appendix) provides the basis of the projected masterplan construction costs.

Escalation

The cost estimate was developed with current (2018) dollar values and escalated to the mid-point of construction based on a June 2019 construction start. The estimate include not only a current standard 5 to 6 % per year cost escalation but also an additional 5% market volatility escalation factor to accommodate possible highly tight market bidding conditions that currently exist and could exist at the time of the bidding.

The design team completed the Master Plan Update March 9, 2018 including reductions intended to better align the project scope with the budget. These plans were presented to the District as Pre-Design Option C. The cost of this design was calculated in the RLB estimate dated February 26, 2018. This cost exceeded the budget, prompting further study by the District and the School Board.

The design team participated with the other bond project teams in studies of the current bid climate and the 2012 Bond projects. An Option A design was developed reflecting equivalent program with the 2012 projects and other 2017 projects. While some rooms are smaller than required in the Education Specifications (Ed Spec), the required program spaces are provided. Some spaces are larger or smaller due to the existing building constraints. Some spaces have been adjusted to reflect the needs of the Madison community.

On May 8, 2018, the board directed the Opsis + Dao team to move forward with the Madison Option A design. Our team has modified the design and provided drawings to contractor Fortis Construction for estimating. The Master Plan Update, dated May 22, 2018, has been revised to include Option A. The Fortis estimate is provided as an Appendix.

APPENDICES

01 Design Advisory Group Meetings

DAG 00

DAG 01

DAG 02

DAG 03

02 Stakeholder Meetings

Science

Building Systems

CTE

Food Service

Visual Arts

Performing Arts

03 Design Narratives

Civil

Site

Envelope . .

Structural

Mechanical

Electrical

Theater

04 Room Data Sheets . .

Classroom

Science Lab

Chemistry lab

Commons

Art Room 2D

Art Room 3D

Band

Choir

05 Architectural Plans & Diagrams

Existing Plans

Preferred Design Plans

06 Conceptual Estimate . .

Conceptual Estimate

Conceptual Estimate Plans

ATTACHMENT D

	Total SF	÷	SF/TS	=	TS	*	Util	=	Available	*	Students per			
											Classroom Range	=	Stud - low	Stud - high
General Classroom	36,900		900		41		95%		38.95		20	30	779	1,169
Science	14,520		1,320		11		95%		10.45		20	30	209	314
Specialized Instruction ¹			<i>varies</i>		11		90%		9.90		20	30	198	297
PE/Athletics ²			<i>varies</i>		5		75%		3.75		20	30	75	113
Special Education			<i>varies</i>		5		70%		3.50		20	30	70	105
Small Instructional	3,500		500		7		70%		4.90		20	30	98	147
Total					80								1,429	2,144

Average: 1786

Proposed Program at 85% Utilization

	Total SF	÷	SF/TS	=	TS	*	Util	=	Available	*	Students per			
											Classroom Range	=	Stud - low	Stud - high
General Classroom	36,900		900		41		85%		34.85		20	30	697	1,046
Science	14,520		1,320		11		85%		9.35		20	30	187	281
Specialized Instruction			<i>varies</i>		11		75%		8.25		20	30	165	248
PE/Athletics			<i>varies</i>		5		50%		2.50		20	30	50	75
Special Education			<i>varies</i>		5		70%		3.50		20	30	70	105
Small Instructional	3,500		500		7		0%		0.00		20	30	0	0
Total					80								1,169	1,754

Average: 1461

Proposed Program at 75% Utilization

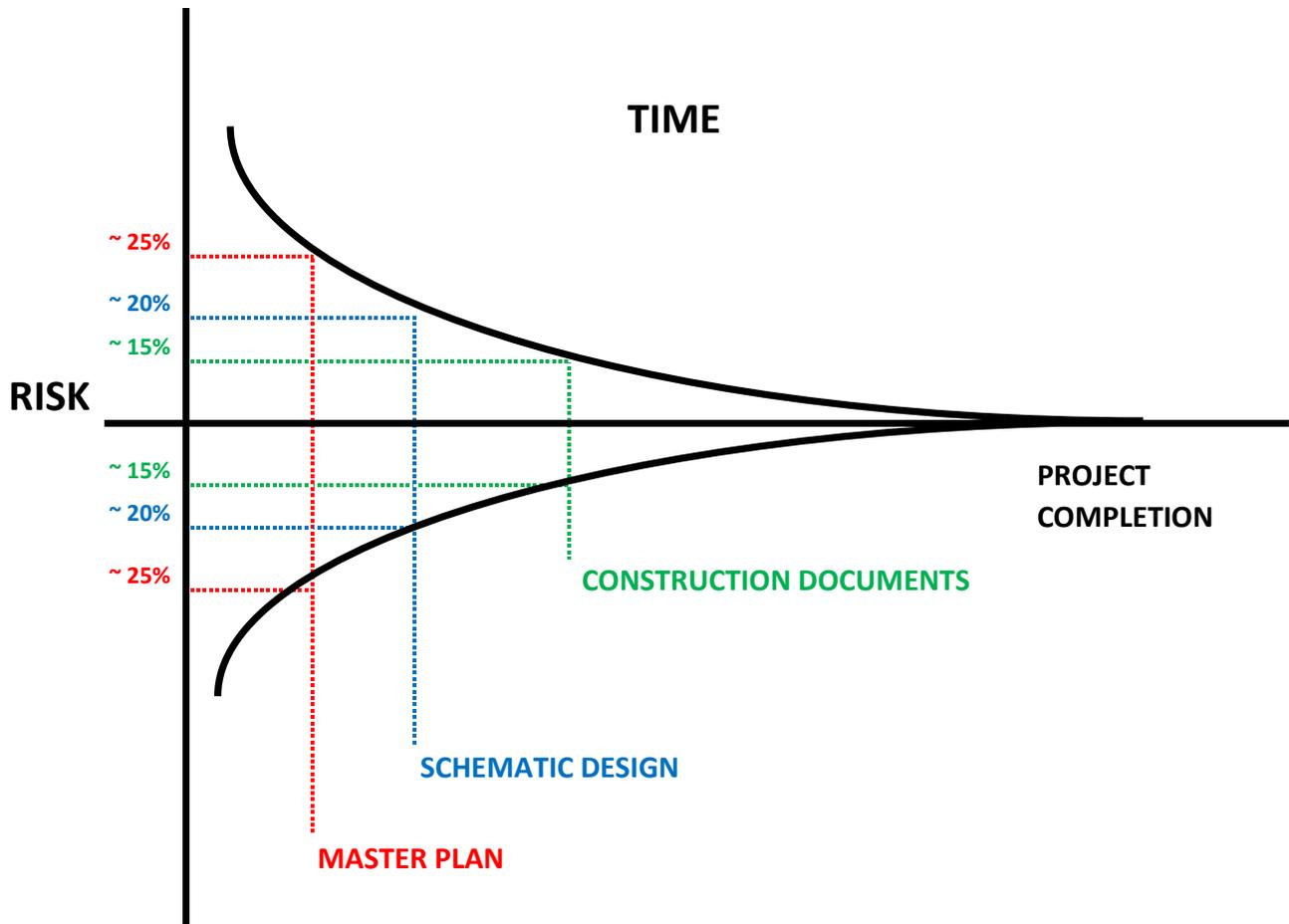
	Total SF	÷	SF/TS	=	TS	*	Util	=	Available	*	Students per			
											Classroom Range	=	Stud - low	Stud - high
General Classroom	36,900		900		41		75%		30.75		20	30	615	923
Science	14,520		1,320		11		75%		8.25		20	30	165	248
Specialized Instruction			<i>varies</i>		11		75%		8.25		20	30	165	248
PE/Athletics			<i>varies</i>		5		50%		2.50		20	30	50	75
Special Education			<i>varies</i>		5		70%		3.50		20	30	70	105
Small Instructional	3,500		500		7		0%		0.00		20	30	0	0
Total					80								1,065	1,598

Average: 1331

¹ Specialized Instruction includes: (4) CTE, (2) Art, Black Box, Band, Choir, Scene Shop, and ELL Classroom

² PE/Athletics includes: (2) Main Gym, Aux Gym, Weight Room, Mat/Dance

BOND BUDGET PROGRESSION - TIME AND RISK



MADISON HIGH SCHOOL

BOARD PRESENTATION

UPDATE
MAY 22, 2018



DESIGN TEAM ENGAGEMENT

Stakeholder Engagement

CTE - Career and Technical Education
CTE - Health Science
Science - All
Science – Chemistry
Classrooms - Teachers
Arts - Visual Arts
Arts - Music
Arts - Performing Arts 1
Arts - Performing Arts 2
Athletics / PE 1
Athletics / PE 2
Administration
Counseling
SPED - District
SPED - Madison
Food Service 1
Food Service 2
Library / Media Center
Custodial
Partner Uses – Food Pantry
Wrap Around - Health Clinic
Wrap Around - Teen Parent Services
Wrap Around Programs - SUN School
Wrap Around Programs - Step Up Program

District Engagement

PPS Building Systems
Security
Mechanical
Electrical
SHPO
District Energy Charrette
PPS Madison HS LEED Eco-Charrette
Leadership Meetings (weekly)
Steering Committee Meetings (bi-weekly)

Design Advisory Group Meetings

DAG 0 – New Member Welcome
DAG 1 – Learning Environment Workshop
DAG 2 – Commons & Classrooms
DAG 3 – Tour Franklin HS / Roosevelt HS
DAG 4 – Lessons Learned, Exterior Spaces
DAG 5 – Meeting Guiding Principles in New Design

Outreach

Eighth Grade Introduction
Latino Family Conference
Asian New Year Celebration Booth
Student Survey
Student Crossroads

SITE PLAN



Russian



Central American



Polynesian



Chinese



Vietnamese



Zulu



Missoula Flood Deposit



Gabion Retaining Wall



Quinhungdao Red Ribbon Park



Gabion Retaining Wall



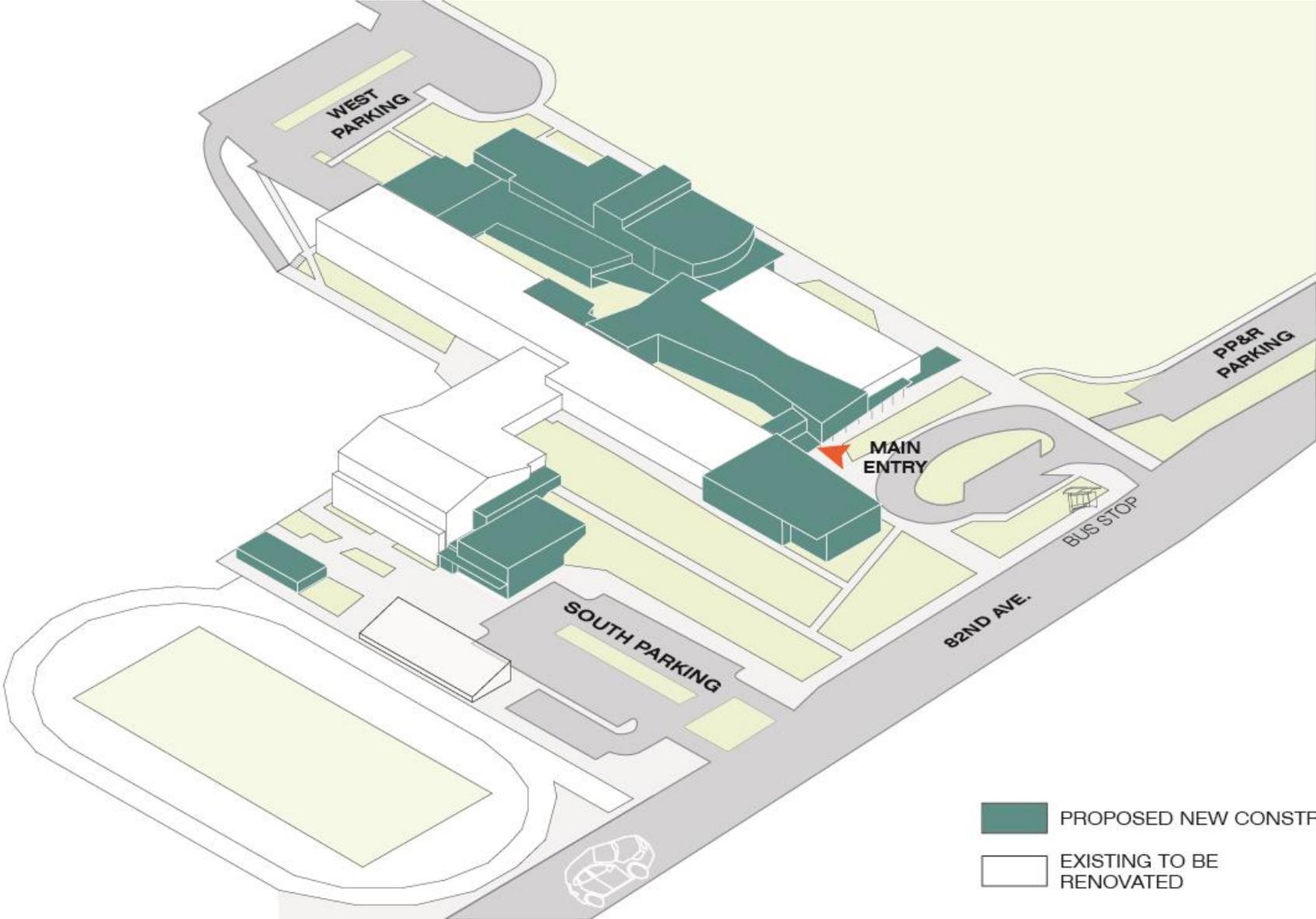
Gabion Seat Wall



Quinhungdao Red Ribbon Park



NEW CONSTRUCTION



LOWER LEVELS 1-3



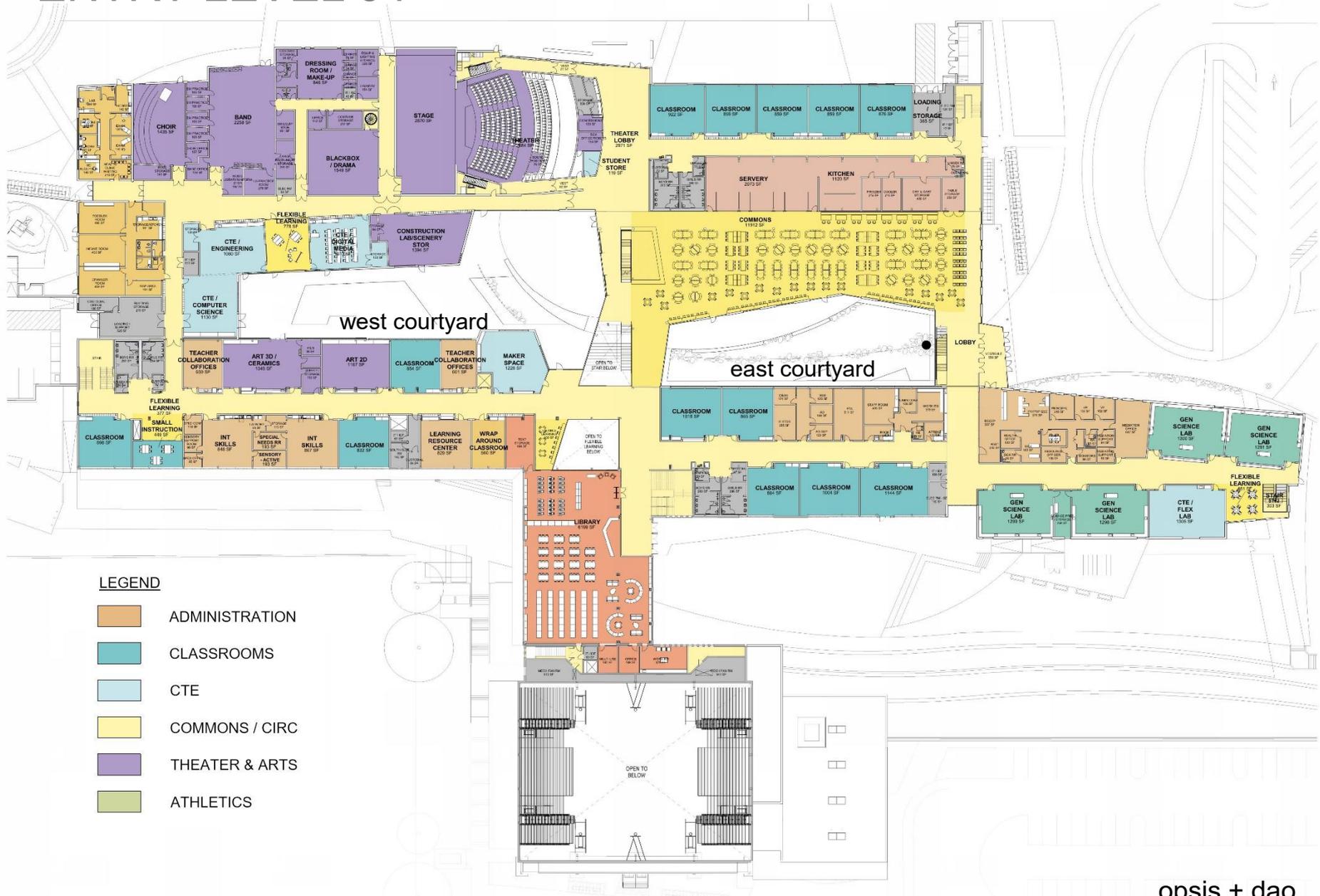
LEVEL 01 PLAN



LEVEL 02 PLAN

LEVEL 03 PLAN

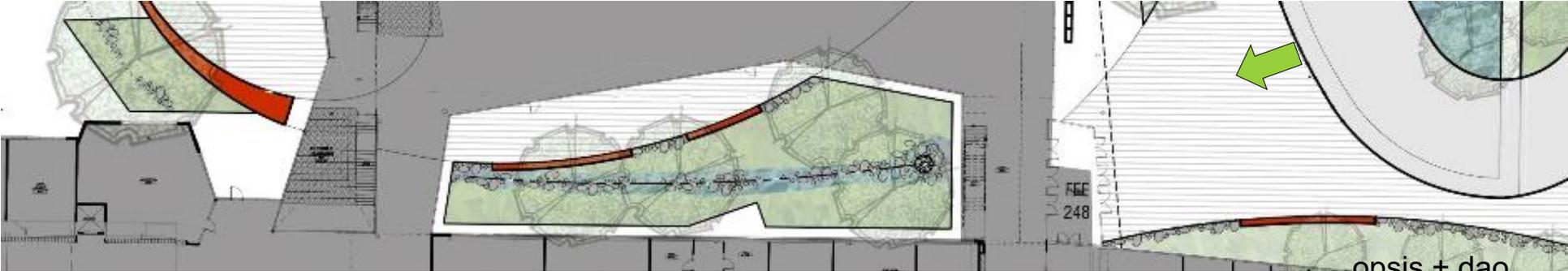
ENTRY LEVEL 04



LEGEND

- ADMINISTRATION
- CLASSROOMS
- CTE
- COMMONS / CIRC
- THEATER & ARTS
- ATHLETICS

NEW ENTRY



COMMONS



COMMONS



CROSSROADS



SUN / STEP UP LOWER LEVEL STUDENT CENTER



SOUTH ENTRY: PARKING, ATHLETICS, FOOD PANTRY



AUXILIARY GYM: ADA-AG ACCESS TO GYM, BUILDING



MP PROGRAM / ED SPEC COMPARISON

PPS Comprehensive High School Area Program	ED SPEC			MADISON HS			MADISON HS		
SUMMARY	RECOMMENDED			OPTION A			DELTA Option A - Ed Spec		
AREA	Quantity	S.F. Room	S.F. Total	Quantity	S.F. Room	S.F. Total	Quantity	S.F. Room	S.F. Total
COMPREHENSIVE HIGH SCHOOL - TEACHING STATIONS									
General Education (Gen-Ed) Classrooms	41		53,180	41		47,379	0		(5,801)
Science Labs	11		17,480	11		15,592	0		(1,888)
Fine & Performing Arts (Drama, Theater)	4		22,850	4		23,999	0		1,149
Career Preparation/CTE ³	3		6,000	3		6,074	0		74
Athletics (includes area for P.E. instruction)	3		35,580	3		37,691	0		2,111
Education Support ⁴	2		67,400	2		64,465	0		(2,933)
Sub-Total Recommended Teaching Stations	64		202,490	64		195,202	0		(7,288)
Community Partners ⁵			1,200			581			(619)
Wrap-Around Service Providers ⁵			4,700			5,931			1,231
Sub-Total			5,900			6,512			612
SUB-TOTAL REQUIRED AREA			208,390			201,714			(6,676)
Net to Gross Ratio of 36% ⁶			75,020			96,431			21,411
TOTAL COMPREHENSIVE HIGH SCHOOL REQUIRED			283,410			298,145			14,735

MP PROGRAM / ED SPEC COMPARISON

PPS Comprehensive High School Area Program	ED SPEC			MADISON HS			MADISON HS		
	RECOMMENDED			OPTION A			DELTA Option A - Ed Spec		
AREA	Quantity	S.F. Room	S.F. Total	Quantity	S.F. Room	S.F. Total	Quantity	S.F. Room	S.F. Total
CORE PROGRAM									
Career Preparation CTE									
Specialized classrooms/labs	4	1,200	4,800	4	1,212	4,846	0		46
Maker Space	1	1,200	1,200	1	1,228	1,228	0		28
Sub-Total Career Prep CTE	5		6,000	5		6,074	0		74
General Education Classrooms - Core Program Recommendations									
Sub-Total Gen Ed Classrooms	41	980	40,180	41	903	37,022	0	(77)	(3,215)
Specialized Classrooms - Core Program Recommendations									
Science Lab	11	1,500	16,500	11	1,345	14,795	0		(1,705)
Chemical Storage	1		180	1		180	0		0
Prep Rooms	4	200	800	3	206	617	(1)		(183)
Sub-Total Specialized Classrooms	11		17,480	11		15,085	0		(2,395)
Smaller Instructional Spaces (optional)	10	500	5,000	7	Varies	3,476	(3)		(1,524)
Flexible Learning Areas (optional)	8	1,000	8,000	13	Varies	6,881	5		(1,119)
FINE & PERFORMING ARTS									
Sub-Total Fine & Visual Arts	2		3,080	2		2,832	0		(248)
Sub-Total Band/Orchestra	1		3,470	1		3,695	0		225
Sub-Total Choir (optional choir room 1,500)	1		1,700	1		1,751	0		51
Sub-Total Theater Dance	1		14,600	1		15,721	0		1,121
SUB-TOTAL RECOMMENDED FINE & PERFORMING ARTS	5		22,850	5		20,415	1		1,149
PHYSICAL EDUCATION/ATHLETICS									
Gym (large; two teaching stations)	1		13,000	1		13,627	0		627
Mat/Wrestling/Dance	1		2,750	1		2,868	0		118
Weight Room/Aerobics/Spinning	1		2,500	1		2,478	0		(22)
School Team Room	1		800	5	860	4,301	4		3,501
Other Spaces	13	varies	8,330	13	varies	7,642	0		(688)
Field Equipment Storage	1		1,000	1		1,000	0		0
Auxiliary Gym Subtotal	1		7,200	1		6,775	0		(1,425)
SUB-TOTAL PHYSICAL EDUCATION / ATHLETICS	4		35,580	4		37,691	0		2,111

MP PROGRAM / ED SPEC COMPARISON

PPS Comprehensive High School Area Program	ED SPEC			MADISON HS			MADISON HS		
	RECOMMENDED			OPTION A			DELTA Option A - Ed Spec		
AREA	Quantity	S.F. Room	S.F. Total	Quantity	S.F. Room	S.F. Total	Quantity	S.F. Room	S.F. Total
EDUCATION SUPPORT									
Administration									
Teacher Planning/Collaboration Area (optional)	10	980	9,800	6	829	4,972	(4)		(4,828)
Administration			5,460			5,375			(85)
Sub-Total Administration + Teacher Collaboration Areas			15,260			10,347			(4,913)
Sub-Total Counseling/Career			2,735			2,583			(152)
Sub-Total Student Activities			270			270			0
Sub-Total Student Testing			5,500			1,029			(4,471)
Sub-Total SPED	5		5,900	5		5,667	0		(233)
Sub-Total ELL	1		800	1		997	0		197
Sub-Total Student Center			12,620			16,501			3,881
Sub-Total Media Center			10,220			8,086			(2,134)
Sub-Total Student Space			200			236			236
Sub-Total Custodial			3,850			3,114			(736)
Sub-Total Miscellaneous			10,045			15,637			5,592
SUB-TOTAL EDUCATIONAL SUPPORT			67,400	6		64,467			(2,933)
PARTNER & COMMUNITY USES									
SUB-TOTAL COMMUNITY & PARTNER USES			1,200			581			(619)
WRAP AROUND SERVICE PROVIDERS									
SUB-TOTAL WRAP AROUND SERVICE PROVIDERS			4,700			5,931			1,231
COMPREHENSIVE HIGH SCHOOL RECOMMENDED NET AREA			215,890	67		201,714			(6,676)
TOTAL GROSS AREA		36%	293,610			298,145			4,535

SCHEMATIC DESIGN – COST REDUCTION PATHWAY

Trending SD Budget Range:	\$185M to \$200M
Natural Turf at Baseball/Softball Fields:	(\$0.8M)
Reduce Landscape / Walls at Slope South of HS:	(\$1.0M)
Retain Existing NW and SE Parking Lots:	(\$0.8M)
Revise CFCI Site Items to OFOI / Delete Tree Grates	(\$0.2M)
Reuse Existing Fire Lane at SW Corner / Reduce Site Conc. Walls:	(\$0.5M)
Reduce 82nd Avenue Frontage Improvements:	(\$0.7M)
Structural System Alternatives:	(\$1.5M)
Exterior Envelope Alternatives:	(\$2.0M)
Mechanical System Targeted Cost Reduction:	(\$1.5M)
Electrical System / Material Alternatives:	(\$1.0M)
Target Final SD Budget Range:	\$175M to \$190M

RESOLUTION No.

Resolution Authorizing Madison High School Modernization Master Plan as Part of the 2017 Capital Bond Program

RECITALS

- A. At the conclusion of the Madison High School Pre-Design Diligence process in February, 2017, Board Resolution 5394 referred the Madison High School Modernization to voters in May 2017.
- B. The election was duly and legally held on May 16, 2017 (the "2017 Bond Election") and the general obligation bonds were approved by a majority of the qualified voters of PPS voting at the election.
- C. Board Resolution 5471 accepts certification from Multnomah County, Clackamas, Washington Counties for May 16, 2017 voter approval of authorizing Portland Public Schools to issue up to \$790 million of general obligation bonds to improve health, safety, learning by modernization, report schools.

RESOLUTION

- 1. The Board of Education directs staff to design a modernized Madison High School for an enrollment capacity of 1700 students.
- 2. The Board of Education directs staff to utilize the current Madison High School Area Program Summary as a guide to construct the modernized Madison High School to an approximate size of 298,000 square feet.
- 3. The Board of Education approves the Master Plan Preferred Site Plan for Madison High School.

- The Office of School Modernization anticipates a Total Project Budget based upon Schematic Design documents in a range of \$181M to \$196M.
- The Office of School Modernization will return to the Board of Education with a Total Project Budget based upon Schematic Design documents in July 2018.

The Superintendent shall share with the Board any information that has been secured which helps explain the rapidly changing cost estimates from the pre-referral estimating that was done to the February 2017 ballot measure referral to early April 2018 when the numbers changed rather dramatically.

- Notwithstanding the above, in recognition of budget realities, the Superintendent shall engage in a review of the plan and how it meets EdSpecs with a goal to reduce costs and optimize funds without materially impacting educational benefits for all students and still achieving the goal of equitable high school facilities across the district.
- The project team shall take into account the results of this review and engage in creative cost-saving exercises similar to those used on Franklin, Roosevelt, and Grant High Schools. This number will be set after the EdSpec review has been completed.

MEETING MINUTES

Meeting Name: Design Advisory Group 01

Project Name: **Madison High School Modernization**

Project Number: 4722-01

Meeting Date: 12/11/2017

Meeting Time: 6:00-8:00pm

Location: Madison High School Library

Attendees: PPS and Design Team
(shown in **Bold**)

Jessie Steiger	PPS OSM
Paul Cathcart	PPS OSM
Ayana Horn	PPS OSM
Petra Callin	PPS MHS
Dan Jung	PPS OSM
David Mayne	PPS OSM
Derek Henderson	PPS OSM
Alec Holser	Opsis
Randall Heeb	Opsis
Steve Nelsen	Opsis
Kirstin Justice	Opsis
Bryce Tolene	Opsis
Max Frixione	Opsis
Joann Dao Le	DAO
Nancy Hamilton	NHC
Stephanie Barnhart	NHC

Design Advisory Group Members

Eric Bennett
Brian Butenschoen
 Yolanda Cabrera
Raymond Cheng
Elena Collazo-Santiago
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Laura Spidell
 Nancy Sullivan
 Thao Duc Tu
David Valenzuela
Chad Whipple

Anna Cabello
Adie Cheyne
Ally Shuell
Julian Darion
Max Jacobs-Sherbilor

The following notes represent our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

Item Discussion

1.01 Welcome Back and Introductions

Paul Cathcart, PPS Project Manager for the Madison HS Master Plan, provided a brief introduction, and introduced Jessie Steiger, PPS Project Manager. Jessie allowed the following PPS and Design Team Members to introduce themselves:

Portland Public Schools

- o Ayana Horn PPS Project Coordinator, Office of School Modernization
- o Dan Jung PPS Communications, Office of School Modernization
- o Ayana Horn PPS Project Coordinator, Office of School Modernization
- o David Mayne PPS Communications, Office of School Modernization

Design Team

- o Alec Holser Opsis Architecture, Design Principal
- o Randall Heeb Opsis Architecture, Senior Project Architect
- o Steve Nelsen Opsis Architecture, Project Manager
- o Kirsten Justice Opsis Architecture, Senior Interiors
- o Bryce Tolene Opsis Architecture, Project Architect
- o Max Frixione Opsis Architecture, Architect
- o Joann Dao DAO Architecture, Associate Architect
- o Stephanie Barnhart Nancy Hamilton Consulting

DAG Members

- o Individual DAG team members introduced themselves, and provided a brief explanation as to why they volunteered to participate in the Design Advisory Group.

1.04 Code of Conduct and DAG Charter - Jessie Steiger provided a review of the following:

- o Code of Conduct for team members was reviewed
- o DAG Mission: Advise the Madison Modernization Project Team in developing a comprehensive, equitable integrated and visionary school design with authentic school community engagement
- o DAG Role: Members are part of an advisory committee, providing input to Team Leaders in the decisionmaking process.

1.05 Election of Co-Chairs

- o The role of each Co-Chair Role will be to represent the group as a sounding board, provide help with marketing, attend the leadership DAG-prep meetings to aid in planning, attend Open House events, and help provide clear communication to the community at large.
- o The following three DAG members were selected as Co-Chairs following brief explanations as to why they are volunteering for these positions:
 - Raymond Cheng - City of Portland Resident and Architect. Previous experience for a DAG on Oregon Episcopal School
 - Ana Munoz – Program/Site Use Partner. Member of the Latino community, and participation in the Master Plan process as part of the MPC.
 - Doug Pruitt – High School Cluster parent and Architect.

1.06 Master Plan Update and Schedule

- o Randall Heeb, Senior Project Architect, presented the following
 - overview of the completed Master Plan Process, the current vetting phase of the educational specifications and costing exercise, and due diligence exercises relative to program elements and building improvements.

- Overall Project Schedule:
 - Current Predesign Phase with Master Plan Update and budget is scheduled to be complete, with recommendations to the PPS Board of Directors early 2018
 - General Contractor (CMGC) selection in the Winter of 2018, with construction bidding scheduled for spring of 2019.
 - Students are scheduled to move from Madison to the Marshall Campus in the Fall of 2019.
 - Students return from Marshall to the completed Madison facility in the Fall of 2020.
- Bond Schedule: Dan Jung outlined the overall Bond Schedule:
 - There are (4) Large Projects, and lots of smaller projects in the current Bond
 - Order of Projects: 1. Madison, 1.5 Kellogg, 2 Lincoln, and 3 Benson
 - Health and Safety Improvements are also underway using Bond funds at a number of other facilities
- Alec Holser, Design Principal, reviewed program area relationships being analyzed during the predesign phase, as well as key areas for potential cost savings and other cost options being explored. Budgetary challenges were touched on, specifically the state of the current construction market and their potential impacts to the project, as well as the volatility of escalation on the project budget. Estimated construction costs from the Master Plan as compared to the PPS Madison Budget were reviewed, along with a subsequent outline of Optional Priorities developed in the Due Diligence phase. Further work is being developed and will be presented as part of the Master Plan Update.

1.07 Group Activity and Report

- Learning Space Interactive – For this exercise, DAG members assembled into (6) individual to explore key areas of the Masterplan. Facilitated by Design Team members, each group participated in a brainstorming session to imagine learning possibilities by the grouping together programs and related spaces with desired features that enhanced those programs or activities. The exercise focused on the following Programs located in two key areas of the facility:
 - Career and Technical Education (CTE) Programs
 - Science
 - Visual and Performing Arts

Groups were provided with “Game Boards” with floor plans located in two key areas of the facility, and “Playing Cards” with images illustrating learning activities or text describing design qualities. Three groups focused on the “STEM” wing, while the balanced focused on the “Arts” area. The goal was to think about ways these spaces work together to support different learning opportunities.



- Group Interactive Report Back – Each group reported back to the DAG following the brainstorming session, describing their vision.



Summary Comments

CTE Science

- Make it interesting that attracts students not already engaged
- Transparent and active – not looking like a typical classroom
- Place to demonstrate – visible to public or visitors
- A “home-base” for teachers where teachers can get together within their department is important to create a community – this could have a fridge, printers, coffee, restroom...
- Labs that open to the outside and a garden
- Small group learning areas if they are highly transparent and visible
- Open space for students to work so they are not on the floor in the hallway
- Flexible and Modular work tables
- Natural Light
- Lots of Storage
- Overhead retractable power
- Science Balcony – roof top outdoor space

Fine and Performing Arts

- More accessible and visible art and performance space to the public (hard to find now) – Use Commons as a lobby and access point to auditorium
- Open gallery space
- Flexible work space that could be used by different groups – scene shop is a dirty makerspace
- Open student work areas for projects – need mobile white boards, work tables etc – not sitting on the floor
- Group student work rooms – would they reserve them?
- Greater connectivity between arts – scattered now
- Outdoor work area for theater and fine arts

Group 1 CTE Science



Group 2 Fine and Performing Arts



Group 3 Fine and Performing Arts



Group 4 CTE Science



Group 5 Fine and Performing Arts



Group 6 CTE Science



1.08 DAG Next Steps and Public Comment

DAG Meeting 2	January 22	Review MP Update
Final Report to Board	January 23	
Board Master Plan Update Review	February 20	
DAG Meeting 3	February 26	Franklin HS Tour
Optional Meeting	February TBD	Roosevelt HS Tour
DAG Meeting 4	March 19	Design Options
DAG Meeting 5	April 16	Preferred Option
DAG Meeting 6	May 14	Review Schematic Design
DAG Meeting 7 – If Required	September	

End of Meeting Notes

MEETING MINUTES

Meeting Name: Design Advisory Group 02

Project Name: **Madison High School Modernization**

Project Number: 4722-01

Meeting Date: 1/22/2018

Meeting Time: 6:00-8:00pm

Location: Madison High School Library

Attendees:
(shown in **Bold**)

PPS and Design Team

Jessie Steiger	PPS OSM
Paul Cathcart	PPS OSM
Ayana Horn	PPS OSM
Petra Callin	PPS MHS
Dan Jung	PPS OSM
David Mayne	PPS OSM
Derek Henderson	PPS OSM
Alec Holser	Opsis
Randall Heeb	Opsis
Steve Nelsen	Opsis
Kirstin Justice	Opsis
Bryce Tolene	Opsis
Max Frixione	Opsis
Joann Dao Le	DAO
David Horsley	DAO
Nancy Hamilton	NHC
Stephanie Barnhart	NHC

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Raymond Cheng
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Jim Holstein
Sue House
Chuck Jones
Amber Lamadrid
Kathryn Lindstrom
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Laura Spidell
Nancy Sullivan
Thao Duc Tu
David Valenzuela
Chad Whipple
Anna Cabello
Adie Cheyne
Ally Shuell
Julian Darion
Max Jacobs-Sherbilor

These notes represent our understanding of the meeting discussions. Communicate revisions to Opsis.

Item Discussion

- 2.01 Welcome and Announcements
- Reviewed the Codes of Conduct
 - Reviewed the DAG Charter
 - Review MPC Vision Statement
 - Portland Parks and Recreation announced it is creating a Citizen Advisory Group for anticipated improvements to the park. Contact PP&R if you or someone you know is interested in participating.
 - Early cost estimates are being prepared. Industry costs are high so there will be pressure on the scope and budget.
 - An optional tour of Roosevelt HS will be scheduled. Email Jessie if you would like to attend.
 - The next DAG meeting will include a tour of Franklin HS. Email Jessie if you would like to carpool to the school.
 - Reviewed the project schedule.
- 2.02 Co-Chairs Recognition
- Raymond Cheng: Portland Resident, Architect. Previous DAG on Oregon Episcopal School
 - Ana Munoz: Program/Site Use Partner. Member of the Latino community, and MPC member.
 - Doug Pruitt: High School Cluster parent, Architect.
- 2.03 Master Plan Update
- Reviewed building organization
 - Reviewed program layout
 - Review cost reduction options
- 2.04 Lesson from DAG 01
- Consider adding elevators in classroom areas. Design will study elevator speeds and trip times which will improve with new elevator.
 - The number of lockers needed will be determined with school administration.
 - Manage acoustics in the commons.
 - CTE should offer hands-on class, not just digital programs.
 - Offer accessible spaces if stadium is offered.
 - Consider vertical access to all 3 levels within the crossroads.
- 2.05 3D Visualization – Fly-thru: Open discussion
- Acoustics are important in public spaces
 - Flexible furniture
 - Extended Learning should be visible and connected to classrooms



2.06 Group Activity and Report

- For this exercise we want to explore two key areas of the Design to imagine the possibilities and opportunities these spaces can bring to a new Madison.
- Commons / Crossroads
 - What makes a successful Commons – Light, Space, Materials...
 - What Community Uses can the Commons support
 - What Issues might a Commons have – Noise, security, crowding...
- Classrooms / Extended learning
 - What makes a successful Classroom – Flexibility, Supports Group work, Natural Light, Technology...
 - How can Extended Learning Spaces be used for Classroom Break-outs, observation / control
 - Who / When / How can Extended Learning spaces be used.

Group 1 – Classroom / Extended Learning

- Flexible Furniture can improve room use
- Gather into circles – engage the entire room
- Foster movement in room
- Accommodate groups – 4/5
- Accommodate after school programs
- Glass – some good, too much can be a distraction
- Display surfaces – good, limit glass
- Teachers – changing rooms hard
 - mobile furniture can help
 - Limit distance between rooms
- Keep temperatures the same in all room (solar exposure, mechanical controls)
- Community
 - near commons
 - student hangout
- Extended Learning
 - Before / After school casual use
 - Include smaller rooms of 15-20
 - more open
 - Visual Control – teachers
 - Soft furniture (some in classroom too)



Group 2 - Classroom/Extended Learning

- Flexible Furniture is key to using the classrooms in multiple ways from one class period to the other. Wheels on chairs and tables are good as long as they don't cause noise in the rooms below (a current problem when moving tables without wheels).
- The most common size for work groups in a classroom would be 3-6 students. The ability to let students leave the classroom in these groups (mostly now into the hall or library) is often dependent on their grade level – the more advanced grades acting more responsibly.
- If a group work space could be immediately outside the classroom and visible through glass from the teacher stations, they would more likely be used
- Informal study and work areas would get use for after school groups that now are always trying to find open classrooms or other spaces to meet.
- The Crossroads would be a great space for student organization events and in particular performance with music during lunch since there is not a space currently for that to happen in the school. A soft floor at the bottom of the crossroads would be great to sit on.
- Open informal like the Crossroads or other similar spaces should be located where there are “eyes on the street” from administration functions – like the library overlooking the crossroads.



Group 3 – Commons/Crossroads

- Commons should accommodate a variety of functions
 - Dances (can't currently wear heels on gym floor)
 - Place to meet in smaller groups
 - PTA – Meet in Library now, could use commons
 - Choir, drumline, temporary art installations.
- Include an A/V System for educational and community presentations
- Limit attraction / interest along 82nd.
- Acoustics is also important
 - Commons is near some classrooms, hallways, etc.
 - Crossroads and the library are nearby.
 - Consider insulating/laminating glass for noise control at extensive glazing areas.
- Furniture needs to be flexible
 - Now, about 50% of the students eat in the café during the 37-minute lunch period. The rest eat throughout the school, in hallways or classrooms.
 - Furniture should be rearranged conveniently
 - Stackable (detached) seats are more flexible than attached tables and chairs. Better for community events.

- Seating shown seems too regimented. Have different sizes and types of furniture to allow for both a large and small eating groups.
- The east glass brings in morning light, so can wake up and be ready to study.
 - Daylight Control at large windows
 - South light is good (all day), will need sun and light controls.
- Like the connection to the outdoors.
 - Think about air infiltration and durability of doors, consider sliding doors instead of garage doors.
 - Visual connections from Commons to the Park
 - What can outdoor park be?
 - Covered for use during inclement weather – like Portland often has
 - Benches in the courtyard corners, would be nice as a place to eat on nice days.
 - Flexible site furnishing, low planter walls, benches for instead of tables and chairs.
 - Consider roof covering for part of the courtyard for dining outdoors on rainy days.



Group 4 – Commons/Crossroads

- The Commons will be used for a variety of focused gatherings and the flexibility of the furniture is important to consider. It would be ideal if the tables could be easily collapsed and moved.
- A variety of table sizes and configurations would be preferred to allow for different size student groups. A more random seating pattern was discussed as more inviting than continuous rows of tables.
- There currently is not enough space in the cafeteria to support the number of students who wish to use it. Students often eat in the hallways or off campus. If the new Commons is appropriately sized for the population, it would be utilized more.
- The current cafeteria is also used as a dance studio and the new Commons could be used in a similar manner.
- In discussing the materiality of the Commons, wood was discussed as preferable for its warmth and is indicative of the NW region. Fabric furniture is seen as a negative as it would be prone to damage and a challenge to keep clean.
- The accessibility and distribution of outlets and charging stations for mobile devices, laptops, etc should be considered in the Commons layout as students will naturally gather where charging is available.
- Having large amounts of glazing is seen as a positive as it would let in natural light and open views to other parts of the school, provided the heat/cold transmission through the glass is controlled via sunshades, screening, etc.
- Acoustics in the large Commons is also an area to be studied as the design progresses.



2.07 DAG Next Steps and Public Comment

Optional Roosevelt Tour
DAG Meeting 3
DAG Meeting 4
DAG Meeting 5
DAG Meeting 6

February 15
February 26
March 19
April 16
May 14

Roosevelt HS Tour
Franklin HS Tour
Design Options
Preferred Option
Review Schematic Design

End of Meeting Notes

MEETING MINUTES

Meeting Name: Design Advisory Group 03

Project Name: **Madison High School Modernization**

Project Number: 4722-01

Meeting Date: 2/26/2018

Meeting Time: 6:00-8:00pm

Location: Franklin High School Facility Tour

Attendees:
(shown in **Bold**)

PPS and Design Team

Jessie Steiger	PPS OSM
Ayana Horn	PPS OSM
Petra Callin	PPS MHS
Dan Jung	PPS OSM
David Mayne	PPS OSM
Derek Henderson	PPS OSM
Alec Holser	Opsis
Randall Heeb	Opsis
Steve Nelsen	Opsis
Kirstin Justice	Opsis
Bryce Tolene	Opsis
Max Frixione	Opsis
Joann Dao Le	DAO
David Horsley	DAO
Nancy Hamilton	NHC
Steph Barnhart	NHC
Kristin Merkel	DAO
Max Archer	DAO

Public Attendee's

Susan Stone	PPS
Debra Westom	PPS retired
Khang Tran	Skanska

Design Advisory Group Members

Eric Bennett
 Brian Butenschoen
 Yolanda Cabrera
Raymond Cheng
Elena Collazo-Santiago
 Kelly Dwight
Laura Gifford
Maria Paz Herrera
Jim Holstein
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Laura Spidell
 Nancy Sullivan
 Thao Duc Tu
 David Valenzuela
Chad Whipple
Anna Cabello
Adie Cheyne
 Ally Shuell
 Julian Darion
 Max Jacobs-Swerbilov

These notes represent our understanding of the meeting discussions. Communicate revisions to Opsis.

Item Discussion

3.01 Welcome and Announcements

- Optional tour of Roosevelt occurred on February 12, and was attended by approximately 15 District, DAG, and Design Team Members.



3.02 Master Plan Update

- An update to the Master Plan is being completed and will be submitted to the FAO committee the first week of March. Information currently being finalized for inclusion into the report includes updated construction costs and updates to the conceptual plans
- Alec Holser of Opsis provided an overview of updates to the conceptual plans, including modifications to the building organization or program layouts updated since the last DAG Meeting in January. Revisions included the following:
 - Relocation of the CTE program spaces to a centralized location near the performing
 - Relocation of the Auxiliary Gym to the East side of the existing Main Gymnasium, including improved after hours and ADA access
 - Demolition of the existing Theater, and reconstruction aligning with PPS Ed Spec requirement. Reconstruction will help mitigate costs associated with seismic improvements. The new layout will improve visual and functional connections between the theater to the Commons and strengthen the connection to the Crossroads.

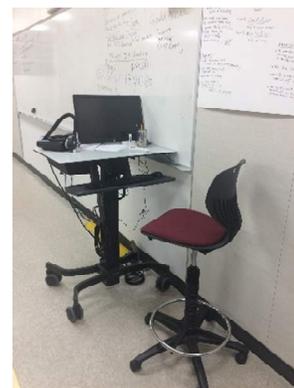


3.03 Tour and Group Activity

- For the tour, the DAG Committee members broke up into two groups for a guided tour of the Facility. DAG team members were asked to each take 3-4 photos of spaces or elements they find to be compelling examples of building elements that enhance to learning environment and contribute to a successful facility. Attention on the tour was paid to the following areas:
 - Commons / Cafeteria:
 - Use of flexible seating in multiple arrangements
 - Large windows daylighting the space during school hours



- Library (Theater conversion)
- Main Entry and Administration
- General Classroom space
 - Transparency between instructional spaces, with the ability to provide some privacy with window coverings
 - Furnishings allow for a flexible learning environment
 - Access to technology, including projection and access to WIFI



▪ Science Labs

- Seating arrangement at island counters provide ample room for students
- Utilities (water, gas) are provided at instructional stations
- Ample flow allowing students to move around
- Access to technology appropriate for instruction



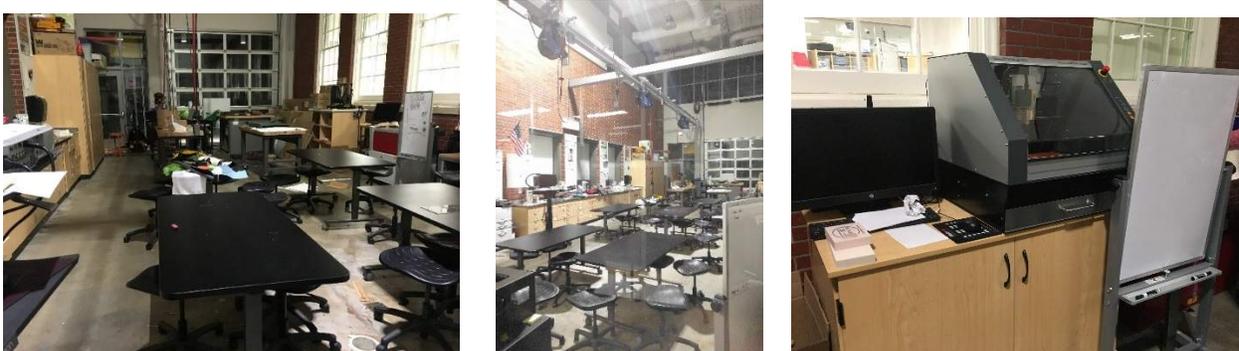
▪ Extended Learning Spaces

- Flexible furnishings allowing for various small group activities
- Access to technology
- Transparent between the instructional and extended learning spaces allowing for sightlines for teachers from nearby classrooms



▪ Maker Spaces

- Mobile equipment, ample storage, and access to power
- Space appears active, and transparent to adjacent spaces in a way that might attract students not already engaged in the activities taking place in these spaces. Doesn't look like a "typical classroom"



- Theater and Black Box
 - Flexible seating arrangements in the Black Box
 - Good public access to the theater and black box without having to navigate through the whole school



- Band and Choir
 - Adequate secure storage for equipment and instruments
 - Well equipped with current technology
 - Acoustically separated between instructional spaces and practice rooms



- Gym / Athletics
 - Exterior windows are providing natural light and connection to outdoors
 - Space provides support for a variety of uses beyond athletics
 - The space is usable after non-school hours maximizing use of space without having the whole school open
 - Re-use of materials (flooring) from old school into the new design



- SPED
 - Mobile furnishings allowing for flexible learning arrangements
 - Access to appropriate equipment to allow for life skills



3.04 DAG Next Steps and Public Comment

DAG Meeting 4	March 19	Design Options
DAG Meeting 5	April 16	Preferred Option
DAG Meeting 6	May 14	Review Schematic Design

End of Meeting Notes

MEETING MINUTES

Meeting Name: Design Advisory Group 04

Project Name: Madison High School Modernization

Project Number: 4722-01

Meeting Date: 3/19/2018

Meeting Time: 6:00-8:00pm

Location: Franklin High School Facility Tour

Attendees:
(shown in **Bold**)

PPS and Design Team

Jessie Steiger	PPS OSM
Ayana Horn	PPS OSM
Petra Callin	PPS MHS
Dan Jung	PPS OSM
David Mayne	PPS OSM
Derek Henderson	PPS OSM
Alec Holser	Opsis
Randall Heeb	Opsis
Steve Nelsen	Opsis
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Susan Stone	PPS
Debra Westom	PPS retired
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Chad Whipple
Anna Cabello
Adie Cheyne
 Ally Shuell
 Julian Darion
 Max Jacobs-Swerbilov

These notes represent our understanding of the meeting discussions. Communicate revisions to Opsis.

Item Discussion

- 4.01 Welcome and Announcements
- A project schedule update was provided.
 - The Public Open House was scheduled for May 8th. This is after a staff meeting, and same night as PTA Meeting. DAG members should help make sure the community is invited to participate. Members should attend and help explain the progress.
Update: This meeting will be postponed to a later date
 - The design team has led a considerable number of stakeholder engagement meetings to date and has many more meetings scheduled. Stakeholders include teachers, MHS administrators, District administrators, facilities and community partners.
 - Fortis Construction was selected as the CM/GC (Construction Manager /General Contractor) for Madison High School. The selection was made based on Qualifications and interviews. Fortis will provide scheduling, constructability and cost support throughout the project. Fortis will also support field verification and testing this summer.
 - Blain Grover, senior project manager for Fortis, attended the DAG meeting and introduced himself and the firm. Opsis and Fortis have completed many projects together and will work with PPS to build an integrated team.
- 4.02 DAG 3 Review
- Opsis recapped the optional tour of Roosevelt HS and the tour of Franklin HS conducted as DAG 3. Members were encouraged to take photographs and share their observations of design conditions considered either successful or contrary to Madison intent. See the DAG 4 Presentation for those comments. Themes included:
 - Prefer to see more student art
 - The music rooms supported student development
 - The SUN room was not sufficient to meet MHS needs
 - There is a need for a space that can hold up to 50 people
 - FHS entry was bright and welcoming
 - Maker Space need ample floor area to accommodate all uses and accessibility
 - Some leftover spaces from remodel were awkward and unsuitable for students
 - Student Store was well liked
 - Size of the cafeteria at FHS seems small
 - Wood Panels bring in outdoors / nature
 - Adequate lockers should be provided
 - Much appreciation for branding, re-use of gym flooring, and name/branding
 - Avoid all white sterile walls
 - Shades on hallway windows were often drawn down, defeating the openness and transparency that was intended.
 - Support for extended learning areas, modern student directed space
 - New theater was well liked
- 4.03 Theater Analysis: Opsis recapped the analysis that shows replacement of the Auditorium with a Theater matching Ed Spec is the preferred direction for Madison. Factors include:
- The ED Spec Theater is primarily intended to provide theatrical and music education
 - The teacher need visual connection to students, all circulation must be within the room
 - Auditorium has too many seats and sight distances are extreme
 - Typical audiences fit in the 500-seat theater with appropriate sight-lines
 - Better accessibility and acoustics in smaller space
 - The large auditorium also has excessive circulation around the house including unsupervised space facing the park
 - The auditorium is in the center of the school and block circulation and a special connection to the entire school

- The arrival path to a new theater from the new commons improves on the circuitous path for the current auditorium
 - The large and tall auditorium will be more costly to renovate and seismically upgrade than a new right-sized theater
 - The auditorium renovation carries a greater risk of unknown conditions
 - The replacement layout properly aligns the theater, black box and scene shop in a most desirable configuration
- 4.04 Schematic Design Update: Opsis reviewed recent refinements to the building design including:
- Performing Arts Wing
 - Crossroads
 - Auxiliary Gymnasium
 - Locker rooms
 - Future Expansion areas
 - Opsis presented a 3D flythrough of the current design model
- 4.05 Site Plan: Mayer Reed reviewed recent refinements to the site design including:
- Reviewed entries, parking and service areas
 - Review improvements to the stadium and fields
- 4.06 Group Activity – Exterior Spaces: Mayer Reed led breakout groups to get input on the character of exterior spaces and program needs.
- General
 - Celebrate multiculturalism and school pride
 - Use color
 - Universal accessibility
 - Low maintenance
 - Microclimates
 - Address safety and security
 - Coordinate doorway locations with circulation needs/desires
 - Entry from 82nd Ave
 - School ID: school pride, multiculturalism, identity pieces
 - Wayfinding:
 - Progression to main entry
 - Pedestrian connections: bus stops, sidewalk, front park parking lot, etc.
 - To Auditorium entry: procession, lighting
 - Vehicular circulation – clear and fluid
 - Safety of all modes of travel
 - Bike parking: covered, secured (fenced)
 - Roses need to be saved and transplanted into the new design.
 - Concern about limited quantity of parking and drop-off.
 - East Courtyard
 - Zen garden? mindfulness
 - Use stormwater to animate the space
 - Opportunity for habitat?
 - Acoustics and microclimates
 - Use Spaces:
 - South edge should be buffered (administration) from the Commons – visual, physical
 - Maybe some seating, but minimally, small groups
 - Concern about people using the space feeling like they are in a “fish bowl”.
 - West Courtyard
 - Large enough for several trees
 - Acoustics and microclimates
 - Use stormwater visibly

- Circulation: deliveries, pedestrian
- Outdoor storage?
- Use Spaces
 - Outdoor Amphitheater
 Music, plays, poetry, lunch
 Capacity?
 - Covered outdoor area for rainy day use.
 - Seating with versatility and character: like the “purple bench”
 - Multi-use space that can accommodate different programs
 - West side to be more construction based.
 - Need a buffer from east side? Visual screening?
 - Covered work areas?
- South Lawn / Garden
 - PP&R Community Garden will be moving to Glenhaven Park.
 - View of Mt. Hood from library doors.
 - Cobb house was built in 2006 and has a time capsule in it. It is successfully used as a covered outdoor classroom, during the year and for summer programs. If the house is removed there should be a ceremony to do so.
 - The gardens are used in the summer as well: internships (growing and selling crops), Ninth Grade Counts
 - Don't need after-hours access to the library through existing door. Visitors must use front door of school.
 - Pros
 - Student Garden is liked and well used. Strong staff mentor: Sustainable Agriculture teacher, Susan Wiencke.
 - Great views of the surrounding landscape.
 - Cons
 - Homeless population comes into the garden; eats produce, sleeps in cobb house.
 - Rats are seen on the zig-zag stairs at the se corner, possibly living in the overgrown hillside vegetation.
 - Compost delivery – trucks cannot drive to the garden, dump material next to flagpole.
 - Use Spaces
 - Student garden to remain. Improve. Raised accessible planting areas.
 - Contemplative, meditative space – mindfulness class, mandala (walking meditation)
 - Outdoor classroom. Covered preferred.
 - Outdoor study area connected to the library. Would it have to be fenced?
 - Cross pollination of school curriculums – library, agriculture, science labs.
 - Create habitat for pollinators
 - Outdoor lab space? Currently use football fields to set off rockets.
 - Areas for learning how to harness energy: water, sun, wind
 - Stormwater harvesting for agricultural use.

4.07 DAG Next Steps and Public Comment

- Concern for Future Enrollment if we don't get “the best” facilities
- The district will let the DAG know when Madison will be presented to the school board
- The DAG would like to learn about district plans for bus transportation to Marshall
- What is the process for relocating the public garden to Glenhaven Park?

DAG Meeting 5	TBD	Preferred Option
DAG Meeting 6	TBD	Review Schematic Design
Board Presentation	TBD	

End of Meeting Notes

MEETING MINUTES

Meeting Name: Science

Project Name: Madison High School

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: 12/7/2017

Attendees:	Jessie Steiger	PPS Project Manager	Alec Holser	Opsis
	Ayana Horn	PPS Project Coord	Randall Heeb	Opsis
	Petra Callin	MHS – Principal	Steve Nelsen	Opsis
	Treothe Bollock	Chemistry, Physics	Kirsten Justice	Opsis
	Rachael Stagner	Chemistry, Forensics	Bryce Tolene	Opsis
	Garth Fossen	Physics / Math	Joann Dao Le	Dao
	Tim Kniser	Science		
	Sue House	Bio, Physics, AP Envi		
	David Valenzuela	Bio Medical		
	Garth Fossen	Physics		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Science classes and future program needs.

- TOSA – 6-12 Science STEAM - Kristin Moon kmoon@pps.net
- | <u>Instructor</u> | <u>Room</u> | <u>Subject</u> |
|--------------------|-------------|---|
| • Treothe Bullock | C60 | Biology/Chemistry |
| • Leslie Cowley | | Biology |
| • Garth Fossen | C57 | AP Adv Math/AP |
| • Sue House | C55 | Biology/AVID (Advancement Via Individual Determination) |
| • David Kennedy | | Math/Physics |
| • Tim Kniser | C51 | AP Chemistry |
| • Erik Mellgren | | Biomed/Biology |
| • Rachel Stagner | C53 | Forensic Science |
| • David Valenzuela | B67 | Biology |

General

- Review “Next Generation Science Standards” – student directed education
- 36-students – allow for (4) extra students at ends of desks for 40 students total
- Short throw projector on white boards
- Locked display in the corridors – staff aren’t reliable about updating

- Informal or Breakout learning space would be great
 - needs to be under full control of teacher, visible but separate space, limit doors to hall
 - open hangout space will collect garbage unless supervised by teachers
 - shared group rooms would “address kids that want to go work in the hall”
- Technology must stay in the room
- Students work in cohorts of 4
- Consider security, avoid windows that are easy for intruders
 - ACTION: Talk to David about bio-med as CTE – in science room or separate, additional
 - ACTION: Plan a tour of Franklin science labs one Tuesday afternoon (date?)
- Student Numbers
 - labs – (8) groups of (4) where fixed stations are provided
- non-chemistry science spaces
 - 4/5 students per lab station
 - (1) sink between stations serving (8) students
 - Double sink needed for prep
- Maker Space should be multi-story
- Students should be able to interact with the building construction
 - Water storage
 - Solar array’s

Science Labs

- Physics (math heavy) - 425 students - Treothe, Garth – physics, chemistry, micro-chemistry
 - 425 students / 36 students-per-class = 12 class periods; 6 classes per room = 2 rooms
 - Need room height
 - Projection onto whiteboard
 - Teach in cohorts – break up into groups
 - Outdoor learning area, protected (covered) courtyard
 - Should not be facing 82 for security reasons (transients and break ins)
 - Should be open to school
 - CTE should have access
 - Share Makerspace
 - Should be on ground floor (preferred)
- Chemistry - 425 Students - Chemistry, AP Chemistry, Chemistry for artists
 - 425 students / 32 students-per-class = 14 class periods; 6 classes per room = 3 rooms
 - Big open space flexible space (docking tables????)
 - Just a few benches
 - Groups of 4, facing the same way
 - Teach to multiple screens
 - No instructor’s station – give space to students
 - Prefer all instruction, not split lab/class
 - Teach to long wall so students are closer
 - Rachel – Students in power

- Preference is to limit the amount of storage in the lab, and provide it somewhere else
- Maximize the screen, with markerboard behind
- (2) rooms to be plumbed to islands, possibly (3). Balance of Labs to be flexible w/ tables.
- Chemistry Prep
 - Visibility – glass from adjacent classrooms to see if instructor needs aid
 - Room for carts – planning multiple classes
 - Shared between labs
- Biology – 425 students - biology, physics, environmental science (earth)
 - Outdoor learning
 - Makerspace for engineering tools
 - Aqua-culture
 - Find ways for students to interact with the building – rainwater, water, power
 - Bio-Med – Largest CTE Program at Madison
- Food Lab
 - Food safe materials
 - Not Culinary Arts – need to define what this means
 - Does this align with Sustainable Agriculture?
- Sustainable Agriculture is in CTE
 - Does this align with earth sciences?
 - Wants a “test/teaching kitchen
- **Action:** Determine total number of science labs required

Meeting Wrap-up

- Determine way to use staff meeting time and visit Roosevelt or Franklin, to talk with staff on lessons learned
- Could break it up for Lab Tours

Required and Elective Classes

PHYSICS - Required Freshman Year

CHEMISTRY – Required Sophomore Year

BIOLOGY – Required Junior Year

AP BIOLOGY

AP CALCULUS AB

AP CHEMISTRY

AP ENVIRONMENTAL SCIENCE

AP ENVIRONMENTAL. SCIENCE WELCOME

AP HUMAN GEOGRAPHY

AP PSYCHOLOGY

AP Psychology Summer Fun

Unit 1.1 Approaches in Psychology

Unit 1.8 Who is the Cat that Curiosity Killed?

Unit 3.15 Brain Structure Chart

Unit 4.3 Simple Compelling Demonstrations of Retinal Disparity

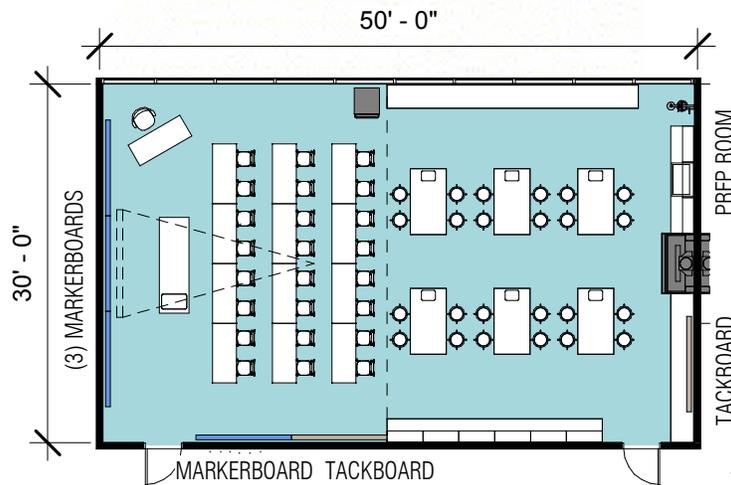
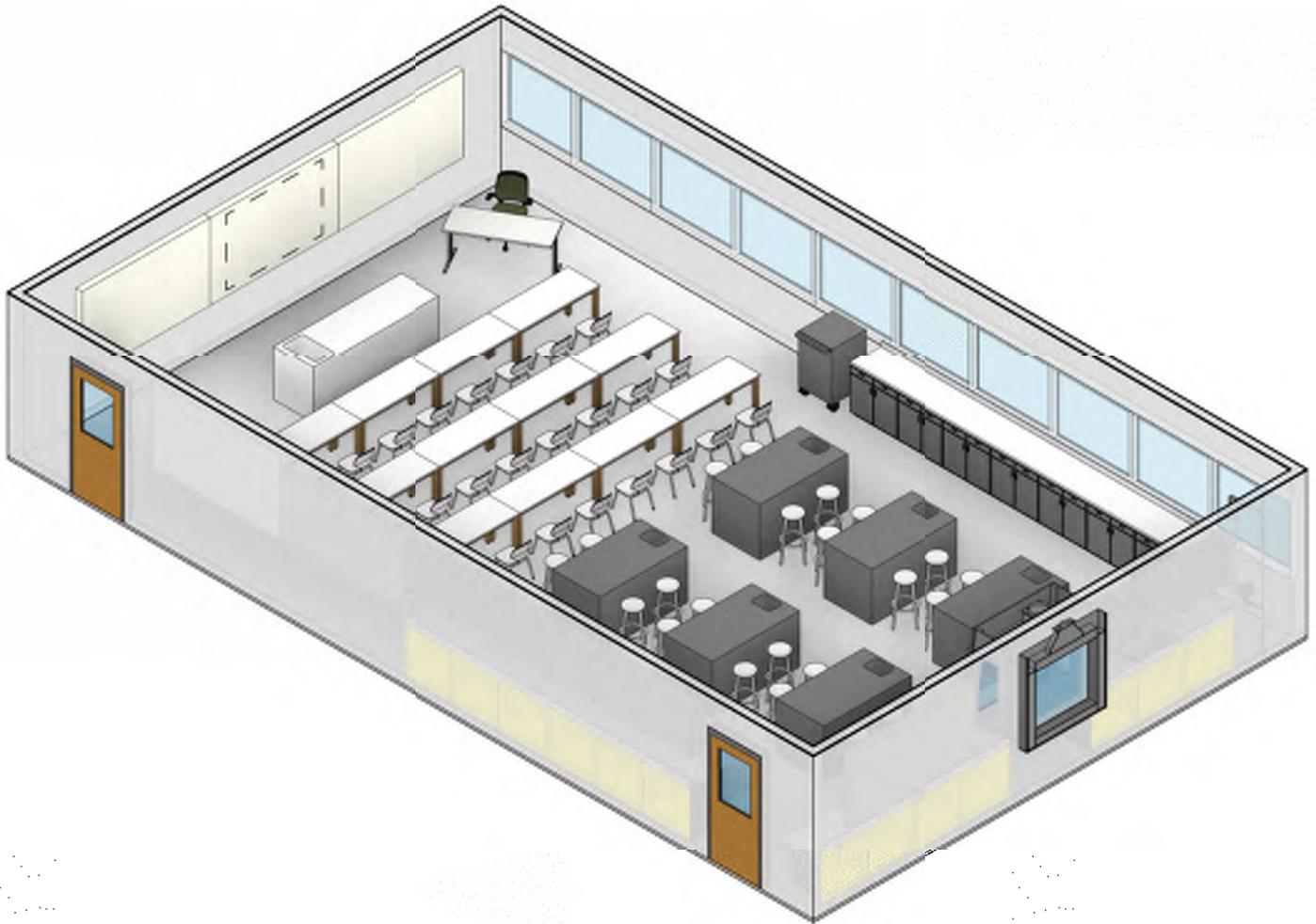
Unit 5.6 Sleep and Dreams

Unit 5.9 Neuroscience of Addiction

Unit 8.3 Motivation and Rock Music

Unit 11.6 Increasing Intelligence -- The Flynn Effect

End of Meeting Notes



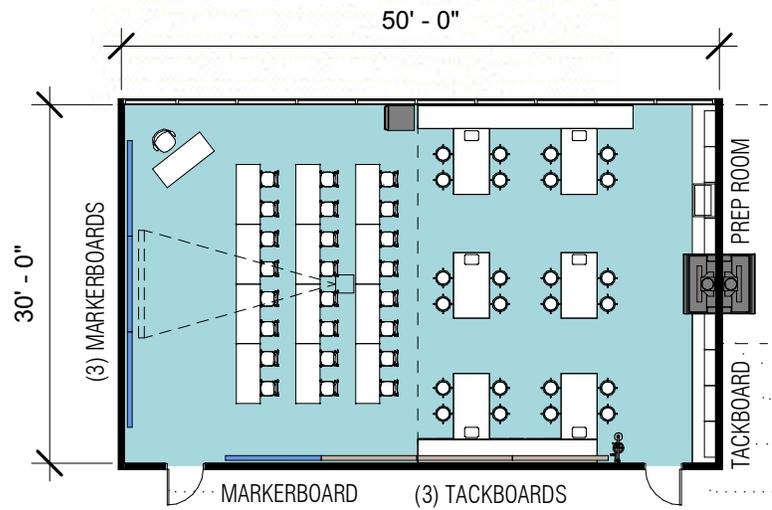
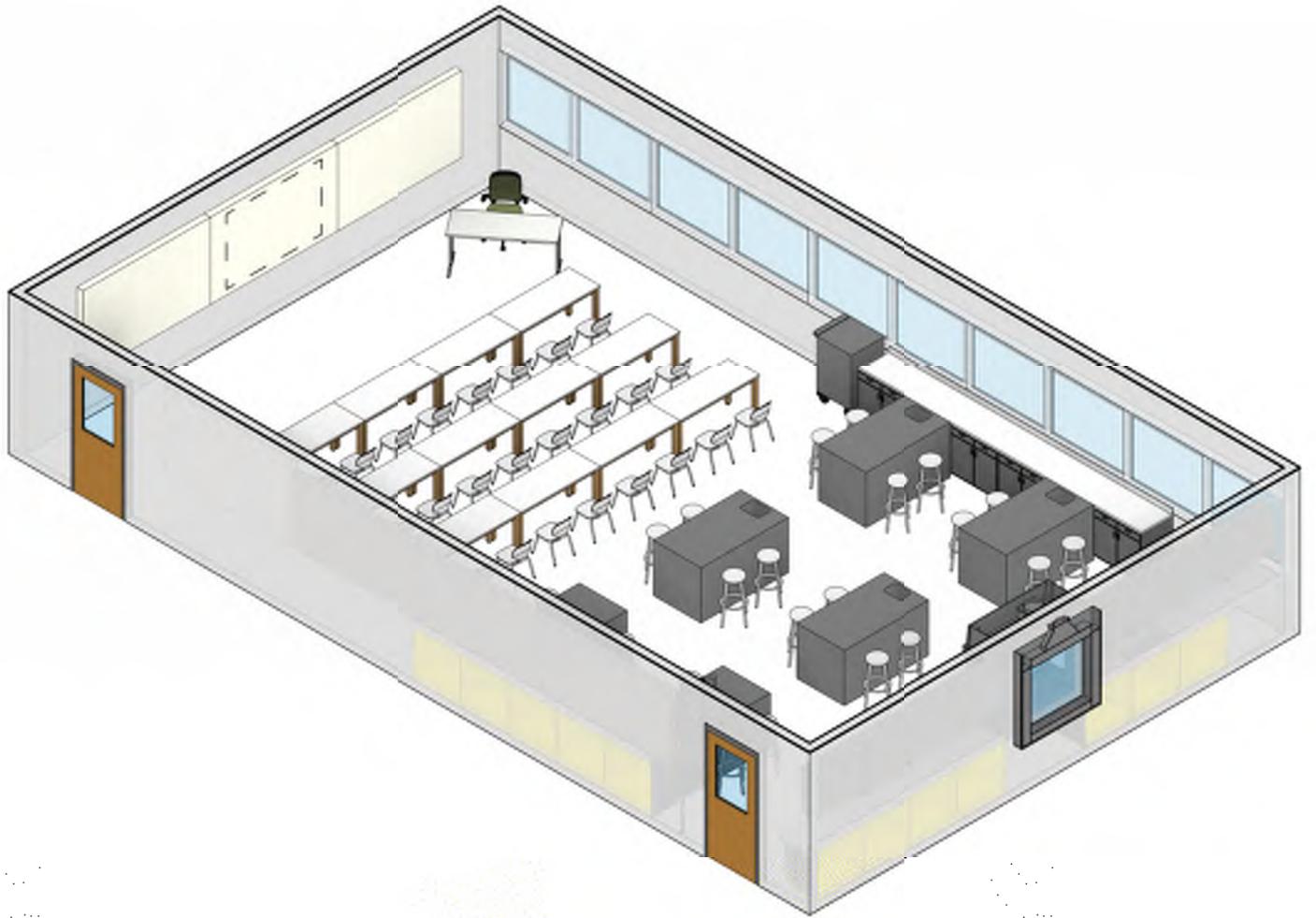
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 seat count lab island counters: 24

Core Program

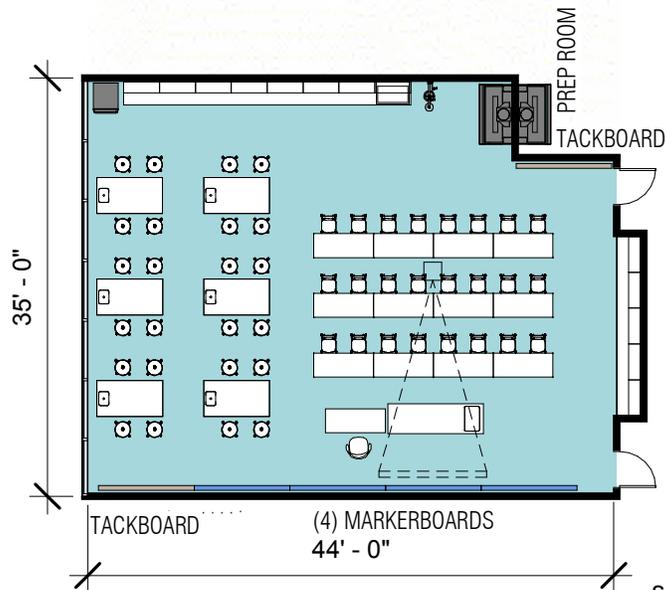
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Chemistry Lab 1A

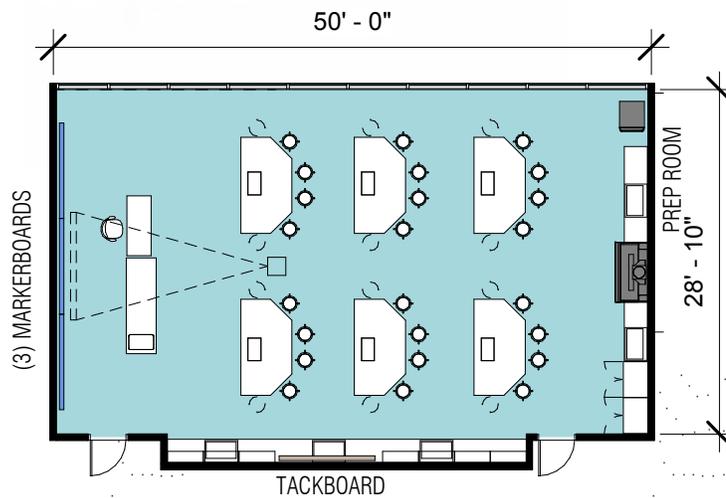
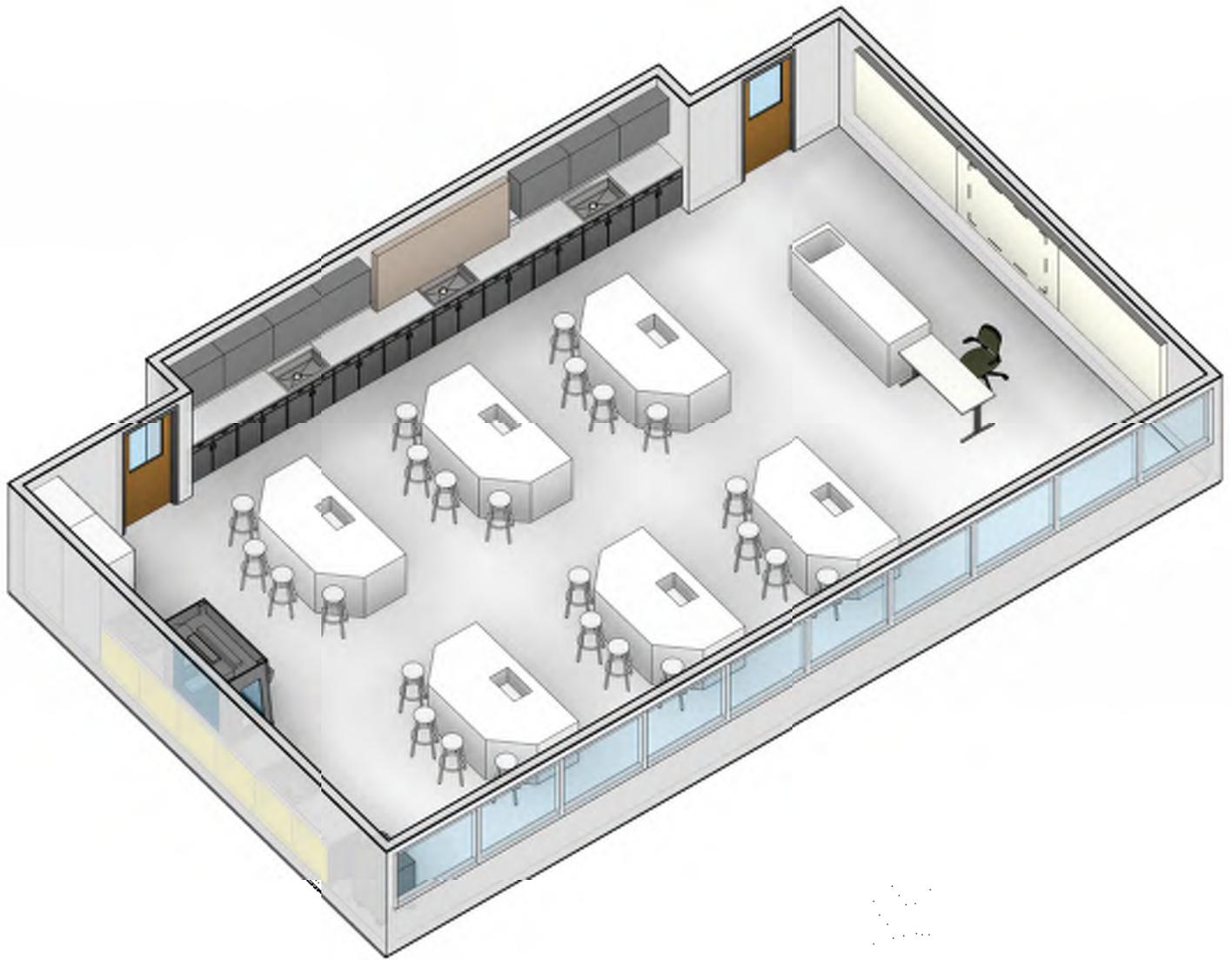
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seat count instruction area: 24
 seat count lab island counters: 24



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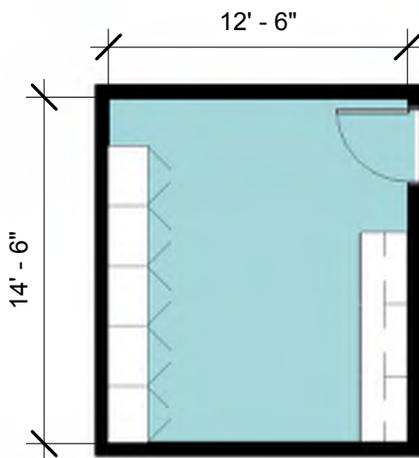
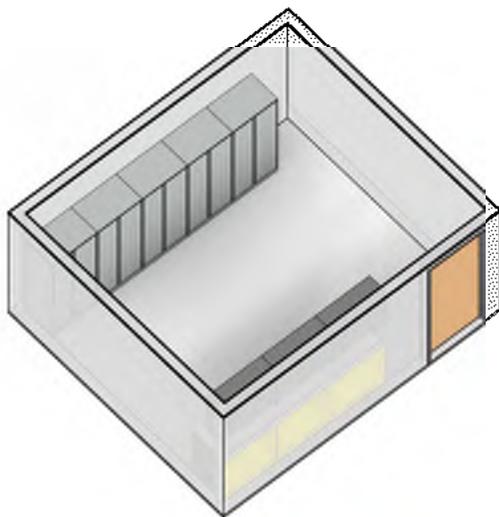


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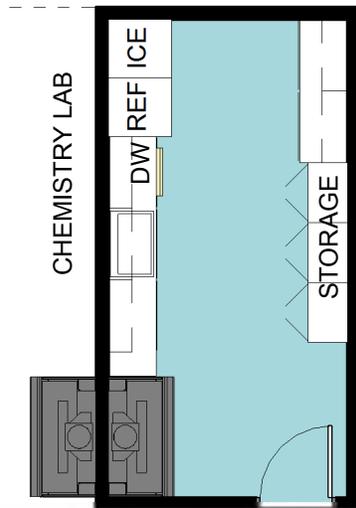
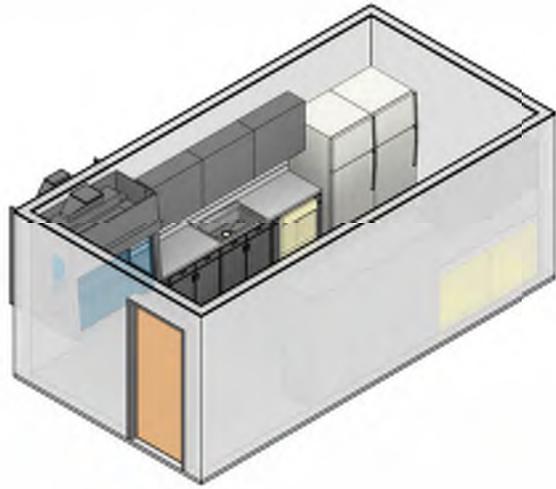
PROGRAM	Room Name	Science Lab	ROOM SIZE	Area Dimensions	1,500 SF
	Program Group	Core Program			
	Adjacency	Prep Room; Chemical Storage; Flexible Learning Areas			
	Description	support varying curriculum over time including core academic, career preparation and elective programming			
EQUIPMENT	Fixed	teacher instructional station; fume hood; gas and air spigots; projection screen; digital projector; fire extinguisher; cabinets w/doors and drawers; lockable teacher cabinet	OCCUPANCY	Hours	
	Mobile	blanket cabinet; goggle sanitizer; beaker drying rack; microwave; rod and socket assembly; computers; laptops; computer carts		Occ. Load	22 min. w/ counter space; 28 min. w/out counter space
SYSTEMS	HVAC			Security	
	Plumbing	(6) sinks min.per classroom, (1) for teacher station; eywash stations; emergency shower; potentially acid trap			
	Electrical	outlets to power computing devices and equipment; outlets at perimeter counters; overhead power; 32 outlets per room equipment matrix	BUILDING	Ceiling	
	Lighting	natural daylighting; direct/indirect; task lighting as required		Walls	(1) wall w/windows; min. of (2) 4x8 tackboards; min. of (2) 4'x16' magnetic whiteboards
	Audio/Visual	audio reinforcement		Floor	
	Communications	video outlet near demonstration area; wireless access point; telephone; clock/intercom		Doors	doors with re-lite windows
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves	
				Comments	chemical resistant surfaces for chemistry

11/29/2017

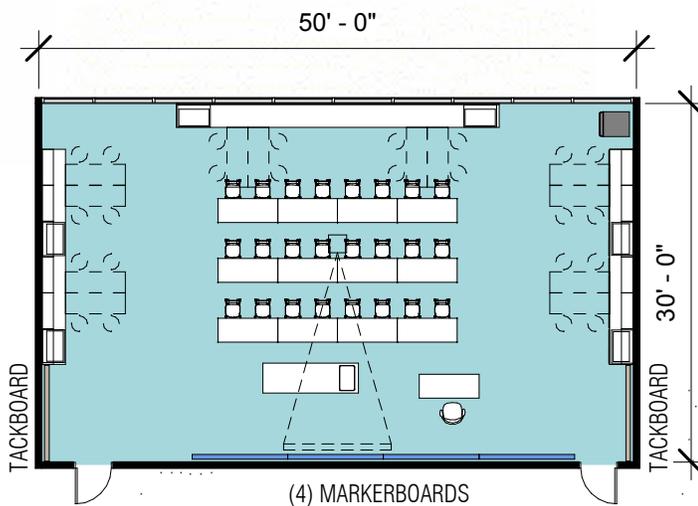
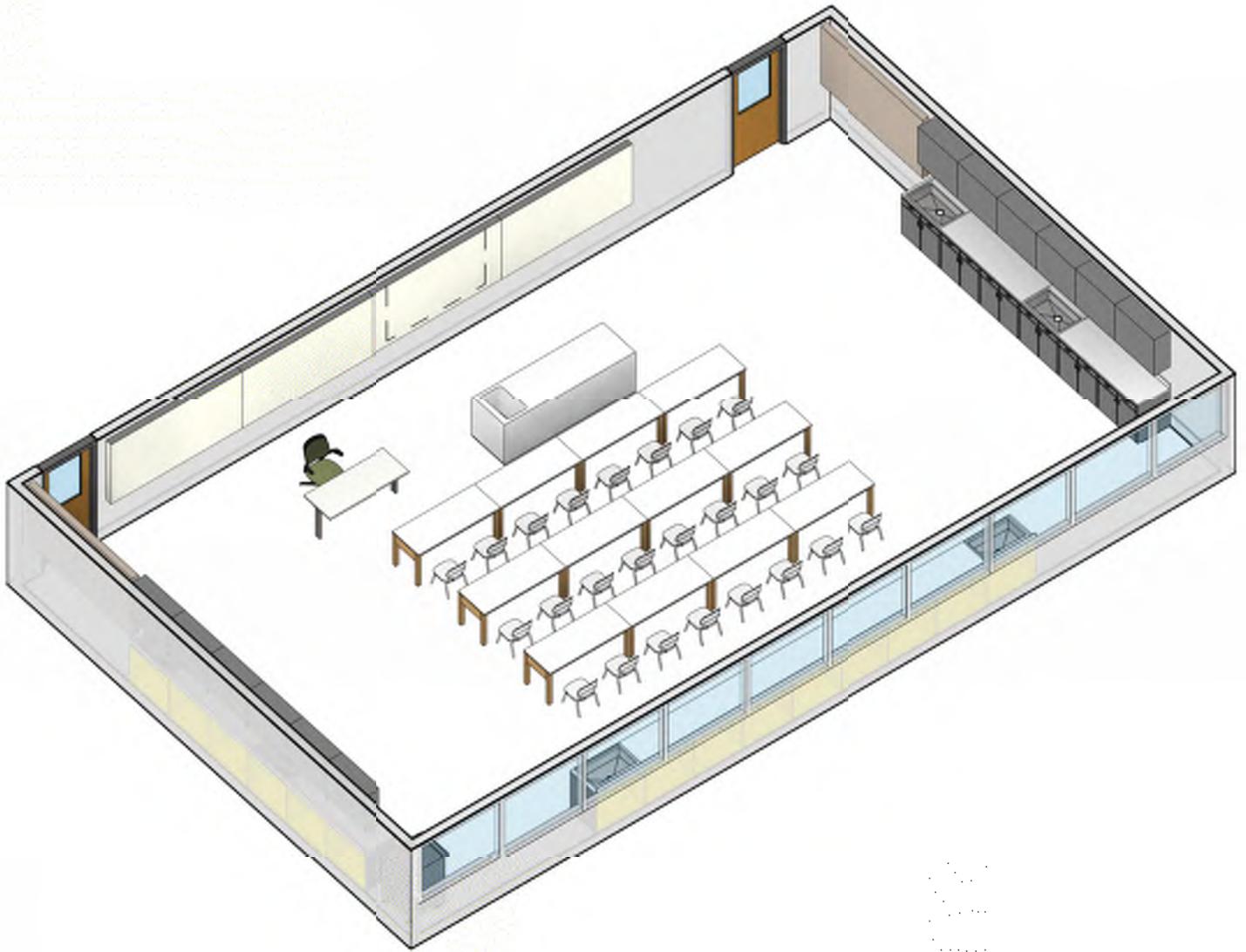


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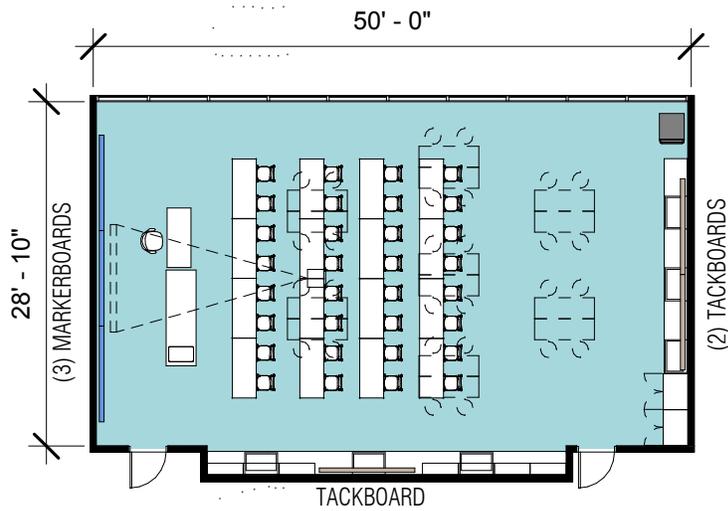
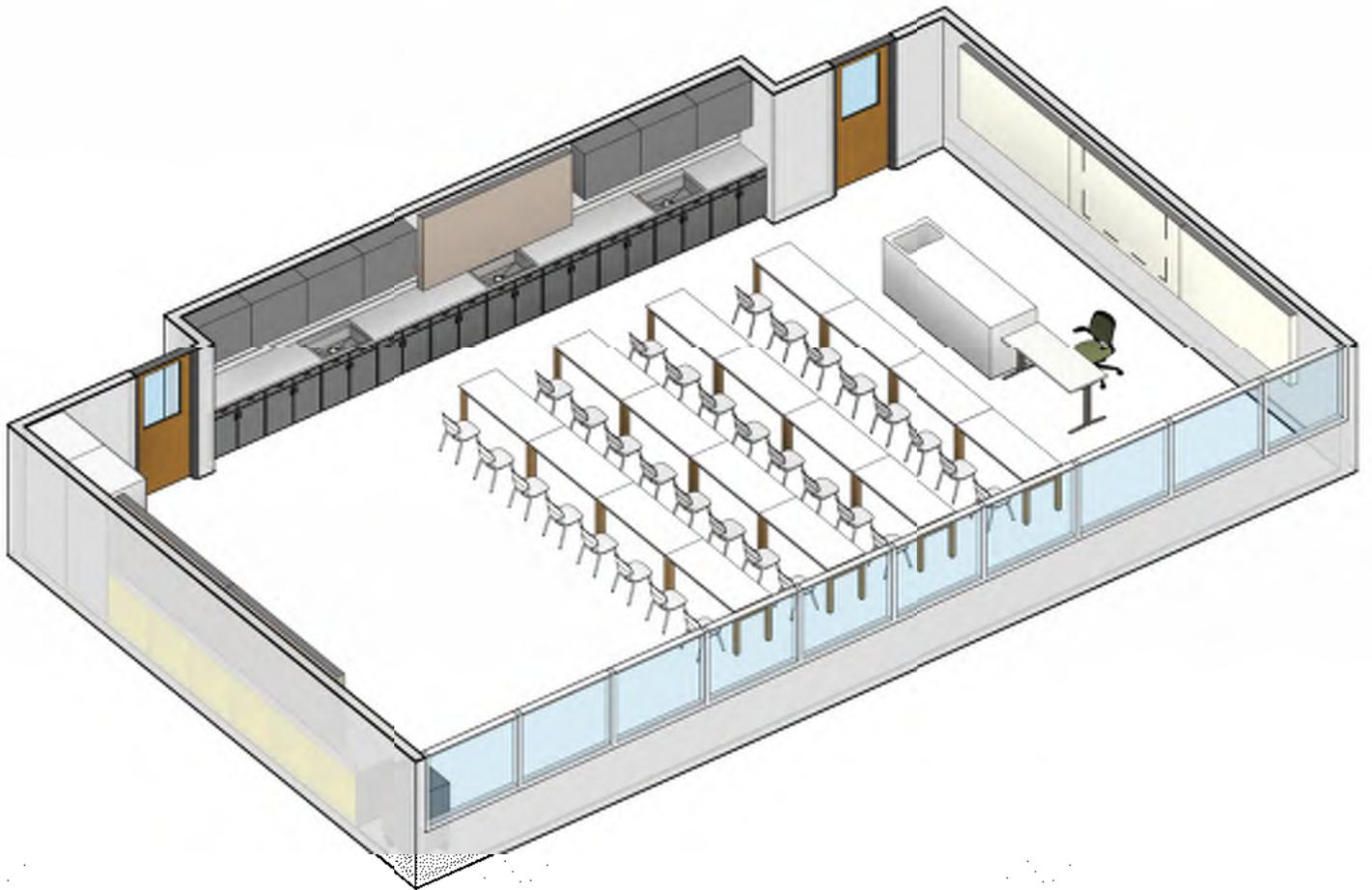
PROGRAM	Room Name Program Group Adjacency	Chemical Storage Core Program Science Classrooms; Prep Room	ROOM SIZE	Area Dimensions	180 SF
EQUIPMENT	Description Fixed	secure flammable and chemical storage cabinet; secure cabinets w/ doors and drawers of various sizes, adjust. shelving;	OCCUPANCY	Hours	
SYSTEMS	Mobile HVAC Plumbing Electrical	N/A convenience outlets	BUILDING	Occ. Load Security	secure
	Lighting	direct/indirect; task lighting as required		Ceiling Walls	
	Audio/Visual			Floor	hard surface, durable, chemical resistant
	Communications Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise		Doors Windows	none required
				Comments	



PROGRAM	Room Name Program Group Agency	Prep Room Core Program Science Classrooms; Chemical Storage	ROOM SIZE	Area Dimensions	200 SF
EQUIPMENT	Description Fixed Mobile	fume hood; gas, air spigots; deep freezer; refrigerator; dish washer; water purifier; secure flammable and chemical storage cabinet	OCCUPANCY	Hours Occ. Load	
SYSTEMS	HVAC Plumbing Electrical Lighting Audio/Visual Communications Acoustics	direct/indirect; task lighting as required acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise	BUILDING	Security Ceiling Walls Floor Doors Windows Comments	secure hard surface, durable, chemical resistant N/A

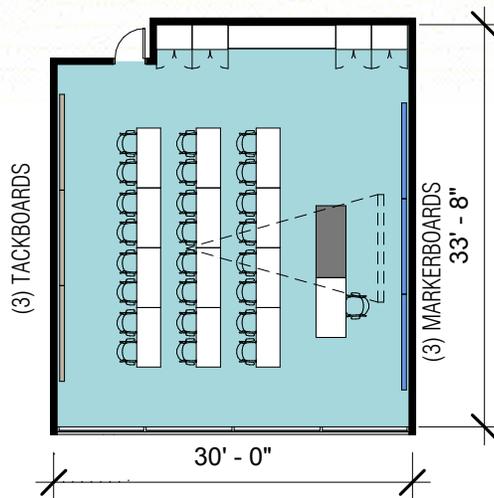
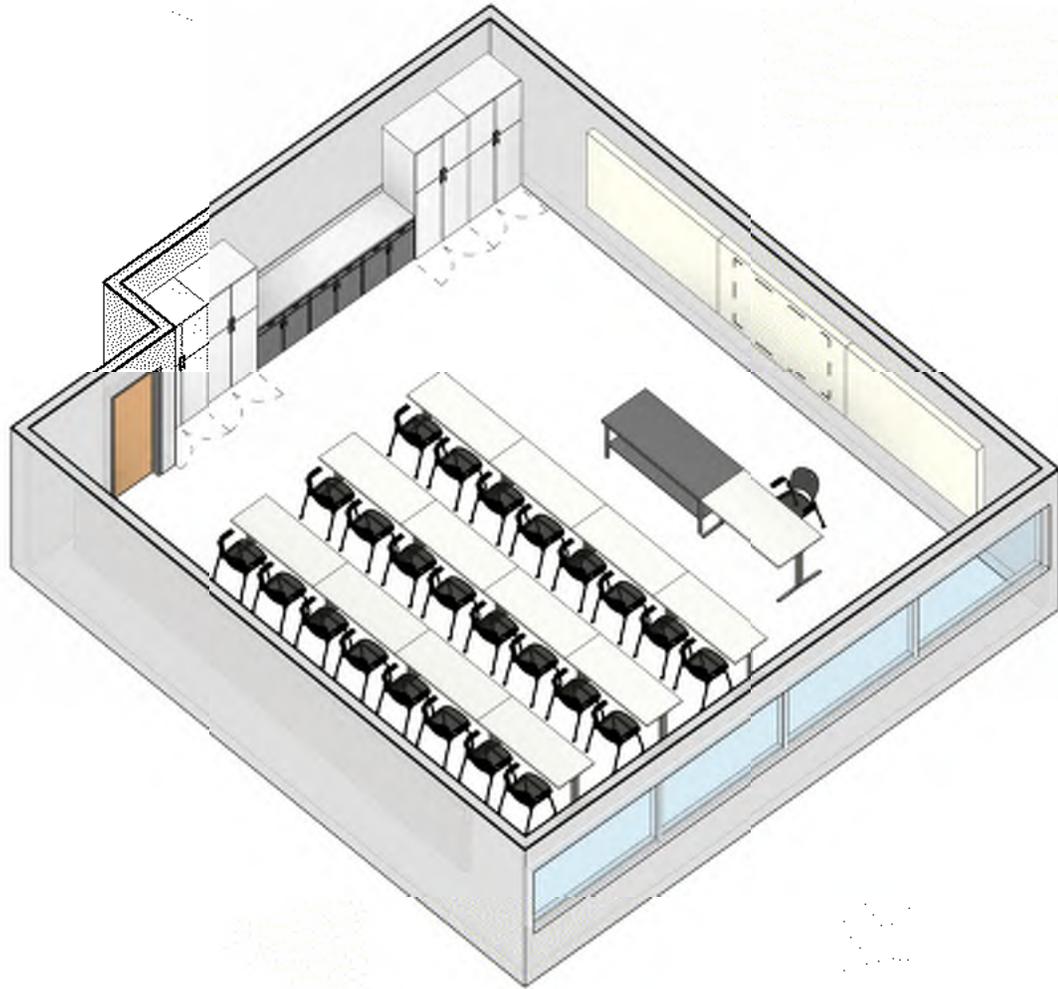


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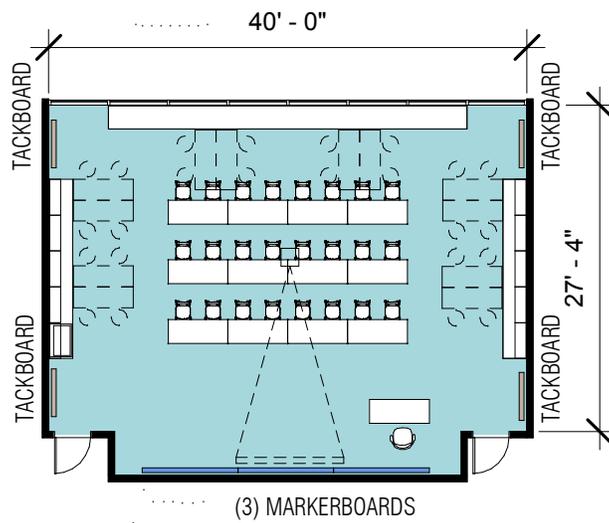
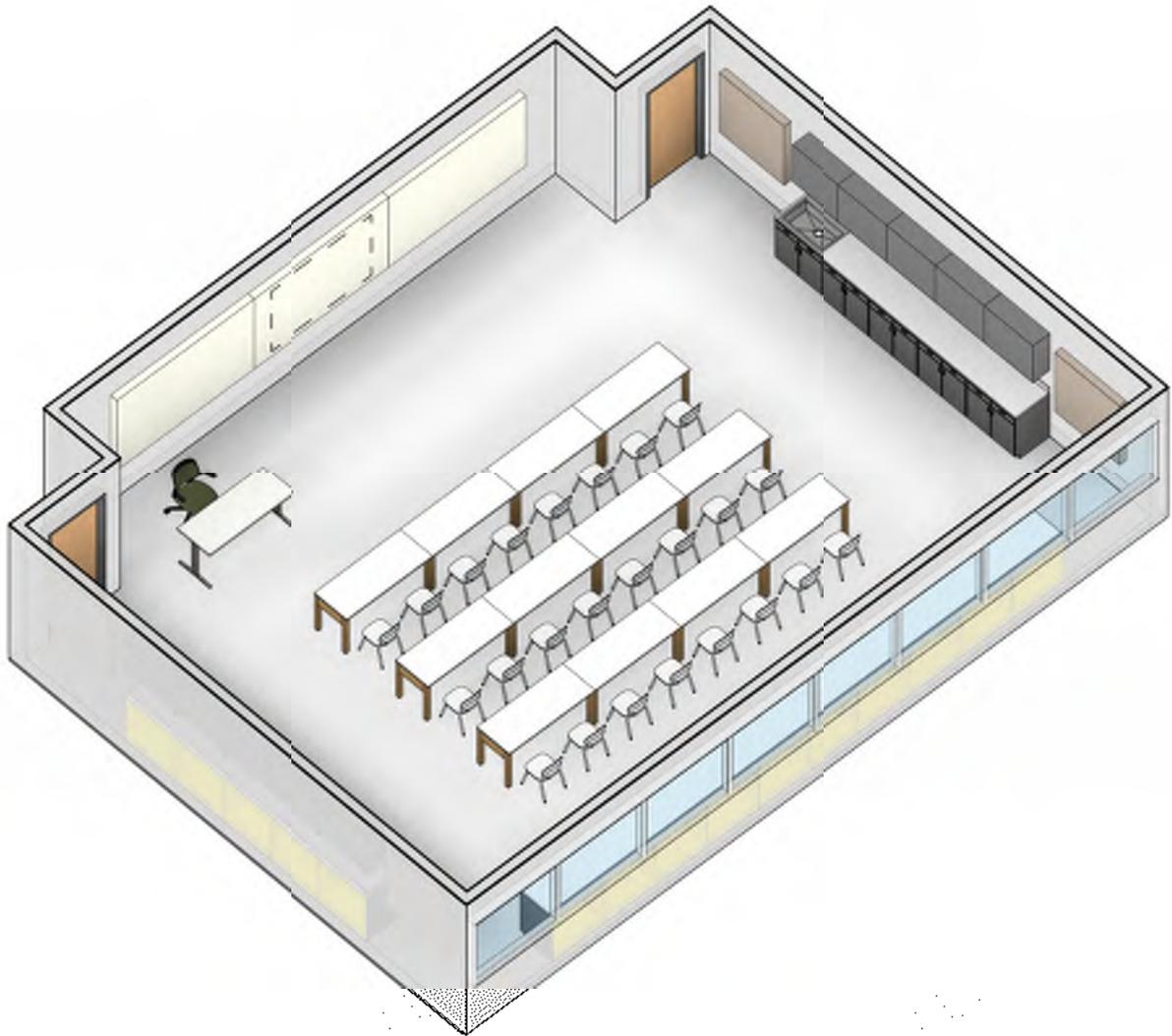


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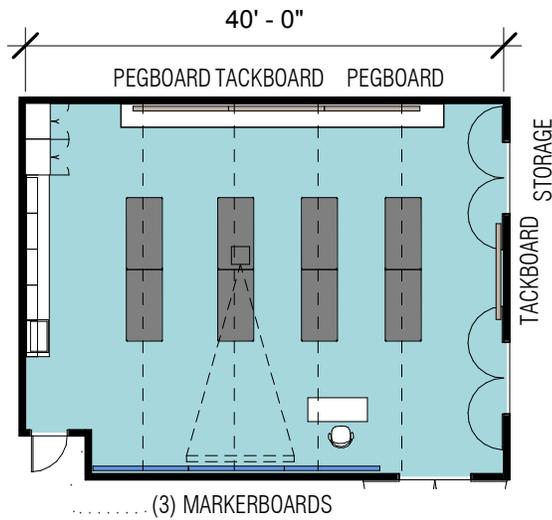
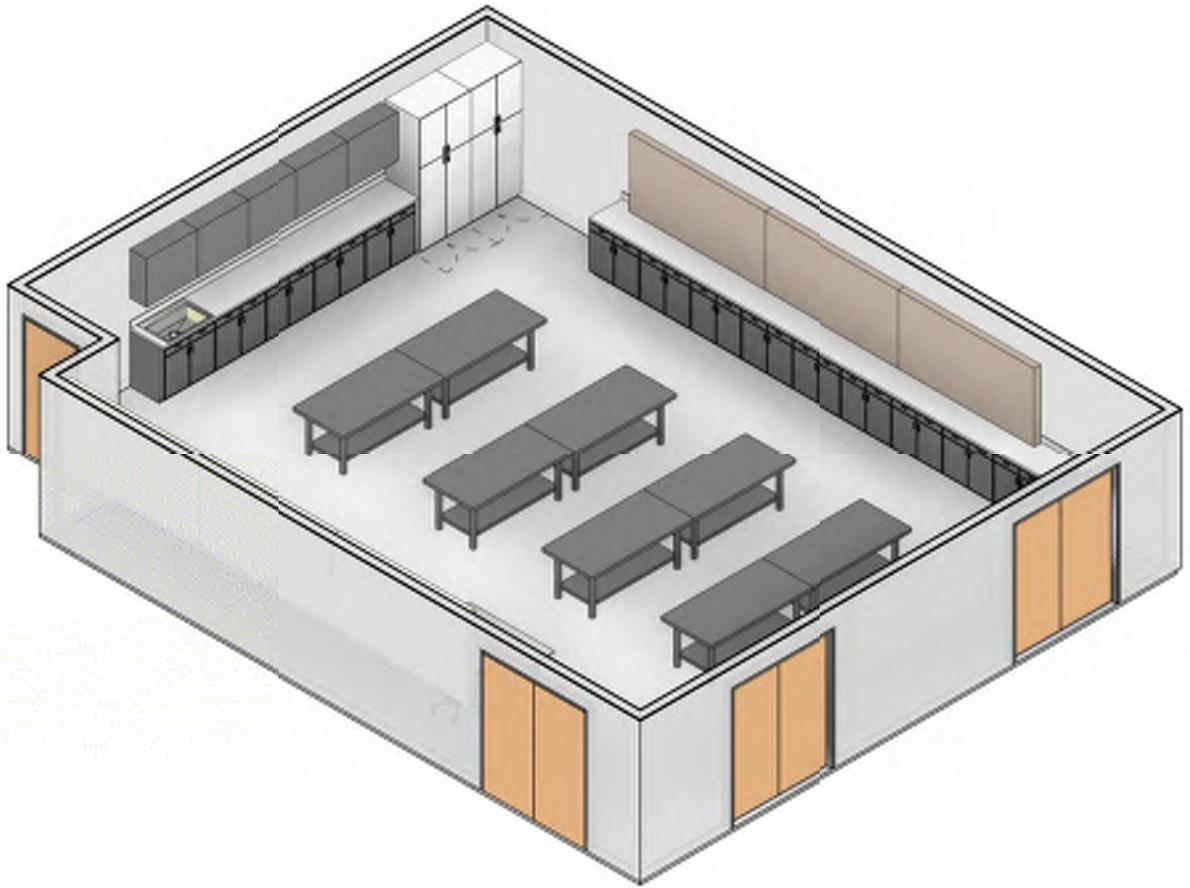
PROGRAM	Room Name	Science Lab	ROOM SIZE	Area Dimensions	1,500 SF
	Program Group Adjacency	Core Program Science spaces; Flexible Learning Areas			
	Description	support varying curriculum over time including core academic, career preparation and elective programming			
EQUIPMENT	Fixed	gas and air spigots; projection screen; digital projector; fire extinguisher; cabinets w/ doors and drawers; lockable teacher cabinet	OCCUPANCY	Hours	
	Mobile	blanket cabinet; goggle sanitizer; beaker drying rack; microwave; rod and socket assembly; laptops; computer carts		Occ. Load	22 min. w/ counter space; 28 min. w/out counter space; student groups ranging 2-4
SYSTEMS	HVAC Plumbing	(6) sinks min.per classroom, (1) for teacher station	BUILDING	Security	
	Electrical	outlets to power computing devices and equipment; outlets in perimeter counters; overhead power; 32 outlets per room equipment matrix		Ceiling	
	Lighting	natural daylighting; direct/indirect; task lighting as required		Walls	(1) wall w/windows; extra window space for biology; min. of (2) 4x8 tackboards; min. of (2) 4'x16' magnetic whiteboards
	Audio/Visual Communications	audio reinforcement; video outlet near demonstration area; wireless access point; telephone; clock/intercom		Floor Doors	doors with re-lite windows
	Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves
				Comments	chemical resistant surfaces for Biology; easily movable furniture for floor space for Physics



seat count instruction area: 24



seat count instruction area: 24



11/29/2017

MEETING MINUTES

Meeting Name: Food Service

Project Name: Madison High School

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: 12/12/2017

Attendees:	Jessie Steiger	PPS Project Manager	Randall Heeb	Opsis
	Ayana Horn	PPS Project Coord	Steve Nelsen	Opsis
	Whitney Ellersick	PPS Food Service	Bryce Tolene	Opsis
	Chris Walters	MHS Food Service	Joann Dao Le	Dao
			Laura Borland	HAI

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Food Service program needs.

General

- One lunch period at all high schools
- Madison is an open campus
- Participation is increasing in new schools – Franklin now has inadequate capacity
- Madison has had higher participation historically than other High Schools, 55-60%
 - Increase in participation - Fewer options outside, more F&R
 - Limit participation - wait time, cost, location far from front door
 - Centralized location will increase participation over current numbers
- New location will increase students who grab food then go to park
- Disposable Dishes – can't use ware wash with open campus due to theft of trays and utensils.
 - This will not change, do not accommodate future washing (dish return)
- Franklin is a better model than Grant or Roosevelt. Franklins new FS is currently out-serving MHS. Franklin closes the cooking area and equipment (POS, milk coolers, salad bars) off from the commons, protecting against susceptibility to damage.
- Okay to have some separation between Cooking and Holding,
- Keep holding and serving adjacent
- Breakfast: served 800-900 when free, now serves 300-400
- Lunch: serves 660-720 students
- Dinner (after school lunch): 60-100 students, from 3:00 to 3:30, as late as 5:00pm
- No Vending: Coke pulled in 2007. Balance of vending will be removed at the end of their contract.

Servery

- Currently 4-lines serving in 15 minutes
 - Burritos
 - Burritos
 - Pizza
 - MHS Favorites (sandwiches?)
- Design to 6 lines (Optimum)
- Should account for a large queue, very long lines
- Option 2A was the preferred option presented by the Design Team. 2-lines at each POS, and 2B didn't take advantage of queue space in the commons
- 2 lines have one Point of Service (POS)
- Extra lines won't impact staffing
- Close off quickly after service – locking doors/gates
- Not grilles – separate the noise
- Must become locked off from the students
- Prefer a centralized queue for supervision. Remote OK, but not preferred.

Cooking / Storage

- Meet Ed Specs
- Don't scale up with more server lines
- Keep all elements visually connected, no long halls
- Cooking area adjacency to serving line not as important as holding area adjacency to serving line
- Critical Storage (food prep related) should be adjacent to cooking area
- Non-Critical Storage (trays, napkins, utensils) can be located across the hall
- Requested there be at least (3) prep stations in the food prep area
- Double sided pass or roll thru warmers are preferred
- District currently use transports for food deliveries from Central kitchen, but design should allow for future pallet jacks

Custodial

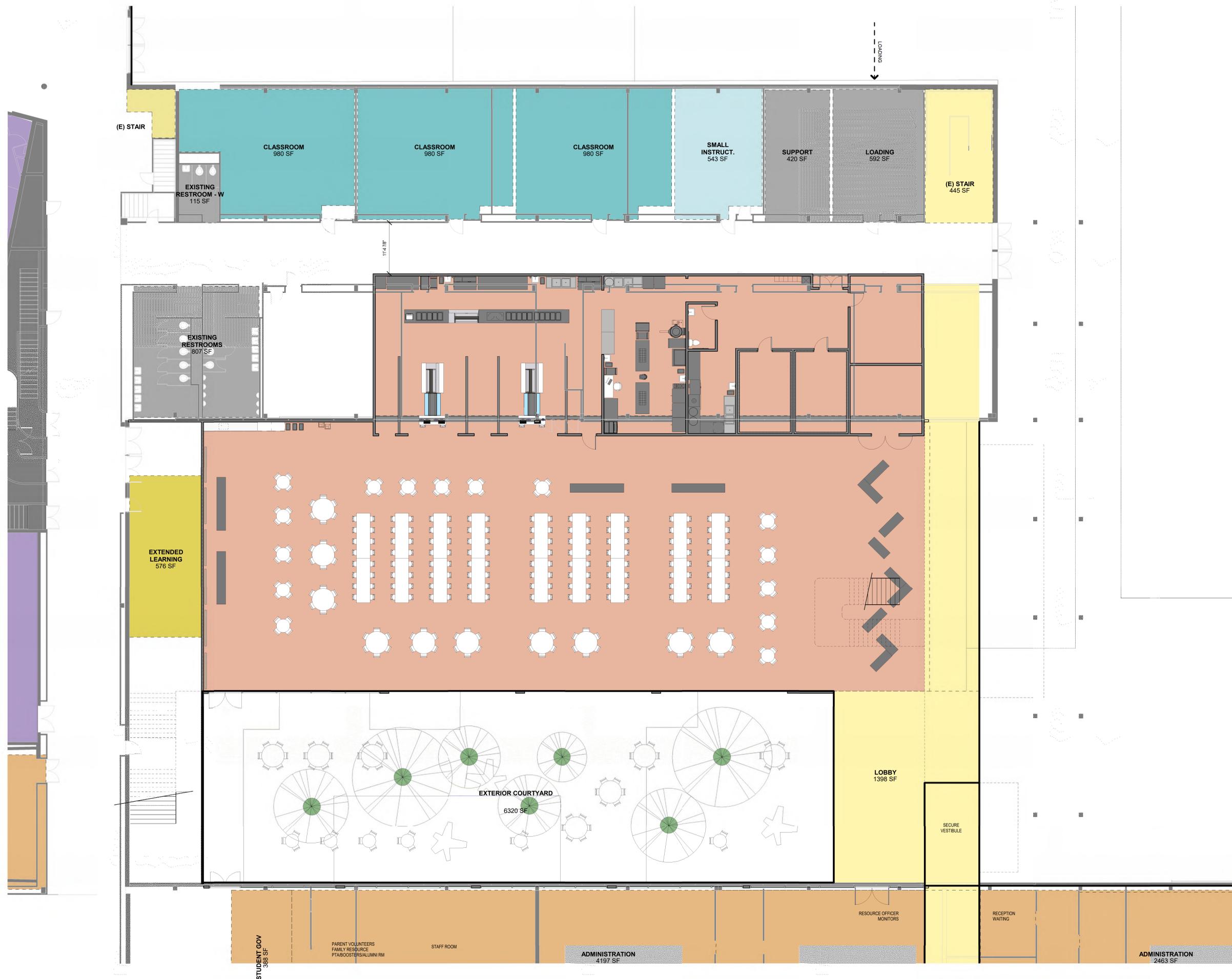
- Need to wash area quickly
- All tables/seating easy to move
- FHS – too many types of seating
- RHS – booths heavy and hard to move
- Flooring and table discussions are Operations issues, not facility issues.
- Custodial issues should be coordinated with on-site managers

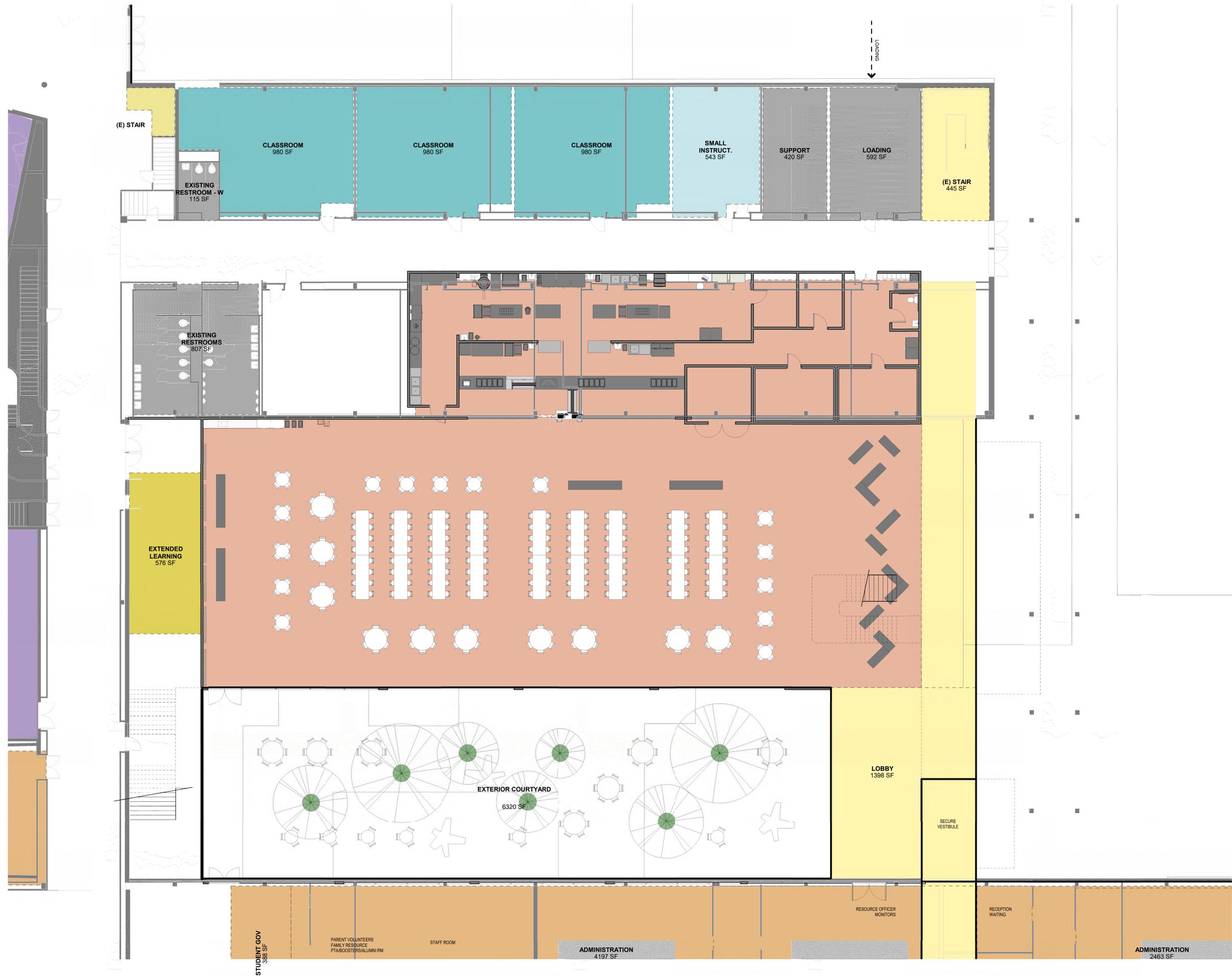
Loading Area

- Vehicles:
 - 26-ft District Truck
 - 36-ft (Alpenrose) Dairy Truck

- Don't allow for larger trucks in future
 - Because ES / MS have smaller lots, PPS will always ask vendors to use smaller trucks
 - Trucks have lift gates, don't need elevated dock – flat slab for rear loading
 - Up to 3 deliveries/day – never during start/end of school day
 - Alpenrose will only deliver when custodian is at the school, between 6:00am and 2:00pm
 - Trucks need to be able to back in.
- More on-site storage will decrease frequency of deliveries
- Waste
 - Trash Dumpster – much liquid waste
 - Recycling Dumpster
 - No compactors, it is a pest issue.
 - Maybe future composting (talk to Sustainable Agriculture). Composting will be built in to PPS Operations within the next couple of years
 - Preferred to have Trash/Recycling located near Food Service
 - Grant Design Issue: Long distance to trash area, potential workman's comp issue.
- Limit turns along service paths inside building
- **Action Items:** Talk to PPS - Frank Levitt, Brian Booze

End of Meeting Notes





MEETING MINUTES

Meeting Name:	Building Systems	
Project Name:	PPS Madison High School Modernization	
Project Number:	4722-01	
Submitted By:	Steven P. Nelsen	
Meeting Date:	December 13, 2017	
Attendees:	Jessie Steiger Ayana Horn Aaron Presberg Steven Nitsch Stacy Mills Steven Nelsen David Horsley Bryce Tolene Andy Frichtl Robert Klawa Kareem Carter	PPS PPS PPS Building Op and Energy PPS Mechanical PPS Electrical Opsis DAO Opsis IEI Mechanical Reyes Electrical Reyes Low Voltage
Distribution:	Jessie Steiger Steven Nelsen	PPS Design Team

This represents our understanding of discussions during the Meeting. Revisions by participants should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to discuss the District MEP System Guidelines, and confirm acceptable approaches to preliminary MEP systems.

Mechanical

- Cooling
 - Three systems are proposed in the master plan
 - Air Cooled
 - Water Cooled
 - Ground Source
 - Air or water cooled are preferred. Ground source is most likely not feasible
 - Location of cooling tower needs to be identified.
 - Size and location recommendations need to be developed, for coordination with site design
- Heating
 - Preferred heating option is Gas Fired High Efficiency Boilers
 - (e) boilers are original to the building
 - Burners were replaced with high efficiency gas. Potentially could salvage burners from the boilers
 - Fuel storage tanks were disconnected. Confirmation is needed on whether tanks were de-commissioned

- Proposed heating water range 100-140 degrees
- New Rooftop Air Handlers are proposed, with some other combinations being proposed as options
 - Commons: Possible radiant heat with displacement air for ventilation
 - Classrooms: VAV system
 - District Standards: 10% increase over current energy code is required minimum
 - Live cycle costs are determining beyond that
 - Custom AHU's are proposed, architecture will help determine final locations
 - Rooftop units will need to be screened
 - Package units are option, but not preferred
 - Design team needs to verify if new air handlers will be able to fit in mechanical rooms adjacent to the theater
- Natural Ventilation: An option to explore, if security is worked out
- VRF Option
 - Not a preferred solution, interface to explore this option
 - Would allow for incorporation of cooling into the system
 - Would require DOA's for ventilation
- PPS Equipment Standards
 - No specific equipment manufacture stipulated. Each new bond project currently has unique equipment to that project
 - Bond projects are all currently in the commissioning process. Completion of the SD on the Madison project aligns with the (1) year completion on other projects, allowing for some lessons learned/standard equipment preferences to be communicated to the Design Team as equipment is specified
 - Matching equipment from the other schools would be ideal, but might be hard to control if keeping an open specification

Plumbing

- All plumbing, piping, and fixtures to be removed and replaced

Electrical / IT

- Power
 - Due to the energy requirements for the cooling system, Reyes is proposing a dual voltage system
 - 277/480 for the mechanical system
 - 120/208 for the general building/classrooms
 - Service (Vault): currently located in the (e) boiler room. Recommendation is to explore exterior pad transformers
 - (e) need to be replaced due to chiller demand (+/- 1000kw)
 - Size and location recommendations need to be developed, for coordination with site design
 - Franklin HS went with pad mounted transformers
 - Emergency Power
 - Reyes is recommending E-Power be relocated outside, if possible
 - Size and location recommendations need to be developed, for coordination with site design

- Potential of repurposing the existing generator was suggested. Possible use at Kitchen for refrigeration (resiliency)
 - Fuel fired, with storage on site
 - Current code requires 90 minutes for life safety systems
 - Confirmation needed on current storage capacity. Initial suggestion is there is 12 hours of fuel capacity currently (200-300 gallon tank)
 - Gas not an option
- Lighting
 - LED lighting is being proposed , in conformance with the District Standards
 - Voltage preference needs to be confirmed. Reyes is proposing 120V
- IT
 - PPS currently has no District Master Plan for technology systems
 - UPS in each room is not a PPS Standard
 - Franklin: IT (at MDF Rooms) is on backup generator
 - Lockdown: Emergency notification system is currently via phone. Verification is need whether this needs to be on backup power
 - Follow-up meeting needs to be scheduled to discuss PPS Madison Strategy the following
 - IT/Technology
 - Fire Alarm
 - Security
 - EAC / door controls (equipment and protocols)

End of Meeting Notes

MEETING MINUTES

Meeting Name: Career Technical Education (CTE)

Project Name: Madison HS Masterplan

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: 12/13/2017

Attendees:	Jessie Steiger	PPS Project Manager	Alec Holser	Opsis
	Ayana Horn	PPS Project Coord	Randall Heeb	Opsis
	Petra Callin	MHS – Principal	Kirsten Justice	Opsis
	Jeanne Yerkovitch	Director	Joann Dao Le	Dao
	Tamara O'Malley	Computer Science		
	Randy Maves	Digital Media		
	Monica Gray	Engineering		
	Susan Wiencke	Sustainable Ag		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the CTE program needs.

General

- CTE / Career Pathways: <https://www.pps.net/Domain/190>
 - Director - Jeanne Yerkovich (503) 916-5450 jyerkovi@pps.net
- TOSA – Maker Space
 - Glennon Stratton gstratten@pps.net
 - Jaclyn Herzog jherzog@pps.net
- Instructors
 - Computer Science Tamara O'Malley
 - Digital Media Randy Maves
 - Engineering Monica Gray & Ryan Cook
 - Sustainable Agriculture Susan Wiencke
 - Design & Applied Arts Susan Russell
 - Health Sciences David Valenzuela & Erik Mellgren

Maker Space

- Ed Specs call for Maker Space that supports CTE
- CTE staff see the Maker Space as a school amenity unconnected with CTE
 - Clean area
 - Dirty area

- Storage
- Action: Need to identify purpose, users and staffing of Maker Space.

Career and Technical Education (CTE)

- Staff make all decisions together – collaborative
- All staff like the garage doors
- See list of courses at MHS at end of Meeting Notes.
- GRAPHIC DESIGN
 - Screen printing supports the clubs and student store – making branded products
 - Needs small darkroom (developing and drying) uses current foundry
 - Allow for existing large format mobile sink (is a floor drain required?)
- COMPUTER SCIENCE
 - 30 students
 - need wall display and white board on long wall
 - Group computers around perimeter of classroom
 - Group instruction tables in middle
 - Can teach robotics
 - Separate locking room for storage and 3D printers (shared between 2-3 rooms?)
 - (2) 3D printers
 - (4) vinyl cutters
 - Heat press
- ENGINEERING
 - Also likes perimeter tables for CPU's and work tables in center
 - Prefer to hold tables away from walls to use the wall for teaching marker boards
 - Includes area for soldering – wants hood, power, work desk
 - Robotic needs are for table with dedicated test course
 - Storage / tool area
 - (4) good 3D printers
 - (3) small 3D printers of low quality – donated
 - (1) vinyl cutter
 - Future Tools: CNC Machine and Laser Cutter
- SUSTAINABLE AGRICULTURE
 - Garage door to exterior!
 - Direct connection to garden
 - Vertical plant wall, want more
 - Green House – needs for wet and dirty work suggests separate greenhouse
- CONFERENCE ROOM
 - Consider shared conference to present/discuss/evaluate work
- BIOMEDICAL
 - Meet with David Valenzuela and Eric Mellgren
- 3D ART
 - Meet with Susan Russell

End of Meeting Notes

COMPUTER SCIENCE

INSTRUCTOR: TAMARA O'MALLEY

Intro to Computer Science

This class is a chance to explore Computer Science through coding, 3D modeling and animation, and the exploration of the history, current events, and ethical issues of computing. Learn the fundamental concepts of programming through a visual programming language, then extend that knowledge into a syntax-based language. You will also code a webpage, build a mobile app, explore robotics and investigate 3D modeling, 3D printing and 3D animation.

3D Modeling and Animation

This course introduces the fundamental concepts, principles, and practices of 3D digital modeling, rendering, and rapid prototyping (3D printing). You will learn 3D modeling techniques including production of surfaces and forms, texturing, lighting, and rendering. Once you have mastered the concepts of 3D modeling, you will move on to animating models and eventually work toward making an animated movie or 3D game. Prerequisite: Intro CS, Intro to Engineering Design, Digital Design.

Robotics

Design, build, and program robots! Learn how circuit boards work. Using Arduino and Lego/Tetrix robots we will cover the fundamentals of problem solving, program design, algorithms and coding. You will have the option of joining a First Tech Challenge competition team which requires a commitment to attend evening and weekend events.

DESIGN AND APPLIED ARTS

INSTRUCTORS: SUSAN RUSSELL

Foundations of 3D Design

Introduction to 3D Design, Ceramics, Sculpture, and Textiles. Providing students with the exploration of career path options in each industry.

Intermediate Ceramics & Sculpture

Focused work in Ceramics and Sculpture industry with an emphasis in technical skill development. The student will build self-marketing strategies in a small business format.

Intermediate Textiles

Focused work in Textiles Industry with an emphasis in technical skill development. The student will build self-marketing strategies in a small business format

Intermediate 3D

Design Focused work in 3D Design/ Industrial Design Industry with an emphasis in technical skill development. The student will build self-marketing strategies in a small business format

AP 3D Design

Individual exploration of a career path industry. Work done in available internships or community based non-profit alliances. Student driven Portfolio.

DIGITAL MEDIA

INSTRUCTOR: RANDY MAVES

Foundations of Digital Design

Graphic Arts is art with a message. This foundation of digital design course is a hands-on introduction to the art, craft and business of graphic design. The terms are used interchangeably. We will cover the history, processes, creative forms and production of graphic arts, as well as necessary underlying skills and perceptual principles. Students will be given a broad overview of the language of art and the principles of design through software manipulation. The course also provides and immersion in several artistic, creative, technical and psychological techniques linked to graphic design. Adobe Illustrator, Photoshop, and InDesign will be the primary software. Foundation of Digital Design is centered on skill and technique development. Students will apply basic skills to design problems: posters, personal logos, magazine layout, photo editing, and product labels.

Intermediate Digital Design

Intermediate digital design will be primarily a design studio. Students will explore Adobe Illustrator, Photoshop, and InDesign with a focus on creative printed materials. A design team organization will allow each class member to lead in every area of the design process. The class will learn to manage jobs that will come from our school and outside community. Marketing, photography, and presentation will be the center of each project. Students will be expected to seek out an intern opportunity in the community. The

principals of design will be explored as they affect good design. Each student will present an original marketing campaign for the culmination of the course. Product design will be introduced.

Print Publications

This class primarily produces the yearbook, but if you are interested in applying the design skills you learned in Foundations of Digital Design or Intermediate Digital Design this course is for you. Organization, independent work habits, and afterschool freedom are necessary. The student body is the client and as a Print Publication staff member you will be tasked with producing a historical item that best captures the Madison Experience. Students that choose this class should take this responsibility very serious and should understand that only the highest level of citizenship and behavior will be accepted. This is an opportunity to be part of a team that creates a one-of-a-kind object. Students must have an excellent working knowledge of Adobe Illustrator, Photoshop, and InDesign.

ENGINEERING

INSTRUCTOR: MONICA GRAY & RYAN COOK

Intro to Engineering Design

Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software, and use an engineering notebook to document their work.

Prerequisite/Corequisite: Algebra 1-2

Digital Electronics

From smart phones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices.

Robotics

Design, build, and program robots! Learn how circuit boards work. Using Arduino and Lego/Tetrix robots we will cover the fundamentals of problem solving, program design, algorithms and coding. You will have the option of joining a First Tech Challenge competition team which requires a commitment to attend evening and weekend events.

Principles of Engineering (POE)

Explore a broad range of engineering topics, including simple machines, structural and material strength, and automation. Develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation. Use an engineering notebook to organize knowledge and document project work.

HEALTH SCIENCES

INSTRUCTOR: DAVID VALENZUELA & ERIK MELLGREN

Anatomy & Physiology - Human Body Systems

This course is for students who have completed Health Services 1-2 and Biology. Students will study basic anatomy, physiology, and pathophysiology of the human body and practice health care skills that will prepare them for clinical experience in Health Services 5-6. Students will also continue to build their medical language and communication skills, numeracy skills, standard precaution skills and safety practices. Students will have the opportunity to learn in a variety of ways: hands-on labs, demonstrations, individual and group projects, student presentations, research reports, videos, field trips, service learning, guest speakers, computer aided exploration, and a whole class discussion, as well as oral and written assignments and tests. Students will read current science and medical periodicals to enhance their literacy skills. Students will collect samples of their work to place in their cumulative Portfolios.

Throughout the year students will maintain an interactive notebook to reflect their learning and to take more responsibility for directing their own learning.

Medical Interventions

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices and diagnostics. Thus students learn basic and advanced health care

skills, medical laboratory skills, and biomedical research skills as they develop a portfolio for their chosen health care profession.

Principals of Biomedical Science

This introductory course is designed to develop a working knowledge of Medical Terminology, human behavior, aspects of the healthcare industry, critical thinking skills, decision making skills, basic laboratory skills and communication skills. In addition, students learn basic clinical skills by performing and documenting Vital Signs. Students develop a four-year plan by identifying individual interests, aptitudes and abilities in relation to career planning and post-secondary education. A Portfolio of work is begun. Focus is placed on leadership development, community service and professional conduct. Students work individually, in small groups and in large groups to emphasize teamwork and responsibility. Students are encouraged to join SkillsUSA, a student run leadership organization. This class incorporates PLTW Bio-Medical Curriculum.

Health Services 7

This course is for students who have successfully completed Health Services 5-6, 3-4 and 1-2. Students will use medical record keeping methods, update their clinical and education plan for post-secondary education and update an electronic portfolio with resume, letter of introduction, and multimedia presentations representing chosen work samples and a culminating project demonstrating what has been learned in the four-year course. Students will complete an extensive Senior Project that they choose and are related to helping the community. The project must be related to their career interest, and/or community service and research. Students will prepare for college entrance.

SUSTAINABLE AGRICULTURE

INSTRUCTORS: SUSAN WIENCKE

INTRO TO SUSTAINABLE AGRICULTURE

This class is focused on learning essential gardening and urban farming methods that do not harm the soil, air, or water, even over many generations. Plan, plant, compost, save seeds, use garden tools/equipment and learn a variety of growing techniques in the school garden. In addition, investigate factors that affect plant health, growth, and reproduction by designing and conducting simple experiments in the garden. Use knowledge and experience in this class to think critically about how our current food system operates, and develop real solutions to help change social and environmental problems. Receive six college credits in Urban Agriculture Practicum for completing one year of Intro to Sustainable Agriculture.

Urban Farming

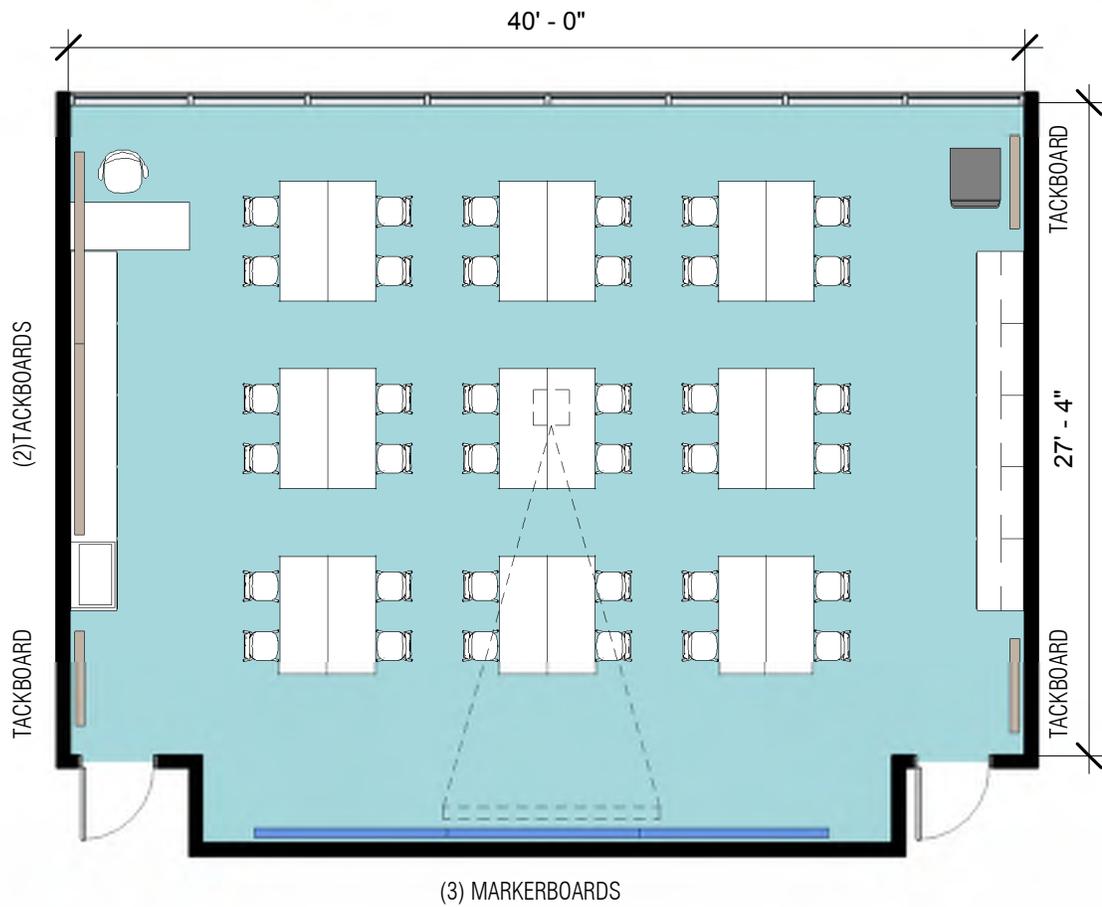
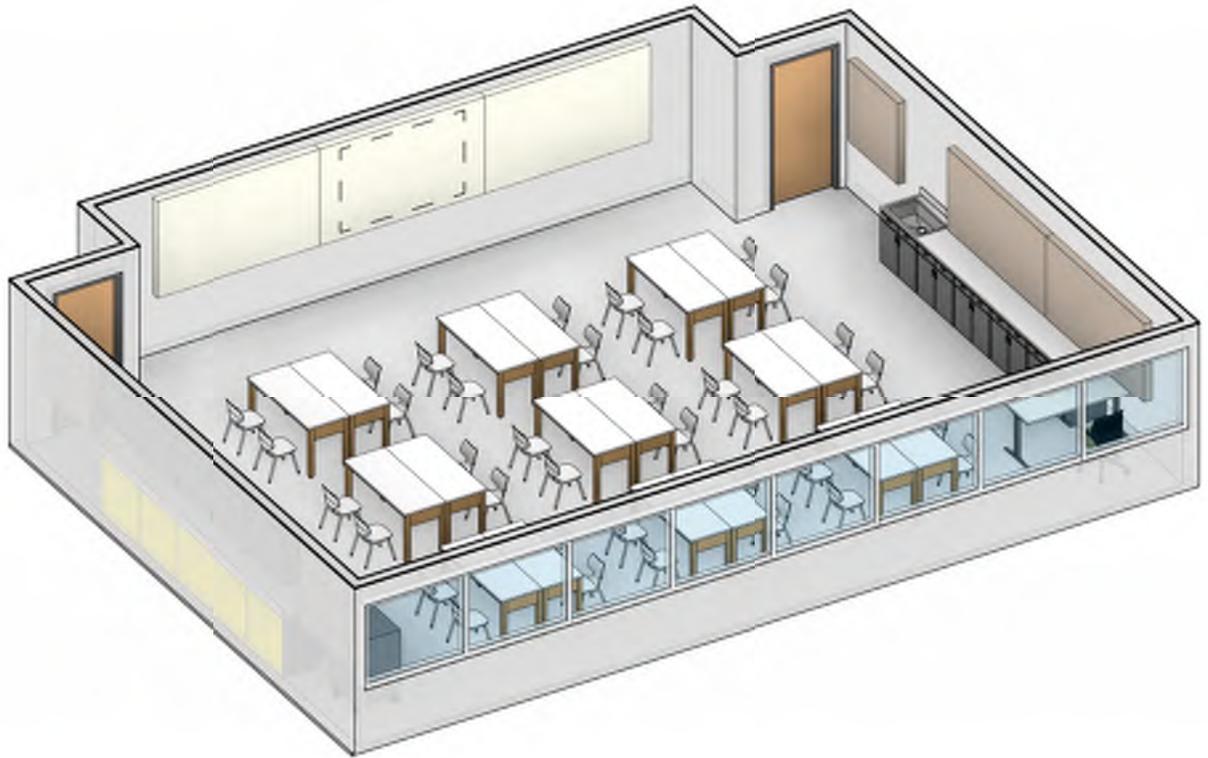
Through hands-on experience in the school garden and greenhouse, utilize sexual and asexual methods to grow plants. For example, plant seeds under lights and let them reproduce sexually, or use cuttings from plants to asexually reproduce (or propagate) them. Use a grafting knife to join two plant parts together so they will grow as one. Develop and operate Madison's student-run Farmer's Market and/or Community Supported Agriculture (CSA) business. Products sold will include vegetables; edible and medicinal plants, seeds, and value-added products like jam, pickles, salsa, pesto, and tomato sauce. Other components will involve field trips, paid and unpaid internships, cooking, networking, and fundraising. Receive four college credits in Propagation of Edible Plants from Clackamas Community College for completing one year of Urban Farming.

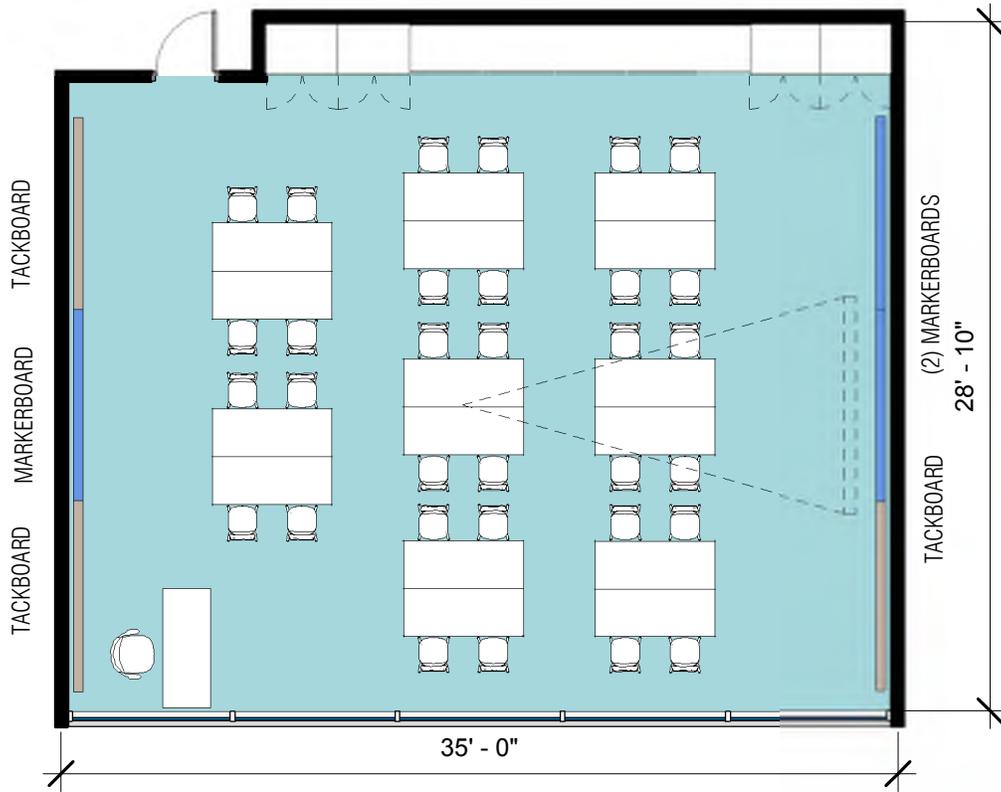
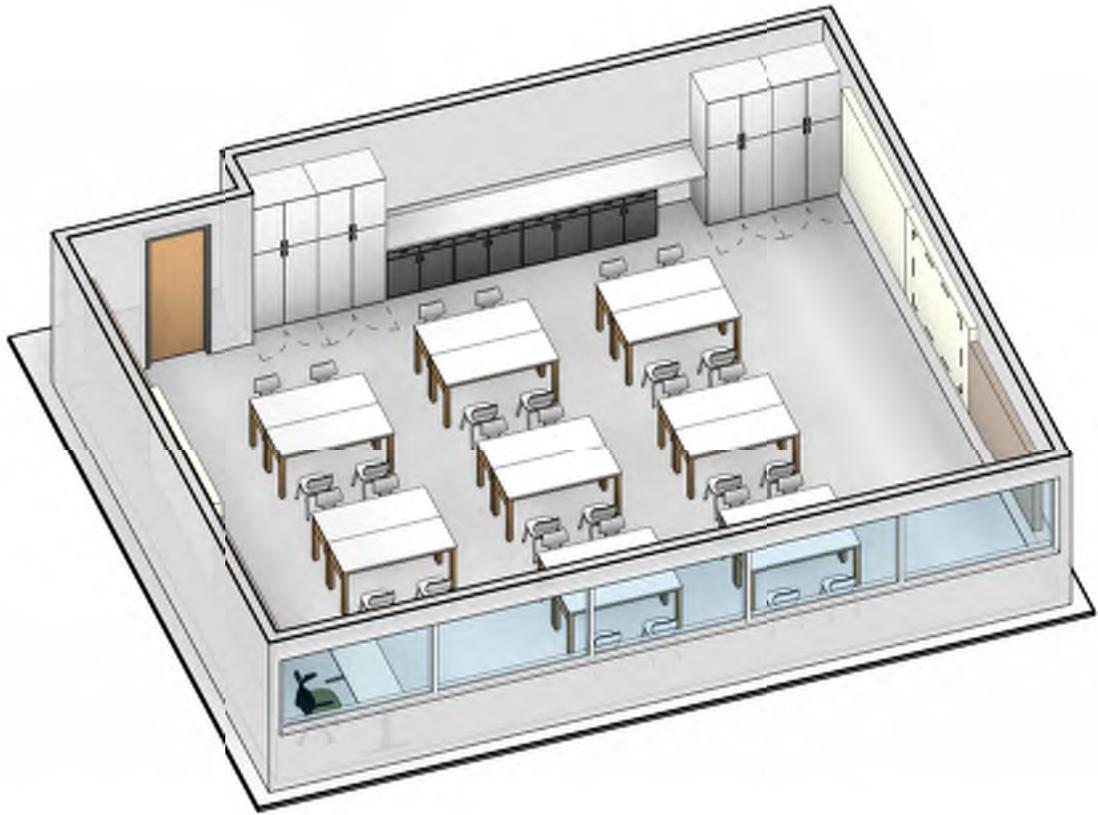
AP ENVIRONMENTAL SCI 1-2

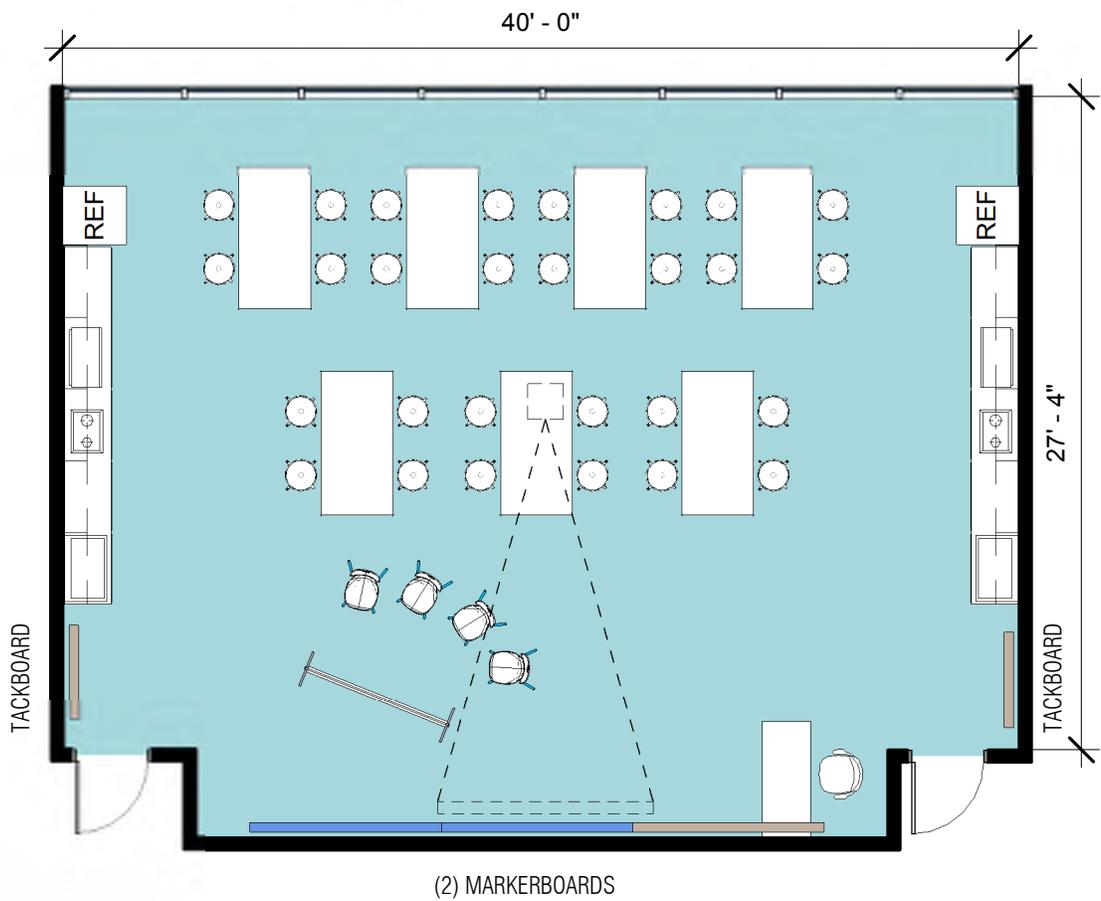
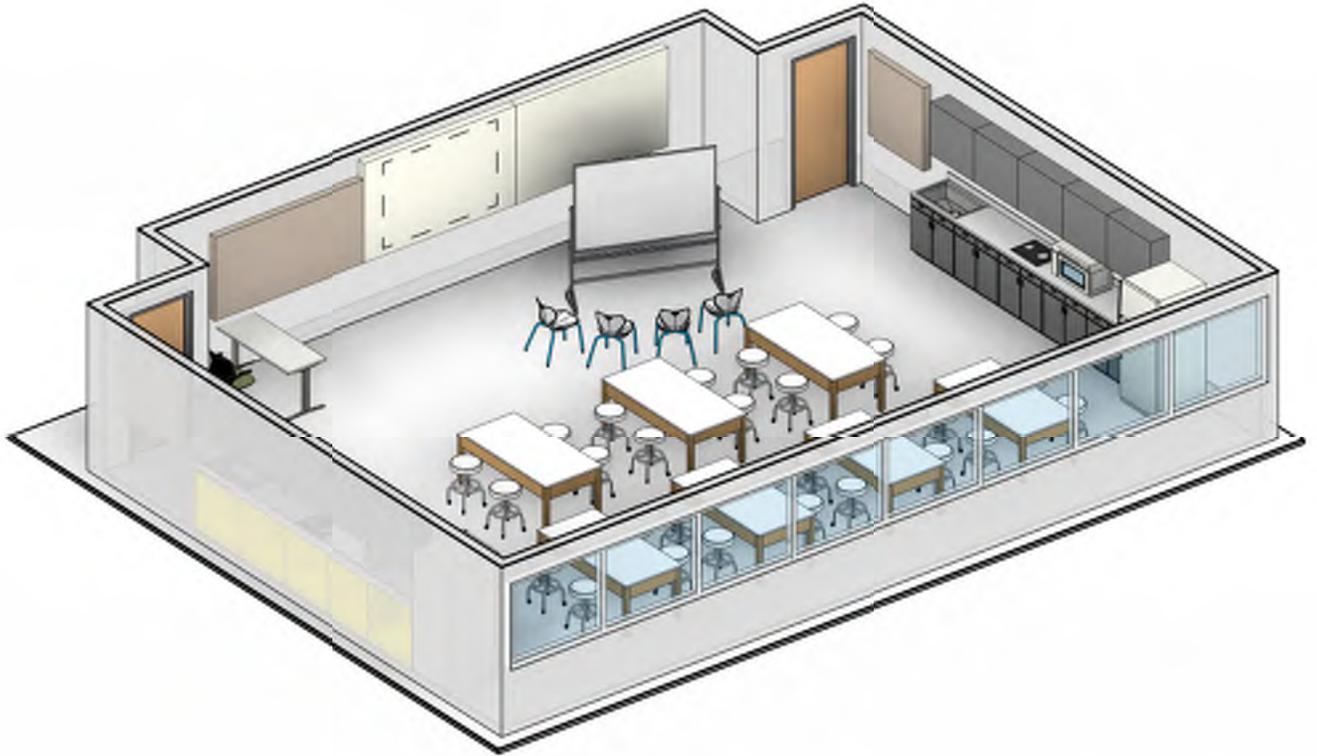
AP Environmental Science is a comprehensive course designed to cover the same material as an introductory college course in environmental science. We will primarily focus on scientific skills and content, but environmental science is interdisciplinary so also touches on politics, geography, and sociology. This is a lab-based course that could possibly fulfill a science lab requirement in college (if the student passes the AP exam), and/or prepare students for more advanced college-level environmental science courses.

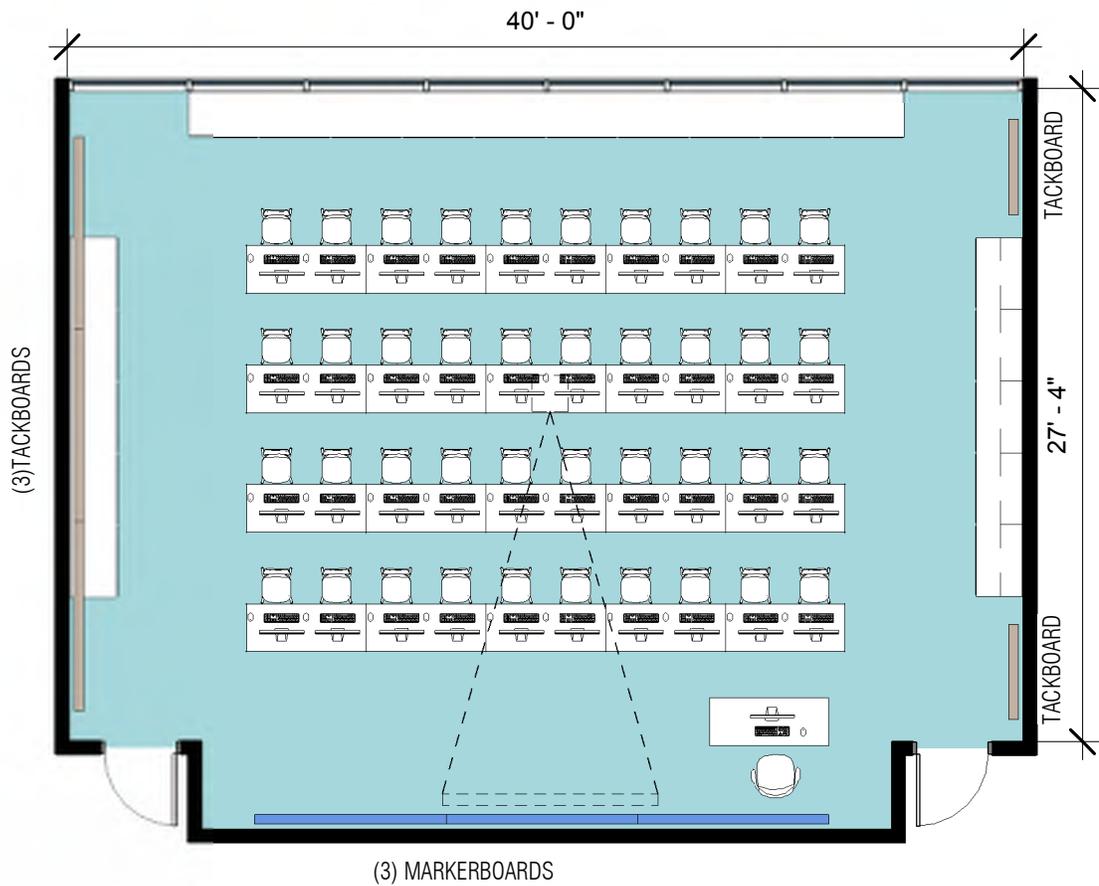
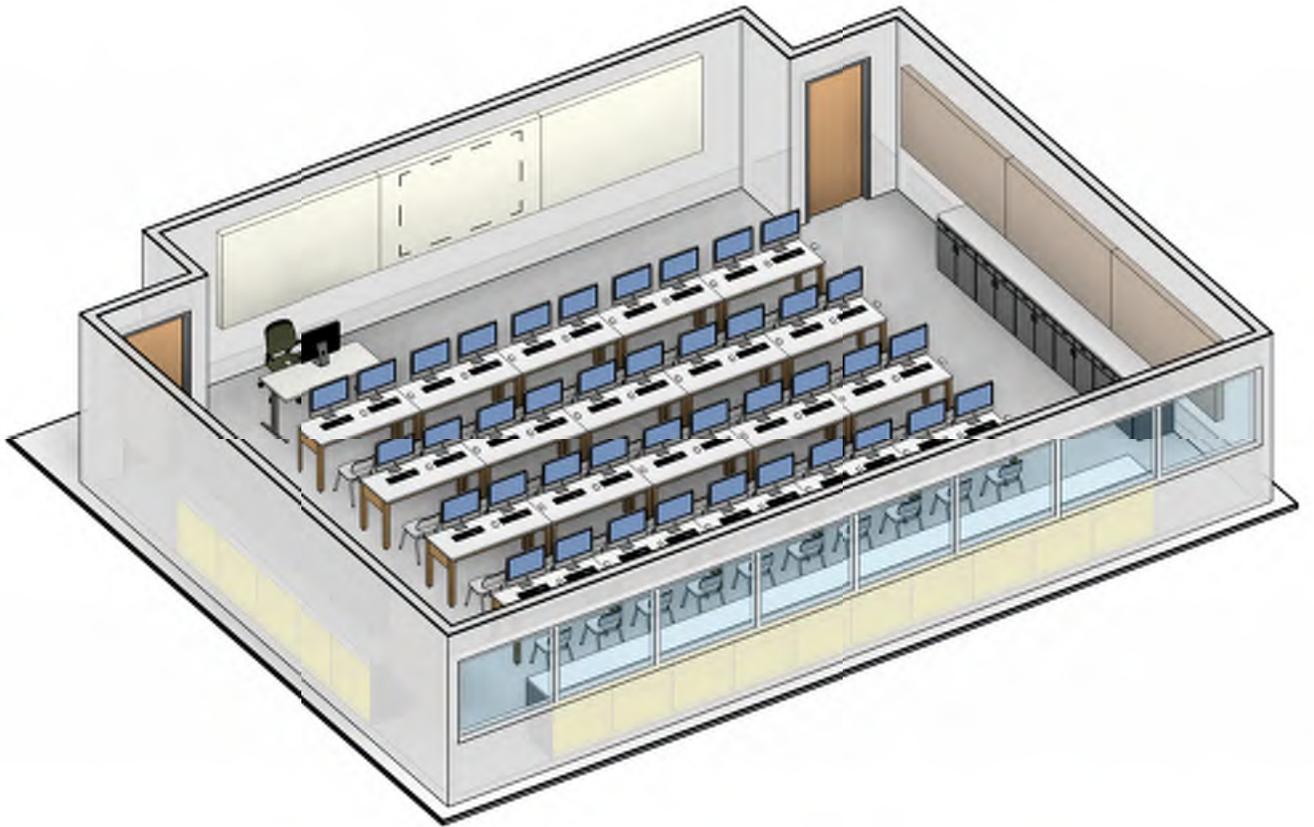
SENIOR CAPSTONE/PRACTICUM

Students in this course will complete an environmentally focused senior project including research, action, and presentation. First semester, students will explore and complete action research, which might include field trips, films, interviews, skill building, and internships. Students then propose, develop, and carry out their project during second semester, followed by a culminating presentation and portfolio. Projects can be completed with a partner.









Core Program

12/11/2017

CTE Classroom

opsis architecture | **DAO architecture**

MEETING MINUTES

Meeting Name:	Visual Arts	
Project Name:	PPS Madison High School Modernization	
Project Number:	4722-01	
Submitted By:	Kirsten Justice	
Meeting Date:	December 14, 2017	
Attendees:	Ayana Horn Clint Harpster Rick Graves Susan Russell Kirsten Brayson Joann Le Steven P. Nelsen Kirsten Justice	PPS Social Studies, Art Art Ceramics, Textiles PPS DAO Opsis Opsis
Distribution:	Jessie Steiger Randall Heeb	PPS Design Team

This represents our understanding of discussions during the Meeting. Revisions by participants should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Visual Arts classes and future program needs.

Ceramics/3D Art:

- Desire to be located near the other CTE programs (Digital Media, Engineering and Computer Sciences). (3D) Design Program cross pollinates with engineering and robotics.
- Susan sees no benefit in co-locating and sharing storage space with 2D Art.
- Current student count 35 max.
- Would prefer to be located on current level (lower floor) – infrequent truck deliveries
 - Would prefer and exterior drive-up entrance
 - Supply deliveries include:
 - Plaster
 - Clay “Georgies”. 1000lb deliveries, twice a year
 - Glazing material
- Space requires Kiln Room, Glazing Room and room for storage shelving.
- Kiln Room requires special venting to the outside. Currently have two kilns in use.
 - Space should be fire-“proofed”
 - Cool intake for room should be provided
- Future: Floor drains (with plaster trap)
- Equipment to be accommodated in classroom:
 - (15) pottery wheels
 - (2) slab rollers
 - (1) wedging table

- (2) Utility sinks (with plaster trap)
- Glazing Room has special venting requirements and should accommodate a pugmill
- Program would not have a need to utilize "Maker Space". Equipment for the program is specific to the curriculum, and not conducive to the maker space
- Future: Access to an outdoor firing pit
- Future: Computer carts with Samsung books
 - action Item: Opsis to check with PPS regarding venting requirements
- Drainage (floor sink or trench drain) with plaster trap is needed
- Classrooms need their own ventilation
- Open storage space is needed
- Shared storage is not preferred for ceramics
- All spaces (Classroom, Kiln room, Glazing Room) need their own ventilation

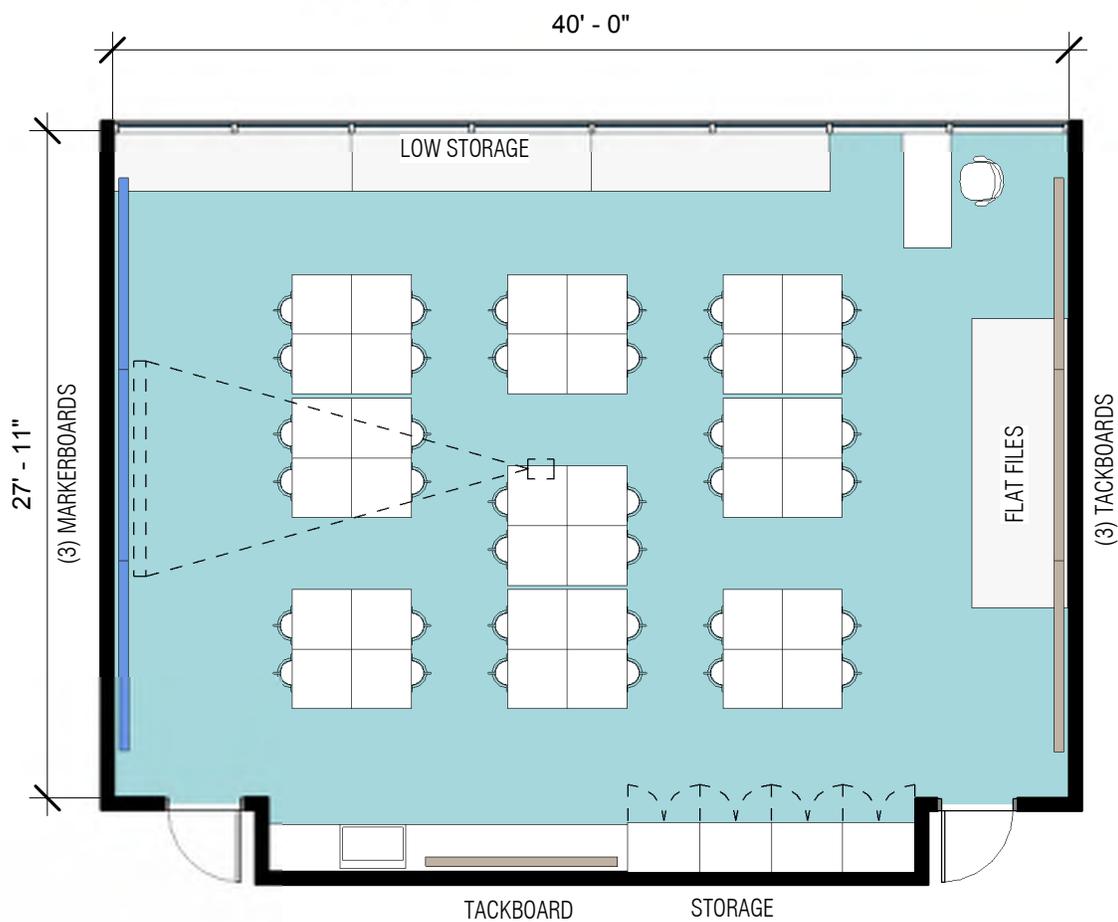
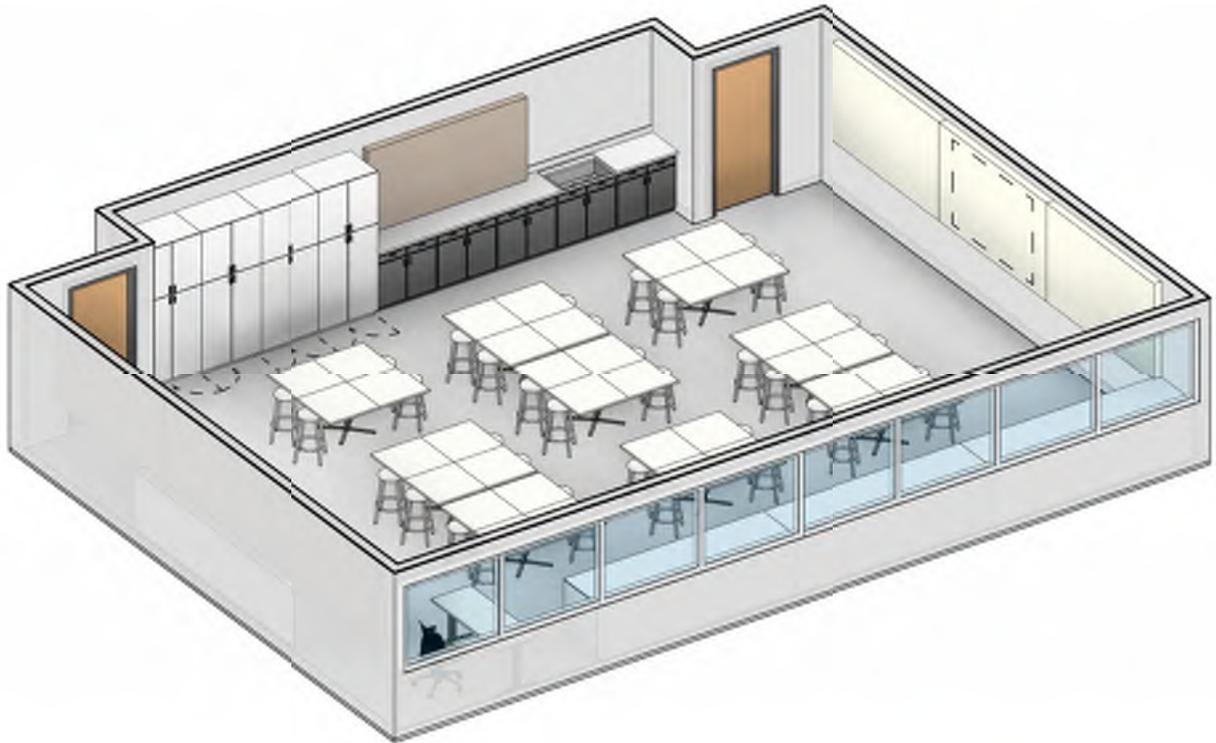
Textiles

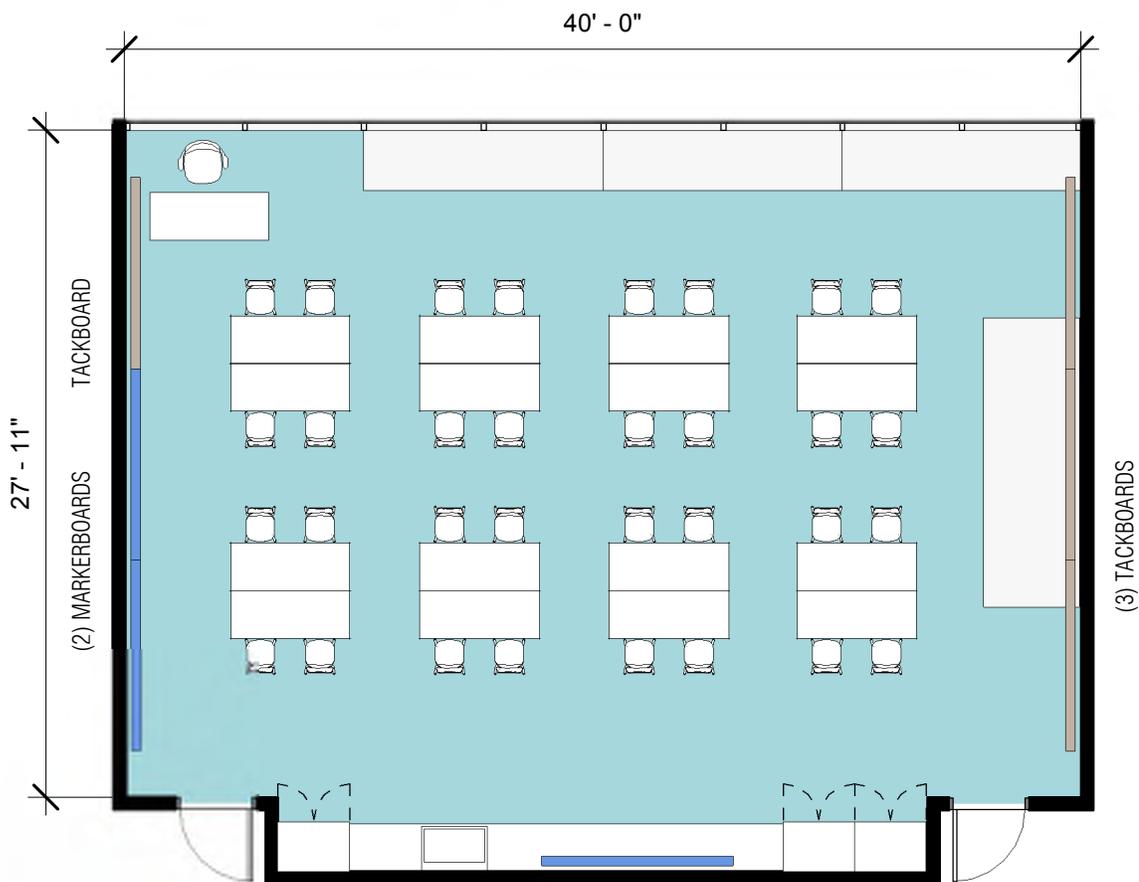
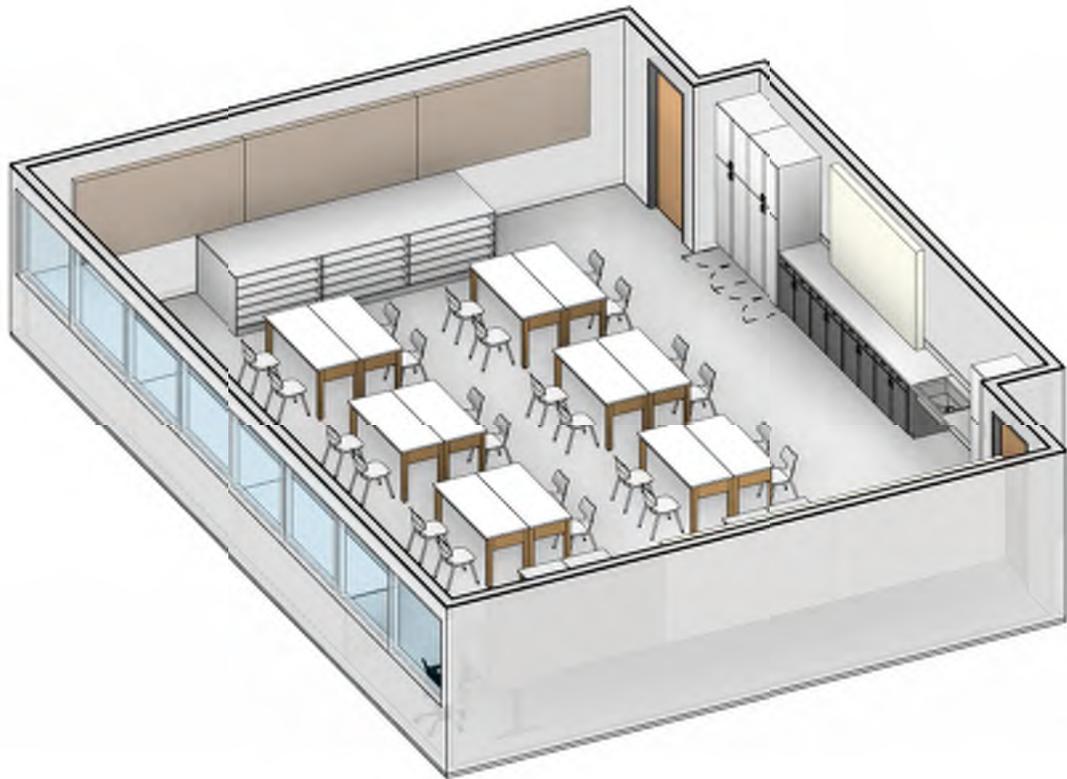
- Textiles program could be co-located with 2D Art and theater. Collaboration with theater (costume making).
- Program can occur in a regular sized classroom, but is a part of design and applied arts.
- Classroom needs lockable storage for sewing machines and fabrics.
- A sink is required
- The following additional equipment needs to be accommodated within the classroom:
 - Anvils
 - Sanders
 - Power tools
 - Hand tools
- About 20 students
- Future: storage space for mannequins

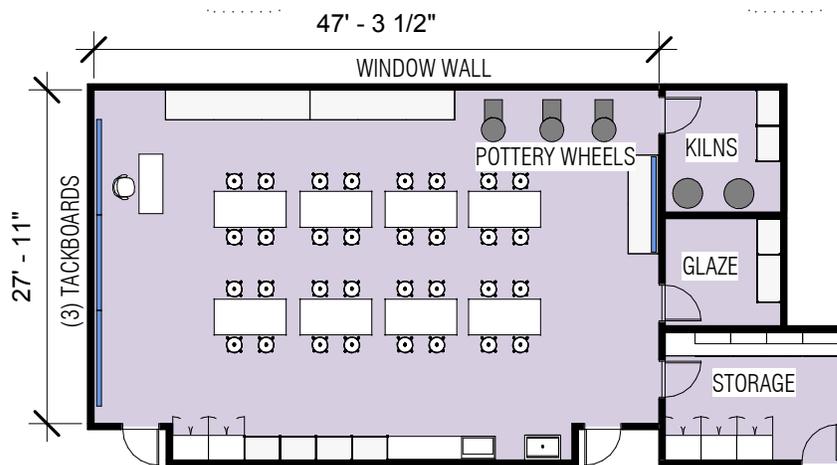
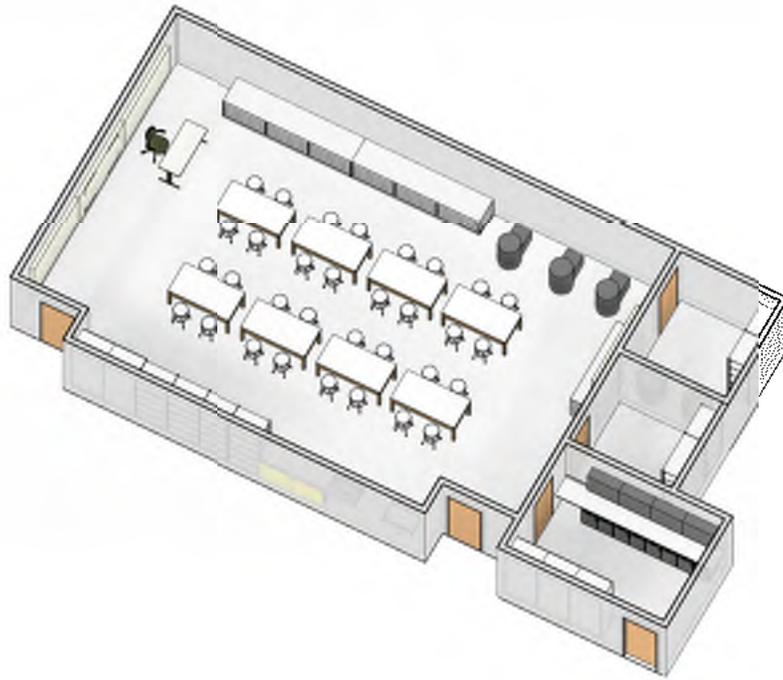
2D Art

- Space should have great light and a good amount of storage (current classroom is ideal).
- Would utilize "gallery space" nearby for exhibits and auxiliary workspace for students
- Classrooms requires two sinks (plaster traps? Ceramics work)
- Student count in this class varies from 25-35
- Class would benefit from close proximity to art courtyard. Sketching and painting outside is desired.
- If "Maker Space" had wood working tools Rick would utilize the space

End of Meeting Notes







12/11/2017

MEETING MINUTES

Meeting Name: Performing Arts

Project Name: **Madison High School**

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: 12/14/2017

Attendees:	Jessie Steiger	PPS Project Manager	Alec Holser	Opsis
	Ayana Horn	PPS Project Coord	Randall Heeb	Opsis
	Kristen Brace	TOSA	Max Frixione	Opsis
	Petra Callin	Principal		
	Zena	Theater		
	Jeremy Dell	Band / Choir		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Performing Arts, Theater and Music, program needs.

General

- Theater instructor is currently half-time.
- Kristen Brace will schedule Performing Arts tour of RHS and FHS. Include staff and Opsis.
- The Master Plan meetings suggested 3 drama productions per year; typically 300 audience.
- The school has about 3 events per year using the auditorium. Those could be moved to the Gym if auditorium capacity is reduced.

Auditorium House

- The Ed Spec calls for 500-seats.
 - The auditorium currently seats 1,281; 933 on main level and 348 on balcony.
 - Improvements to accessible seating, seat size and row spacing will decrease seating.
 - Staff prefer more seating than Ed Spec., closer to 600.
- The Ed Spec calls for a 500-sf Orchestra Pit.
 - Staff prefer an orchestra pit with thrust stage extension. Pit floor 9-ft below stage.
 - Shallow seating bowl makes it hard to see over the orchestra and achieve pianissimo levels.
 - Plan for about 10 musicians.
- Control Booth – provide in seating area.
 - The control equipment will need lockup covers if in the open.

- Look at CHS and RHS examples.
- Room for teaching
- A occupied projection booth is not needed if other projection configurations can be made.
- Box Office – keep but reconfigure as required.
- Concessions – keep but reconfigure as required.
- Remove paintings.
- Room acoustics are poor.
 - Voices do not project to the full house
 - Design team will analyze the room acoustics
- Exiting from the house may be reduced as seating decreases.
 - Study re-allocation of house poche.
- All students must stay within teacher's visual control. Balcony access (including stage lighting adjustments) is from the corridor now.

Auditorium Stage and Backstage

- Ed Spec call for 3,500-sf stage
 - The existing stage is 3,545-sf including side-stage.
 - The stage is too deep, sound does not project from the back.
 - Prefer 35-ft stage with 5-ft crossover.
- The stage floor is 4-inches lower than the main floor level at corridors.
- An accessible path (lift) to stage is required. Perhaps this can serve orchestra pit as well.
- Stage lighting is poor and should be replaced.
 - The dimmer is less than 10-years old but is a low quality unit.
 - Confirm that it will be compatible with new fixtures.
- There is no sound existing sound system, no clusters.
- Boys Dressing is not at a floor level and is inaccessible. It must be moved to the main floor level.
- Include individual changing areas and toilets near shared make-up / green room.

Black Box / Theater Classroom

- Proposed location is good.
- Double height is preferred. Provide catwalk instead of pipe grid if possible.
- 100-125 seat audience.
- Prefer a wood floor.
- Match stage proportions if possible for rehearsals.
- Possible location for dance / cheer practice.
- Milwaukie HS is a good example. RHS is a poor example.
- Include office and storage off od Black Box.

Scene Shop

- One stagecraft class of 30 students currently.
- Current shop is landlocked behind stage.
- Access to outdoor space is preferred.

- The theater instructor does not have access to the lift, however, the lift is not large enough to bring set construction supplies up from the current loading dock.
- Need to bring in 8-ft x 12-ft materials.
- Proposed new location is acceptable, next to Black Box and across hall from stage.
- Break out specific work areas for tools:
 - Wood station
 - Paint station
 - Sewing station
 - Laundry / Wash Station
- Tools are old and not safe.
- This room can also be used for sewing (textiles) and wood shop.

Band Room

- The existing room works but need improvements.
- Remove permanent risers and instrument storage, provide flat floor.
- Carpet on floor.
- Provide band office.
- Practice rooms over office are desirable. Keep stair access from Band to upper level.
- Keep music library between Band and Choir.
- Request for a manual operating acoustic wall drape and pocket to control sound pressure levels.

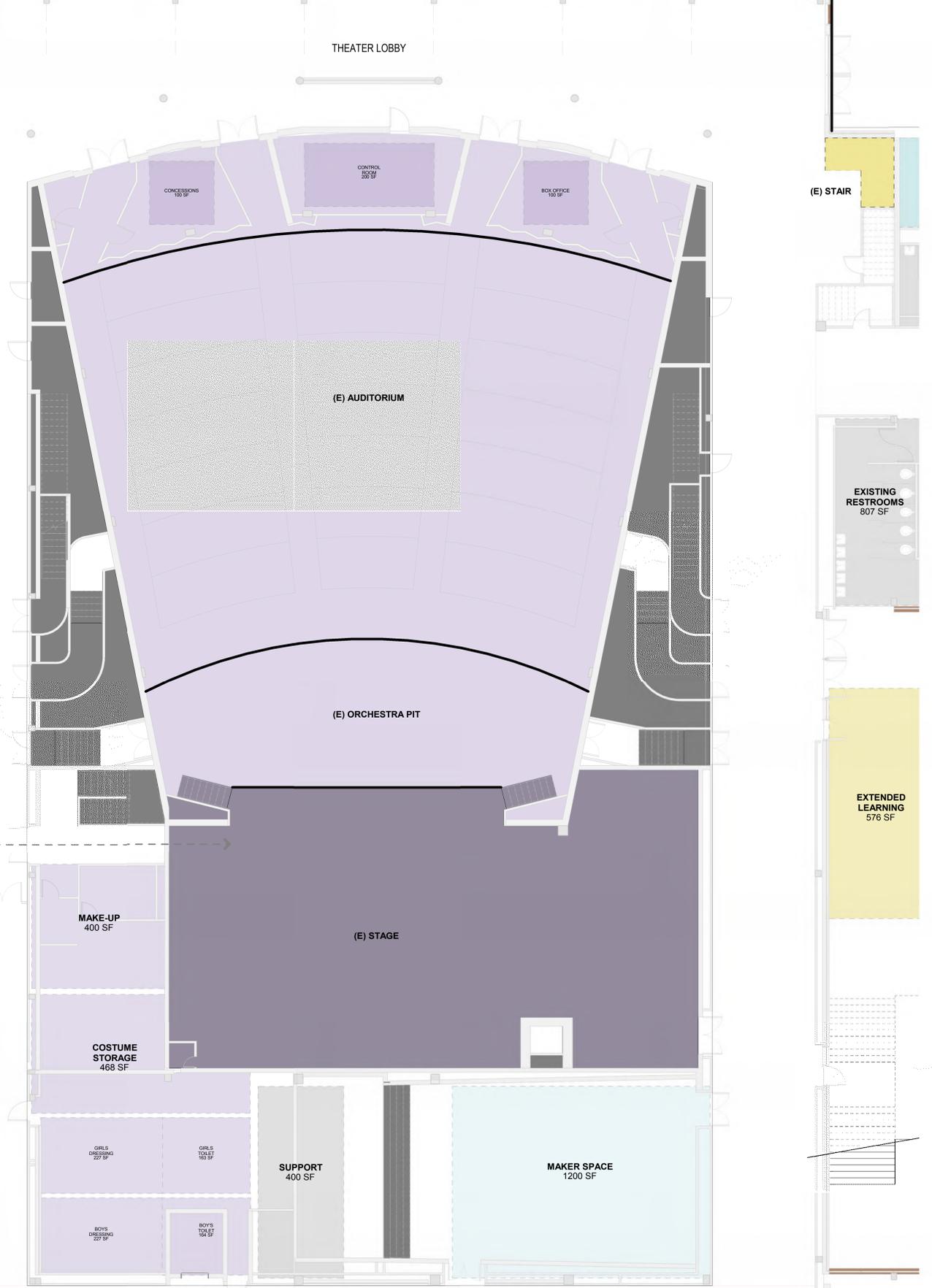
Choir Room

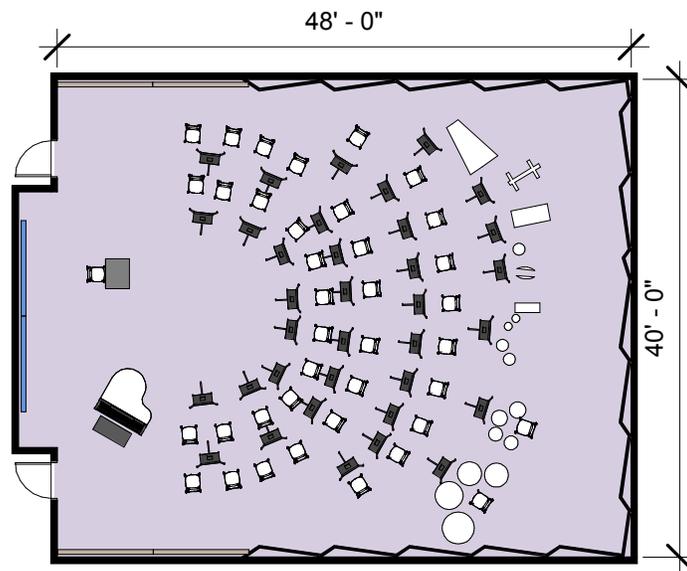
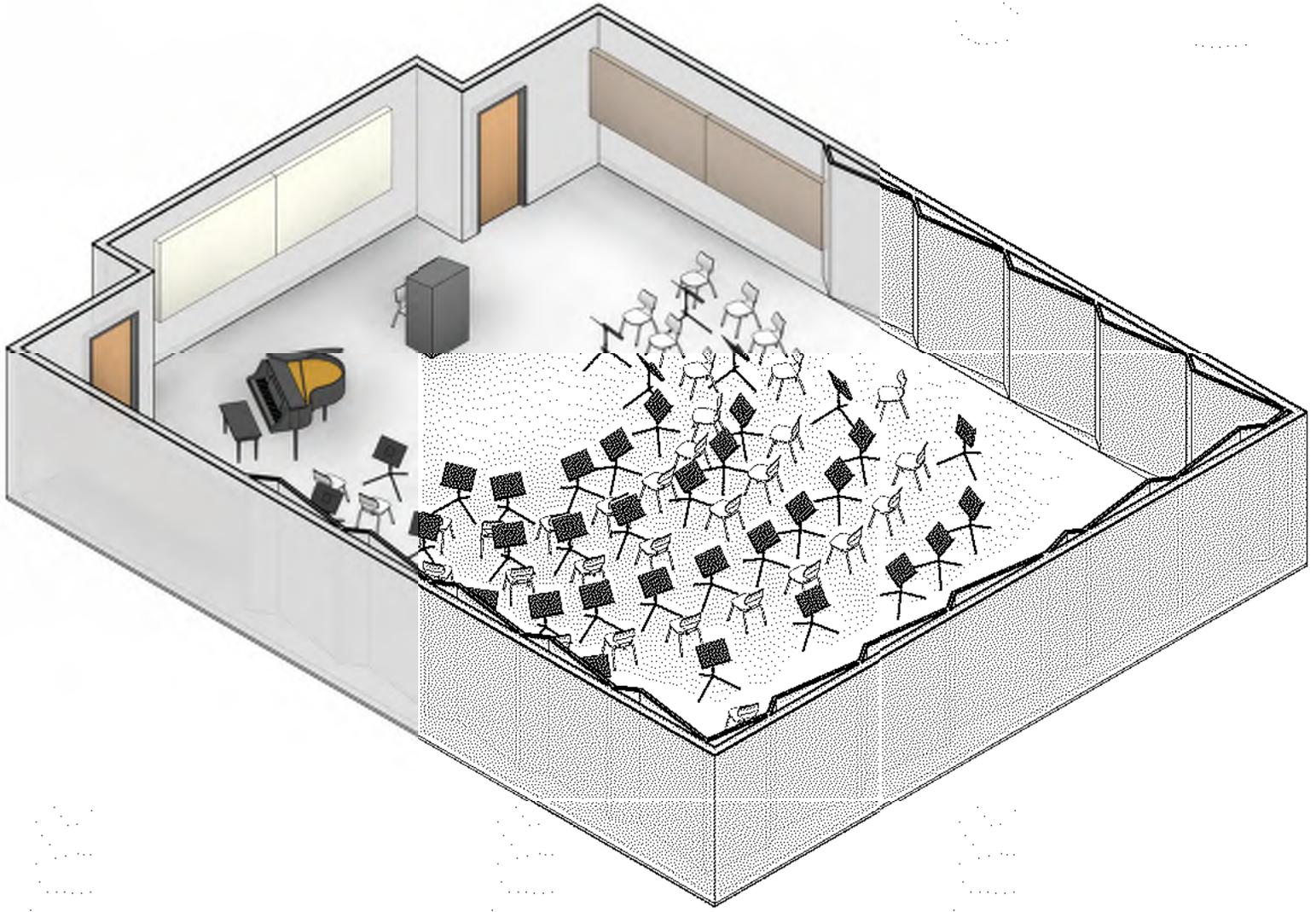
- Need to keep choir program and room.
- The existing room works well.
- Provide carpet on the floor.
- Provide choir office.

Music Support Spaces

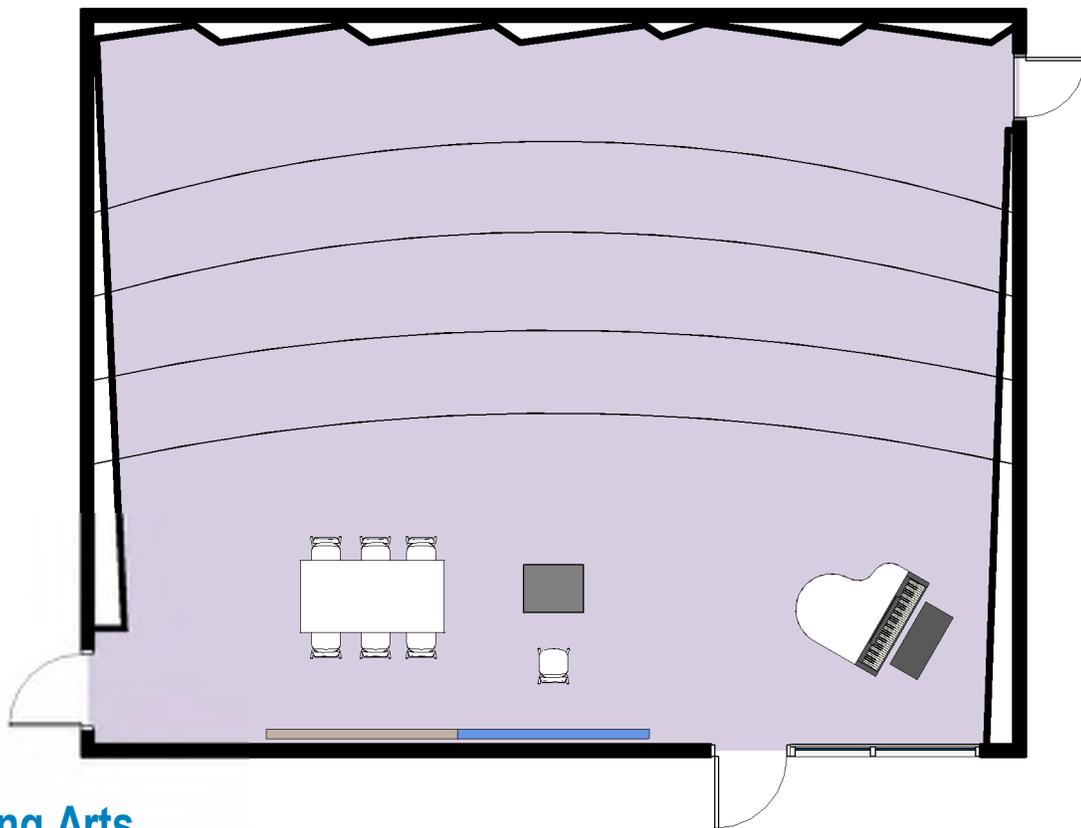
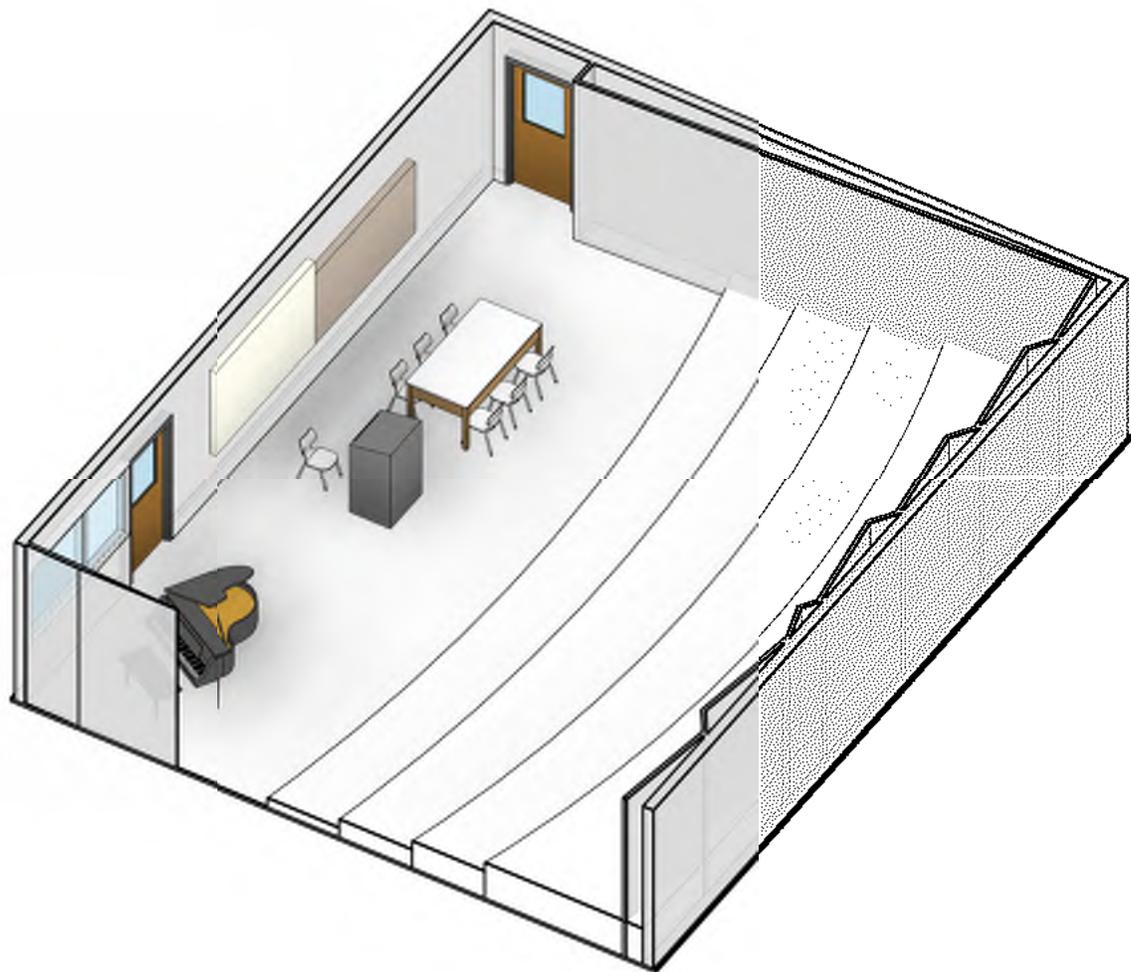
- Instrument storage across the hall is acceptable.
- Large practice / ensemble room across the hall is acceptable.
- New corridor provides elevator access to practice rooms.

End of Meeting Notes





12/11/2017

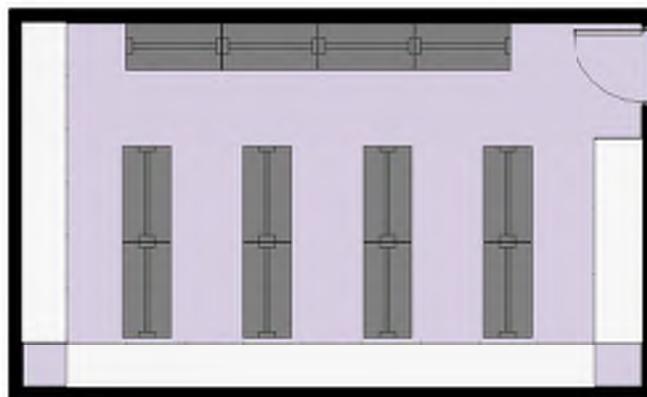
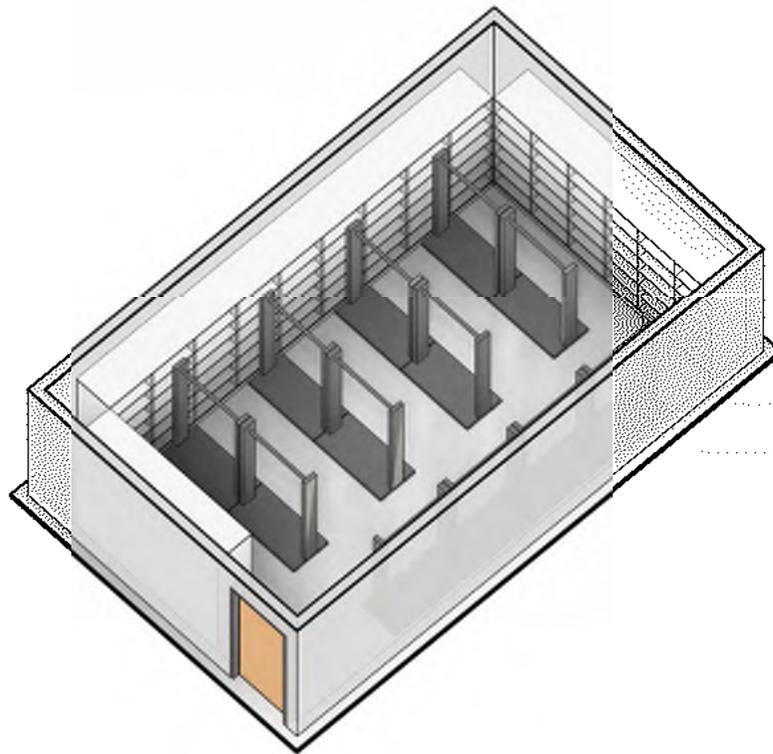


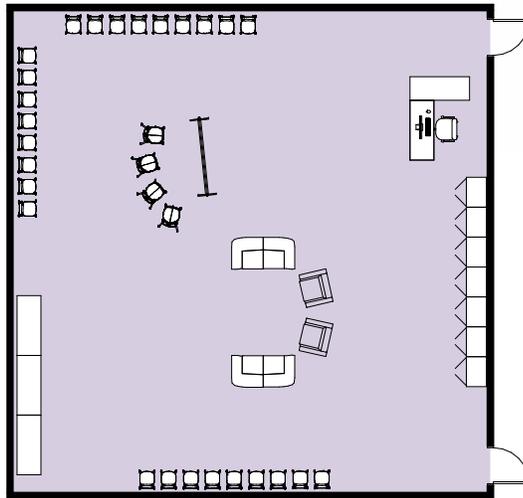
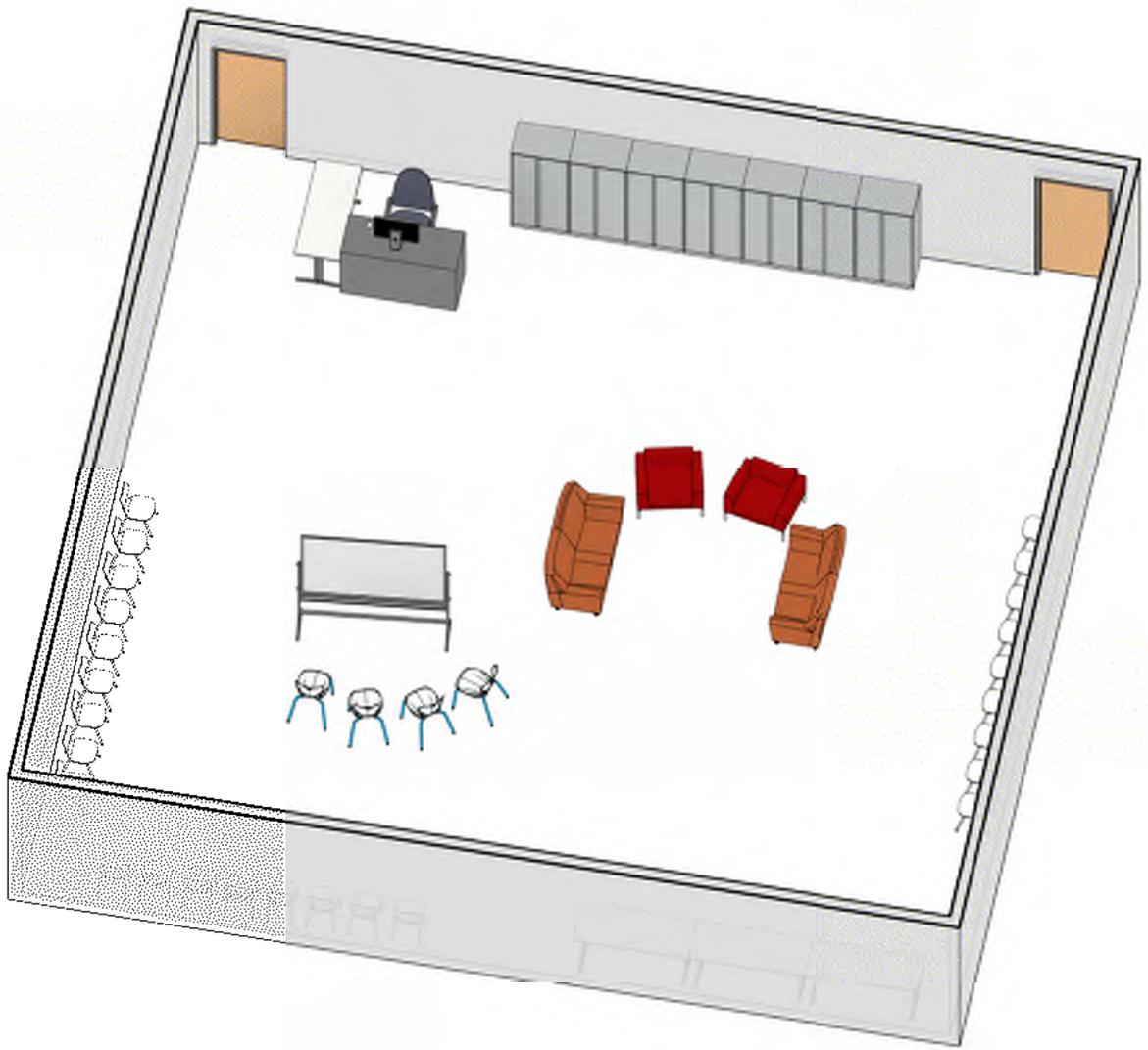
Performing Arts

Choir Room

12/11/2017

opsis architecture | DAO architecture

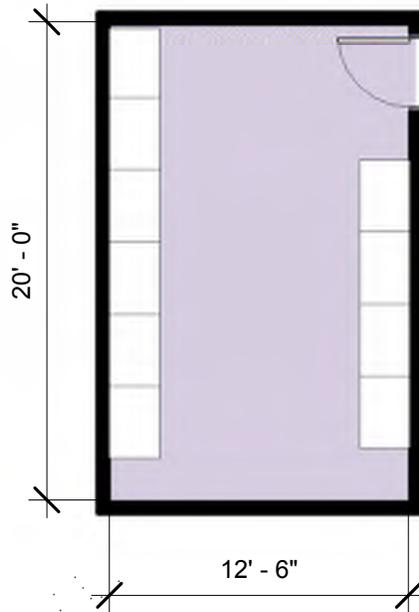
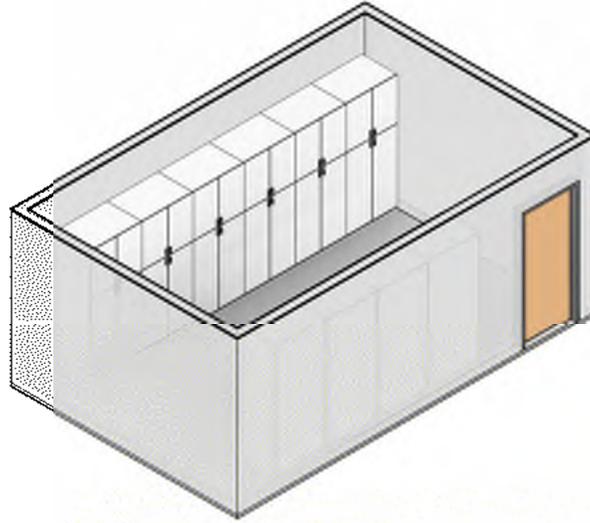


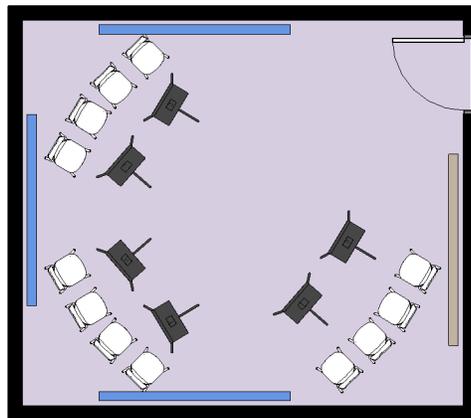
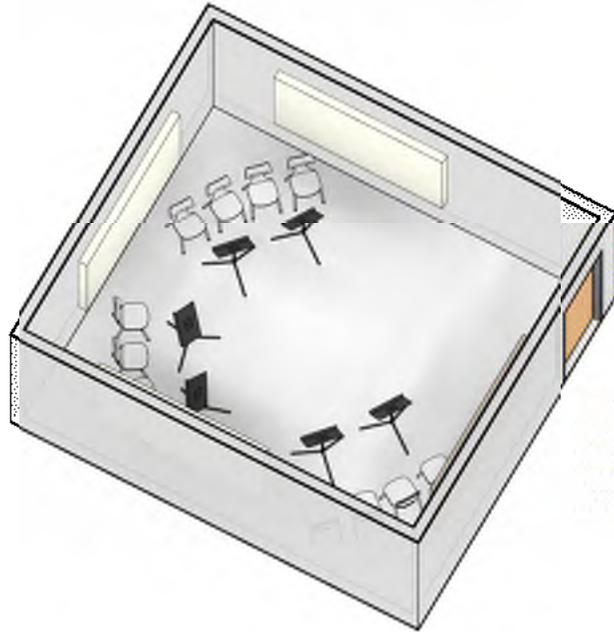


Performing Arts

Drama Classroom

12/14/2017



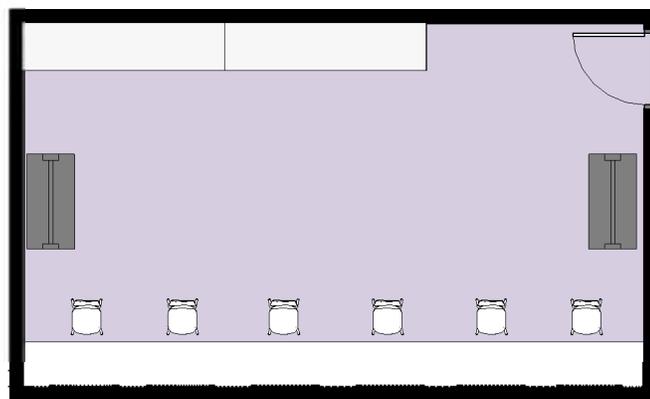
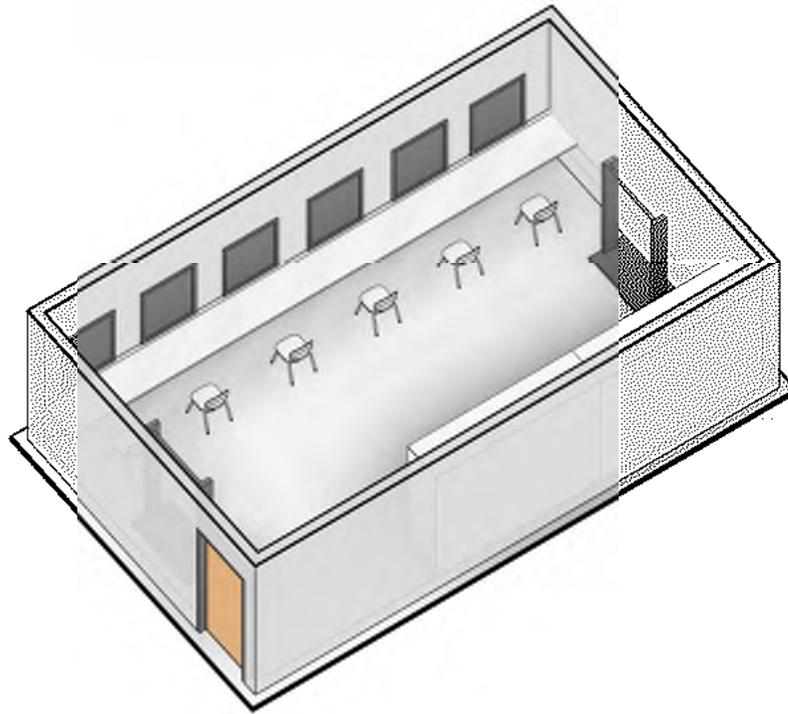


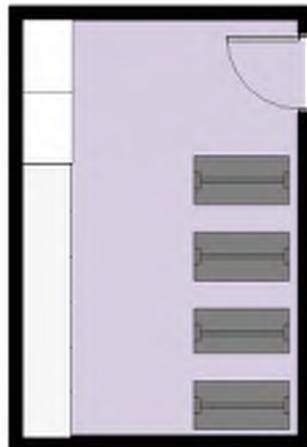
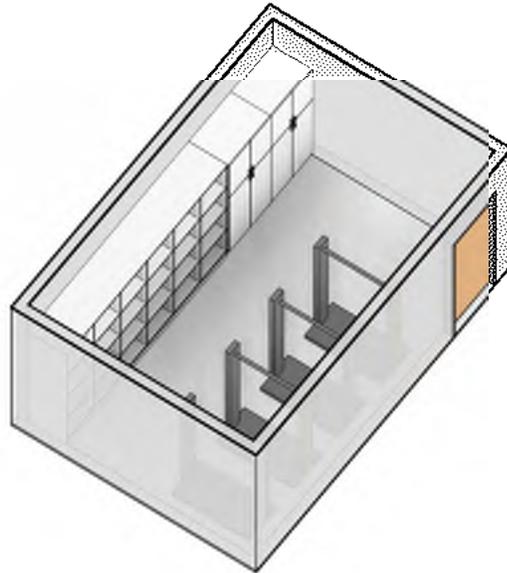
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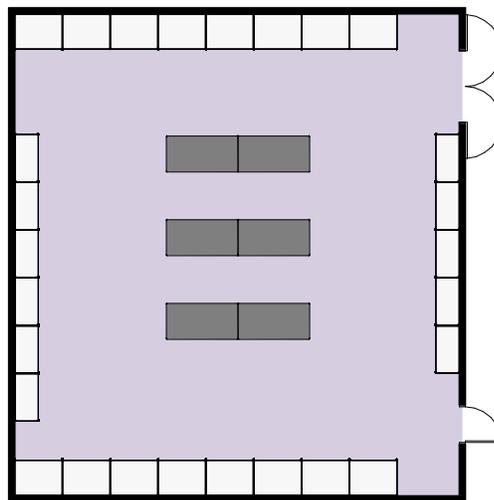
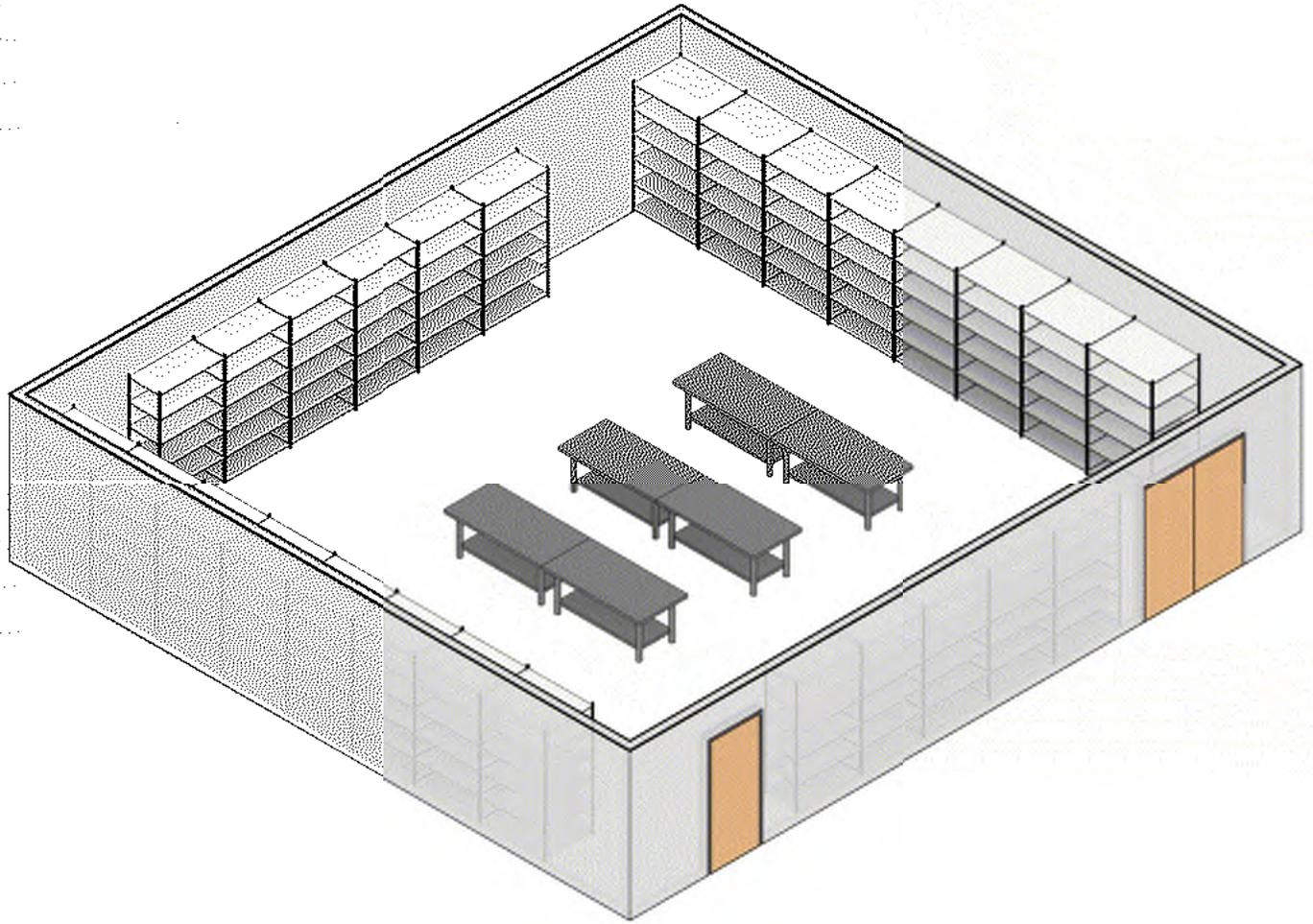
12/11/2017

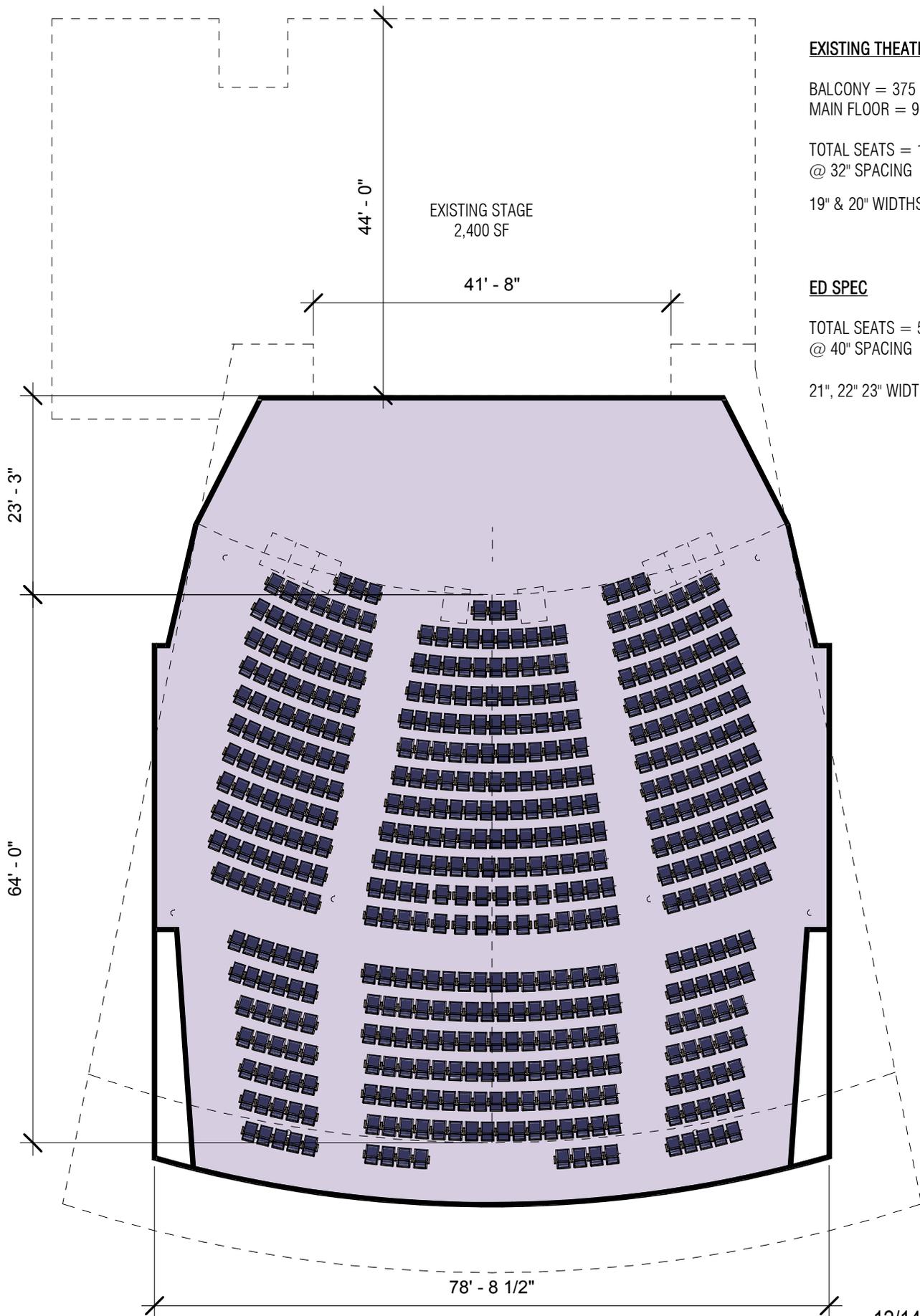
Large Practice Room/Music Lab

opsis architecture | DAO architecture









EXISTING THEATER SEATS

BALCONY = 375
 MAIN FLOOR = 970

TOTAL SEATS = 1345
 @ 32" SPACING

19" & 20" WIDTHS

ED SPEC

TOTAL SEATS = 500
 @ 40" SPACING

21", 22" 23" WIDTHS

12/14/2017

MEETING MINUTES

Meeting Name:	Visual Arts	
Project Name:	PPS Madison High School Modernization	
Project Number:	4722-01	
Submitted By:	Kirsten Justice	
Meeting Date:	December 14, 2017	
Attendees:	Ayana Horn Clint Harpster Rick Graves Susan Russell Kirsten Brayson Joann Le Steven P. Nelsen Kirsten Justice	PPS Social Studies, Art Art Ceramics, Textiles PPS DAO Opsis Opsis
Distribution:	Jessie Steiger Randall Heeb	PPS Design Team

This represents our understanding of discussions during the Meeting. Revisions by participants should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Visual Arts classes and future program needs.

Ceramics/3D Art:

- Desire to be located near the other CTE programs (Digital Media, Engineering and Computer Sciences). (3D) Design Program cross pollinates with engineering and robotics.
- Susan sees no benefit in co-locating and sharing storage space with 2D Art.
- Current student count 35 max.
- Would prefer to be located on current level (lower floor) – infrequent truck deliveries
 - Would prefer and exterior drive-up entrance
 - Supply deliveries include:
 - Plaster
 - Clay “Georgies”. 1000lb deliveries, twice a year
 - Glazing material
- Space requires Kiln Room, Glazing Room and room for storage shelving.
- Kiln Room requires special venting to the outside. Currently have two kilns in use.
 - Space should be fire-“proofed”
 - Cool intake for room should be provided
- Future: Floor drains (with plaster trap)
- Equipment to be accommodated in classroom:
 - (15) pottery wheels
 - (2) slab rollers
 - (1) wedging table

- (2) Utility sinks (with plaster trap)
- Glazing Room has special venting requirements and should accommodate a pugmill
- Program would not have a need to utilize "Maker Space". Equipment for the program is specific to the curriculum, and not conducive to the maker space
- Future: Access to an outdoor firing pit
- Future: Computer carts with Samsung books
 - action Item: Opsis to check with PPS regarding venting requirements
- Drainage (floor sink or trench drain) with plaster trap is needed
- Classrooms need their own ventilation
- Open storage space is needed
- Shared storage is not preferred for ceramics
- All spaces (Classroom, Kiln room, Glazing Room) need their own ventilation

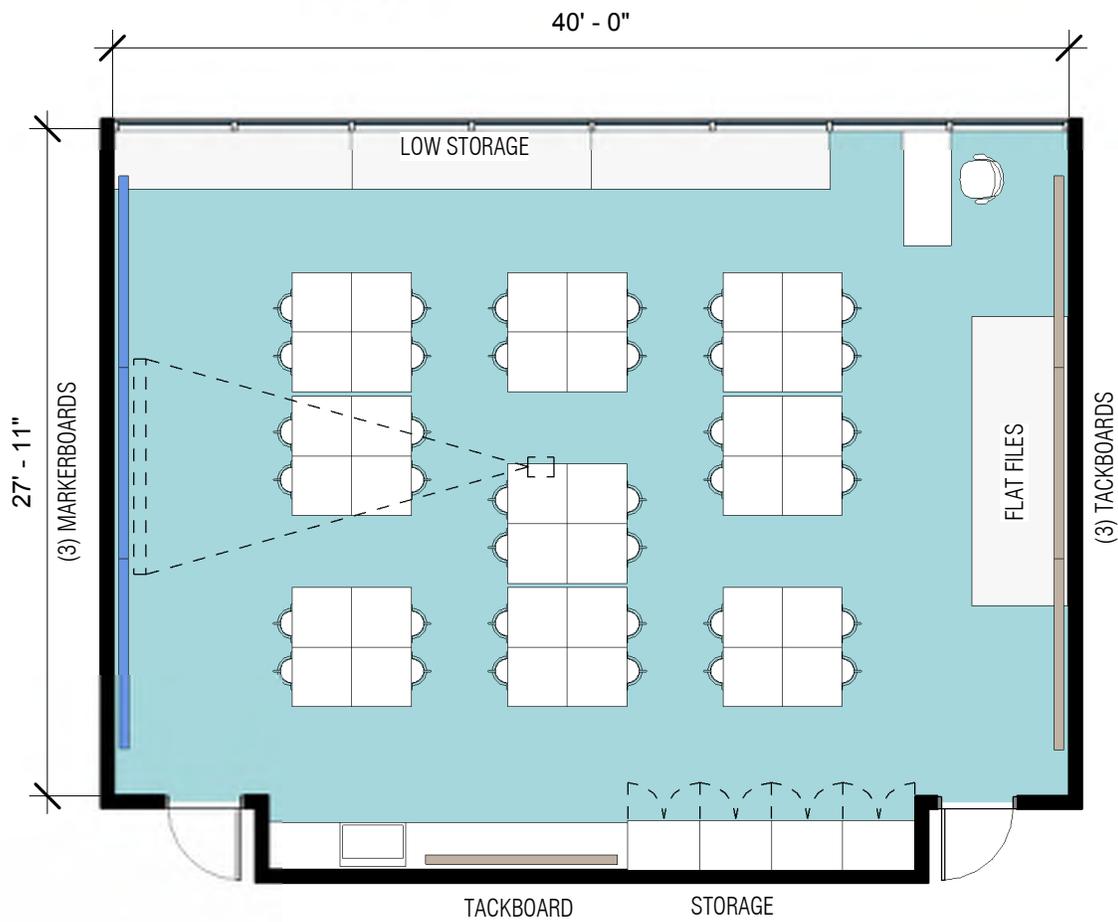
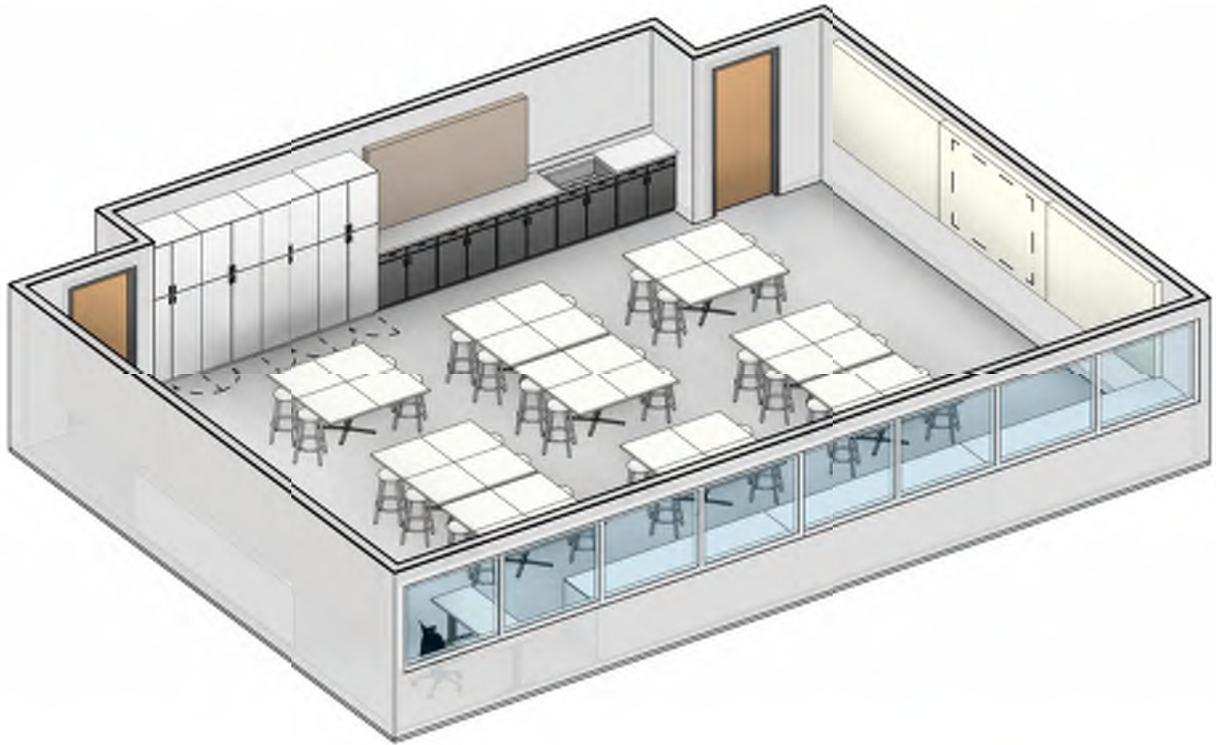
Textiles

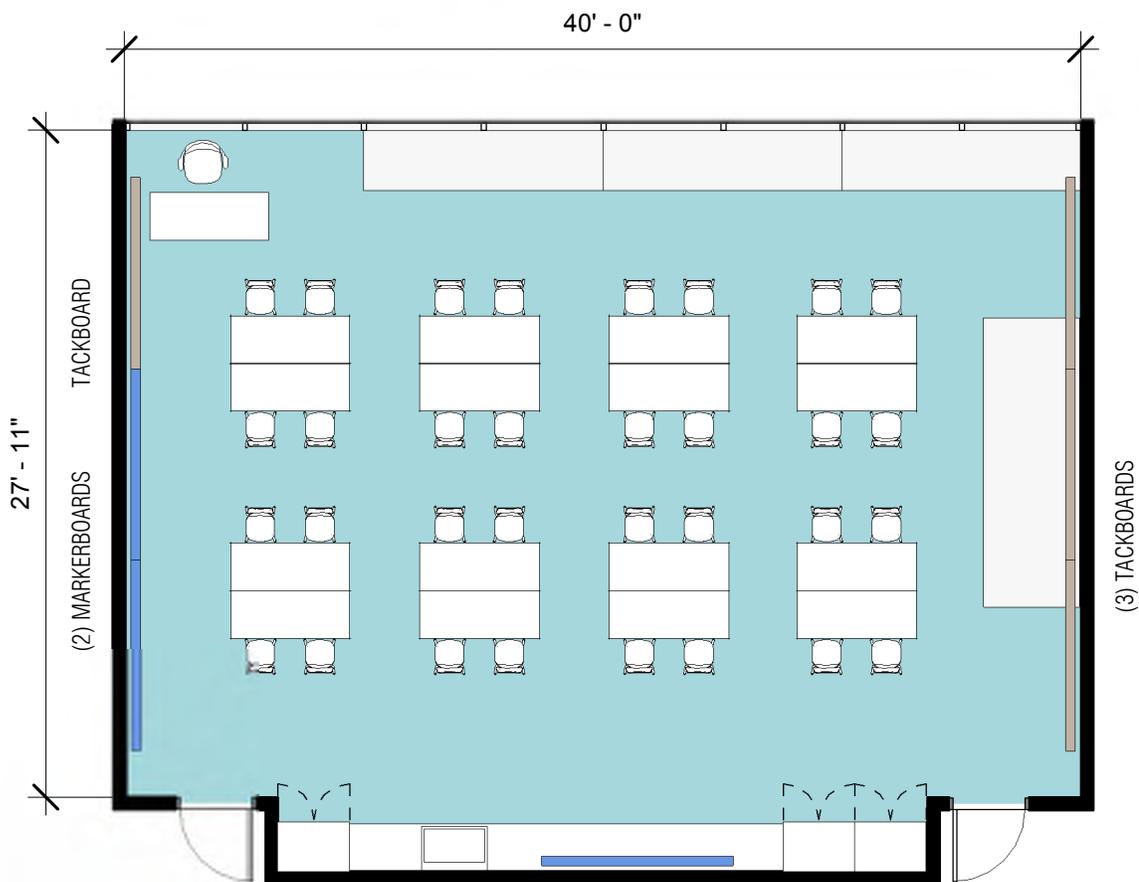
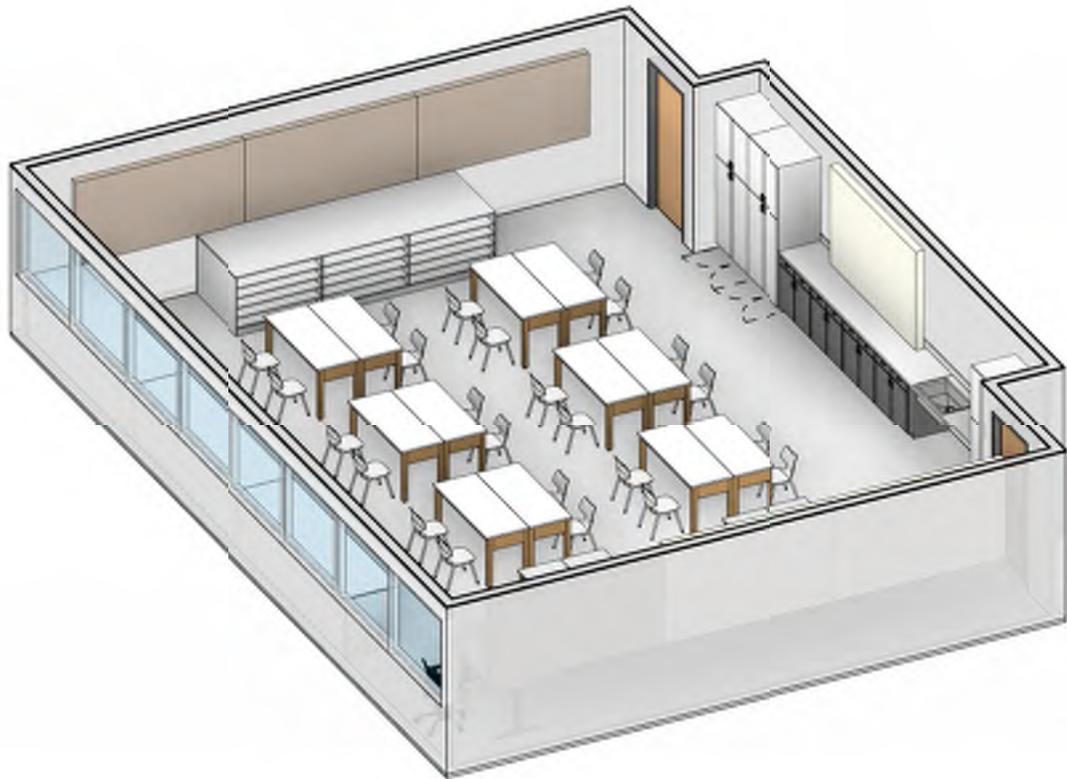
- Textiles program could be co-located with 2D Art and theater. Collaboration with theater (costume making).
- Program can occur in a regular sized classroom, but is a part of design and applied arts.
- Classroom needs lockable storage for sewing machines and fabrics.
- A sink is required
- The following additional equipment needs to be accommodated within the classroom:
 - Anvils
 - Sanders
 - Power tools
 - Hand tools
- About 20 students
- Future: storage space for mannequins

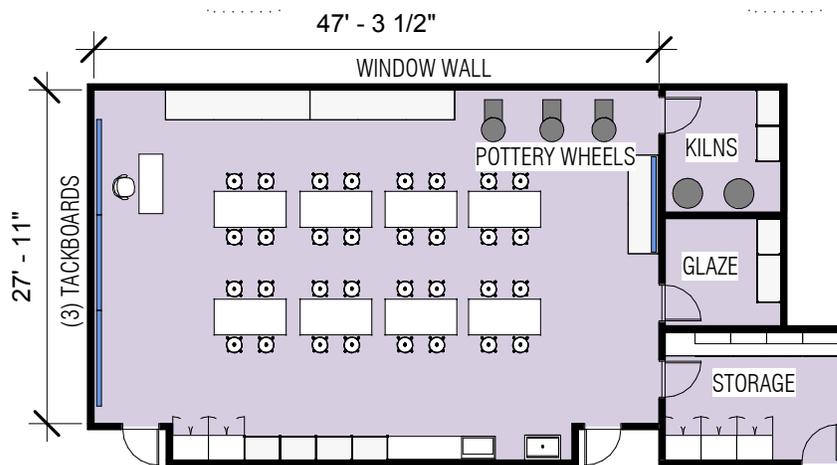
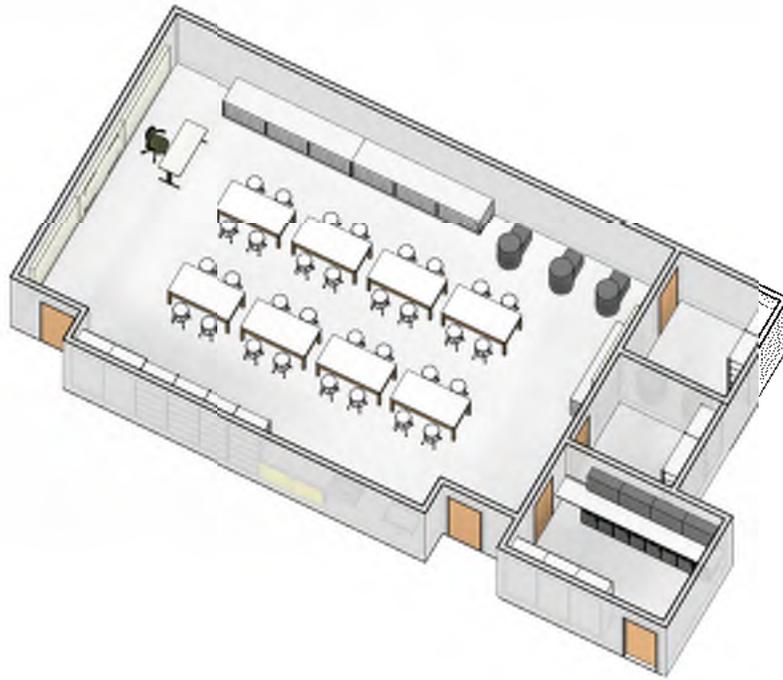
2D Art

- Space should have great light and a good amount of storage (current classroom is ideal).
- Would utilize "gallery space" nearby for exhibits and auxiliary workspace for students
- Classrooms requires two sinks (plaster traps? Ceramics work)
- Student count in this class varies from 25-35
- Class would benefit from close proximity to art courtyard. Sketching and painting outside is desired.
- If "Maker Space" had wood working tools Rick would utilize the space

End of Meeting Notes







12/11/2017

MEETING MINUTES

Meeting Name: SUN / Community Partners

Project Name: PPS Madison High School Modernization

Project Number: 4722-01

Submitted By: Steven P. Nelsen

Meeting Date: January 18, 2018

Attendees:

Jessie Steiger	PPS
Randall Heeb	Opsis
Steven P. Nelsen	Opsis
Kristine Merkel	DAO
Sarah Delaney	IRCO SUN Site Manager
LaRae Goldsmith	IRCO SUN
Joanna Xing	IRCO SUN
Stacy Holtmann	IRCO SUN
Tuku Walio	IRCO Sun Youth Advocate
Callie Brown	REAP Youth Advocate
Jerome Sloan	REAP
Maria Paz Herrera	Latino Network
Aliera Morasch	Latino Network
Miquel Rodriguez	College Possible
Glenn LaMotte	PPS Equity & Partnerships

Distribution:

Jessie Steiger	PPS
Randall Heeb	Design Team

This represents our understanding of discussions during the Meeting. Revisions by participants should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to gather input from the existing Community Partnerships / Programs at Madison HS. This includes verification of partnership groups, overall program mission and vision, existing and future space requirements, and any program adjacency requirements or desires.

Madison IRCO SUN and Program Partners

- IRCO (Immigrant Refugee Community Organization)
 - IRCO SUN Youth Advocacy (SYA)
 - Madison SUN
 - Hunger Relief Cooking Class
 - Student-led Clubs
 - After-school meals (cafeteria)
 - Tutoring Center
 - Madison Food Pantry (Oregon Food Bank)
- College Possible (yearlong program)
 - Junior Cohort, Senior Cohort
- Latino Network
 - Year-long programs
 - 9th – 10th Grades: Early Escalera

- 11th – 12th Grades: Escalera
- Escalera Colegio De Padres (parent support program)
- Urban Opportunities
 - Jobs (101)
- Open School
 - Step Up 9th, Step Up 10th grade
 - Need separate space (afrita.davis@openschoolnw.org)
- REAP <http://www.reapusa.org/programs/>
 - Renaissance: specialized support exclusive to black male students
 - Solutions: year-round leadership program that engages student voice among business and community leaders.
- NAYA (Native American Youth and Advocacy)
 - Madison Food Pantry
- Confluence Environmental Center & AmeriCorps
 - SUN Environmental Justice Educator
- Adult ESL part of SUN programming
 - Adult ESL Class

Madison SUN Program

- SUN is a wraparound system of support for students, families and community members.
- SUN Community Schools are a collaboration of Multnomah County Department of Human Services, Portland Parks & Recreation, IRCO and PPS. SUN offers:
 - Academic Support (computers / laptops)
 - After-School Tutoring
 - Community Food Pantry
 - School & Hygienic Supplies
 - Support space: sink, refrigerator, microwave (staff and students)
 - Adult Education Classes
 - Referrals to Social Services
- SUN Offices
 - 13 staff currently occupy the office space created next to the library, B-19
 - Case Management
 - Academic Support
 - Student community space and student support
 - Programming after school
 - Includes Africa House
 - Programs are offered throughout the School Day
 - Before School: drop-in meetings and study
 - During School: drop-in meetings (students study here throughout the day)
 - Lunch: drop-in meetings and study
 - After School: drop-in meetings, study and formal programs, Flex-time
 - Lunch and Flex time is when demand is highest
 - 2-hours twice a week
 - Flex-Time is shortened day each week for students to meet with teachers or SUN staff
 - Sun Space become a place of identity for students
 - Students come to B-19 because it is a safe supervised space

- Mentors are available to help students in need
- Staffing based upon need, not enrollment
- After school programs
 - Locate near cafeteria to support after-school meals
 - Access to technology is extremely important
 - Between 145 - 180 students served
 - Most rooms are scheduled annually, some on short notice
 - Staff rely on relationships with teachers to schedule rooms
 - Shared classroom conflicts centered on furniture/layout
 - More mobile furniture would help SUN staff return classrooms to teacher's layout
 - Programs are typically from 3:15 – 5:00, can run until 8:30 PM twice a week
- 1. African Drumming Club
- 2. College Possible
- 3. Escalera
- 4. IRCO SUN Youth Advocacy
- 5. Jobs 101
- 6. Food Pantry
- 7. Makers Club
- 8. SOAR! Indian Education
- 9. Solutions
- 10. Step Up
- Tutoring Center (Drop-In) after school
 - Uses Library except during staff/special meetings – disruptive to relocate one day per week
 - Serves between 5-30 students
 - Requires access to technology / computers
 - Shared space
- College Possible
 - After school program, runs (4) days a week, Monday thru Thursday
 - Yearlong program
 - Adjacency to the career counseling center would be desirable
- Renaissance
 - Mainly at lunch period
 - 12-15 students
- Food Pantry
 - Oregon Food Bank is partner/supplier
 - Open to the community from 4-6pm on Wednesday only
 - Generally accessed by older shoppers
 - Supplies included canned goods, as well as produce, typical grocery items
 - Currently on B2 level (in Schoolhouse Supplies) using about 400-sf and sharing about 200-sf.
 - Level B2 is the preferred location because it is a large area adjacent to parking.
 - Up to 50 shoppers come and enter a lottery distribution system. Provide chairs for waiting.
 - Provide storage equipment and transaction counter.
- Clothing Closet
 - There is no Clothing Closet now and it is not anticipated in the future

Space Needs and Adjacencies

- Site needs: safe, well lighted access to parking and bus stops

- SUN Offices: near library preferred, ease of access to building entry. Room needs include:
 - Needs to be a larger space
 - Prefer small open desks for staff
 - One large group table in center of space
 - Several tables for 4-6 for group work and tutoring
 - (3) glass meeting rooms for 4, confidential conversations, exposed to main room
 - Private office for the administrator with space for confidential meetings.
- Instructional Space Needs: needed at lunch, then after school
 - Ed Specifications list (2) Classrooms @ 500-sf
 - Serves approximately 12-15 students, upwards of 35
 - Access to technology / projection is required
- Cooking classes and demonstrations
 - Accessibility to garden would be desired
 - Affiliated with Sustainable Agriculture
 - Cares for garden
 - Option to partner with science – food lab
 - Cafeteria used for cooking – files CUB permit with PPS
 - Some classes could be done in the garden space
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 - 5 – 20 parents
 - 6pm – 8pm, twice a month
 - Requires adjacent childcare room
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- All Classroom: should be near each other for after school support and access to facilities

Wrap Around Services not included in Meeting

- STEP UP – Through SUN program
 - <https://openschoolnw.org/programs/step-up/>
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 - (503) 488-5188
- NARA Counseling – Native American Rehabilitation Association
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The SUN space is a safe and welcoming environment that students consistently seek out. Students bond with each other and build strong relationships with adults. It is vital to the success of many students.

End of Meeting Notes

MEETING MINUTES

Meeting Name: SUN / Community Partners
Project Name: PPS Madison High School Modernization
Project Number: 4722-01
Submitted By: Steven P. Nelsen
Meeting Date: January 18, 2018
Attendees:

Jessie Steiger	PPS
Randall Heeb	Opsis
Steven P. Nelsen	Opsis
Kristine Merkel	DAO
Sarah Delaney	IRCO SUN Site Manager
LaRae Goldsmith	IRCO SUN
Joanna Xing	IRCO SUN
Stacy Holtmann	IRCO SUN
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Distribution:

Jessie Steiger	PPS
Randall Heeb	Design Team

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End of Meeting Notes

MEETING MINUTES

Meeting Name: SPED
Project Name: PPS Madison High School Modernization
Project Number: 4722-01
Submitted By: Randall Heeb
Meeting Date: January 25, 2018
Attendees:

Paul Cathcart	PPS Senior Manager	Randall Heeb	Opsis
Jessie Steiger	PPS Project Manager	Joann Dao Le	Dao
Petra Callin	MHS Principal		
Lajena Broadous	MHS VP		
Robert Cantwell	Dir - Special Ed		
Mary Pearson	Sr Dir Student Service		
Noelle Sisk	SPED Advocate		

Distribution:

Jessie Steiger	PPS
Randall Heeb	Design Team

This represents our understanding of discussions during the Meeting. Participants to communicate revisions to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to gather input from the Special Education administrators from the District and Madison HS. This includes verification of overall program mission and vision, existing and future space requirements, and any program adjacency requirements or desires.

General

- District SPED staff to review project plans and sign off prior to bidding.

Madison Program

- Sensory Support Room
 - Place to calm down or be alert; is a planned space with soft light, music, trampoline, etc.
- Intensive Skills Classroom (ISC)
 - Two rooms, for students with different needs
 - About 30 total students, 13 highest needs, 17 also access General Classes
 - High needs students, consider medically fragile
 - Toilet / Kitchen / Laundry
 - Don't need to be together, can be with general classrooms
 - Need hi-low table for changing in toilet room, ADA compliant, accommodate 2 staff
- Learning Resource Center (LR)
 - 2 rooms that co-teach – should be adjacent
 - 20 students at a time
 - Learning Lab – student work individually or groups of 2 at stations, self-directed
 - students are very tech-savvy.
 - 4.5 SPED teachers and 150 students use the LRC
 - Staff have different skills, should be available to both classrooms
 - Can be on upper floor if needed
 - Should be near Counseling

- Growth is slightly linear but doesn't exactly reflect increases to total population.
- Ensure that SPED classrooms don't feel isolated and should be located around 'peers' and be closer to standard classrooms
- Office, Reception and Conference Room can be shared – prefer with Counseling
- Need to gain insights for both 'mobility' and 'cognitive issues' to incorporate into the design
- Itinerants
 - Speech Pathologists (2 per Ed Spec / 1.5 now)
 - Psychologists (2 per Ed Spec / 1.5 now)
 - Should be grouped with counseling
 - Should be near or clear path to SPED Counselor office
 - May be on the second floor, but ensure access by parent with disabilities

Transportation

- Currently 5 or 6 busses serve Madison
- Drop off at NW end of Alameda
- Arrive / Depart all at the same time
- Can continue to use curb side drop-off.

End of Meeting Notes

MEETING MINUTES

Meeting Name:	CTE Health Sciences	
Project Name:	PPS Madison High School Modernization	
Project Number:	4722-01	
Submitted By:	Randall Heeb	
Meeting Date:	January 30, 2018	
Attendees:	Jessie Steiger Jan Osborn David Valenzuela Eric Mellgren Randall Heeb	PPS PPS CTE MHS Science Instructor MHS Science Instructor Opsis
Distribution:	Jessie Steiger Randall Heeb	PPS Design Team

This represents our understanding of discussions during the Meeting. Revisions by participants should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to gather input from the District and School instructional staff about the CTE Health Science Program at Madison HS. This is the initial meeting focused on overall program mission and vision, existing and future space requirements, and any program adjacency requirements.

Health Science Program

The Health Science program at Madison teaches the curriculum developed by “Project Lead The Way”, (PLTW) a national STEM focused organization. Teachers must complete 2-weeks of rigorous training for each subject. The PLTW Design Guide and website are <https://www.pltw.org/>.

- Students completing this work mainly go on to 4-year colleges
- Health Science can be “bench / lab” or “bed / clinic”. Madison is bench and Benson is the bed
- Classes are hands-on, student directed, group-oriented learning

Classes Offered

Principles of Biomedical Science (PBS)

- Freshman – 2 sections of 19-24 students - Mellgren
- <https://www.pltw.org/our-programs/pltw-biomedical-science-curriculum#curriculum-1>
- By engaging in activities like dissecting a sheep heart, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person.
- Teaches biology through a medical lens, forensics.
- Careers Exploration, Food Science, Genetic Testing, Gel Electrophoresis
- Students work in groups of 2-4

Human Body Systems (HBS)

- Sophomore – 4 sections of 27-29 students - Valenzuela, Mellgren
- <https://www.pltw.org/our-programs/pltw-biomedical-science-curriculum#curriculum-2>
- Through projects such as determining the identity of a skeleton using both forensic anthropology and DNA analysis, students examine the interactions of human body systems and apply what they know to solve real-world medical cases.

- Anatomy & Physiology
- Build clay bodies, skeletons and tissue
- Instructor likes having student projects displayed in the room
- Dissections
- Direct Instruction and Lab work
- Like a biology lab/classroom.

Medical Interventions (MI)

- Junior – 2 section of 22-25 students
- <https://www.pltw.org/our-programs/pltw-biomedical-science-curriculum#curriculum-3>
- Students delve into activities like designing a prosthetic arm as they follow the life of a fictitious family and investigate how to prevent, diagnose, and treat disease.
- Follow the Smith Family Global Intervention
- Study super-bugs, antibiotic resistance, cancer, molecular labs
- Study genes, taste buds, organs
- Much open study, group projects
- Use 3D printers to make organs

Biomedical Interventions (BI)

- Senior – 2 sections of 25-26 students - Valenzuela
- <https://www.pltw.org/our-programs/pltw-biomedical-science-curriculum#curriculum-4>
- Students build on the knowledge and skills gained from previous courses to design their own innovative solutions for the most pressing health challenges of the 21st century
- Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They work on an independent project with a mentor/advisor from a university, medical facility, or research institution.
- Capstone Course
- Open projects and Internships
- Study Emergency Department design, worm addiction behavior

Space Needs and Adjacencies

Lab Spaces

- Prefer deeper counters (30-in) at perimeter for large projects
- Need 6-9 sinks on perimeter only
- Teach on long wall
- Include display cameras, document presenters and microscopy cameras to show instructor work
- Fume hood not needed, need general exhaust for burning experiments and dissections
- Storage cabinets in current room B-64 is about right
- Need more drawers to organized experiment-specific equipment (don't like RHS model of counters only and mobile storage)
- Prefer skeleton cabinet
- Prefer tall mobile tables and stools; push tables to perimeter as needed
- Arrange furniture for debate / Socratic Seminar occasionally
- Provide shower only as required by code, include eye wash in each room
- Need direct path between rooms, not just corridor; could include glass but keep rooms separate

- Prefer operable windows to the outside – smoke/odor exhaust
- Prefer to be near other STEM spaces
- Also teach AP Biology in one of these labs

Prep / Storage Space

- Need shared storage / prep room between rooms
- Include refrigerator/freezer: get special needs – stable, molecular, minus 80 freezer

Extended Learning Spaces

- Classes would use adjacent extended learning spaces for breakout study
- Students are engaged/invested, no need for constant visual oversight

Maker Space

- Could use 3D printers and some other tools (need to determine)
- Would schedule maker space on occasion

Academic Connections

AP + PLTW: Partnering to Create More Opportunities for Students

- The College Board and Project Lead The Way (PLTW) partnered on a program to encourage student participation in STEM courses and to build their interest in STEM degrees and careers. This program leverages the success of the College Board's AP and PLTW's applied learning programs.
- College and career pathways that connect AP and PLTW courses
 - PLTW courses introduce all students to the field
 - AP courses/exams provide an opportunity for advanced placement and/or college credit
 - PLTW specialization courses focus on knowledge/skills needed for rewarding careers
- A portfolio of career-focused opportunities for students

Curriculum - Connecting the Classroom to the World Beyond

- PLTW has activity > project > problem based (APB) instructional design centering on hands-on, real-world activities, projects, and problems that help students understand how the knowledge and skills they develop in the classroom may be applied in everyday life. The APB approach scaffolds student learning through structured activities and projects that empower students to become independent in the classroom and help them build skill sets to apply to an open-ended design problem.

Other Comments

Restorative Justice

- The Restorative Justice (RJ) program requires all classroom furniture to be organized in a circle on occasion for student directed discussions.
- The RJ program needs to gather 30-50 students/staff occasionally, currently use Library or classroom
- The RJ program requires that students have access to meeting space of about 6-people to address conflicts in real time. This could be paired with the Counselling suite - confirm.
- Staff see advantages to a wet lab that serves food science, culinary, sustainable ag, etc.
- Space is needed for student clubs (see list) and speakers
 - Science Pub
 - Red Cross – testing/certification
 - Medical Competitions

End of Meeting Notes

PPS 2017 Bond Work

MHS - New Concept Rev4 - Option C

Madison High School
2735 NE 82nd Ave
Portland, OR 97220

Prepared For: Opsis Architecture
920 NW 17th Ave
Portland, OR 97209

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1.00 Estimate Summaries

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PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Summary

GFA: Gross Floor Area
 Rates Current At February 2018

Location	GFA SF	Cost/SF	Total Cost
A ADDITIONS			
A1 NW Addition	40,873	380.19	15,539,387
A2 NE Addition	15,953	391.60	6,247,170
A3 East Addition	21,640	387.32	8,381,566
A4 South Addition (Aux Gym)	10,494	486.77	5,108,114
A5 Theater	10,796	513.44	5,543,103
A - ADDITIONS	99,756	\$409.19	\$40,819,340
B RENOVATIONS			
B2 Renovation Areas	179,841	333.77	60,026,079
B - RENOVATIONS	179,841	\$333.77	\$60,026,079
C SITEWORK			
C1 On-Site Work			11,775,211
C2 Off-Site Work			1,070,745
C - SITEWORK			\$12,845,956
ESTIMATED NET COST	279,597	\$406.63	\$113,691,375
MARGINS & ADJUSTMENTS			
Escalation to June 2020	14.5 %		\$16,485,249
ESTIMATED TOTAL COST	279,597	\$465.59	\$130,176,624

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Summary

GFA: Gross Floor Area
 Rates Current At February 2018

Location	GFA SF	Cost/SF	Total Cost
A ADDITIONS			
A1 NW Addition	40,873	266.30	10,884,506
A2 NE Addition	15,953	274.29	4,375,806
A3 East Addition	21,640	271.30	5,870,836
A4 South Addition (Aux Gym)	10,494	340.95	3,577,960
A5 Theater	10,796	359.64	3,882,646
A - ADDITIONS	99,756	\$286.62	\$28,591,754
B RENOVATIONS			
B2 Renovation Areas	179,841	233.79	42,045,042
B - RENOVATIONS	179,841	\$233.79	\$42,045,042
C SITEWORK			
C1 On-Site Work			8,247,902
C2 Off-Site Work			750,000
C - SITEWORK			\$8,997,902
ESTIMATED NET COST	279,597	\$284.82	\$79,634,698
MARGINS & ADJUSTMENTS			
Preconstruction	0.4 %		\$300,000
General Conditions	9.0 %		\$7,167,123
Bonds & Insurance	2.9 %		\$2,482,402
Overhead & Profit	3.1 %		\$2,777,111
Design Contingency	10.0 %		\$9,236,133
CM/GC Contingency	5.0 %		\$5,079,873
Market Volatility Contingency	5.0 %		\$5,333,866
Solar/Green Energy Allowance	1.5 %		\$1,680,169
Escalation to June 2020	14.5 %		\$16,485,249
ESTIMATED TOTAL COST	279,597	\$465.59	\$130,176,624

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Uniformat Level 2 Summary

Gross Floor Area: 279,597 SF
 Rates Current At February 2018

Description	Cost/SF	Total Cost
A10 Foundations	\$7.08	\$1,979,871
A20 Basement Construction	\$0.30	\$82,952
B10 Superstructure	\$17.09	\$4,779,160
B20 Exterior Enclosure	\$30.54	\$8,538,940
B30 Roofing	\$12.07	\$3,374,553
C10 Interior Construction	\$22.27	\$6,227,459
C20 Stairs	\$1.25	\$350,000
C30 Interior Finishes	\$18.52	\$5,178,551
D10 Conveying	\$1.25	\$350,000
D20 Plumbing	\$10.00	\$2,796,276
D30 HVAC	\$39.25	\$10,973,783
D40 Fire Protection	\$2.54	\$708,828
D50 Electrical	\$27.09	\$7,574,508
E10 Equipment	\$6.73	\$1,881,373
E20 Furnishings	\$8.80	\$2,460,311
F10 Special Construction	\$31.53	\$8,815,296
F20 Selective Building Demolition	\$15.04	\$4,205,408
G10 Site Preparations	\$10.80	\$3,019,274
G20 Site Improvements	\$18.71	\$5,232,155
G30 Site Civil/Mechanical Utilities	\$1.81	\$505,000
G40 Site Electrical Utilities	\$2.15	\$601,000
ESTIMATED NET COST	\$284.82	\$79,634,698
MARGINS & ADJUSTMENTS		
Preconstruction	0.4 %	\$300,000
General Conditions	9.0 %	\$7,167,123
Bonds & Insurance	2.9 %	\$2,482,402
Overhead & Profit	3.1 %	\$2,777,111
Design Contingency	10.0 %	\$9,236,133
CM/GC Contingency	5.0 %	\$5,079,873
Market Volatility Contingency	5.0 %	\$5,333,866
Solar/Green Energy Allowance	1.5 %	\$1,680,169
Escalation to June 2020	14.5 %	\$16,485,249
ESTIMATED TOTAL COST	\$465.59	\$130,176,624

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Uniformat Level 3 Summary

Gross Floor Area: 279,597 SF
 Rates Current At February 2018

Description	Cost/SF	Total Cost
A1010 Standard Foundations	\$4.09	\$1,144,097
A1030 Slab on Grade	\$2.99	\$835,774
A2020 Basement Walls	\$0.30	\$82,952
B1010 Floor Construction	\$7.14	\$1,997,170
B1020 Roof Construction	\$9.95	\$2,781,990
B2010 Exterior Walls	\$17.92	\$5,009,070
B2020 Exterior Windows	\$11.84	\$3,310,930
B2030 Exterior Doors	\$0.78	\$218,940
B3010 Roof Coverings	\$12.07	\$3,374,553
C1010 Partitions	\$10.52	\$2,942,589
C1020 Interior Doors	\$4.28	\$1,197,242
C1030 Specialties	\$7.47	\$2,087,628
C2010 Stair Construction	\$1.25	\$350,000
C3010 Wall Finishes	\$5.40	\$1,510,392
C3020 Floor Finishes	\$6.64	\$1,856,843
C3030 Ceiling Finishes	\$6.48	\$1,811,316
D1010 Elevators and Lifts	\$1.25	\$350,000
D2010 Plumbing Fixtures	\$9.43	\$2,635,800
D2040 Rain Water Drainage	\$0.57	\$160,476
D3090 Other HVAC Systems and Equipment	\$39.25	\$10,973,783
D4040 Sprinklers	\$2.54	\$708,828
D5010 Electrical Service & Distribution	\$5.90	\$1,648,412
D5020 Lighting & Branch Wiring	\$12.03	\$3,364,596
D5030 Communications & Security	\$9.16	\$2,561,500
E1090 Other Equipment	\$6.73	\$1,881,373
E2010 Fixed Furnishings	\$8.80	\$2,460,311
F1020 Integrated Construction	\$31.53	\$8,815,296
F2010 Building Elements Demolition	\$6.46	\$1,807,081
F2020 Hazardous Components Abatement	\$8.58	\$2,398,327
G1020 Site Demolition & Relocations	\$4.94	\$1,380,906
G1030 Site Earthwork	\$5.50	\$1,538,368
G1040 Hazardous Waste Remediation	\$0.36	\$100,000
G2010 Roadways	\$2.68	\$750,000
G2020 Parking Lots	\$1.82	\$509,279
G2030 Pedestrian Paving	\$2.48	\$692,433
G2040 Site Development	\$8.44	\$2,360,110
G2050 Landcaping	\$3.29	\$920,333

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Uniformat Level 3 Summary

Gross Floor Area: 279,597 SF
 Rates Current At February 2018

Description	Cost/SF	Total Cost
G3010 Water Supply	\$0.63	\$175,000
G3020 Sanitary Sewer	\$0.36	\$100,000
G3030 Storm Sewer	\$0.72	\$200,000
G3060 Fuel Distribution	\$0.11	\$30,000
G4010 Electrical Distribution	\$1.54	\$431,000
G4020 Site Lighting	\$0.61	\$170,000
	ESTIMATED NET COST	\$284.82 \$79,634,698
MARGINS & ADJUSTMENTS		
Preconstruction	0.4 %	\$300,000
General Conditions	9.0 %	\$7,167,123
Bonds & Insurance	2.9 %	\$2,482,402
Overhead & Profit	3.1 %	\$2,777,111
Design Contingency	10.0 %	\$9,236,133
CM/GC Contingency	5.0 %	\$5,079,873
Market Volatility Contingency	5.0 %	\$5,333,866
Solar/Green Energy Allowance	1.5 %	\$1,680,169
Escalation to June 2020	14.5 %	\$16,485,249
	ESTIMATED TOTAL COST	\$465.59 \$130,176,624

2.00 Basis of Estimate

PPS 2017 Bond Work

MHS - New Concept Rev4 - Option C

Project Details

Description

Basis of Estimate

The project comprises an addition to and renovation of Portland Public School's Madison High School and associated sitework.

Items Specifically Included

ESTIMATE PRICING:

- . Pricing is based on Construction Costs as of February 2018.
- . Margins and Adjustments are included in the estimate.
- . Items included or excluded are detailed in the estimate. Other assumptions, inclusions and exclusions are listed below.

GROSS FLOOR AREA:

- . New Construction - 99,756 SF
- . Main Renovation Areas - 179,841 SF

The following assumptions have been made in the preparation of this estimate:

- . The project will be competitively bid amongst Sub-Contractors (at least 3).
- . The works will be carried out during normal working hours.
- . The Contractor will be required to pay prevailing wage rates.
- . Resources are available locally.

ITEMS SPECIFICALLY INCLUDED:

- . Please note where allowances have been made, we would request the Design Team and Owner to review the sum to ensure the allowance meets their intent.
- . Sub-Contractors Overheads and Profit are included in the unit rates.

The following items have been specifically included in Margins and Adjustments:

- . Preconstruction (\$300,000)
- . General Conditions (9%)
- . Bonds and Insurance (2.85%)
- . Overhead & Profit (3.1%)
- . Design Contingency (10%)

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Project Details

Description

- . CM/GC Contingency (5%)
- . Market Volatility Contingency (5%)
- . Solar/Green Energy Allowance (1.5%)
- . Escalation to June 2020 (14.5%)

Items Specifically Excluded

ITEMS SPECIFICALLY EXCLUDED:

- . Items marked as "Excl." in the estimate.
- . Shiftwork or overtime working or acceleration.
- . Double handling or materials due to site access restrictions.
- . Delays or working restrictions on the Contractor.
- . Piled or caisson foundations or other special foundation systems, besides that included in estimate.
- . Rock or concrete excavation.
- . Underground services encountered during excavation.
- . De-watering required during excavation other than surface water.
- . Assumes disposal of materials to a local dump only.
- . Allow for improvements to existing site, other than that shown in estimate.
- . Walls coverings besides that shown in estimate.
- . Moveable furnishings to classrooms.
- . Interior Landscaping.
- . Loose furniture, FF&E & equipment, besides that included in estimate.
- . The affects of potential unfair Contract Conditions which may affect Bid pricing.
- . Building & Statutory Industry Fringe Benefits.
- . Statutory Authorities' charges, contributions (and compliance orders).
- . The implications of proposed Construction legislation which may occur during the Construction period.
- . Lack of competition amongst Sub-Contractors bidding the Project.
- . Unavailability of local resources to undertake specific trades and the affect on bid pricing from non-regional bidders.
- . Uncompetitive bidding due to the complexity of the project Sub-Contractors work loads.
- . Abnormal changes in market conditions affecting our assessment of escalation.
- . Construction Management Fees.
- . Development Soft Costs including; Land, Financing and Legal costs.

ALTERNATES (Including Margins and Adjustments)

- 1) 4 Classroom Addition - \$2,093,000
- 2) Football Parking Lot replacement - \$865,000
- 3) Field Turf to Baseball/Softball fields - \$3,183,000

PPS 2017 Bond Work

MHS - New Concept Rev4 - Option C

Project Details

Description

4) Football Grandstands and Restrooms - \$1,804,100

Documents

DESIGN DETAILS USED FOR THE ESTIMATE:

This estimate is based upon measured quantities and built-up rates prepared from the following information :

Architectural Drawings by Opsis

February 9, 2018

. Option C concept sketches.

Civil Drawings

None included

Landscape Drawings by Mayer/Reed

February 12, 2018

. "Base Bid" Conceptual site plan

Structural Drawings by ABHT

January 11, 2018

. Conceptual diagram for structural improvement

Mechanical/Electrical/Plumbing/Technology Drawings

None included

. HVAC narrative provided by Interface

3.00 Estimate Detail

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS
 A1 NW Addition

GFA: 40,873 SF Cost/SF: \$266.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
A10 Foundations				
A1010 Standard Foundations				
168 Premium for stepped footings, retaining walls, additional earthwork	SF	33,848	5.50	186,164
98 Standard foundations, incl. base courses, concrete, rebar, formwork	SF	33,848	7.50	253,860
Standard Foundations			\$10.77/SF	\$440,024
A1030 Slab on Grade				
99 Slab on grade, incl. base course, vapor barrier, concrete, rebar, formwork	SF	33,848	10.00	338,480
Slab on Grade			\$8.28/SF	\$338,480
Foundations			\$19.05/SF	\$778,504
B10 Superstructure				
B1010 Floor Construction				
228 Allowance for concrete shearwalls	SF	40,873	7.00	286,111
103 Concrete slab on deck	SF	7,040	10.00	70,400
154 Seismic joint	LF	369	175.00	64,575
102 Steel floor framing (assumes 12 psf + 10% allowance for misc. metals and connections)	T	46.47	4,500.00	209,115
Floor Construction			\$15.42/SF	\$630,201
B1020 Roof Construction				
106 Concrete slab on deck	SF	33,848	10.00	338,480
105 Steel roof framing (assumes 10 psf + 10% allowance for misc. metals and connections)	T	186.17	4,500.00	837,765
Roof Construction			\$28.78/SF	\$1,176,245
Superstructure			\$44.20/SF	\$1,806,446
B20 Exterior Enclosure				
B2010 Exterior Walls				
107 Exterior wall assembly; brick veneer, weather barrier, sheathing, flashings/sealants, secondary support steel, mineral wool insulation, framing, vapor barrier, batt insulation, gyp board to inside face of exterior wall	SF	15,187	58.00	880,846
108 Work at interface between (N) and (E) building	SF	6,873	25.00	171,825
Exterior Walls			\$25.75/SF	\$1,052,671
B2020 Exterior Windows				
124 Curtainwall - Qty is allowance	SF	1,500	125.00	187,500
113 Storefront windows in new additions	SF	3,797	90.00	341,730
Exterior Windows			\$12.95/SF	\$529,230

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A1 NW Addition (continued)

GFA: 40,873 SF Cost/SF: \$266.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
B2030 Exterior Doors				
115 Exterior doors	SF	40,873	1.50	61,309
			Exterior Doors	\$1.50/SF
			Exterior Enclosure	\$40.20/SF
				\$1,643,210
B30 Roofing				
B3010 Roof Coverings				
117 Low slo membrane roof system, complete incl. insulation, vapor barriers, flashings/sealants	SF	33,848	18.00	609,264
			Roof Coverings	\$14.91/SF
			Roofing	\$14.91/SF
				\$609,264
C10 Interior Construction				
C1010 Partitions				
157 Allowance for additional interior glazing	SF	40,873	1.00	40,873
54 Allowance for misc. rough carpentry incl. blocking, ledgers, etc.	SF	30,762	1.00	30,762
55 Caulking/sealing to partitions	SF	30,762	1.00	30,762
52 Furring wall: metal stud w/ gyp board to (1) side only	SF	1,384	7.00	9,688
56 Interior storefront glazing	SF	531	66.00	35,046
14 Premium for extra layer of gyp board	SF	3,761	3.00	11,283
13 Standard partition	SF	29,379	12.00	352,548
			Partitions	\$12.50/SF
				\$510,962
C1020 Interior Doors				
169 Remaining interior doors and glazing	SF	40,873	2.50	102,182
49 Single HM door, incl. frame and hardware	EA	5	1,500.00	7,500
66 Single WD door, incl. frame and hardware	EA	9	2,000.00	18,000
			Interior Doors	\$3.12/SF
				\$127,682
C1030 Specialties				
84 Divider curtain	SF	269	5.00	1,345
161 Glass guardrail	LF	164	350.00	57,400
125 Specialties; includes markerboards, tackboards, signage, corner/wall protection, fire extinguishers	SF	40,873	5.50	224,801
126 Toilet fitments	SF	257	25.00	6,425
			Specialties	\$7.09/SF
			Interior Construction	\$22.72/SF
				\$928,615
C20 Stairs				
C2010 Stair Construction				
236 Metal pan stair	Flight	2	25,000.00	50,000

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A1 NW Addition (continued)

GFA: 40,873 SF Cost/SF: \$266.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
156 Open feature stair	Flight	1	50,000.00	50,000
Stair Construction			\$2.45/SF	\$100,000
Stairs			\$2.45/SF	\$100,000
C30 Interior Finishes				
C3010 Wall Finishes				
19 Allowance for misc. new wall finishes	SF	40,873	3.00	122,619
82 FRP	SF	3,973	6.00	23,838
51 Paint finish	SF	56,168	1.00	56,168
Wall Finishes			\$4.96/SF	\$202,625
C3020 Floor Finishes				
64 Polished concrete	SF	3,819	6.50	24,824
20 Remaining floor finishes	SF	32,940	6.00	197,640
240 Resilient floor - Dance Studio - Per PLA designs dated 2/15/18	Item			36,200
65 Resinous flooring w/ integral base, at kitchen/servery areas	SF	4,115	9.00	37,035
239 Semi -Sprung floor - Black Box - Per PLA designs dated 2/15/18	Item			17,904
Floor Finishes			\$7.67/SF	\$313,603
C3030 Ceiling Finishes				
69 Accoustical ceiling tile	SF	3,900	5.50	21,450
21 Allowance for new ceiling finishes	SF	32,869	6.00	197,214
70 Allowance for soffits, bulkheads, misc. ceiling features	SF	40,873	0.25	10,218
81 Scrubbable accoustical ceiling tile - kitchen and servery areas	SF	4,105	10.00	41,050
Ceiling Finishes			\$6.60/SF	\$269,932
Interior Finishes			\$19.23/SF	\$786,160
D20 Plumbing				
D2010 Plumbing Fixtures				
132 Plumbing and drainage to Additions	SF	40,873	12.00	490,476
Plumbing Fixtures			\$12.00/SF	\$490,476
D2040 Rain Water Drainage				
123 Rain water drainage	SF	33,848	1.25	42,310
Rain Water Drainage			\$1.04/SF	\$42,310
Plumbing			\$13.04/SF	\$532,786

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A1 NW Addition (continued)

GFA: 40,873 SF Cost/SF: \$266.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
D30 HVAC				
D3090 Other HVAC Systems and Equipment				
133 HVAC, incl. controls	SF	40,873	38.00	1,553,174
			Other HVAC Systems and Equipment	\$38.00/SF \$1,553,174
			HVAC	\$38.00/SF \$1,553,174
D40 Fire Protection				
D4040 Sprinklers				
134 Fire sprinklers, (N) work	SF	40,873	3.50	143,055
			Sprinklers	\$3.50/SF \$143,055
			Fire Protection	\$3.50/SF \$143,055
D50 Electrical				
D5010 Electrical Service & Distribution				
221 Electrical service and distribution to (N) work	SF	40,873	8.00	326,984
			Electrical Service & Distribution	\$8.00/SF \$326,984
D5020 Lighting & Branch Wiring				
253 Dimming & Distribution-- Black Box - Per PLA designs dated 2/15/18	Item			90,054
255 General Illumination -- Black Box- Per PLA designs dated 2/15/18	Item			14,224
136 Lighting and branch wiring to new work	SF	40,873	12.00	490,476
251 Stage Lighting Instruments -- Black Box - Per PLA designs dated 2/15/18	Item			32,040
			Lighting & Branch Wiring	\$15.34/SF \$626,794
D5030 Communications & Security				
276 Allowance for DAS system	SF	40,873	1.06	43,132
138 Low voltage systems to new work	SF	40,873	11.00	449,603
			Communications & Security	\$12.06/SF \$492,735
			Electrical	\$35.39/SF \$1,446,513
E10 Equipment				
E1090 Other Equipment				
75 Allowance for risers in choir room	Item			30,000
245 Hardware & Soft Good - Black Box - Per PLA designs dated 2/15/18	Item			16,500
246 Hardware & Soft Goods - Band/Choir - Per PLA designs dated 2/15/18	Item			6,700
			Other Equipment	\$1.30/SF \$53,200
			Equipment	\$1.30/SF \$53,200

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A1 NW Addition (continued)

GFA: 40,873 SF Cost/SF: \$266.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
E20 Furnishings				
E2010 Fixed Furnishings				
172 Allowance for misc. casework, millwork, etc	SF	40,873	4.00	163,492
29 Base cabinets with p-lam countertop	LF	92	300.00	27,600
28 Full height storage cabinet, assume 8'H	LF	77	400.00	30,800
32 Full height storage cubbies	LF	30	300.00	9,000
88 Reception desk - Qty is allowance	LF	15	600.00	9,000
83 Storage shelving	LF	121	150.00	18,150
58 Wall mounted p-lam countertop	LF	37	175.00	6,475
59 Wall mounted p-lam upper cabinets	LF	46	225.00	10,350
79 Wall mounted shelving - full height	LF	29	300.00	8,700
			Fixed Furnishings	\$6.94/SF \$283,567
			Furnishings	\$6.94/SF \$283,567
G10 Site Preparations				
G1030 Site Earthwork				
170 Allowance for structural excavation, pad prep, misc. earthwork	SF	33,848	6.50	220,012
			Site Earthwork	\$5.38/SF \$220,012
			Site Preparations	\$5.38/SF \$220,012
			NW ADDITION	\$266.30/SF \$10,884,506

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS
 A2 NE Addition

GFA: 15,953 SF Cost/SF: \$274.29
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
A10 Foundations				
A1010 Standard Foundations				
168 Premium for stepped footings, retaining walls, additional earthwork	SF	13,241	5.50	72,825
98 Standard foundations, incl. base courses, concrete, rebar, formwork	SF	13,241	7.50	99,308
Standard Foundations			\$10.79/SF	\$172,133
A1030 Slab on Grade				
99 Slab on grade, incl. base course, vapor barrier, concrete, rebar, formwork	SF	13,241	10.00	132,410
Slab on Grade			\$8.30/SF	\$132,410
Foundations			\$19.09/SF	\$304,543
B10 Superstructure				
B1010 Floor Construction				
228 Allowance for concrete shearwalls	SF	15,953	7.00	111,671
103 Concrete slab on deck	SF	2,723	10.00	27,230
154 Seismic joint	LF	317	175.00	55,475
102 Steel floor framing (assumes 12 psf + 10% allowance for misc. metals and connections)	T	17.98	4,500.00	80,910
Floor Construction			\$17.26/SF	\$275,286
B1020 Roof Construction				
106 Concrete slab on deck	SF	13,241	10.00	132,410
105 Steel roof framing (assumes 10 psf + 10% allowance for misc. metals and connections)	T	72.83	4,500.00	327,735
Roof Construction			\$28.84/SF	\$460,145
Superstructure			\$46.10/SF	\$735,431
B20 Exterior Enclosure				
B2010 Exterior Walls				
107 Exterior wall assembly; brick veneer, weather barrier, sheathing, flashings/sealants, secondary support steel, mineral wool insulation, framing, vapor barrier, batt insulation, gyp board to inside face of exterior wall	SF	7,794	58.00	452,052
108 Work at interface between (N) and (E) building	SF	3,710	25.00	92,750
Exterior Walls			\$34.15/SF	\$544,802
B2020 Exterior Windows				
124 Curtainwall - Qty is allowance	SF	1,500	125.00	187,500
113 Storefront windows in new additions	SF	1,949	90.00	175,410
Exterior Windows			\$22.75/SF	\$362,910

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A2 NE Addition (continued)

GFA: 15,953 SF Cost/SF: \$274.29
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
B2030 Exterior Doors				
115 Exterior doors	SF	15,953	1.50	23,930
78 Overhead sectional door, glass, 28'W x 15'H - commons	EA	3	25,000.00	75,000
Exterior Doors			\$6.20/SF	\$98,930
Exterior Enclosure			\$63.10/SF	\$1,006,642
B30 Roofing				
B3010 Roof Coverings				
117 Low slo membrane roof system, complete incl. insulation, vapor barriers, flashings/sealants	SF	13,241	18.00	238,338
Roof Coverings			\$14.94/SF	\$238,338
Roofing			\$14.94/SF	\$238,338
C10 Interior Construction				
C1010 Partitions				
157 Allowance for additional interior glazing	SF	15,953	1.00	15,953
54 Allowance for misc. rough carpentry incl. blocking, ledgers, etc.	SF	2,118	1.00	2,118
55 Caulking/sealing to partitions	SF	2,118	1.00	2,118
56 Interior storefront glazing	SF	233	66.00	15,378
13 Standard partition	SF	2,118	12.00	25,416
Partitions			\$3.82/SF	\$60,983
C1020 Interior Doors				
76 Paired aluminum storefront doors	Pr	2	6,000.00	12,000
169 Remaining interior doors and glazing	SF	15,953	2.50	39,883
Interior Doors			\$3.25/SF	\$51,883
C1030 Specialties				
161 Glass guardrail	LF	112	350.00	39,200
125 Specialties; includes markerboards, tackboards, signage, corner/wall protection, fire extinguishers	SF	15,953	5.50	87,742
Specialties			\$7.96/SF	\$126,942
Interior Construction			\$15.03/SF	\$239,808
C20 Stairs				
C2010 Stair Construction				
156 Open feature stair	Flight	1	50,000.00	50,000
Stair Construction			\$3.13/SF	\$50,000
Stairs			\$3.13/SF	\$50,000

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A2 NE Addition (continued)

GFA: 15,953 SF Cost/SF: \$274.29
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
C30 Interior Finishes				
C3010 Wall Finishes				
19 Allowance for misc. new wall finishes	SF	15,953	3.00	47,859
51 Paint finish	SF	4,235	1.00	4,235
<i>Wall Finishes</i>			\$3.27/SF	\$52,094
C3020 Floor Finishes				
64 Polished concrete	SF	15,953	6.50	103,694
20 Remaining floor finishes	SF		6.00	0
<i>Floor Finishes</i>			\$6.50/SF	\$103,694
C3030 Ceiling Finishes				
69 Accoustical ceiling tile	SF	15,953	5.50	87,742
21 Allowance for new ceiling finishes	SF		6.00	0
70 Allowance for soffits, bulkheads, misc. ceiling features	SF	15,953	0.25	3,988
<i>Ceiling Finishes</i>			\$5.75/SF	\$91,730
<i>Interior Finishes</i>			\$15.52/SF	\$247,518
D20 Plumbing				
D2010 Plumbing Fixtures				
132 Plumbing and drainage to Additions	SF	15,953	12.00	191,436
<i>Plumbing Fixtures</i>			\$12.00/SF	\$191,436
D2040 Rain Water Drainage				
123 Rain water drainage	SF	13,241	1.25	16,551
<i>Rain Water Drainage</i>			\$1.04/SF	\$16,551
<i>Plumbing</i>			\$13.04/SF	\$207,987
D30 HVAC				
D3090 Other HVAC Systems and Equipment				
133 HVAC, incl. controls	SF	15,953	38.00	606,214
<i>Other HVAC Systems and Equipment</i>			\$38.00/SF	\$606,214
<i>HVAC</i>			\$38.00/SF	\$606,214
D40 Fire Protection				
D4040 Sprinklers				
134 Fire sprinklers, (N) work	SF	15,953	3.50	55,836
<i>Sprinklers</i>			\$3.50/SF	\$55,836
<i>Fire Protection</i>			\$3.50/SF	\$55,836

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A2 NE Addition (continued)

GFA: 15,953 SF Cost/SF: \$274.29
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
D50 Electrical				
D5010 Electrical Service & Distribution				
221 Electrical service and distribution to (N) work	SF	15,953	8.00	127,624
			Electrical Service & Distribution	\$8.00/SF \$127,624
D5020 Lighting & Branch Wiring				
136 Lighting and branch wiring to new work	SF	15,953	12.00	191,436
			Lighting & Branch Wiring	\$12.00/SF \$191,436
D5030 Communications & Security				
276 Allowance for DAS system	SF	15,953	1.06	16,718
138 Low voltage systems to new work	SF	15,953	11.00	175,483
			Communications & Security	\$12.05/SF \$192,201
			Electrical	\$32.05/SF \$511,261
E20 Furnishings				
E2010 Fixed Furnishings				
172 Allowance for misc. casework, millwork, etc	SF	15,953	4.00	63,812
29 Base cabinets with p-lam countertop	LF	13	300.00	3,900
74 File cabinets/low storage	LF	6	200.00	1,200
30 Tackboard, assume 8'w x 4'h	EA	5	450.00	2,250
77 Waste receptacles	EA	3	5,000.00	15,000
			Fixed Furnishings	\$5.40/SF \$86,162
			Furnishings	\$5.40/SF \$86,162
G10 Site Preparations				
G1030 Site Earthwork				
170 Allowance for structural excavation, pad prep, misc. earthwork	SF	13,241	6.50	86,066
			Site Earthwork	\$5.39/SF \$86,066
			Site Preparations	\$5.39/SF \$86,066
			NE ADDITION	\$274.29/SF \$4,375,806

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS
 A3 East Addition

GFA: 21,640 SF Cost/SF: \$271.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
A10 Foundations				
A1010 Standard Foundations				
168 Premium for stepped footings, retaining walls, additional earthwork	SF	11,900	5.50	65,450
98 Standard foundations, incl. base courses, concrete, rebar, formwork	SF	11,900	7.50	89,250
Standard Foundations			\$7.15/SF	\$154,700
A1030 Slab on Grade				
99 Slab on grade, incl. base course, vapor barrier, concrete, rebar, formwork	SF	11,900	10.00	119,000
Slab on Grade			\$5.50/SF	\$119,000
Foundations			\$12.65/SF	\$273,700
B10 Superstructure				
B1010 Floor Construction				
228 Allowance for concrete shearwalls	SF	21,640	7.00	151,480
103 Concrete slab on deck	SF	9,770	10.00	97,700
102 Steel floor framing (assumes 12 psf + 10% allowance for misc. metals and connections)	T	64.48	4,500.00	290,160
Floor Construction			\$24.92/SF	\$539,340
B1020 Roof Construction				
106 Concrete slab on deck	SF	11,900	10.00	119,000
105 Steel roof framing (assumes 10 psf + 10% allowance for misc. metals and connections)	T	65.45	4,500.00	294,525
Roof Construction			\$19.11/SF	\$413,525
Superstructure			\$44.03/SF	\$952,865
B20 Exterior Enclosure				
B2010 Exterior Walls				
107 Exterior wall assembly; brick veneer, weather barrier, sheathing, flashings/sealants, secondary support steel, mineral wool insulation, framing, vapor barrier, batt insulation, gyp board to inside face of exterior wall	SF	9,394	58.00	544,852
108 Work at interface between (N) and (E) building	SF	2,029	25.00	50,725
Exterior Walls			\$27.52/SF	\$595,577
B2020 Exterior Windows				
124 Curtainwall - Qty is allowance	SF	1,500	125.00	187,500
113 Storefront windows in new additions	SF	2,349	90.00	211,410
Exterior Windows			\$18.43/SF	\$398,910

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A3 East Addition (continued)

GFA: 21,640 SF Cost/SF: \$271.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
B2030 Exterior Doors				
115 Exterior doors	SF	21,640	1.50	32,460
			Exterior Doors	\$1.50/SF \$32,460
			Exterior Enclosure	\$47.46/SF \$1,026,947
B30 Roofing				
B3010 Roof Coverings				
117 Low slo membrane roof system, complete incl. insulation, vapor barriers, flashings/sealants	SF	11,900	18.00	214,200
118 Translucent skylights	SF	997	150.00	149,550
			Roof Coverings	\$16.81/SF \$363,750
			Roofing	\$16.81/SF \$363,750
C10 Interior Construction				
C1010 Partitions				
157 Allowance for additional interior glazing	SF	21,640	1.00	21,640
54 Allowance for misc. rough carpentry incl. blocking, ledgers, etc.	SF	12,777	1.00	12,777
55 Caulking/sealing to partitions	SF	12,777	1.00	12,777
52 Furring wall: metal stud w/ gyp board to (1) side only	SF	1,117	7.00	7,819
56 Interior storefront glazing	SF	160	66.00	10,560
13 Standard partition	SF	11,661	12.00	139,932
			Partitions	\$9.50/SF \$205,505
C1020 Interior Doors				
169 Remaining interior doors and glazing	SF	21,640	2.50	54,100
49 Single HM door, incl. frame and hardware	EA	1	1,500.00	1,500
66 Single WD door, incl. frame and hardware	EA	21	2,000.00	42,000
			Interior Doors	\$4.51/SF \$97,600
C1030 Specialties				
125 Specialties; includes markerboards, tackboards, signage, corner/wall protection, fire extinguishers	SF	21,640	5.50	119,020
			Specialties	\$5.50/SF \$119,020
			Interior Construction	\$19.51/SF \$422,125
C20 Stairs				
C2010 Stair Construction				
156 Open feature stair	Flight	1	50,000.00	50,000
			Stair Construction	\$2.31/SF \$50,000
			Stairs	\$2.31/SF \$50,000

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A3 East Addition (continued)

GFA: 21,640 SF Cost/SF: \$271.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
C30 Interior Finishes				
C3010 Wall Finishes				
19 Allowance for misc. new wall finishes	SF	21,640	3.00	64,920
80 Allowance for vertical plant wall in CTE Agriculture	Item			10,000
51 Paint finish	SF	24,438	1.00	24,438
Wall Finishes			\$4.59/SF	\$99,358
C3020 Floor Finishes				
62 Luxury vinyl tile - classrooms	SF	1,212	5.00	6,060
64 Polished concrete	SF	11,898	6.50	77,337
20 Remaining floor finishes	SF	8,247	6.00	49,482
63 Sealed concrete	SF	284	2.00	568
Floor Finishes			\$6.17/SF	\$133,447
C3030 Ceiling Finishes				
69 Accoustical ceiling tile	SF	13,395	5.50	73,673
21 Allowance for new ceiling finishes	SF	8,246	6.00	49,476
70 Allowance for soffits, bulkheads, misc. ceiling features	SF	21,640	0.25	5,410
Ceiling Finishes			\$5.94/SF	\$128,559
Interior Finishes			\$16.70/SF	\$361,364
D20 Plumbing				
D2010 Plumbing Fixtures				
132 Plumbing and drainage to Additions	SF	21,640	12.00	259,680
Plumbing Fixtures			\$12.00/SF	\$259,680
D2040 Rain Water Drainage				
123 Rain water drainage	SF	11,900	1.25	14,875
Rain Water Drainage			\$0.69/SF	\$14,875
Plumbing			\$12.69/SF	\$274,555
D30 HVAC				
D3090 Other HVAC Systems and Equipment				
133 HVAC, incl. controls	SF	21,640	38.00	822,320
234 Premium for science wing HVAC	SF	21,640	5.00	108,200
Other HVAC Systems and Equipment			\$43.00/SF	\$930,520
HVAC			\$43.00/SF	\$930,520

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A3 East Addition (continued)

GFA: 21,640 SF Cost/SF: \$271.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
D40 Fire Protection				
D4040 Sprinklers				
134 Fire sprinklers, (N) work	SF	21,640	3.50	75,740
			Sprinklers	\$3.50/SF
			Fire Protection	\$3.50/SF
				\$75,740
D50 Electrical				
D5010 Electrical Service & Distribution				
221 Electrical service and distribution to (N) work	SF	21,640	8.00	173,120
			Electrical Service & Distribution	\$8.00/SF
				\$173,120
D5020 Lighting & Branch Wiring				
136 Lighting and branch wiring to new work	SF	21,640	12.00	259,680
			Lighting & Branch Wiring	\$12.00/SF
				\$259,680
D5030 Communications & Security				
276 Allowance for DAS system	SF	21,640	1.06	22,745
138 Low voltage systems to new work	SF	21,640	11.00	238,040
			Communications & Security	\$12.05/SF
				\$260,785
			Electrical	\$32.05/SF
				\$693,585
E10 Equipment				
E1090 Other Equipment				
27 Short throw projector - By Owner	EA	10		Excl.
			Other Equipment	Excl.
			Equipment	Excl.
E20 Furnishings				
E2010 Fixed Furnishings				
172 Allowance for misc. casework, millwork, etc	SF	21,640	4.00	86,560
29 Base cabinets with p-lam countertop	LF	592	300.00	177,600
74 File cabinets/low storage	LF	12	200.00	2,400
28 Full height storage cabinet, assume 8'H	LF	48	400.00	19,200
31 Markerboard, assume 8'w x 4'h	EA	30	700.00	21,000
30 Tackboard, assume 8'w x 4'h	EA	21	450.00	9,450
58 Wall mounted p-lam countertop	LF	9	175.00	1,575
59 Wall mounted p-lam upper cabinets	LF	214	225.00	48,150
79 Wall mounted shelving - full height	LF	8	300.00	2,400
			Fixed Furnishings	\$17.02/SF
				\$368,335
			Furnishings	\$17.02/SF
				\$368,335

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Uniformat Level 2/Uniformat Level 3 Item

A ADDITIONS

A3 East Addition (continued)

GFA: 21,640 SF Cost/SF: \$271.30
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
G10 Site Preparations				
G1030 Site Earthwork				
170 Allowance for structural excavation, pad prep, misc. earthwork	SF	11,900	6.50	77,350
			Site Earthwork	\$3.57/SF
			Site Preparations	\$3.57/SF
			EAST ADDITION	\$271.30/SF
				\$77,350
				\$77,350
				\$5,870,836

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A4 South Addition (Aux Gym)

GFA: 10,494 SF Cost/SF: \$340.95
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
A10 Foundations				
A1010 Standard Foundations				
100 Elevator pit, incl. waterproofing	LS	1	20,000.00	20,000
168 Premium for stepped footings, retaining walls, additional earthwork	SF	8,176	5.50	44,968
98 Standard foundations, incl. base courses, concrete, rebar, formwork	SF	8,176	7.50	61,320
Standard Foundations			\$12.03/SF	\$126,288
A1030 Slab on Grade				
99 Slab on grade, incl. base course, vapor barrier, concrete, rebar, formwork	SF	8,176	10.00	81,760
Slab on Grade			\$7.79/SF	\$81,760
Foundations			\$19.83/SF	\$208,048
A20 Basement Construction				
A2020 Basement Walls				
109 Below grade concrete elevator shaft walls, incl. waterproofing	SF	952	71.00	67,592
110 Excavation for elevator shaft	CY	256	60.00	15,360
Basement Walls			\$7.90/SF	\$82,952
Basement Construction			\$7.90/SF	\$82,952
B10 Superstructure				
B1010 Floor Construction				
228 Allowance for concrete shearwalls	SF	10,494	7.00	73,458
103 Concrete slab on deck	SF	1,842	10.00	18,420
102 Steel floor framing (assumes 12 psf + 10% allowance for misc. metals and connections)	T	12.16	4,500.00	54,720
Floor Construction			\$13.97/SF	\$146,598
B1020 Roof Construction				
106 Concrete slab on deck	SF	8,176	10.00	81,760
111 Metal deck	SF	102	5.00	510
105 Steel roof framing (assumes 10 psf + 10% allowance for misc. metals and connections)	T	44.97	4,500.00	202,365
Roof Construction			\$27.12/SF	\$284,635
Superstructure			\$41.09/SF	\$431,233

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A4 South Addition (Aux Gym) (continued)

GFA: 10,494 SF Cost/SF: \$340.95
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
B20 Exterior Enclosure				
B2010 Exterior Walls				
107 Exterior wall assembly; brick veneer, weather barrier, sheathing, flashings/sealants, secondary support steel, mineral wool insulation, framing, vapor barrier, batt insulation, gyp board to inside face of exterior wall	SF	12,918	58.00	749,244
108 Work at interface between (N) and (E) building	SF	2,515	25.00	62,875
			Exterior Walls	\$77.39/SF \$812,119
B2020 Exterior Windows				
113 Storefront windows in new additions	SF	3,230	90.00	290,700
			Exterior Windows	\$27.70/SF \$290,700
B2030 Exterior Doors				
115 Exterior doors	SF	10,494	1.50	15,741
			Exterior Doors	\$1.50/SF \$15,741
			Exterior Enclosure	\$106.59/SF \$1,118,560
B30 Roofing				
B3010 Roof Coverings				
117 Low slope membrane roof system, complete incl. insulation, vapor barriers, flashings/sealants	SF	8,278	18.00	149,004
			Roof Coverings	\$14.20/SF \$149,004
			Roofing	\$14.20/SF \$149,004
C10 Interior Construction				
C1010 Partitions				
157 Allowance for additional interior glazing	SF	10,494	1.00	10,494
223 Misc. partitions	SF	10,494	10.00	104,940
			Partitions	\$11.00/SF \$115,434
C1020 Interior Doors				
169 Remaining interior doors and glazing	SF	10,494	2.50	26,235
			Interior Doors	\$2.50/SF \$26,235
C1030 Specialties				
125 Specialties; includes markerboards, tackboards, signage, corner/wall protection, fire extinguishers	SF	10,494	5.50	57,717
			Specialties	\$5.50/SF \$57,717
			Interior Construction	\$19.00/SF \$199,386
C30 Interior Finishes				
C3010 Wall Finishes				
19 Allowance for misc. new wall finishes	SF	10,494	3.00	31,482
			Wall Finishes	\$3.00/SF \$31,482

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A4 South Addition (Aux Gym) (continued)

GFA: 10,494 SF Cost/SF: \$340.95
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
C3020 Floor Finishes				
20 Remaining floor finishes	SF	4,794	6.00	28,764
15 Wood gym flooring incl. striping	SF	5,700	14.00	79,800
Floor Finishes			\$10.35/SF	\$108,564
C3030 Ceiling Finishes				
21 Allowance for new ceiling finishes	SF	10,494	6.00	62,964
70 Allowance for soffits, bulkheads, misc. ceiling features	SF	10,494	0.25	2,624
Ceiling Finishes			\$6.25/SF	\$65,588
Interior Finishes			\$19.60/SF	\$205,634
D10 Conveying				
D1010 Elevators and Lifts				
112 Elevator	Stop	3	50,000.00	150,000
Elevators and Lifts			\$14.29/SF	\$150,000
Conveying			\$14.29/SF	\$150,000
D20 Plumbing				
D2010 Plumbing Fixtures				
132 Plumbing and drainage to Additions	SF	10,494	12.00	125,928
Plumbing Fixtures			\$12.00/SF	\$125,928
D2040 Rain Water Drainage				
123 Rain water drainage	SF	8,278	1.25	10,348
Rain Water Drainage			\$0.99/SF	\$10,348
Plumbing			\$12.99/SF	\$136,276
D30 HVAC				
D3090 Other HVAC Systems and Equipment				
133 HVAC, incl. controls	SF	10,494	38.00	398,772
Other HVAC Systems and Equipment			\$38.00/SF	\$398,772
HVAC			\$38.00/SF	\$398,772
D40 Fire Protection				
D4040 Sprinklers				
134 Fire sprinklers, (N) work	SF	10,494	3.50	36,729
Sprinklers			\$3.50/SF	\$36,729
Fire Protection			\$3.50/SF	\$36,729
D50 Electrical				
D5010 Electrical Service & Distribution				
221 Electrical service and distribution to (N) work	SF	10,494	8.00	83,952
Electrical Service & Distribution			\$8.00/SF	\$83,952

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A4 South Addition (Aux Gym) (continued)

GFA: 10,494 SF Cost/SF: \$340.95
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
D5020 Lighting & Branch Wiring				
136 Lighting and branch wiring to new work	SF	10,494	12.00	125,928
			Lighting & Branch Wiring	\$12.00/SF \$125,928
D5030 Communications & Security				
276 Allowance for DAS system	SF	10,494	1.06	10,932
138 Low voltage systems to new work	SF	10,494	11.00	115,434
			Communications & Security	\$12.04/SF \$126,366
			Electrical	\$32.04/SF \$336,246
E10 Equipment				
E1090 Other Equipment				
167 Allowance for gym equipment	Item			30,000
			Other Equipment	\$2.86/SF \$30,000
			Equipment	\$2.86/SF \$30,000
E20 Furnishings				
E2010 Fixed Furnishings				
172 Allowance for misc. casework, millwork, etc	SF	10,494	4.00	41,976
			Fixed Furnishings	\$4.00/SF \$41,976
			Furnishings	\$4.00/SF \$41,976
G10 Site Preparations				
G1030 Site Earthwork				
170 Allowance for structural excavation, pad prep, misc. earthwork	SF	8,176	6.50	53,144
			Site Earthwork	\$5.06/SF \$53,144
			Site Preparations	\$5.06/SF \$53,144
			SOUTH ADDITION (AUX GYM)	\$340.95/SF \$3,577,960

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS
 A5 Theater

GFA: 10,796 SF Cost/SF: \$359.64
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
A10 Foundations				
A1010 Standard Foundations				
168 Premium for stepped footings, retaining walls, additional earthwork	SF	9,264	5.50	50,952
			Standard Foundations	\$4.72/SF \$50,952
A1030 Slab on Grade				
99 Slab on grade, incl. base course, vapor barrier, concrete, rebar, formwork	SF	9,264	10.00	92,640
			Slab on Grade	\$8.58/SF \$92,640
			Foundations	\$13.30/SF \$143,592
B10 Superstructure				
B1010 Floor Construction				
104 Black box catwalk platform	SF	1,579	25.00	39,475
			Floor Construction	\$3.66/SF \$39,475
B1020 Roof Construction				
106 Concrete slab on deck	SF	9,283	10.00	92,830
105 Steel roof framing (assumes 10 psf + 10% allowance for misc. metals and connections)	T	51.06	4,500.00	229,770
			Roof Construction	\$29.88/SF \$322,600
			Superstructure	\$33.54/SF \$362,075
B20 Exterior Enclosure				
B2010 Exterior Walls				
107 Exterior wall assembly; brick veneer, weather barrier, sheathing, flashings/sealants, secondary support steel, mineral wool insulation, framing, vapor barrier, batt insulation, gyp board to inside face of exterior wall	SF	3,607	58.00	209,206
			Exterior Walls	\$19.38/SF \$209,206
B2020 Exterior Windows				
113 Storefront windows in new additions	SF	902	90.00	81,180
			Exterior Windows	\$7.52/SF \$81,180
			Exterior Enclosure	\$26.90/SF \$290,386
B30 Roofing				
B3010 Roof Coverings				
117 Low slop membrane roof system, complete incl. insulation, vapor barriers, flashings/sealants	SF	9,283	18.00	167,094
			Roof Coverings	\$15.48/SF \$167,094
			Roofing	\$15.48/SF \$167,094

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A5 Theater (continued)

GFA: 10,796 SF Cost/SF: \$359.64
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
C10 Interior Construction				
C1010 Partitions				
157 Allowance for additional interior glazing	SF	10,796	1.00	10,796
54 Allowance for misc. rough carpentry incl. blocking, ledgers, etc.	SF	8,550	1.00	8,550
55 Caulking/sealing to partitions	SF	8,550	1.00	8,550
52 Furring wall: metal stud w/ gyp board to (1) side only	SF	411	7.00	2,877
13 Standard partition	SF	8,139	12.00	97,668
Partitions			\$11.90/SF	\$128,441
C1020 Interior Doors				
169 Remaining interior doors and glazing	SF	10,796	2.50	26,990
66 Single WD door, incl. frame and hardware	EA	12	2,000.00	24,000
Interior Doors			\$4.72/SF	\$50,990
C1030 Specialties				
125 Specialties; includes markerboards, tackboards, signage, corner/wall protection, fire extinguishers	SF	10,796	5.50	59,378
126 Toilet fitments	SF	346	25.00	8,650
Specialties			\$6.30/SF	\$68,028
Interior Construction			\$22.92/SF	\$247,459
C30 Interior Finishes				
C3010 Wall Finishes				
19 Allowance for misc. new wall finishes	SF	10,796	3.00	32,388
57 Fabric wrapped accoustical wall panel	SF	5,535	20.00	110,700
51 Paint finish	SF	11,154	1.00	11,154
Wall Finishes			\$14.29/SF	\$154,242
C3020 Floor Finishes				
22 Carpet tiles	SY	30	50.00	1,500
20 Remaining floor finishes	SF	5,424	6.00	32,544
238 Sprung floor - Main Theater - Per PLA designs dated 2/15/18	Item			36,275
89 Theatre flooring	SF	5,104	6.00	30,624
Floor Finishes			\$9.35/SF	\$100,943
C3030 Ceiling Finishes				
69 Accoustical ceiling tile	SF	5,372	5.50	29,546
21 Allowance for new ceiling finishes	SF	5,425	6.00	32,550
70 Allowance for soffits, bulkheads, misc. ceiling features	SF	10,796	0.25	2,699

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A5 Theater (continued)

GFA: 10,796 SF Cost/SF: \$359.64
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
164 Premium for theater ceiling finishes	SF	10,796	10.00	107,960
			Ceiling Finishes	\$16.00/SF
			Interior Finishes	\$39.64/SF
				\$172,755
				\$427,940
D20 Plumbing				
D2010 Plumbing Fixtures				
132 Plumbing and drainage to Additions	SF	10,796	12.00	129,552
			Plumbing Fixtures	\$12.00/SF
				\$129,552
D2040 Rain Water Drainage				
123 Rain water drainage	SF	9,283	1.25	11,604
			Rain Water Drainage	\$1.07/SF
			Plumbing	\$13.07/SF
				\$11,604
				\$141,156
D30 HVAC				
D3090 Other HVAC Systems and Equipment				
133 HVAC, incl. controls	SF	10,796	38.00	410,248
			Other HVAC Systems and Equipment	\$38.00/SF
			HVAC	\$38.00/SF
				\$410,248
				\$410,248
D40 Fire Protection				
D4040 Sprinklers				
134 Fire sprinklers, (N) work	SF	10,796	3.50	37,786
			Sprinklers	\$3.50/SF
			Fire Protection	\$3.50/SF
				\$37,786
				\$37,786
D50 Electrical				
D5010 Electrical Service & Distribution				
273 Allowance for new feeders to Theater	Item			24,000
221 Electrical service and distribution to (N) work	SF	10,796	8.00	86,368
			Electrical Service & Distribution	\$10.22/SF
				\$110,368
D5020 Lighting & Branch Wiring				
254 General Illumination -- Main Theater - Per PLA designs dated 2/15/18	Item			143,284
136 Lighting and branch wiring to new work	SF	10,796	12.00	129,552
252 Stage Lighting Accessories -- Main Theater - Per PLA designs dated 2/15/18	Item			9,387
249 Stage Lighting Distribution Devices -- Main Theater - Per PLA designs dated 2/15/18	Item			47,040
250 Stage Lighting Instruments -- Main Theater - Per PLA designs dated 2/15/18	Item			128,822

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

A ADDITIONS

A5 Theater (continued)

GFA: 10,796 SF Cost/SF: \$359.64
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
248 Stage/House lighting controls -- Main Theater - Per PLA designs dated 2/15/18	Item			174,024
Lighting & Branch Wiring			\$58.55/SF	\$632,109
D5030 Communications & Security				
276 Allowance for DAS system	SF	10,796	1.06	11,252
138 Low voltage systems to new work	SF	10,796	11.00	118,756
Communications & Security			\$12.04/SF	\$130,008
Electrical			\$80.82/SF	\$872,485
E10 Equipment				
E1090 Other Equipment				
243 Acoustic Concert Reflector - Main Theater - Per PLA designs dated 2/15/18	Item			98,000
244 Orchestra Pit Filler System - Main Theater - Per PLA designs dated 2/15/18	Item			33,000
241 Rigging Mobilization/Prep/Engineering - Main Theater - Per PLA designs dated 2/15/18	Item			5,000
242 Stage Rigging & Drapes - Main Theater - Per PLA designs dated 2/15/18	Item			412,173
Other Equipment			\$50.78/SF	\$548,173
Equipment			\$50.78/SF	\$548,173
E20 Furnishings				
E2010 Fixed Furnishings				
172 Allowance for misc. casework, millwork, etc	SF	10,796	4.00	43,184
247 Fixed, Upholstered Seating - Main Theater - Per PLA designs dated 2/15/18	Item			114,752
60 Full height clothing rack	LF	40	125.00	5,000
32 Full height storage cubbies	LF	37	300.00	11,100
Fixed Furnishings			\$16.12/SF	\$174,036
Furnishings			\$16.12/SF	\$174,036
G10 Site Preparations				
G1030 Site Earthwork				
170 Allowance for structural excavation, pad prep, misc. earthwork	SF	9,264	6.50	60,216
Site Earthwork			\$5.58/SF	\$60,216
Site Preparations			\$5.58/SF	\$60,216
THEATER			\$359.64/SF	\$3,882,646

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
A10 Foundations				
A1010 Standard Foundations				
144 Allowance for shoring/underpinning	Item			200,000
Standard Foundations			\$1.11/SF	\$200,000
A1030 Slab on Grade				
158 Infill slab on grade	SF	5,957	12.00	71,484
Slab on Grade			\$0.40/SF	\$71,484
Foundations			\$1.51/SF	\$271,484
B10 Superstructure				
B1010 Floor Construction				
162 Infill concrete floor structure	SF	1,917	60.00	115,020
208 Loading dock, complete	LS	1	50,000.00	50,000
154 Seismic joint	LF	1,150	175.00	201,250
Floor Construction			\$2.04/SF	\$366,270
B1020 Roof Construction				
111 Metal deck	SF	14,687	5.00	73,435
122 Plywood sheathing	SF	14,687	3.50	51,405
Roof Construction			\$0.69/SF	\$124,840
Superstructure			\$2.73/SF	\$491,110
B20 Exterior Enclosure				
B2010 Exterior Walls				
131 Anchor (E) masonry with helical anchors	SF	32,625	26.00	848,250
264 Clean bio growth/efflorescence from masonry	SF	810	3.50	2,835
262 Concrete sun shade to match (E)	SF	750	60.00	45,000
220 Demo (E) brick, replace with metal panel system	SF	4,777	50.00	238,850
225 Furring, insulation, painted gyp to inside face of (E) exterior walls	SF	32,625	18.00	587,250
229 Ledger angle at (E) brick	T	1.24	4,500.00	5,580
259 Replace (E) masonry	SF	1,450	35.00	50,750
265 Replace mortar and sealant at shelf angles	LF	110	8.00	880
260 Tuckpointing of (E) masonry	SF	850	18.00	15,300
Exterior Walls			\$9.98/SF	\$1,794,695
B2020 Exterior Windows				
114 Storefront windows in renovation, incl. removal of (E), prep of opening	SF	16,480	100.00	1,648,000
Exterior Windows			\$9.16/SF	\$1,648,000

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas (continued)

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
B2030 Exterior Doors				
38 Glass sectional door	SF	100	75.00	7,500
37 HM door	EA	2	1,500.00	3,000
<i>Exterior Doors</i>			\$0.06/SF	\$10,500
<i>Exterior Enclosure</i>			\$19.20/SF	\$3,453,195
B30 Roofing				
B3010 Roof Coverings				
117 Low sloe membrane roof system, complete incl. insulation, vapor barriers, flashings/sealants	SF	14,687	18.00	264,366
116 Re-roof of (E) building, incl. removal of (E)	SF	61,905	21.00	1,300,005
119 Replace sunshade waterproofing, incl. removal of (E)	SF	5,136	12.00	61,632
118 Translucent skylights	SF	1,474	150.00	221,100
<i>Roof Coverings</i>			\$10.27/SF	\$1,847,103
<i>Roofing</i>			\$10.27/SF	\$1,847,103
C10 Interior Construction				
C1010 Partitions				
157 Allowance for additional interior glazing	SF	179,841	1.00	179,841
54 Allowance for misc. rough carpentry incl. blocking, ledgers, etc.	SF	109,369	1.00	109,369
55 Caulking/sealing to partitions	SF	109,369	1.00	109,369
35 CMU walls	SF	10,640	24.00	255,360
52 Furring wall: metal stud w/ gyp board to (1) side only	SF	10,564	7.00	73,948
56 Interior storefront glazing	SF	57	66.00	3,762
53 Plumbing wall	SF	904	18.00	16,272
34 Plywood sheathing to (E) seismic walls, incl. tie downs, anchors	SF	7,021	10.00	70,210
14 Premium for extra layer of gyp board	SF	18,659	3.00	55,977
13 Standard partition	SF	87,263	12.00	1,047,156
<i>Partitions</i>			\$10.68/SF	\$1,921,264
C1020 Interior Doors				
160 Horizontal fire shutters	EA	2	100,000.00	200,000
76 Paired aluminum storefront doors	Pr	1	6,000.00	6,000
47 Paired HM door, incl. frame and hardware	Pr	1	3,000.00	3,000
67 Paired WD door, incl. frame and hardware	Pr	1	4,000.00	4,000
48 Premium for fire-rated doors	EA	19	250.00	4,750
169 Remaining interior doors and glazing	SF	179,841	2.50	449,602
49 Single HM door, incl. frame and hardware	EA	21	1,500.00	31,500

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas (continued)

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
66 Single WD door, incl. frame and hardware	EA	72	2,000.00	144,000
Interior Doors			\$4.69/SF	\$842,852
C1030 Specialties				
42 Allowance for new toilet room fittings	SF	2,340	25.00	58,500
161 Glass guardrail	LF	165	350.00	57,750
127 Locker room/team room specialties	SF	6,260	30.00	187,800
125 Specialties; includes markerboards, tackboards, signage, corner/wall protection, fire extinguishers	SF	179,841	5.50	989,125
126 Toilet fitments	SF	5,311	25.00	132,775
Specialties			\$7.93/SF	\$1,425,950
Interior Construction			\$23.30/SF	\$4,190,066
C20 Stairs				
C2010 Stair Construction				
281 Stadium stairs/seating	Item			75,000
33 Update stair finishes to code - per flight	Flight	15	5,000.00	75,000
Stair Construction			\$0.83/SF	\$150,000
Stairs			\$0.83/SF	\$150,000
C30 Interior Finishes				
C3010 Wall Finishes				
19 Allowance for misc. new wall finishes	SF	179,841	3.00	539,523
43 Allowance for new restroom wall finishes	SF	4,044	10.00	40,440
17 Allowance to refresh (E) wall finishes	SF	11,345	3.00	34,035
50 Electro-static paint on (E) lockers - assume 6'H	SF	12,000	8.00	96,000
57 Fabric wrapped accoustical wall panel	SF	2,854	20.00	57,080
51 Paint finish	SF	203,513	1.00	203,513
Wall Finishes			\$5.40/SF	\$970,591
C3020 Floor Finishes				
16 Allowance to refresh (E) floor finishes	SF	11,345	4.00	45,380
22 Carpet tiles	SY	1,272	50.00	63,600
62 Luxury vinyl tile - classrooms	SF	44,230	5.00	221,150
20 Remaining floor finishes	SF	94,468	6.00	566,808
63 Sealed concrete	SF	4,781	2.00	9,562
15 Wood gym flooring incl. striping	SF	13,578	14.00	190,092
Floor Finishes			\$6.10/SF	\$1,096,592
C3030 Ceiling Finishes				
69 Accoustical ceiling tile	SF	60,565	5.50	333,107
21 Allowance for new ceiling finishes	SF	105,594	6.00	633,564

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas (continued)

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
70 Allowance for soffits, bulkheads, misc. ceiling features	SF	179,841	0.25	44,961
18 Allowance to refresh (E) ceiling finishes	SF	11,345	4.00	45,380
45 Gyp ceiling with epoxy paint	SF	2,340	11.00	25,740
Ceiling Finishes			\$6.02/SF	\$1,082,752
Interior Finishes			\$17.52/SF	\$3,149,935
D10 Conveying				
D1010 Elevators and Lifts				
217 Allowance for seismic improvements to (E) elevator hoistway	Item			50,000
112 Elevator	Stop	3	50,000.00	150,000
Elevators and Lifts			\$1.11/SF	\$200,000
Conveying			\$1.11/SF	\$200,000
D20 Plumbing				
D2010 Plumbing Fixtures				
165 Plumbing and drainage to Renovations - Re-use (E) piping where possible	SF	179,841	8.00	1,438,728
Plumbing Fixtures			\$8.00/SF	\$1,438,728
D2040 Rain Water Drainage				
123 Rain water drainage	SF	14,687	1.25	18,359
166 Revise rainwater drainage to addtions	SF	61,905	0.75	46,429
Rain Water Drainage			\$0.36/SF	\$64,788
Plumbing			\$8.36/SF	\$1,503,516
D30 HVAC				
D3090 Other HVAC Systems and Equipment				
140 Demo of (E) HVAC systems	SF	179,841	1.00	179,841
133 HVAC, incl. controls	SF	179,841	38.00	6,833,958
226 Premium for kitchen HVAC	SF	5,088	12.00	61,056
Other HVAC Systems and Equipment			\$39.34/SF	\$7,074,855
HVAC			\$39.34/SF	\$7,074,855
D40 Fire Protection				
D4040 Sprinklers				
135 New sprinkler heads and branch piping, (E) mains to remain, incl. seismic bracing of (E) pipework	SF	179,841	2.00	359,682
Sprinklers			\$2.00/SF	\$359,682
Fire Protection			\$2.00/SF	\$359,682

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas (continued)

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
D50 Electrical				
D5010 Electrical Service & Distribution				
272 Allowance to extend feeder from (E) Basement to main floor transformer vault via (4) new vertical chases	Item			62,000
271 Allowance to locate service and power distribution in (E) transformer vault	Item			45,000
222 Electrical service and distribution to renovations, re-use (E) pathways, panels, where possible, incl. seismic bracing of (E)	SF	179,841	4.00	719,364
Electrical Service & Distribution			\$4.59/SF	\$826,364
D5020 Lighting & Branch Wiring				
141 Demo (E) lights and receptacles	SF	179,841	1.00	179,841
137 Lighting and receptacles to renovation, re-use (E) pathways, panels where possible, incl. seismic bracing of (E) pipework	SF	179,841	7.50	1,348,808
Lighting & Branch Wiring			\$8.50/SF	\$1,528,649
D5030 Communications & Security				
276 Allowance for DAS system	SF	179,841	1.06	190,438
142 Demo (E) low voltage devices	SF	179,841	0.50	89,921
139 Low voltage systems to renovation, re-use (E) conduits where possible	SF	179,841	6.00	1,079,046
Communications & Security			\$7.56/SF	\$1,359,405
Electrical			\$20.65/SF	\$3,714,418
E10 Equipment				
E1090 Other Equipment				
230 Allowance for A/V in remaining renovation areas	Item			285,000
167 Allowance for gym equipment	Item			50,000
40 Allowance for new bleachers in gym	Item			200,000
41 Allowance for partition netting in gym	Item			25,000
129 Kitchen equipment	Item			650,000
128 Laundry equipment	LS	1	40,000.00	40,000
27 Short throw projector - By Owner	EA	49		Excl.
Other Equipment			\$6.95/SF	\$1,250,000
Equipment			\$6.95/SF	\$1,250,000
E20 Furnishings				
E2010 Fixed Furnishings				
172 Allowance for misc. casework, millwork, etc	SF	179,841	4.00	719,364
216 Allowance for seismic bracing of (E) casework, furnishings to remain	SF	179,841	0.50	89,921
29 Base cabinets with p-lam countertop	LF	515	300.00	154,500

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas (continued)

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
74 File cabinets/low storage	LF	94	200.00	18,800
28 Full height storage cabinet, assume 8'H	LF	641	400.00	256,400
32 Full height storage cubbies	LF	129	300.00	38,700
31 Markerboard, assume 8'w x 4'h	EA	154	700.00	107,800
83 Storage shelving	LF	174	150.00	26,100
30 Tackboard, assume 8'w x 4'h	EA	161	450.00	72,450
58 Wall mounted p-lam countertop	LF	9	175.00	1,575
59 Wall mounted p-lam upper cabinets	LF	81	225.00	18,225
79 Wall mounted shelving - full height	LF	8	300.00	2,400
Fixed Furnishings			\$8.38/SF	\$1,506,235
Furnishings			\$8.38/SF	\$1,506,235
F10 Special Construction				
F1020 Integrated Construction				
143 Structural improvements for seismic resiliency to (E) building	SF	161,554	48.00	7,754,592
148 Structural improvements for seismic resiliency to (E) building	SF	18,288	58.00	1,060,704
Integrated Construction			\$49.02/SF	\$8,815,296
Special Construction			\$49.02/SF	\$8,815,296
F20 Selective Building Demolition				
F2010 Building Elements Demolition				
173 Allowance for misc. demo	SF	179,841	2.00	359,682
147 Allowance for shoring/bracing	Item			100,000
23 Complete interior demo and removal of all (E) items	SF	21,918	10.00	219,180
258 Demo (E) brick	SF	7,811	10.00	78,110
10 Demo and remove (E) casework	LF	179	50.00	8,950
5 Demo and remove (E) ceiling	SF	179,841	1.25	224,801
36 Demo and remove (E) coiling door	EA	1	500.00	500
7 Demo and remove (E) door, per leaf	EA	19	150.00	2,850
25 Demo and remove (E) equipment	SF	2,180	3.00	6,540
39 Demo and remove (E) floor finishes	SF	179,841	1.25	224,801
12 Demo and remove (E) lockers	EA	373	50.00	18,650
4 Demo and remove (E) partitions	SF	112,263	2.50	280,658
9 Demo and remove (E) restroom finishes and accessories	SF	2,340	7.50	17,550
8 Demo and remove (E) roof access assembly	EA	1	1,000.00	1,000
6 Demo and remove (E) stair risers, treads - per flight	EA	2	5,000.00	10,000
146 Demo concrete floor structure	SF	3,067	25.00	76,675
261 Demo concrete sun shade	SF	750	15.00	11,250

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

B RENOVATIONS

B2 Renovation Areas (continued)

GFA: 179,841 SF Cost/SF: \$233.79
 Rates Current At February 2018

Description	Unit	Qty	Rate	Total
121 Demo roof sheathing	SF	14,687	2.00	29,374
159 Demo slab on grade	SF	5,957	5.00	29,785
263 Demo wood canopy fins	SF	24	10.00	240
237 Premium for demo of CMU walls	SF	16,582	5.00	82,910
120 Sawcut and demo concrete roof deck	SF	943	25.00	23,575
Building Elements Demolition			\$10.05/SF	\$1,807,081
F2020 Hazardous Components Abatement				
155 Hazardous Materials Abatement - Per PBS dates 1/11/18 (Does not include PBS Contingency)	Item			2,261,066
Hazardous Components Abatement			\$12.57/SF	\$2,261,066
Selective Building Demolition			\$22.62/SF	\$4,068,147
RENOVATION AREAS			\$233.79/SF	\$42,045,042

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

C SITEWORK

C1 On-Site Work

Rates Current At February 2018

Description	Unit	Qty	Rate	Total
F20 Selective Building Demolition				
F2020 Hazardous Components Abatement				
155 Hazardous Materials Abatement - Per PBS dates 1/11/18 (Does not include PBS Contingency)	Item			137,261
Hazardous Components Abatement				\$137,261
Selective Building Demolition				\$137,261
G10 Site Preparations				
G1020 Site Demolition & Relocations				
145 Demo (E) buildings, complete	SF	97,517	7.50	731,378
257 Demo (E) covered walkways	SF	3,716	5.00	18,580
174 Demo hardscapes and softscapes	SF	416,632	1.50	624,948
231 Tree Removal	EA	12	500.00	6,000
Site Demolition & Relocations				\$1,380,906
G1030 Site Earthwork				
175 Allowance for excavation, backfill	SF	416,632	1.50	624,948
176 Level, grade, compact	SF	416,632	1.00	416,632
Site Earthwork				\$1,041,580
G1040 Hazardous Waste Remediation				
212 Allowance for remediation of contaminated soil at de-commissioned underground tank	Item			100,000
Hazardous Waste Remediation				\$100,000
Site Preparations				\$2,522,486
G20 Site Improvements				
G2020 Parking Lots				
178 Parking lots; AC paving, base course, curbs, painting/stripping, etc.	SF	47,901	9.00	431,109
282 Patch/repair (E) AC paving to remain, repaint as needed	SF	52,113	1.50	78,170
Parking Lots				\$509,279
G2030 Pedestrian Paving				
204 AC paving, incl. base course	SF	18,128	4.50	81,576
93 Concrete paving, incl. base course	SF	69,831	7.00	488,817
205 Concrete stairs - per LF of stair nosing	LF	1,156	95.00	109,820
194 Soft play area (assumes rubberized surface)	SF	611	20.00	12,220
Pedestrian Paving				\$692,433
G2040 Site Development				
232 Allowance for baseball dugouts, press boxes, batting cages	Item			250,000
195 Allowance for play equipment	Item			25,000

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

C SITEWORK

C1 On-Site Work (continued)

Rates Current At February 2018

Description	Unit	Qty	Rate	Total
190 Allowance for site furnishings	Item			50,000
210 Baseball/softball backstops, black vinyl coated	EA	1	7,500.00	7,500
233 Bollards	EA	20	1,000.00	20,000
278 Chainlink fencing, 4'H, black vinyl coated	LF	648	25.00	16,200
191 Chainlink fencing, 6'H, black vinyl coated	LF	570	35.00	19,950
209 Chainlink fencing, 10'H, black vinyl coated	LF	350	60.00	21,000
185 Concrete retaining wall	SF	20,383	45.00	917,235
186 Concrete retaining wall footing	CY	997	650.00	648,050
203 Concrete seat wall footings	CY	53	650.00	34,450
202 Concrete seat walls	SF	1,427	65.00	92,755
197 Guardrails	LF	609	200.00	121,800
196 Handrails	LF	396	90.00	35,640
192 Man gates, paired	Pr	2	1,200.00	2,400
200 Trash enclosure	SF	1,335	30.00	40,050
193 Vehicle gates, automatic	EA	2	10,000.00	20,000
206 Welded wire mesh fence, 7'H	LF	448	85.00	38,080
Site Development				\$2,360,110
G2050 Landcaping				
279 Hydroseed baseball field	SF	137,515	0.50	68,758
280 Infield soil, incl. fine grading and compaction	SF	15,165	2.50	37,913
97 New trees	EA	250	450.00	112,500
198 Planted areas, incl. irrigation	SF	127,484	5.50	701,162
Landcaping				\$920,333
Site Improvements				\$4,482,155
G30 Site Civil/Mechanical Utilities				
G3010 Water Supply				
179 Domestic water	Item			100,000
180 Fire water	Item			75,000
Water Supply				\$175,000
G3020 Sanitary Sewer				
181 Sanitary sewer	Item			100,000
Sanitary Sewer				\$100,000
G3030 Storm Sewer				
182 Storm drainage	Item			200,000
Storm Sewer				\$200,000

PPS 2017 Bond Work
MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

C SITEWORK

C1 On-Site Work (continued)

Rates Current At February 2018

Description	Unit	Qty	Rate	Total
G3060 Fuel Distribution				
219 Upgrade gas service	Item			30,000
	Fuel Distribution			\$30,000
	Site Civil/Mechanical Utilities			\$505,000
G40 Site Electrical Utilities				
G4010 Electrical Distribution				
275 Allowance for 125 kW diesel generator, incl. ATS	Item			58,000
218 Site electrical distribution	Item			373,000
	Electrical Distribution			\$431,000
G4020 Site Lighting				
184 Allowance for re-configuration of (E) field lighting	Item			120,000
183 Site lighting	Item			50,000
	Site Lighting			\$170,000
	Site Electrical Utilities			\$601,000
	ON-SITE WORK			\$8,247,902

PPS 2017 Bond Work

MHS - New Concept Rev4 - Option C

Location Unifomat Level 2/Unifomat Level 3 Item

C SITEWORK

C2 Off-Site Work

Rates Current At February 2018

Description	Unit	Qty	Rate	Total
G20 Site Improvements				
G2010 Roadways				
177 Allowance for half-street improvements	Item			750,000
			Roadways	\$750,000
			Site Improvements	\$750,000
			OFF-SITE WORK	\$750,000

MEETING MINUTES

Meeting Name: Performing Arts

Project Name: Madison High School

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: 3/6/2018

Attendees:	Jessie Steiger	PPS Project Manager	Alec Holser	Opsis
	Ayana Horn	PPS Project Coord	Randall Heeb	Opsis
	Johnny Metoyer	PPS Constr. Manager	Kirsten Justice	Opsis
	Zena	Theater		
	Jeremy Dell	Band / Choir		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Performing Arts, Theater and Music, program needs.

General

- Review new Masterplan layout: New Theater, Black Box, Band and Choir with support spaces
- Escalating construction costs the uncertainty of renovating a large complex space suggests that complete replacement of the theater may be the best approach.

Band Room/ Choir Room

- The current relationship between Band and Choir spaces with support spaces works well.
- The second level practice rooms are not accessible and require leaving the main band room.
- Band Room - Prefer flat floor with no risers.
 - Carpet on floor preferred by Band/Choir director for Band and Choir Rooms for acoustics.
 - To meet design standards, acoustics will be managed through walls and ceilings. A durable, maintenance friendly flooring material should be specified in lieu of carpet.
 - Provide projection and document presenter.
 - Instrument storage can occur inside Band Room with instrument wire lockers.
 - Separate Storage Room required for larger instruments.
 - Instruments to be double locked: locked instrument case and locked room/or locker.
 - Band's Small Equipment Storage could be used for oversized instrument storage.
 - Band Room needs one set of double doors all the way to the stage for moving large instruments. (marimba, timpani, vibes, piano) Consider one pair of doors and one 42-in door to avoid frequent conflict with removable mullion.
 - School instruments are rented through PPS.
- Band office can be co-located with band music library.
 - The office should provide visual control of students entering the band room and practice rooms.
 - Office needs desk, layout surface and file cabinets. Band is co-curricular; instructors compose music on keyboard, plan studies, organize events/contracts and handle cash.

- Band Practice Rooms should be accessible directly from the Band Room. MHS needs (1) large practice room and as many small practice rooms as possible. Rooms should be adequate for sectionals or a piano. Recording to occur in the large Practice Room.
- Choir room should have a flat floor with risers.
 - Prefer stable semi-permanent and re-configurable for future needs. Seated riser depth preferred.
 - Provide projection and document presenter.
 - Music stands stay in the room.
- Choir office is separate from band and can house the choir music library.
 - The office should provide visual control of students entering the band room and practice rooms.
 - Offices need desks, ample layout surfaces and file cabinets. Band and Choir are co-curricular, so instructors compose music, plan studies and organize performance in their office.
- Uniform Storage for Band and Choir can be combined.
- Small Equipment Storage includes drumline, mouth pieces, tuba, etc. Provide over-sized door.

ACTION ITEM: Band / Choir director to provide music instrument inventory list as well as uniform and choir robe count.

Auditorium House

- Updated layout shows complete theater replacement.
- Discussed daylight in auditorium – would require complete blackout for daytime performances.
- Design team prefers FHS theater layout to RHS. Two catwalks will suffice for MHS depth.
- Orchestra Pit: plan for 16 musicians; or 10 musicians w/ large instruments. Musicals do not require a lot of musicians.
- Control Booth – ideally provide in seating area, mid-house.
- All students must stay within teacher's visual control.
- Prefer line-sets over stage to catwalk
- Need side-sets in house and stage.
- Orchestra Pit sized for xylophone, marimba, percussion, timpani.
- Include video feed for players to follow action.
- Prefer (3-4) traps in stage connected to Orchestra Pit.

Black Box / Theater Classroom

- Black Box should be located behind Stage, separated by a corridor for access.
- Ideal proportion: mimicking stage for rehearsals, close to square.
- Teaching and performance space also used for poetry slams, small concerts, meetings.
- Stagecraft curriculum will be taught in this space, teacher needs to see students at all times.
- One set of large double doors to allow delivery of large set components
- Prefer wood floor
- Need fully accessible catwalk with offset crosswalk.
- Controls (for both theaters) can be at catwalk so students can see impact of adjustments below.
- Office should be accessible from Black Box. Provide interior windows.

Changing

- Need sink w/ plaster trap in shared Make-Up Room. Built-in counters preferred.
- Provide mirrors on 2 adjacent walls in private changing areas to view costumes / makeup
- Small wire lockers might be a good alternative to conventional lockers at changing alcoves.
- Rolling costume racks a good solution
- Provide individual changing rooms for flexibility and accommodation.

Theater Support Spaces

- Multifunction space for equipment storage and sewing

- Scene Shop should be located close to the Stage.
 - Concession Stand needs full size refrigerator w/ ice box.
 - Tickets are mostly pre-sale, but Ticket Booth is still required – can be combined with concessions.
 - Provide water bottle filling station near stage for rehearsals
- ACTION ITEM:** PPS will report back regarding history of broken windows at current theater lobby.
- ACTION ITEM:** Theater director to provide equipment inventory list as well as costume count.

End of Meeting Notes

MEETING MINUTES

Meeting Name: Athletics

Project Name: Madison High School

Project Number: 4722-01

Submitted By: Max Frixione

Meeting Date: 3/15/2018

Attendees:	Petra Callin	MHS Principal	Alec Holser	Opsis
	Jessie Steiger	PPS Project Manager	Randall Heeb	Opsis
	Ayana Horn	PPS Project Coord	Kirsten Justice	Opsis
	Johnny Metoyer	PPS Constr. Manager	Max Frixione	Opsis
	Tyler Kelleher	MHS Athletic Director	Anne Samuel	Mayer/Reed
	Adam Skyles	MHS VP		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Athletics & PE program needs.

General

- Review new concept layout of the existing gym, locker room level, ground floor level with new auxiliary gym and sports fields.

Locker Rooms / Instruction Space / Storage / Team Sports

- Existing gymnasium doesn't allow 3 concurrent PE classes. The Ed Spec lists 2 teaching stations.
- The (2) classrooms across from the main gym are used for yoga/dance PE classes. The concept plan currently changes this to a double-sized lecture room.
- The existing shower count is oversized based on usage. Provide 4-6 showers per locker room.
- Locker Rooms accommodate PE lockers only. Athletic lockers should be in the team rooms.
- Madison has (6) team rooms; (4) boys and (2) girls. Ed Spec allows (1) team room. There is a strong desire to maintain (6) team rooms. The concept plans show team rooms accessed from public corridor, so all team rooms can be assigned to boys or girls sports. Adding team rooms beyond Ed Spec may offset other storage and locker needs.
- Team Rooms are best on the same level as Locker Rooms. It is acceptable to locate some team rooms on the field level.
- It is possible to install cages (baseball/softball/golf) under lockers in existing Schoolhouse Supply.
- Consider high density shelving for uniform storage. Existing storage space is not sufficient.
- The existing Mat Room location is acceptable. Remove the divider wall, the existing column in the center is acceptable. Provide a roll down divider because High School and Youth Wrestling programs need to be separated. Need to add wood floor to east side.
- The mat room will remain 6-feet below locker room level. An ADA lift will be provided.
- Existing weight room is 1,914-sf. Ed Spec allows 2,500-sf. PE suggests doubling the area to hold a PE class of 45-50 students.

Main Gym

- Existing size is adequate for all school assembly.
- Replace existing bleachers & flooring.
- Existing south storage is difficult to use because doors are only at ends. Doors at each end would allow better access to more materials.
- Madison requests (2) small offices in gym level. Ed Spec shows PE offices adjacent to locker rooms.
- Provide projection screens and new audio system in Main Gym. The concept plan will show 2 screens, one facing each bleacher section.
- The roof needs to be replaced including new skylights which will be reviewed with PPS.

Auxiliary Gym

- The new auxiliary gym is on the east side of main gym, allowing fire department access between grandstands and gym as well as creating an accessible entry to the upper levels.
- The auxiliary gym can be used for JV games, concurrent with Varsity games in the main gym. Athletics requested bleachers for JV parents (25-seats?).
- A room divider would allow simultaneous use of the floor for multiple users.
- Dance/Cheer could use auxiliary gym as practice space. Also see mat room above.

Outdoor fields

- Existing grand stands should be reduced in length, reducing seating capacity from 4,000 to +/-2,000. This will reduce the cost of seating repair and the code required toilet fixture count.
- No occupied spaces are allowed under the grandstands. Storage is allowed.
- Provide room for new restroom/concessions building & additional parking and storage. Code required fixtures for 1,000 will be provided next to the stadium, the remaining fixtures will be next to the auxiliary gym.
- Opsi & Mayer/Reed will develop plan strategy for using restrooms within main building floor as supplemental restroom for ticketed outdoor events.
- Allow space for (2) athletics buses for games. Buses park off site until pickup.
- Press box needs to be fully renovated/updated.
- Field Storage on north side of MHS is currently accomplished with freight boxes.
- Provide netting along street to keep balls off street
- Lights and sound system currently not included in scope of work, confirm

End of Meeting Notes

MEETING MINUTES

Meeting Name: Library

Project Name: Madison High School

Project Number: 4722-01

Submitted By: Kirsten Justice

Meeting Date: 3/15/2018

Attendees:	Jessie Steiger	PPS Project Manager	Alec Holser	Opsis
	Ayana Horn	PPS Project Coord	Max Frixione	Opsis
	Johnny Metoyer	Heery Constr. Mgr	Kirsten Justice	Opsis
	Nancy Sullivan	Library		
	Susan Stone	PPS Library Services		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Comments and revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Library/Media Center program needs.

General

- Reviewed Room Data Sheets of Library/Media Center
- MHS Library has the highest circulation in the district
- Space allocation in current plan is under Ed Spec recommendations

Library

- Popular space for meetings, events and performances such as:
 - SUN program tutoring daily after school
 - Staff meetings Tuesdays/bi-weekly 3:15 – 5:00
 - PTA meetings Tuesday/monthly 6:30-8:00
 - MAD Poetry
 - Flexible seating area for 110 currently required for larger events. Flexible seating/tables to accommodate different type/size of event. School-day seating based on 6-8 students per table.
 - Tables should be on casters for easy relocation; furniture gets moved around at least twice a week.
 - Need durable furniture.
 - Sled base stackable chairs preferred.
 - Circulation desk should be centrally located allowing visual control of library. Circulation desk is always staffed for check-in and check-out purposes.
 - Desire display table inside the library and display case outside the library.
 - Computer stations should all face the same direction for easy observation of students.
 - Prefer tall book stacks vs. low.
 - Library staff is reducing physical materials in preparation for the move.
 - Ongoing collaboration with teachers for classes held in the Library.
- ACTION ITEM:** Nancy to provide linear footage of books per collection

Accessory Spaces

- Only one office required.
- The Workroom should be located towards the back of the library. Workroom needs sink.
- There is a need for a kitchenette with sink, refrigerator, microwave, dishwasher and lockable cabinets. There are a lot of events in the library that require catering. Kitchenette can be co-located with Workroom or a Conference/Multi Use Room.
- Questioning the high amount of Multi-Use spaces; one would suffice.
- Would have use for a room that could accommodate up to 12.
- Textbook Room should be adjacent to corridor with a service window. Text book distribution happens every day due to a lot of new and departing students. Currently the room is staffed with part-time employee. Textbook room does not require sink.
- Would consider high density storage shelving at Textbook Room
- Textbook Room currently accommodates some computer carts; those could be in the IT repair space next to the Computer Lab or might be stored in the respective classrooms in the future.

End of Meeting Notes

Attachment: MHS Library Remodel Modernization Notes 3/5/18 updated provided by Nancy Sullivan

MHS Library Remodel Modernization Notes

3/5/18 update

- **Only improvements to existing**
- **Nothing that makes the library worse for students and teachers!**
- **Door is a must have. "Open" libraries do not work. Provides a sound barrier and security.**
- **Walls are needed.**
- **Line of sight of entire library for one staffer at circulation desk is a must.**
- **Conference Rooms**
- **Workrooms**
- **Temperature Control**
- **Lots of windows that open and have motorized blinds/shades**
- **--Please NO suicide/sniper pit like at FHS**

Main Library Floor/Seating (middle):

Seating at tables for at least 110 students

Teaching locations - 2 or 3, include motorized screen/projector

Audio/Visual cart or station - soundboard and mounted speakers

Book drop - one outside and one inside

Outlets - lots!

Standing counters with outlets

Photocopier/printer plus color

Large folding/stapling station

Carpet - other noise reduction

HEAVY DUTY, durable, sturdy furniture

Heavy duty, sled base, padded, upholstered, armless, stacking chairs

Heavy duty tables on casters or easily movable - roomy/seat 6 - 8

Sofas 2 to 4

Space for plants

Ability to set up "audience style" with a small platform stage and seating in rows for 300+ (unless this happens elsewhere in the building)

Circulation Desk:

Single staffer is able to see everything from this location - **LINE OF SIGHT**

Space for 36 students to line up at a time

Slot for book returns

Sign-in kiosk

Locking cabinets for Playaways, Kindles, microphones, and other tech

Ergonomic workstations - accommodate a variety of staff preferences

Cash drawer - locking

File drawers - locking

Storage for books in process: bookcases

Station to process books

Place for shelving carts

Outlets

Tile (not carpet) to accommodate rolling carts

Bookcases/Shelving:

Perimeter shelving - tall

Display cases for literature promotion and to showcase student work

Computer Lab:

Seating for 36 students at a time
Line of sight to screens
All desktop computers/stations face the same way
Computer lab monitoring software
Motorized screen/projector
Outlets

Kitchen (for events):

Sink
Refrigerator
Dishwasher
Drinking water
Counter space for food prep
Locking storage for appliances
Locking storage for plates, napkins, cups, utensils, coffee/tea service, pitchers, platters, bowls, etc.
Outlets for appliances
Cabinets and drawers for dishware & catering supplies

Walls/Windows:

NO "OPEN" FLOOR PLAN
Walls around library space - noise and theft reduction
Windows to let in light and air
Automatic shades over windows
prevent sun damage to furniture and library materials
prevent computer screen displays from being washed out
prevent undue strain on the heating and cooling systems
provide security during emergency situations
Space to display student work, posters, information
Bulletin Board
Outlets

Work Room:

Lamination (unless this happens elsewhere in the building)
Locking storage for supplies, kits, equipment, display items,

Office:

Large height-adjustable standing desk
Locking drawers and cabinets
Storage for supplies
Storage for devices (Playaways, Kindles, tripods, mic stands, etc.)
File cabinets

Just Outside the Library:

Book drop - sturdy
Signage reads "LIBRARY"

Display spaces outside the library
Wall space for posters/signage

Textbook Room:

Window for student/class check-out - motorized and locking for security
Space for 36 students to line up at a time
Novel sets
Textbooks
 could be high density units (accordion style shelving that can be rolled on a track)
Book cart/Media carts - locked storage
iPad/Chromebook carts - locked storage
Teaching Materials
Work counter
Storage for supplies
Book drop

RHS:

1. Get a monitor for outside the library for announcements.
2. Make sure shelf signage is in your plan.
3. Make sure dropbox is equipped with spring loaded shelf.
4. Sink in library. I also have one in conference room & one in book room. Don't need in library.
5. Too many of my shelves are too low.
6. Get placement of overhead projectors right.

GHS:

- 1) Because students need a space to study and do group work and teachers need a space to bring their classes for work at both computers and tabletops, we need the couches taken out of the current design and replaced with two to three more ten top tables.
- 2) Our current library collection takes up 16,650 total linear feet.
 - How much linear feet is provided in the current design?
 - What are the measurements for the tall shelves and the low shelves against the west facing wall?
 - Is there a way to add tall shelving units (37" w X 75"H) to the southeast corner?
 - Formula was $37" \times 75" = 2775" \times 72 = 199,800 / 12 = 16,650$
- 3) We need a set of doors to the library to provide both a sound barrier and security after hours.
- 4) We need a door (or sound proof sliding glass door) in the southeast corner (by the cement stairs/amphitheater) to close off the library from noise during the school day but provide access to the space for use when the library hosts special events.
- 5) How many electrical outlets are being installed in addition to charging station outlets?
- 6) In the current design, where are the desktop computers for the main library space being placed?
- 7) Where will the locking display cabinet be sited inside the library?
- 8) Is the south facing wall to have a screen? A smart board? A combination of both? Will it be motorized?

- 9) Will audio be built into the ceiling?
- 10) Where will there be locked storage for stackable chairs and library tech bundles?
- 11) Will there be motorized/thermostat controlled window treatments to:
 - prevent sun damage to furniture and library materials
 - prevent computer screen displays from being washed out
 - prevent undue strain on the heating and cooling systems
 - provide security during emergency situations
- 12) Will the doors on the west facing wall be alarmed and serve as emergency exits only?
- 13) What is the wall treatment plan for the east facing library wall?
- 14) The conference room will change from North-South orientation to a West-East orientation.
- 15) Next to the conference room will be a West-East oriented IT space.
- 16) The librarian's office will shift to the south to make additional space for the Textbook Room.
- 17) Is there a door to the textbook room from the hallway as well as one in the library?
- 18) We will need a textbook room window to the hallway, as well as a book drop (to provide after hours book return) installed.
- 19) With reorienting the IT space and the Library Conference Room, the Textbook/Work Room will be able to gain added footage
- 20) Our current textbook collection takes up 37,800 total linear feet.
 - How much linear feet is provided in the current design?
 - What are the measurements for the shelving units?
 - Will the textbook shelving be high density units (accordion style shelving that can be rolled on a track)?
- 21) Where will the sink, refrigerator and work tables be located within the Textbook Room space?
- 22) There needs to be a window on the west facing wall of the Textbook Room.

FHS:

[punch lists](#)

MEETING MINUTES

Meeting Name: Teen Parent Services

Project Name: PPS Madison High School Modernization

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: March 21, 2018

Attendees:	Ayana Horn	PPS Asst. Project Mgr.	Randall Heeb	Opsis
	Johnny Metoyer	PPS Construction Project Mgr.	Joann Dao Le	DAO
	Cheryl James	Dir-Teen Parent Services		
	Elaine Harrison	Dir-Albina Early Headstart		

Distribution:	Jessie Steiger	PPS Project Mgr.
	Randall Heeb	Design Team

This represents our understanding of discussions during the Meeting. Participants to communicate revisions to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to gather input from the District Director of Teen Parent Services Program and the Director of Albina Early Head Start program as it relates to Madison HS. This includes verification of overall program mission and vision, existing and future space requirements, and any program adjacency requirements or desires.

General

- PPS contracts with Albina Early Headstart as a service provider for Madison, Franklin, Roosevelt and Grant High Schools. The Early Headstart program covers children from 0-3years. The child care center at Madison serves the school's students as well as other high schools (without access to this program), and alumni graduates within 2 years of post-secondary school. The program is 80% federally funded with 20% funding from community partnerships.

Madison Program

- Teen Parent Counselor office
 - Case manager of students who have kids in the child care center comes in twice a week
 - Office location is with other counselor offices
 - Counselor typically holds one-on-one meetings with the students
 - Need a room for shared "parenting" meetings, includes mothers and fathers
 - Parenting group meets once a week, typically at lunch time
 - If the group is all female some mothers will nurse their babies
- Currently there are (11) babies at the child center, (9) from Madison HS students and (2) from Benson HS students.
- Early Head Start is funded for 8 children per age range – infant, crawler, toddler
- State regulation require:
 - indoor space allocation of 35-sf/child (minimum), and 50-sf/child (preferred)
 - Outdoor space allocation 75-sf/child
- Separate but visually connected rooms to accommodate Infant (8), Crawlers (8), and Toddlers (8).

- Childcare Center location
 - Current location is not ideal due to public location where vandalism is a frequent occurrence
 - Proximity to Glenhaven Skatepark is not ideal - marijuana odor from the park is strong and disruptive to the children at play outside
 - Skatepark noise is also disruptive when the park is active during the nicer weather and can be challenging for kids' nap time
 - Madison students thrown trash down from the second-level windows into the play area
 - Relocation of the Childcare center to the West side of the school is good if not too hidden.
- Children's Outdoor Play Area
 - Outdoor space allocation is required at 75sf/child (which in the past has been sufficient)
 - Each children's room must have direct access to the outside play area
 - The Mud room area would be better served if accessible from each kids' area
 - Large area desired for secure storage of buggies, strollers, and toys, etc.
 - The Tuff-shed storage addition is broken into about 3 times each year
 - A direct path to Glenhaven Park is needed for outdoor trips
- Breastfeeding Room
 - Not required to be in the childcare center, but helpful if nearby
 - Can be efficient and serve students and teachers
 - Sink is required
- Teen parents take multiple modes of transportation; some drive, some take mass transit, some are dropped off by their parents
- Entrance location can be flexible, either access directly from the outside or from the school interior, each equipped with a buzzer
- Childcare center opens at 7:30am. Lunch time is the busiest with student parents visiting the children. Students also visit the center during their free time
- Doors with viewing glass are critical but there must be opportunity for lock-down when necessary
- Pony doors should also have viewing glass, particularly between Infant and Crawler areas. Provide latching or locking mechanism (located above child reach zone)
- Provide protection at door hinge side to prevent hands/fingers injury
- Low walls/counters between areas are preferred. The current circular openings in walls are fine.
- Visual access is critical from the kitchen area and into the kids' bathrooms.
- Two separate sinks are required for hand washing and a 3-comp sink for food prep.
- Ensure at least two lavatories and toilet fixtures are provided.
- Nap area/room should accommodate (8) cribs with 3'-0" clearance separation and space for a rocking chair.
- Washer/dryer can be located in the kitchen area.
- More space and storage is desired wherever possible.
- Food is catered by various vendors and not through Nutrition Services.
- Garbage (diapers) is collected twice a day, proximity to trash bins is preferred

End of Meeting Notes

MEETING MINUTES

Meeting Name: Administration and Counseling

Project Name: Madison High School

Project Number: 4722-01

Submitted By: Randall Heeb

Meeting Date: 3/22/2018

Attendees:

Jessie Steiger	PPS Project Manager	Randall Heeb	Opsis
Ayana Horn	PPS Project Coord	Kirsten Justice	Opsis
Johnny Metoyer	PPS Constr. Manager	Joann Dao Le	Dao
Adam Skyles	MHS VP		
Jessica Omilianowicz	Principal Secretary		
Julie Hunt	Counselling Secretary		
Kelly Shelton	School Counselor		
Erin Hale	School Counselor		
Jerardo Marquez	School Counselor		
Julie Conroy	School Counselor		
Malaina Guzman	School Counselor		

Distribution: Jessie Steiger – PPS; Randall Heeb – Design Team

This represents our understanding of the discussions during the Meeting. Revisions should be communicated to Opsis Architecture.

OBJECTIVES

The purpose of this meeting is to review the Administration and Counseling needs. The design team included an update on the overall school design.

General

- Reviewed current concept layout of the new entry, administration and counseling areas on the entry level and upper floor.

Entry

- Plans show the entry vestibule with direct entry to the admin area, via a single door.
- The main hall and commons can be accessed directly from the vestibule through lockable doors.
- A stair directly across from vestibule provides access to upper floor. That stair should be a switchback stair, so people start and stop in the same location on each floor.

Administration East

- Entry desk/counter to include space for TA.
- Possibly provide full height glass between entry and secretary area for backup and passive oversight.
- Student Mediation / Restorative Justice: This suite should include the RJP and a Social Services station. Ideally three small offices. Consider Roosevelt HS “flex-desk” pod. Location near front office works. Room for 20-25 students seated in circle, no tables. Provide marker board, projector, projection surface.
- Prefer direct access to main admin area with door and glazed wall as well as a door to public hallway.
- Keep Vice-Principals adjacent to Principal.

- Resource Officer needs direct access to hallway and admin suite.
- Madison has 2 school monitors now and that would grow to 3 at 1,700 students. Monitor space directly accessed from admin suite
- Per Ed Spec two conference rooms dedicated to Admin. One to accommodate eight and one to hold 12 seated
- Nurse is full time; health office and sick room to be located inside main admin area.
- Do not need record storage, going paperless. Capture space to accommodate third VP office in the future

Administration West

- Bookkeeper and Business office to be located near east Admin
- Workroom to be adjacent to Teacher Lounge
- Consider providing a student store near front. A Business/Marketing pathway starts with the new school year.

Counseling

- Waiting can be smaller, provide seating for four
- Storage can be smaller
- Look for ways to share daylight more equally.
- Two conference rooms should accommodate 6-8 people each
- Counseling offices too small, Alcohol/Drug Counseling office can be smaller
- Counselors include:
 - Counselors (5)
 - Drug and Alcohol
- Support
 - Teen Counselor – 2 days/week
 - College Interns (2)
- Itinerants
 - Speech
 - Psychologist

Career Center

- Career Center staff should be in a workstation or open office configuration, no private office. Provide 3 dedicated desks for staff
- Omit the computer desk carrels. Chrome books are available via carts. Provide printing station.
- Main area to include:
 - Projection/Teaching station
 - Perimeter shelves
 - Loose tables and chairs that are easily configured.
- Coordinate TRIO program in SUN space.

End of Meeting Notes

Civil Systems – Scope:

- Erosion Control
- Earthwork, Excavation and Fills, Trenching and Backfill
- Site Vehicular Pavements, Curbs, Signage, and Striping
- Right-of-Way Improvements
- Site Storm Drainage Systems
- Site Sanitary Sewer Systems
- Site Water Distribution Systems
- Site Natural Gas Systems

Erosion Control:

- Scope: Temporary construction erosion control.
- Construction activities must comply with City of Portland and Oregon Department of Environmental Quality (DEQ) Erosion and Sediment control standards. The project will need to obtain coverage under the DEQ 1200-C permit.
- Implement Best Management Practices (BMPs) to prevent erosion and sedimentation from entering public or private drainage systems.
- Provide inspection to ensure compliance with erosion control standards and LEED prerequisites.

Site Clearing and Preparation:

- Scope: Provide clearing and grubbing per PPS Design Guidelines and Standards Section 31-11-00.

Earthwork, Excavation, Trenching and Backfill:

- Scope: Excavation, fills, trenching and backfill, base rock, and subgrade protection for onsite pavement, building, foundation, and landscape areas. Earthwork shall comply with the Geotechnical Report prepared by RhinoOne, titled Preliminary Geotechnical Investigation Report, dated December 23, 2016 and PPS Design Guidelines and Standards Sections 31-14-00 and 31-20-00. The Geotechnical Report is preliminary and is subject to change.
- Systems Description:
 - Subgrade Protection and Wet Weather Conditions: Existing subgrade soils may be moisture-sensitive and subject to disturbance from construction activities. At this point in design, it should be assumed that construction equipment should not traffic the near-surface subgrade soils unless operating from a granular working pad or haul road. It should be assumed that an 18" thick crushed rock working blanket will be required for areas of light construction equipment use, and a 24" thick crushed section will be required for areas of heavy construction equipment use. Following refinement of the Geotechnical Report, it may be determined that a thickened working pad will not be required in areas of gravelly native soils.
 - Overexcavation: Preliminary Pricing should include an allowance for unforeseen overexcavation where unsuitable soil is encountered.
 - Structural fill to be crushed rock or other allowable materials per the Geotechnical Report.
 - Pavement and slab-on-grade base material to be ¾" minus crushed rock. Slab-on-grade may need to be open graded crushed rock capped with ¾" minus.
 - Earthwork materials to comply with the Oregon Standard Specifications for Construction.

Vehicular Pavements, Curbs, Signage, and Striping:

- Scope: Includes onsite and offsite vehicular pavements and curbs.
- Asphalt Pavements
 - Parking Stalls: 3” asphalt pavement over 8” crushed rock base.
 - Drive Lanes: 5” asphalt pavement over 12” crushed rock base.
- Concrete Pavements:
 - Service Areas and Driveway Aprons: 8” concrete over 6” crushed rock base
 - Pedestrian Paths with Incidental Vehicle Loading: 6” concrete over 6” crushed rock base.
 - Concrete pavements and walkways to be 4,000 psi concrete.
 - Concrete curbs to be 3,000 psi concrete.
 - Materials to comply with the current ACI standards and applicable sections of the Oregon Standard Specifications for Construction and PPS Design Guidelines and Standards Section 32-16-13.
- Construction Traffic: New pavement used to support construction traffic will need to be constructed with a thicker cross section, as described under Earthwork. Existing asphalt or concrete pavements should not be trafficked with construction traffic. If existing pavements must be trafficked with construction traffic, include allowance to overlay, replace, and/or repair pavements to their original condition.
- Work Within the Right-of-Way: Work within the right-of-way shall conform to the Oregon Standard Specifications for Construction (NE 82nd right-of-way) and the City of Portland Standard Specifications (Thompson and Alameda rights-of-way).
- Pavement Markings & Signage: Provide pavement markings for parking areas, unloading areas, crosswalks, and loading zones. Comply with City of Portland Standard Specifications.

Right-of-Way Improvements:

- Scope: Offsite improvements within the adjacent public rights-of-way.
- NE 82nd Avenue - Northeast Parking Lot Driveway Entrance
 - Modify signal to provide protected northbound left turn phase, including new signal head.
 - Replace curb ramps on east and west side of NE 82nd.
 - Replace driveway apron per ODOT standards.
 - Restripe pavement to create left turn lane.
- NE 82nd Avenue - Upgrade Trimet Bus Stop Near Northeast Driveway Entrance
 - Remove existing bus shelter.
 - Construct new Trimet BX bus shelter behind sidewalk. Relocate solar power to new bike shelter and provide lighting.
 - Construct new paved boarding area as shown in the site plan.
- NE 82nd Avenue Midblock Crossing
 - Possible crossing approximately 200 feet north of NE Russel Street, pending outcome of Traffic Impact Analysis.
 - Include allowance for curb ramps, signage, and pavement striping.
- NE 82nd Avenue - Southeast Parking Lot Driveway Entrances
 - The existing driveway entrances do not comply with City/ODOT standards and an allowance should be included to replace the driveway entrances per City/ODOT standards.

- The existing driveway aprons will likely satisfy width requirements as-is, and the sidewalk crossings may meet ADA cross-slope requirements. The project is seeking approval from the City to leave the existing driveway aprons in place.
- NE 82nd Avenue – Southeast Auxiliary Driveway Entrances
 - Include allowance to remove two existing driveway aprons serving as athletic field access. Replace driveway aprons with standard curb and sidewalk.
 - The project may seek approval from ODOT to leave the existing driveway aprons in place, provided access remains restricted with gates.
 - The existing access to the dumpster area east of the grandstands will be removed, with access provided through the onsite parking lot. There is no driveway apron for this existing access, so work within the right-of-way is not anticipated.
- Upgrade Trimet Bus Stop Near Southeast Driveway Entrances
 - Include allowance for similar improvements to northeast bus shelter. Improvements may not be included.
- NE 82nd Avenue - Curb Ramps at Intersection with NE Thompson Street
 - Replace curb ramps and repair pavement per City/ODOT standards.
- NE Thompson Street – Sidewalk Frontage Improvements (Alternate)
 - PBOT has conditioned frontage improvements and right-of-way dedication with development. Project is seeking to include frontage improvements only as part of athletic fields improvements.
 - Remove existing sidewalk and reconstruct 4.5' wide planter strip and 6' wide sidewalk.
 - Include allowance for mid-block curb ramps at the intersection of NE 80th and 81st Avenues (may not be required).
 - Include allowance for two driveway aprons for athletic field access.
- NE Alameda – Frontage Improvements
 - PBOT has conditioned frontage improvements and right-of-way dedication with development. The project is seeking non-standard frontage improvements per the site plan, but the following should be included as an allowance.
 - Remove existing sidewalk and replace with 4.5' wide planter strip and 6' sidewalk. Include sidewalk transition at edge of property frontage.
- Street Trees
 - NE 82nd Avenue - Provide 51 street trees.
 - NE Thompson Street – Provide 22 street trees.
 - Refer to landscape narrative for further discussion.

Site Storm Drainage Systems:

- Scope: Includes onsite storm drainage conveyance, treatment, and disposal. Systems will comply with Portland BES Stormwater Management Manual and PPS Guidelines and Standards, Section 33-47-26 and 33-49-0.
- Background:

- Applicable Standards: Portland stormwater management standards will apply to all redevelopment areas on the site. Stormwater management standards may also be triggered for existing impervious surfaces depending on the degree of comingled drainage between redeveloped and existing areas. The stormwater management standards require onsite vegetated stormwater treatment and onsite surface infiltration facilities to the maximum extent feasible. If surface infiltration is infeasible, vegetated surface treatment with subsurface infiltration is required to the maximum extent feasible. If infiltration facilities are not feasible, onsite detention with discharge to the combined sewer is allowable.
- Existing Systems: Storm drainage from the site is managed onsite using a series of 80 drywells. Based on field observations and record drawings, the existing drywells are buried below the ground surface, and are not currently accessible for inspection or cleaning. The majority of the existing drywells are believed to be approximately 20' deep. Diameter is unknown. However, based on historical Portland sizing criteria, it is expected that the drywells may be 28" diameter. The existing storm drain collection and disposal system is summarized as follows:
 - Building Roof Areas: Each drywell receives drainage from 1-3 roof drains. The drywells are positioned around the perimeter of the buildings, and are located approximately 15-30' away from the building. Roof drainage discharges directly to the drywells, without passing through a sediment trap. This "direct discharge" conforms with regulations, but increases the sediment loading and shortens the lifespan of the drywell.
 - Parking Lot, Plaza, and Landscape Areas: Drainage is collected in catch basins to trap sediment before discharging drainage to the drywells. The catch basins generally conform to current industry and regulatory standards, and are equipped with sumps and down-turned elbows on the outlet pipe leading to the drywell. Based on field observations, the catch basins are completely filled with sediment.
- Proposed Collection and Conveyance System: Where possible, surface drainage will sheet drain into stormwater management facilities. Where sheet drainage is not possible, stormwater will be collected through area drains, catch basins, or trench drains. The piped conveyance systems will consist of 6" minimum pipes. Mainlines will be 8"-12". Manholes will be provided at changes of direction for pipes 8" and larger. Cleanouts will be provided at changes of direction for pipes 6" and smaller. Pipe depths will vary, as needed to provide gravity drainage to the proposed infiltration facilities; but will be designed to be in the 3'-6' depth range where possible. The following should be used as an assumption for quantities:
 - 8-12" Pipe: 3,000 lineal feet
 - 4"-6" Pipe: 4,500 lineal feet
 - Area Drains: 45 (50% to be installed with decorative cast grate)
 - Trench Drains: 250 lineal feet (installed with decorative cast grate)
 - Catch Basins: 15
 - Cleanouts: 30
 - Overflow Risers: 8
 - Manholes: 24
 - Backwater Valves / Foundation Drain Connections: 8

- Perimeter foundation drainage: It is assumed that perimeter foundation drainage will be required for all new exterior walls and footings. This perimeter foundation drain system will consist of a 4" perforated pipe installed within an envelope of drain rock material a minimum of 6" on all sides. The drain rock will be wrapped in geotextile fabric. Underslab drainage may be required for basement areas below finished grade.
- Stormwater Treatment: The following are specific stormwater treatment approaches for each area identified in the SD drawings:
 - Vehicular areas: Stormwater runoff from vehicular areas will be managed using vegetated surface treatment facilities. Due to existing topography, vegetated treatment facilities will have overflows to subsurface disposal systems. Treatment systems will include a combination of vegetated basins and planters. Refer to City of Portland BES standard drawings for typical details. Each stormwater treatment facility will be equipped with an overflow riser to direct high flows to subsurface infiltration facilities. For pricing, assume 7,500 square feet of stormwater planters and basins will be constructed, distributed throughout the site. A portion of these facilities will be constructed with a soakage trench reservoir underneath similar to those described below. The remainder of the facilities will be lined to prevent infiltration and will have piped overflow to adjacent drywells.
 - Roof areas draining to existing drywells to remain: Stormwater runoff from portions of the existing roof are anticipated to continue to drain to existing drywells. No pre-treatment is provided for this runoff.
 - Roof areas draining to new stormwater systems: Stormwater runoff from roof areas that are being directed to new stormwater management facilities will be treated by a sedimentation manhole prior to discharge to any UIC.
 - Sidewalks, pedestrian plazas, and landscape areas: Stormwater runoff from non-vehicular impervious surfaces and landscape areas will be collected by area drains and catch basins that are configured with sumps and hooded outlets. Additionally, sedimentation manholes will be installed upstream from the drywells.
 - Improvements within adjacent public rights-of-way: Stormwater treatment is not anticipated to be required for the proposed work in the NE 82nd Avenue and NE Thompson Street rights-of-way. Sedimentation manholes will be installed upstream of all new and existing public drywells within the NE Alameda Street right-of-way. For pricing, include an allowance for providing additional sedimentation manholes upstream of adjacent public sumps in NE Thompson Street and NE 82nd Avenue.
 - Alternate – Athletic field areas: BES and DEQ have confirmed that runoff from synthetic turf playing fields may discharge to private UICs without vegetated or mechanical treatment.
- Infiltration / Disposal Systems:
 - Existing Drywells to be Removed: See below for an assumed quantity of existing drywells to be removed. All removed or abandoned drywells must be closed DEQ standards. A DEQ Pre-Closure notification is required prior to demolition of any UIC.
 - Existing Drywells to Remain: See below for an assumed quantity of existing drywells to remain. Any existing drywells to remain should be excavated, cleaned, and retrofitted with a new manhole top, frame, and cover flush with the proposed finished surface.

- New Drywells: New drywells will be constructed with precast 48” diameter perforated sections, sumped bottom, and standard manhole cone or flat-top with access cover. For pricing, assume all new drywells will extend 23’ below the ground surface.
- New Soakage Trenches: Soakage trenches will consist of an 8” minimum diameter perforated pipe installed within a trench backfilled with drain rock. Geotextile fabric will be installed on the sides and bottom of the trench to separate native soil from the drain rock. For pricing purposes, assume all trench drains will be 10’ wide and 8’ tall, with the top of the drain rock starting at 3’ below the ground surface.
- The following should be used as an assumption for quantities.
 - Existing drywells to be removed/abandoned: 33
 - Existing drywells to remain: 25
 - New drywells: 22
 - New soakage trenches: 900 lineal feet
- Alternate – South Athletic Fields: An additive alternate for this project involves replacing the athletic field area between the existing track and NE Thompson Street. Refer to Landscape narrative and drawings for more information on layout. Stormwater runoff from the new synthetic turf field will be collected by a field underdrain system and conveyed to soakage trenches on the north and south edges of the field area. For pricing purposes, assume the combined length of these trenches will be 1,000 feet and assume the width and depth will match what is described for soakage trenches above.
- Flood Zone: The project is outside of the flood zone.

Site Sanitary Sewer Systems:

- Scope: Includes onsite sanitary sewer modifications beyond 5’ outside of the building footprint. Improvements and materials to comply with City of Portland BES standards and PPS Design Guidelines and Standards, Section 33-30-00.
- Systems Description:
 - Reconstruct sanitary sewer mainlines and laterals as shown in the drawings.
 - Provide manholes at junctions and changes in direction. Assume (5) manholes.
 - Provide allowance to install cured-in-place liner in existing onsite wastewater lateral, pending outcome of video inspection.
 - Provide heavy duty trench drains and piping for trash enclosures.

Site Water Systems:

- Scope: Includes onsite domestic water and fire protection supply between points of connection to the public system to the points of connection with building plumbing. New or replacement systems will comply with PPS Design Guidelines and Standards, Section 33-10-00.
- Fire Service: Install new 8” fire service with new double detector check valve assembly backflow preventer (BFP) in below ground vault. Provide new fire hydrants and fire department connection (FDC).
- Domestic Water Service: Reconnect to existing 6” domestic water service and extend new 6” domestic water line to building. Provide allowance for replacement of existing double check valve assembly BFP with new reduced pressure BFP in new above ground enclosure.
- Irrigation Service: Include allowance for new irrigation backflow preventer.

Site Natural Gas Systems:

- Scope: Includes onsite natural gas distribution piping upstream from the meter.
- Relocation: Coordinate with Northwest Natural to relocate existing natural gas meters and service piping.

M E M O R A N D U M

To Randall Heeb
Opsis Architects
920 NW 17th Ave
Portland, OR 97209

Project	Madison High School Modernization	M/R Code	MHS
Date	4.19.18	Sent via	Email
		# Pages	4
Subject	50% Schematic Design Narrative		
By	A. Samuel	Copies to	file , Carol Mayer-Reed

Site Design Philosophy

The site design implements a curvilinear geometry that draws from the streams, swirls and eddies of the Missoula Floods which created the hillside at the top of which the high school sits. Simultaneously, the angular geometry of the building extends into the landscape, anchoring the building amidst the swirling energy of water, habitat, people and ideas.

Main Entry

On the east, a system of arcs visually draws the eye to the new front entry, funneling the stream of students into the school. The vehicular drop-off is rounded, accommodating the swirl of morning and afternoon traffic. An arced edge, created by alternating Missoula Flood boulders and eye catching red seat walls, connects the flag pole to the front entry and onwards into the core of the school.

East Courtyard

The main entry is enhanced by the energy of stormwater tumbling from a roof scupper into the east courtyard. This activity lends vibrancy to the entry experience and an exclamatory introduction to the story of water, a core tenet of the site experience. The flow of water arcs westward along the historic floods' path to join with a second boulder/red seat wall curve delineating the outdoor use space of this more contemplative courtyard. The activators of this courtyard are the natural cycles of wet and dry, sun and shade, seasonal changes and animal habitation. The linear paved area serves as a veranda or terrace where smaller groups can study together or experience, contemplate and be mindful of these shifting patterns. There is a small outdoor terrace on the south edge as well accessible by the administration offices. A three foot concrete band wraps the internal vegetated area, allowing maintenance access along the perimeter.

- Stormwater swale to be conveyance only (lined), not infiltration. Additional rounded boulders to be used throughout swale and as an energy dissipater at the east end.

- Vegetation to be a native plant palette focusing on trees providing dappled shade, and low growing ferns and other shrubs.

West Courtyard

A large central eddy swirls in the indoor/outdoor space at the nexus of the school (west side of Commons, east side of west courtyard). The eddy encompasses a large outdoor flex space for gathering and performance and is edged with a whirl of red seat wall. This eddy can visually connect the indoors and outdoors through groundplane treatments. An architectural screen enhanced by plantings buffers from the more utilitarian uses on the west portion of the courtyard; a series of outdoor work areas to support the art and CTE classrooms within.

West Entry and Childcare Playground

The west entry to the school, a more neighborhood-oriented space, will include covered bike parking and an entry plaza. To the south is an outdoor play area connected to the childcare facility which will be fully fenced and include various areas for play; paved, fall surfacing for playground equipment (NIC) and shrub plantings.

Southwest Plaza and South Yard

This area, very much in the “back” of the school, will be improved to become a pedestrian environment. The plaza will still accommodate maintenance vehicle access and turnaround (mechanical room, electrical equipment), but will be refocused as a pedestrian access between the parking area and neighborhood to the west and the athletic fields and gym to the south. The small plaza can accommodate smaller outdoor classes and gatherings.

Southeast Gardens and Hillside

The south hillside embodies the hydrological flows that once impacted this site, using curved gabion retaining walls and swooping planting edges. The more angular spaces adjacent to the building anchor the landscape against the flow of the hillside. This tapestry of spaces includes an outdoor amphitheater, a paved area for agricultural storage and hoop house, and a student garden area for raised planters, garden plots, orchard and pollinator gardens. The strong diagonal is aligned with Mt Hood with an upper lawn from which to enjoy this view and those of Rocky Butte and the hills to the south.

- Proposed garden area is 6500 sf (not including amphitheater or storage area). Existing is 6700 sf.
- Amphitheater: two stadium steps accommodating approx. 45 people
- Existing concrete retaining wall at bottom of hill and corner stairway to remain. New handrails at stairway.

Athletics Plaza

The Athletics Plaza is a series of spaces which connects between the gym facilities and field entries and to the site beyond. The spaces and circulation accommodate daily building and field access, game time pedestrian crowds (players, spectators, staff), vehicular maintenance (generator) and fire truck access to the southwest corner of the gym. The entry plaza on the east directs visitors to either the new gym building entry or the field entry gates and is large enough to accommodate game time crowds and ticket queuing. Once inside the gates, a new ramp, located between the new concessions building and the refurbished grandstand, provides spectator access directly to the grandstand. A plaza inside the gates and to the north of the concessions building provides a place for congregation and perhaps access to either restrooms or concessions at the higher elevation. Two new flights of steps (one at main building

and one west of concessions building) and a ramp will provide players and staff direct access between the locker rooms and the fields without the need to cross paths with spectator crowds.

South Athletics Fields

Surfacing: synthetic turf with Brock impact attenuation pad and rubber infill, concrete flush curb perimeter edge, with striping and contrasting-colored turf to accommodate baseball, softball and soccer.

Baseball/Softball accessories (@ each field):

- (2) dugouts: shed roof with posts and security fencing all sides, (2) gates, aluminum benches, bat/cap storage.
- (2) bull pens
- (1 total) batting cage with removable netting (accommodates baseball and softball)
- (1) removable pitcher's mound
- (3) 5 row aluminum bleachers, one of which to be ADA compliant
- (1) Storage shed, TuffShed 10ft x 8ft

Materials and Construction :: Basis of Design Assumptions

Paving

- *Pedestrian Concrete Paving:* 4" thick, no reinforcing, scoring at 5ft o.c. both ways, light broom finish, natural color
- *Vehicular Concrete Paving:* 6" thick, no reinforcing, scoring at 5ft o.c. both ways, light broom finish, natural color
- *Ornamental Paving:* concrete paving (thickness per location), linear ornamental scoring at varying spacing (9" – 24"), natural color
- *Pedestrian Asphalt Paving:* 2" thick asphalt over 6" thick ¾" (-) aggregate base
- *Fire Lanes:* 7" thick concrete or 3" thick asphalt paving, ref. civil
- *Fall Surfacing:* 2 1/4 " thick rubber safety tiles over 3 ½" thick rat slab.

Systems

- *Ramps:* 4" CIP concrete paving, 8" width x 6" exposed cheek curbs, handrails both sides
- *Steps:* 12" run x 6" rise typical, CIP concrete, light broom finish, natural color, hand tooled nosing, handrails both sides
- *Stadium Steps:* 3.36ft run x 18" rise typical, CIP concrete, light broom finish, natural color

Walls

- *Concrete Retaining:* 8" width (or per structural requirements), CIP concrete
- *Gabion Retaining:* 24" wide x 36" long x 24" ht (or per structural requirements), WWM galvanized basket, wire together, 4" – 6" diameter river rock infill, ¾" (-) aggregate base @ 6" depth (or per geotechnical report),
- *Seat:* 24" width x 18" exposed ht, CIP concrete, red integral color

Railings and Fencing

- *Handrails:* 36" ht, schedule 40 steel pipe, hot dip galvanized
- *Guardrails:* 42" ht, steel picket fence, Ameristar Aegis Plus or equal
- *Fencing and Gates:*
 - Fields South Edge: 8ft ht, galvanized chainlink with razor wire top to match existing
 - Play Area, Student Garden and North Athletic Field Edge: 7ft ht, WWM, black powder coated.
 - Backstop: black vinyl chainlink, 30 ft ht.
 - Dugout Perimeter and Wing Fencing: black vinyl chainlink, 8 ft ht.
 - Athletic Field Perimeter (rest): black vinyl chainlink, 4 ft ht.
 - Netting: permanent posts with removable netting, 30ft ht.

- Portable Outfield Fence: fence panels that can be easily relocated to provide an outfield edge for either baseball and softball, 4ft ht.
- *Architectural Screen*: perforated weathering steel with 80% opacity.

Furnishings

- *Benches*: Huntco "Willamette" bench, 72" length, metal, backed, black, (10) qty
- *Tables/chairs*: Huntco "Applegate" table and chairs, steel, surface mounted, (20) qty
- *Litter Receptacle*: Huntco "Avenue Receptacle", black powder coated, surface mounted, (10) qty
- *Vehicular Bollards*: at vehicular/pedestrian areas, 6" diameter steel, fixed (embedded, (30) qty) and removable padlocked ((6) qty), powder coated black
- *Barrier Posts*: at utility vaults, 6" diameter Sch 40 pipe with domed top, filled with concrete, embedded, powder coated black, qty per plans
- *Bike Racks*: bike corral with (5) inverted U racks, surface mounted, galvanized, qty per plans
- *Flagpole*: aluminum, internal halyard, 30ft ht., Qty (1)

Miscellaneous

- *Boulder Edge*: a continuous assortment of rounded boulders, ideally from on-site excavation of the Missoula Flood deposits. Boulders to be too heavy to pick up and are arranged, not in a line, but more informally at the edge of the paving. Infill between boulders and paving edge with ¼" (-) crushed aggregate.
- *Student Garden*
 - *Storage Shed*: 12ft x 10ft Tuffshed, lockable
 - *Hoop House*: 12ft x 18ft, plastic shrowded agricultural hoop house (greenhouse)
 - *Raised Planters*: 3ft w x 8ft l x 3ft ht, 4x4 wood, Qty (5)

Soils

Soil fertility analysis needs to be conducted to find out if native soils can be reused in place as planting soils. If native soil is not adequate, imported sandy loam will be used. Amend all soils with biotic soil particle and fertilizer per soil fertility report recommendations.

Amendment and/or New Topsoil Depths:

- Lawn: 6"
- Shrubs and Groundcover: 24"
- Trees: 36"

Planting

Plant species will be chosen from the PPS approved plant list for low maintenance, CPTED concerns and low water demands. Native species will be used where appropriate. Memorial and commemorative trees will be protected or replanted. The roses at the school entry will be salvaged and replanted. Planting design will include city code requirements for site, parking lot, and stormwater as well as Title 11 canopy coverage. 2" depth mulch at all planting areas.

- Trees: B&B
 - Deciduous: 2" diameter on site, 2.5" diameter in ROW
 - Evergreen: 6ft – 8ft ht
- Shrubs, grasses, vines, groundcovers: 4", 1, 2 and 5 gallon as required
- Lawns: hydro-seeded

Irrigation

A fully automated irrigation system will cover all planting areas and lawns. Use Hunter IMMS compatible controller, MP Rotators or low flow rotors and weather station, Schedule 40 PVC mainline, polyethylene laterals.

MEMO

TO: Opsis Architecture
920 NW 17th Ave
Portland OR, 97209

DATE: April 19 2018

PHONE: (503) 525-9511

ATTENTION: Randall Heeb

PROJECT NAME: Madison High School

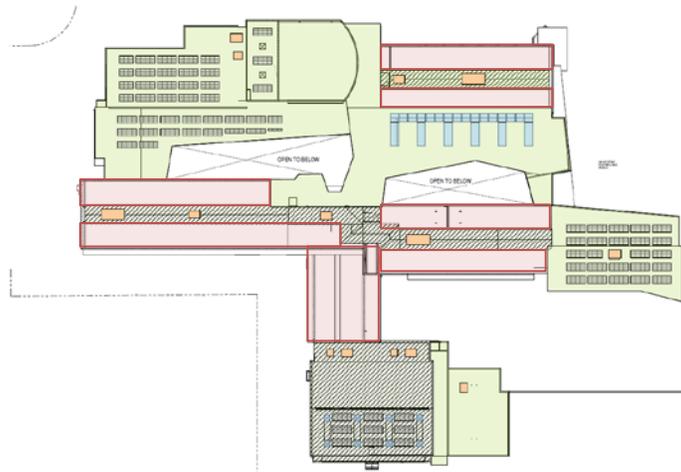
PROJECT NUMBER:

SUBJECT: Existing Roof Conditions and Options for Repair / Replacement

Overview

As part of the current redesign project at Madison High School PMA has performed a limited visual assessment of the existing classroom wing roofs. The purpose of the assessment was to provide an initial report on existing conditions including; confirmation of existing roof type/configuration, confirmation of existing flashing systems, and general condition observations.

PMA was onsite Wednesday March 28th, 2018 and Monday April 9th, 2018. The assessment focused on roofs where repair in lieu of replacement is being considered, specifically the roofs above the library and northeast, southeast (not including the single level administration wing), and southwest classroom wings (i.e. the roofs shown in red below).



While PMA was onsite the weather was predominantly clear with temperatures between 50 - 55 °F on March 28th, and between 60 – 65 °F on April 9th. Prior to PMA's site visits the weather had been rainy/overcast. Observations were made primarily from the roof surface. Scope of assessment included:

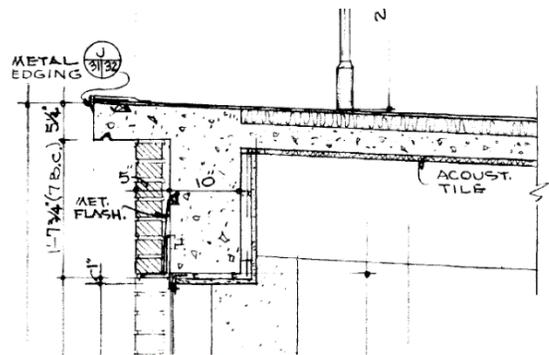
- Visual assessment of the existing roofs noted above.
- Visual assessment of the existing flashing systems.
- Visual observation of roofing cores removed by PBS Environmental Engineering to confirm existing roof materials and configurations.
- Limited scanning of the existing roofs with an electrical impedance scanner.

In addition to visually observing the existing conditions, PMA reviewed the previous documentation provided by Opsis Architecture and Portland Public Schools (PPS), including the original drawings from 1955 and the 2002 re-roof drawings by McBride Architects. PMA used the documents to aid onsite observations. Visual observations confirmed accuracy of the existing drawings, and noted deviations are outlined in subsequent sections.

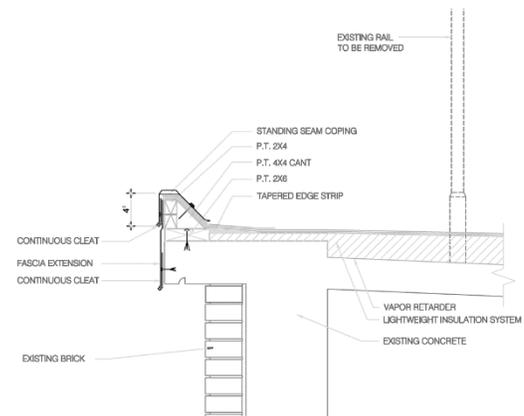
Existing Conditions

Original Roofing and Previous Roof Work

Previous documentation notes that the original roof above the classrooms was composed of a concrete slab, with approximately 2-inches of rigid insulation, and a 'built-up' roof. As shown in the drawing to the right, the original insulation appears to terminate aligned with the interior edge of the concrete wall.



In 2002 the majority of the roofs at Madison were re-roofed, with the exception of the gym. Scope of work typically included new insulation (type varied by roof location/type), new flashing systems, and new roofing (type varied by location). PMA's investigation focused on the roofs above the classrooms where drawings indicate that the new roof consists of a new SBS roof system, over a lightweight insulation system, over a vapor retarder.



Existing Roof Configurations

While onsite PMA compared the existing conditions to the previous documentation to determine accuracy. PMA's primary methods of review included visual observations of the roofing/flashing systems and review of the roof cores removed by PBS. PMA noted the following regarding the existing conditions:

- In general, the flashings observed onsite match the flashings shown in the 2002 re-roof drawings. Some minor differences were noted but the typical flashing systems observed onsite match those shown in the drawings. Note, PMA was only able to compare portions of the flashing systems observable without any deconstructive assessment. Overlaps, substrates, etc., were not confirmed during this limited assessment.
- Existing roof is a SBS roof system as noted on the drawings – and typically appears to be lapped correctly.
- Several cores were removed to determine the material components of the existing roofs. The following observations were made:
 - Due to depth limitations of the coring equipment, cores were removed at the perimeter of the classroom roofs where the roof system is thinnest.
 - While PMA was unable to confirm the overall thickness of the existing roofs in all areas. Based on the re-roof drawings PMA expects the overall depth to vary between 3-inches and 14-inches.
 - In general, the layers observed at a typical classroom wing are:
 - SBS Roof System
 - Lightweight concrete fill (thickness varies)
 - Open Cell Insulation (thickness varies)
 - Asphaltic Vapor Barrier
 - Concrete
 - Cores typically appeared dry. No water or moisture was observed at the cores above the classroom wings; however, materials were not tested for moisture content.

Existing Material Conditions

PMA performed a visual assessment of the existing materials at Madison High School on roofs above the classroom wings (not including the monitors). In general, the existing roofing materials are in fair condition considering their age (approximately 16 years). Deficiencies observed onsite include:

- **Deteriorated Sealants:** where sealants have been installed they have reached the end of their lifespan. Sealants are brittle and have typically failed cohesively and adhesively. Few exposed sealants were observed on the roofing above the classroom wings, but those present are deteriorated.



- **Delaminated Roofing:** A few sections of delaminated roofing were observed, approximately 500 sqft total, spread out in five different locations. Most of the delaminated sections did not have visually perceptible moisture trapped between the delaminated roofing and the substrate. An exception was observed at the roof above the library where a water bubble between the roofing membrane and substrate was observed.
 - On PMA's subsequent site visit (4/9), PMA performed a very limited moisture scan at the delaminated sections and adjacent roofing using an impedance scanner. An impedance moisture scanner is not destructive and can provide moisture readings on a relative scale (i.e. it can compare the relative difference in moisture between two areas). PMA observed that the sections with delaminated roofing were significantly wetter than adjacent areas with well adhered roofing.
- **Granule Loss:** PMA observed some granule loss from the SBS system, primarily along raised lap edges.



- **Adhesion:** PMA noted minimal run out at the seams, which can be an indication that the materials were inadequately torched/heated during installation. PMA visually inspected several seams and noted that the materials were typically well adhered, however some areas of poor adhesion were observed along seam edges.



- **Cracks:** The roof membrane has shallow hairline cracks. Cracking of the membrane as observed is common as SBS modified bitumen roofs age. Cracks will continue to form and as the material ages and will eventually cause the roof to fail.



- **Drainage and Overflows:** The existing roofs typically provide sufficient slope to drain water, however, the existing overflow system is not adequate. PMA observed several clogged roof drains with ponds of standing water. The existing overflows are limited to scuppers along the perimeter of the classroom wing roofs. Drawings indicate that the scuppers are approximately 3-inches above the roof drains, however they are located approximately 20-feet away from the roof drains. PMA observed significant staining and biological growth around several roof drains, an indication that standing water is common. Several of the delaminated sections were adjacent to clogged roof drains.



- **Metal Flashings:** In general, the metal flashings are in good condition. PMA observed that the majority of the flashings were replaced during the 2002 re-roof scope of work, with the exception of the roof to wall flashing along the library roof where the original copper flashings remain.



- **Roof Drains:** PMA noted that the flashing membranes were typically beginning to deteriorate. The reflective coating is peeling away from the membrane and the mastic adhering the SBS roofing to the flashing membrane is deteriorated (poorly adhered and cracked).



Options for Repair/Replacement

Based on PMA's initial limited assessment the following options are available for addressing the roofs over the classroom and library wings. Note that with either option PPS design standards require OSHA compliant fall protection, access hatches, and ladders at all roofs.

Repair

The existing roof is currently 16 years old, and has some serviceable life left, approximately 5 years if the current deficiencies are repaired. To retain the existing roof the following is recommended:



- Follow up with more extensive roof assessment with additional investigations including:
 - Full scan of the existing roof system using an impedance scanner to determine relative moisture content in existing roof system.
 - Invasive openings in two areas one determined to be 'dry' and another determined to be 'wet' by the moisture scan. Invasive openings will assist in assessing actual moisture in 'dry' section and the condition of the existing materials in the 'wet' sections.
 - Removal of a section of roof-to-monitor flashings and roof-perimeter flashings to determine if the existing system meets industry standards.
- At a minimum PMA recommends the following repairs (note that additional repairs may be recommended after additional assessment is performed).
 - Replacement of all existing roof drains/flashings.
 - Addition of new overflow drains in close proximity to the existing roof drains.
 - Repair of the delaminated sections of roofing.
 - Replacement of all exposed sealants.
 - Replacement of original copper flashings with new metal flashing above library roof.

Replacement

Replace all of the existing roof systems. All new roofs will need to meet PPS standards, which indicate:

- Roof (from inside out)
 - New rigid closed cell polyisocyanurate foam core insulation boards, installed in two layers.
 - Rigid Cover Boards
 - 2-Ply SBS Modified Bitumen System
- Flashings
 - Pre-coated galvanized steel per current ASTM A653/A653M, G90 gauge minimum core steel, shop pre-coated with two-coat fluoropolymer finish containing not less than 70% PVDF resin by weight in color-coat.

Recommendations

The roofs above the classroom wings and library are approximately 40,000 sqft total in area. PMA notes the following:

- The vast majority of the roofs at the modernized Madison High School will be new, some efficiency may be gained by replacing all rather than leaving a small percentage in place.
- The existing roofs have some remaining life, but it is limited – and repairs are required to maintain the existing roof systems.

Given the above, PMA recommends PPS consider replacing all of the roofs at Madison

BY: Halla Hoffer, AIA

CC: File

Schematic Design Narrative

**Madison High School Modernization
2017-0482**

Prepared for:

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April 19, 2018

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Mechanical System

Sustainability

The following are sustainable strategies that we propose to implement on this project:

- Displacement ventilation: The advantage of displacement ventilation is superior ventilation effectiveness due to the introduction of cool, fresh air low in the space and the stratification of the warmer, stale air upward and out of the space via a high return grille. Displacement ventilation also provides lower HVAC system sound levels in the space and a greater level of energy efficiency.
- Heat Recovery: Heat is recovered from exhaust air before it leaves the building and is used to pre-heat outdoor air, which saves a significant amount of energy.
- Demand controlled ventilation: CO2 sensors are utilized to reduce the amount of outdoor air that is brought into the building when it isn't needed, which saves energy that would have been required to condition it.
- High performance building envelope: Increased roof/wall insulation along with high performance glazing.
- Natural cooling/ventilation: Utilizing passive strategies such as sun shades along with operable windows to naturally ventilate the building when outdoor conditions are favorable.
- Radiant floor heating/cooling: PEX piping is embedded in concrete floor slabs, and chilled and heating water is circulated through it to provide radiant heating and cooling which is very comfortable and energy efficient. The opportunity to use this strategy on this project will be limited to only areas with new floors.
- Night-time building flush: At night, supply fans will bring in cool, unconditioned outside air to flush out the building, lower indoor CO2 levels, and pre-cool the building mass to delay temperature swings the following day.
- Low flow plumbing fixtures.
- Thermal solar water heating will be studied for viability, educational and cost valuation.
- High efficiency gas-fired boilers and domestic water heaters.

Mechanical System

The following are the proposed mechanical system options for this project:

Option 1:

High efficiency condensing boilers (gas-fired) and packaged DX cooling sections will provide heating and cooling for VAV rooftop air handling units that serve terminal units located throughout the building. The terminal units will be a combination of parallel fan powered boxes and single inlet boxes with heating water coils. Air distribution will be provided overhead with ceiling mounted supply and return grilles, except in the classroom and administration areas where displacement ventilation will be used in combination with finned tube baseboard heaters. In the Common areas, radiant floor slabs will provide heating.

Option 2:

High efficiency condensing boilers (gas-fired) and two high efficiency, air-cooled chillers (evaporative cooled condenser and mag lev compressors, Aeon model LZA, 300 tons each) will provide heating and chilled water for VAV rooftop air handling units that serve terminal units located throughout the building. The terminal units will be a combination of parallel fan powered boxes and single inlet boxes with heating water coils. Air distribution will be provided overhead with ceiling mounted supply and return grilles, except in the classroom and administration wings where displacement ventilation will be used in combination with finned tube baseboard heaters. In the Common areas, radiant floor slabs will provide heating and cooling.

Option 3:

High efficiency condensing boilers (gas-fired) and two central water-cooled chillers (300 tons each with an outdoor cooling tower) will provide heating and chilled water for VAV rooftop air handling units that serve terminal units located throughout the building. The terminal units will be a combination of parallel fan powered boxes and single inlet boxes with heating water coils. Air distribution will be provided overhead with ceiling mounted supply and return grilles, except in the classroom and administration wings where displacement ventilation will be used in combination with finned tube baseboard heaters. In the Common areas, radiant floor slabs will provide heating and cooling.

Option 4:

A VRF (variable refrigerant flow) system with heat recovery will provide heating and cooling for the school, while rooftop HRVs (heat recovery ventilators) will provide ventilation air for all spaces. Air distribution will be provided overhead with ceiling mounted supply and return grilles, except in the classroom and administration wings where displacement ventilation will be used. In the Common areas, radiant floor slabs will provide heating and cooling using a heat exchanger from the VRF system.

The following is a preliminary list of the air handling units (basis of design is Aeon model RN):

- AHU-1 (Southwest Wing): 27,000 cfm
- AHU-2 (Southwest Wing): 27,000 cfm
- AHU-2a (Southwest Wing): 14,000 cfm
- AHU-2b (Southwest Wing): 14,000 cfm
- AHU-3 (Southeast Wing): 24,000 cfm
- AHU-4 (Admin Area): 16,000 cfm
- AHU-5 (Gym): 14,000 cfm
- AHU-6 (Aux. Gym): 6,000 cfm
- AHU-7 (Commons): 11,000 cfm
- AHU-8 (Northeast Wing): 24,000 cfm
- AHU-9 (Northwest Wing): 16,000 cfm
- AHU-10 (Theater): 8,000 cfm
- HRV-1 (Wrestling Room): 3,000 cfm, heat recovery ventilator w/ 100% OSA
- HRV-2 (Locker/Shower Rooms): 13,000 cfm, heat recovery ventilator w/ 100% OSA
- HRV-3 (Weight Room): 3,000, heat recovery ventilator w/ 100% OSA

The VAV AHU's (1 thru 4, 8, and 9) will be mounted on concrete tubs for sound/vibration attenuation, and constant volume AHU's 5, 6, 7 & 10 and HRV's 1, 2, & 3 will be mounted on typical roof curbs. The VAV AHU's will be located directly above their associated shafts, and we're anticipating that the constant volume AHU's and HRV's will be ducted (supply & return) down directly through the roof.

In lab classrooms and prep rooms with fume hoods, each hood will be served by a dedicated roof-mounted exhaust fan with stainless steel exhaust ductwork. In the locker rooms, all supply and exhaust ductwork along with grilles and diffusers will be aluminum.

In the central commons area which contains more than two floors that are open to each other, six roof-mounted exhaust fans (50,000 cfm each) will provide smoke control during a fire/smoke event, and these fans will be on the emergency generator and tied into the fire alarm system. Intake air for this system will be provided by openings including entry doors on automatic openers and louvers with motorized dampers (1,500 square feet total free area).

A new DDC building automation system (Honeywell WEB AX) will serve the entire building.

Plumbing System

Proposed Plumbing System

The following are the proposed plumbing systems for this project:

- Install new domestic water and DWV piping to serve new equipment, devices and fixtures.
- The domestic water system will be from a new service to the building, into and including the building systems. This will include meter, backflow prevention and pressure regulation devices as necessary. The domestic water piping will be copper with brazed joints below grade and soldered joints above grade.
- The sanitary waste system will be a new service within the building. The waste and vent piping system will be no-hub cast iron with heavy duty couplings below grade and no-hub cast iron with standard duty couplings above grade.
- The storm drainage system will be a new service within the building. The waste and vent piping system will be no-hub cast iron with heavy duty couplings below grade and no-hub cast iron with standard duty couplings above grade.
- The plumbing fixtures will be ADA compliant as appropriate for the designated locations.
- The plumbing fixtures will be water conserving within the parameters of governing code standards.
- The domestic hot water will be provided by a central condensing water heater with circulation. The system will also be provided with a separate hot water for the food service areas (+140 deg.).
- For food service, the implementation of a FOG control system (Grease interception) to address food service waste and meet current BES/environmental standards.
- Implementation of an acid neutralization control system to serve Science/Lab area waste conditions and meet current BES/environmental standards.
- In applicable science areas, Emergency safety equipment (showers/eyewashes etc.) will be provided with tempered water systems as outlined by ANSI.
- In applicable science areas, keyed fuel gas control systems will be provided including Emergency shut-off systems which will be provided with shut-down switches at the exit doors.
- In applicable mechanical/plumbing equipment areas, Emergency shut-off systems will be provided for shut-down of the fuel gas system in the room via a switch at the exit doors. In compliance with ASME – CSD standards.
- Hose bibbs will be provided at approximately 100-foot intervals at ground level exterior of entire building. As well, hose bibbs will be provided at roof hatch/access areas.
- The building will be provided with utility meter set and piping extended to all gas fired equipment/devices.
- Condensate drains will be provided at all HVAC cooling units.
- At all gas fired condensing equipment, combustion condensate drains (utilizing chemical resistant piping) will be provided and routed thru neutralizers and then to sanitary drain receptors.
- Make-up water with code approved backflow prevention devices will be provided to Mechanical equipment etc.
- The elevator(s) will be provided with a sump pump and alarm system serving each elevator pit.

Fire Protection System

Proposed Fire Protection System

Provide a new NFPA 13 compliant fire sprinkler system throughout the building for complete coverage. Wet pipe type system to be installed in all conditioned spaces. In areas that require fire sprinklers that are exposed to temperatures below 40 F, a dry pipe sprinkler system or dry pendent type sprinklers will be provided.

Provide a new 6-inch dedicated fire sprinkler service with dedicated detector type fire backflow preventer.

Provide a new fire department connection (FDC). FDC to be within 100 ft. of a fire hydrant. FDC can be connected downstream of the backflow preventer inside the vault.

Because the highest floor level appears to be more than 30-feet above the lowest level of fire department access, standpipes in the stairwells are required by the OSSC. Standpipe system to be designed to meet the requirements of NFPA 14. Additionally, the stage and auditorium will require 2-1/2" hose valve on each side of the stage.

Existing fire sprinkler system to be demolished including existing dry standpipe system.

All new fire sprinkler components to be UL listed or FM approved for fire protection use. Recessed type sprinkler heads to be installed in all finished ceilings. Upright sprinkler heads to be installed in areas exposed to structure.

Technology System

Classroom Audio-Video Systems

Wall Mounted Projection Systems

Provide a wall mounted, short throw projector mount for every classroom and teaching space. Projectors are Owner furnished Contractor installed. Provide one outlet for computer connection to each projector consisting of one HDMI cable.

Classroom Audio Reinforcement System

Provide a classroom audio reinforcement system in every classroom and teaching space that includes an audio amplifier, ceiling speakers and a lapel wireless microphone with charging cradle. Provide an audio connection to the projector in every space. PPS is standardized on the Lightspeed 955 system with the TCQ ceiling speaker.

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April 19, 2018



PPS MADISON HIGH SCHOOL

Electrical Narrative

Division 26, 27, and 28

Reyes Engineering, Inc.

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Project Overview

Madison High School is located at 2735 NE 82nd Ave in Portland, Oregon, and is to undergo a major renovation that will include a redesign of the existing electrical distribution system. Reyes Engineering will be coordinating this design with Opsi, the serving utility, Fortis, and other trades as required for a complete and operational building.

1. Scope

The existing electrical service enters the site from the East and routes underground to a transformer vault in the center of the school, just North of the existing Boiler room. Pacific Power is to de-energize the existing service, remove the conductors and the transformers. Two new service entrances are to feed the site, one located to the West of the new auditorium building, and one located to the West of the existing Boiler room, just South of the loading dock. Each service entrance will include a new 4-inch underground, a 15kV sectionalizing vault, two transformer vaults (one at 277/480V and one at 120/208V) and two meter cabinets. A new main distribution board is to be installed in the existing Transformer vault North of the Boiler room. The secondary distribution system will be designed to intercept and extend existing feeder conduits as applicable.

2. Code and Regulations

The latest adopted revisions of the publications listed below shall be followed:

- International Building Code (IBC)
- National Electrical Code (NEC)
- National Fire Protection Association (NFPA)
- Oregon Administrative Rules (OAR)
- National Electrical Contractors Association (NECA)
- National Electrical Manufacturers Association (NEMA)
- American National Standards Institute (ANSI)
- Institute of Electrical and Electronic Engineers (IEEE)
- Underwriters Laboratories (UL)

3. Fault Current Study

All distribution equipment components and overcurrent protection devices shall have ratings sufficient to meet the short-circuit currents available for the building system and any anticipated growth, both within the building and from the serving utility company. A fault study of the RMS Symmetrical fault current shall be completed by the Contractor for the entire electrical service and distribution system, and shall include the following components as a minimum:

- Conductors
- Circuit Breakers
- Panel Boards
- Switchboards/Commercial meter center
- Utility company contribution
- Contributions from mechanical system motors, chillers, etc.
- Provide fault study drawings by a registered professional engineer licensed in the state of Oregon.

4. Accessibility

All electrical equipment and systems shall be located to provide adequate clearance to allow removal of equipment from the building, as well as cleaning, adjustment and replacement of parts and other maintenance functions. Access doors and panels shall be provided where necessary to allow access to equipment requiring maintenance and adjustment.

Building Power System

1. Pacific Power and Service Configurations

The existing building has an in-building transformer vault with a parallel array of two 500 kVA, oil-filled transformer banks providing 120/208 Volt, three phases, wye-power to the building. The existing transformer vault is located at the existing Boiler Room floor elevation, and North of the existing Boiler room.

The existing three-phase Delta primary power is routed underground from an overhead street crossing pole on the West side of N.E 82nd Avenue. The primary power routes through a Pacific Power vault in the sidewalk of N.E 82nd Avenue. The 15kV cabling routes up the bank to an existing primary power conduit system that routes under the school, South upper sidewalk that runs along the school property, Alameda Ridge crest.

A flush in-sidewalk, primary power splice vault exists at about the midway length of the sidewalk. A primary power cable pulling vault exists at the corner of the existing Gymnasium building and the existing library Hallway.

The existing primary power cabling routes from this primary power cable pulling vault, through the school building interior and terminates, approximately two stories below, in the existing transformer vault.

The existing Pacific Power transformers and primary power cabling are to be de-energized, disconnected and removed by Pacific Power. The existing transformer vault will be vacated by Pacific Power.

The existing transformer vault, north of the Boiler Room will be used as the new main electrical room for the school.

A new overhead line extension will be provided by Pacific Power to provide 15kV primary power to the public road system at the northwest quadrant of the school site. A new 4-inch underground (36-inches below finish grade) will be extended from the new overhead line extension pole to a new precast concrete, 15kV sectionalizing vault. The first new precast concrete, 15kV sectionalizing vault will be located to the West of the new Auditorium Building.

Pacific Power will provide 15kV primary power to the new first precast concrete, 15kV sectionalizing vault located to the West of the new Auditorium Building. A new 4-inch underground (36 inches below finish grade) will be extended from the first new precast concrete, 15kV sectionalizing vault located to the West of the new Auditorium Building to a second new precast concrete, 15kV sectionalizing vault.

The second new precast concrete, 15kV sectionalizing vault will be located between the existing Boiler room truck access road and the south exterior of the school building.

A new 4-inch underground (36 inches below finish grade) will be extended from the second new precast concrete, 15kV sectionalizing vault to the precast, 2000kVA transformer capable, pad vault.

A precast, 2000kVA transformer capable, pad vault will be set on South side of curb, South of the existing boiler room loading dock pavement area. This transformer pad vault will be used to set a 1500kVA oil-filled, 120/208 Volt, Pacific Power pad transformer.

A new 4-inch underground (36 inches below finish grade) will be extended from the second new precast concrete, 15kV sectionalizing vault to the precast, 1000kVA transformer capable, pad vault.

A precast, 1000kVA transformer capable, pad vault will be set on South side of curb, South of the existing boiler room loading dock pavement area. This transformer pad vault will be used to set a 1000kVA oil-filled, 277/480 Volt, Pacific Power pad transformer.

The existing above-ground, diesel fuel tank, located beyond the South curb, South of the existing boiler room loading dock pavement area will be removed as part of the project work.

A new EUSERC compliant, 4000 Ampere, 120/208 Volt service termination, revenue metering cabinet will be set in the space vacated by the diesel storage tank. Power from the 2000kVA Pacific Power pad transformer will route underground through the 120/208 Volt termination, revenue metering cabinet via copper XHHW-2 conductors to the 120/208 Volt service and distribution switchboard in the vacated transformer vault.

A new EUSERC compliant, 1500 Ampere, 277/480 Volt service termination, revenue metering cabinet will be set in the space vacated by the diesel storage tank. Power from the 1000kVA Pacific Power pad transformer will route underground through the 277/480 Volt termination, revenue metering cabinet via copper XHHW-2 conductors to the 277/480 Volt service and distribution switchboard in the vacated transformer vault.

Power to the gymnasium buildings, the south classroom wings, and the Northeast administration & commons area will be fed from the service and distribution switchboards in the vacated transformer vault.

Mechanical loads and large commercial Kitchen loads will be energized from the 277/480 Volt service and distribution switchboard in the vacated transformer vault. Lighting will be circuited as 277 Volt circuiting energized from the service and distribution switchboard in the vacated transformer vault.

Receptacle and small appliance loads will be energized from the 120/208 Volt service and distribution switchboard in the vacated transformer vault.

Twenty-eight 200 Ampere, copper XHHW-2 feeders will energize 277/480 Volt mechanical, lighting and kitchen panels and 120/208 Volt receptacle panels in the gymnasium buildings, the south classroom wings, and the Northeast administration & commons area.

The existing Natural gas utility metering, currently in the vicinity of the new Pacific Power transformers, will need to be relocated to provide code mandated clearance to the transformers.

480 Volt three phase power to the central chiller and rooftop mechanical fan units will be required, using Copper XHHW-2 feeders.

A third new precast concrete, 15kV sectionalizing vault will be located after the first precast concrete, 15kV sectionalizing vault and near the driveway area West of the new Auditorium Building.

A new 4-inch underground (36-inches below finish grade) will be extended from the third new precast concrete, 15kV sectionalizing vault to the precast, 1000kVA transformer capable pad vault.

A precast, 1000kVA transformer capable, pad vault will be set beyond the South curb of the the driveway area West of the new Auditorium Building. This transformer pad vault will be used to set a 750kVA oil-filled, 120/208 Volt, Pacific Power pad transformer.

A new 4 inch underground (36 inches below finish grade) will be extended from the Third new precast concrete, 15kV sectionalizing vault to the precast, 100 kVA transformer capable, pad vault.

A precast, 1000kVA transformer capable, pad vault will be set beyond the south curb of the the driveway area West of the new Auditorium Building. This transformer pad vault will be used to set a 500kVA oil filled, 277/480 Volt, Pacific Power pad transformer.

A new EUSERC compliant, 2000 Ampere, 120/208 Volt service termination, revenue metering cabinet will be set in an exterior space West of the new Auditorium Building. Power from the 750kVA Pacific Power pad transformer will route underground through the 120/208 Volt termination, revenue metering cabinet via copper XHHW-2 conductors to the 120/208 Volt service and distribution switchboard in the new Auditorium Building.

A new EUSERC compliant, 600 Ampere, 277/480 Volt service termination, revenue metering cabinet will be set in an exterior space West of the new Auditorium Building. Power from the 500kVA Pacific Power pad transformer will route underground through the 277/480 Volt termination, revenue metering cabinet via copper XHHW-2 conductors to the 277/480 Volt service and distribution switchboard in the new Auditorium Building.

Ten 200 Ampere, copper XHHW-2 feeders will energize 277/480 Volt mechanical and lighting panels and 120/208 Volt receptacle panels in the new Auditorium Building.

480 Volt three phase power to the central chiller, and rooftop mechanical fan units will be required, using Copper XHHW-2 feeders.

These transformers will be used to supply power to 9 new 200 Ampere, copper XHHW-2 feeders which will energize 277/480 Volt mechanical and lighting and 120/208 Volt receptacle panels in new Auditorium Building.

Providing a separate 120/208 Volt service and 277/480 Volt service to the new Auditorium Building is intended to control:

- The size of the service equipment in the existing transformer vault, North of the Boiler room.
- The number, size and length of feeders routing through the existing reinforced concrete building to feed the new Auditorium Building.
- The new feeders supplying power to the new Auditorium building can have considerable conduit length routed underground.

2. Secondary Distribution System

Provide a service entrance rated, interior main distribution main circuit breaker, 100% LSI (and LSIG as required), switchboard distribution sections for branch panels feeder 80% LSI circuit breakers, sub-feeder branch panel boards for power and lighting distribution. Provide Surge Protection Device (SPD) rated for service entrance (Tier 1) at main switchboard and Tier 2 rated SPD for all sub-distribution switchboards. The main distribution switchboard shall feed all large equipment loads and elevator (via Bussman Power Module for elevators). Branch panel boards shall feed all site, exterior and interior building lighting, receptacles,

special purpose receptacles, office equipment, kitchen equipment, computers, servers, controllers, appliances, audio/visual equipment, irrigation system, fire alarm system, security system including door controls, telecom/intercom systems, HVAC/plumbing systems, etc. Comply with all utility requirements. Installations of all electrical equipment shall meet NEC, state, and local codes. Circuit breakers shall be used as overcurrent protection for all feeders and branch circuits.

3-Phase, 4-Wire, system for lighting and large mechanical loads and 208Y/120-Volt, 3-Phase, 4-Wire, for receptacle and small power loads and shall be rated for seismic zone per IBC and the Oregon Structural Specialty Code. Provide 25% spare capacity in sizing all services.

3. Grounding

Provide ground electrode system per NEC 250, state and local codes. A permanent grounding system shall be provided with methods and materials in accordance with applicable Codes and Standards to conduct ground fault currents to the grounded neutral of the electrical distribution systems, and limit potential differences between grounding conductors, raceways and enclosures.

All conductive raceways and enclosures for electrical system wiring shall be grounded. All ground circuits shall be complete to form permanent conductive paths. A ground bus shall be provided in all sections of main secondary switchboards for connections of ground conductors.

A green ground conductor shall be provided in all non-conductive raceways, sectional raceways, multi-outlet assemblies and multi-conductor cable. An insulated green conductor shall be provided in each feeder conduit and each 3-phase circuit, and for all receptacle circuits.

Provide main ground bus (TMGB) in electrical room and IT ground bus at telecommunications room (MDF and IDF Rooms). Provide telecom grounding per EIA/TIA 569 and 607.

4. Generation

On-site diesel engine generator, power generation shall be provided to accommodate times when utility power is not available. Size of generation equipment will be coordinated with the needs of the facility and with cost in mind. The anticipated size of genset is 150kW.

The diesel engine generator will be housed in a critical sound attenuation rated weather enclosure.

The diesel engine generator will be equipped with a sub-base fuel tank, capable of storing 24 hours of diesel fuel.

The diesel engine generator will be located West of the base of the existing Gymnasium Building.

The diesel engine generator set will be 277/480 Volt rated.

The 300 Ampere Automatic Transfer Switch will be Located in the existing Engine generator room, East of the existing Transformer Vault.

Dry type transformers will be used to supply 120 Volt power for communications standby power.

System Equipment

1. Electrical

1.01 Raceways

A complete raceway system shall be provided for all power conductors. Rigid metallic conduit, rigid intermediate conduit, and electrical metallic tubing shall be used throughout the building. Rigid or rigid intermediate conduit shall be used where conduit is installed exposed in a location that is susceptible to damage. The conduit system shall be a completely grounded system. Minimum size raceway shall be 1/2-inch. All raceway in finished areas shall be concealed. All service entrance and feeder raceway shall be in conduit.

PVC conduit may be used in exterior underground applications and shall be heavy wall type 40. Flexible metal conduit may be used for connections to light fixtures, transformers, motor driven equipment, and miscellaneous equipment. Connections to exterior mounted motor driven and miscellaneous equipment shall be with "Liquid-Tight" flexible metal conduit. Wireways and gutters shall be constructed of sheet steel with baked enamel finish coat with hinged cover.

Cable tray shall be provided in the operation center areas to distribute network cabling as required.

1.02 Conductors

Copper conductors shall be utilized throughout.

1.03 Devices

Switches shall be 20-Ampere, 120-208-Volt, AC specification grade toggle type only. Duplex receptacles shall be Tamper-proof, 20 Ampere, 125-Volt AC.

1.04 Safety Switches

Safety switches shall be provided for all motor-driven equipment and miscellaneous equipment. Switches shall be Horsepower rated, NEMA Heavy Duty rated, fully enclosed. Provide NEMA 3R for all exterior locations.

1.05 Fuses

Fuses shall be non-renewable type, current limiting 200,000 AIC at 600-Volt.

1.06 Panelboards

Lighting and power panelboards shall be no smaller than 225-Amperes. Distribution panelboards shall not be smaller 225-Ampere. Each panelboard shall have a main protective device. Door-in-door trim construction. A panelboard served by an individual dedicated feeder having no other loads connected to that feeder and having overcurrent protection not greater than that of the panelboard may omit the main protective device.

20-Ampere shall be the minimum size of branch circuits. All circuit breakers shall be rated to interrupt the available short circuit current.

Panelboards shall be arranged so that each contains 30 to 42 branch circuits, including spares and spaces. The minimum number of spare overcurrent devices and spaces for future overcurrent devices shall be as follows:

For Lighting panelboards at least:

- 10% Spare Circuit Breakers
- 10% Spaces

For Receptacle Panelboards at least:

- 15% Spare Circuit Breakers
- 10% Spaces

1.07 Identification and Labeling

Provide identification and labeling on all major pieces of electrical equipment, subsystems and wiring methods.

The following types of equipment shall have labels with laminated white plastic nameplates with black engraved with black engraved characters that are at least 3/16" high, attached with two self tapping screws:

Low voltage switchboards:

- Each circuit breaker, including spares and spaces

Motor starter or other device:

- Motor Starters
- Feeder overcurrent devices
- Safety Switches
- Panelboards
- Special systems cabinets

1.08 Electrical Motor and Power Equipment

Connections to all motor driven equipment, heating, ventilation, air conditioning, appliances, and miscellaneous equipment requiring electrical power shall be provided. Final connections to all such equipment shall be made with flexible metal conduit, except at exterior locations, where liquid-tight flexible metal conduit shall be provided. Provide a non-fused disconnect switch at each piece of motor driven equipment, except for elevator motors, which shall be fused per manufacturer's recommendations.

1.09 HVAC/Plumbing

Provide electric connections to all HVAC and Plumbing equipment per divisions 22, 23 and install per NEC, state and local code. Verify locations of all equipment with Architect and divisions 22, and 23. Verify all load requirements with Divisions 22, and 23.

2. Lighting

2.01 Illumination

High efficiency sources (LED) shall be utilized whenever possible and shall operate at 277-Volts and a 4100k lamp color.

All lenses, diffusing media, and control media in luminaires shall be acrylic. Lenses in exterior luminaires shall be tempered glass with metallic guard or high impact acrylic. All exterior luminaires shall have enclosed and gasketed lenses to prevent liquids and insects from entering the luminaire.

Emergency egress lighting shall provide 1.0 foot-candles along the path of egress, as required. Emergency egress lighting fixtures shall be the same as the normal egress lighting fixtures.

Exterior lighting shall comply with Oregon Energy Code and have separate Building Energy Management (DDC) controls for: Exterior Lighting, Parking and Walkways.

Illumination levels at workplace in maintained horizontal foot-candles and luminaire types shall be:

Interior Spaces

- Classrooms and offices: 35-50 foot-candles, 1.0 minimum to 1.2 watts maximum per square foot.
- Corridors, lavatories and stairways: 10-20 foot-candles
- Cafeterias and similar areas: 20-30 foot-candles
- Gymnasium: 50-70 foot-candles

Exterior Spaces

- Stairs & Walkways: 5-15 foot-candles

3. Security Systems

The security systems shall be comprised several sub-systems to create a security system architecture. These systems shall include:

- Access Control System (ACS)
- Security Intercom System (SIS)
- Intrusion Detection System (IDS)
- Video Management System (VMS)
- Lock-Down Alarm (LDA)

3.01 Access Control:

The ACS shall use the District approved Kantech (Tyco) system with the KT-400 controller. New and modernized schools should include a secure main entry & vestibule adjacent to school office which functions as the single point of entry for all visitors. See SIS description below for integrated station with card reader.

HID iCLASS card readers will be provided at the following locations:

- Secondary exterior entry doors
- Entries nearest to teacher parking lots
- Annex and modular buildings.
- MDF and IDF closets.
- Computer labs.
- Elevator external call buttons at each floor stop
- Electronic parking gates
- Locations to be reviewed by District Access Control Committee.
- Door hardware integration shall be coordinated with the ACS.

3.02 Security Intercom System:

The SIS shall consist of the 2N Helios IP Force (integrated voice intercom, IP camera & card reader) at main entries and ADA entries, and shall work with the main office Cisco video IP phone to enable office staff to manage entry.

3.03 Intrusion Detection System:

The IDS shall be based on the DSC 4020 (Tyco) system and will consist of door switches as approved by PPS Electrical Shop.

Motion detectors shall be located as follows:

- Computer labs
- Offices
- Stairways
- Corridors and corridor intersections
- Keypads will be located as directed by PPS Department of Security Services.

3.04 Video Management System:

The VMS shall be based on the Kantech (Tyco) Entrapass Corporate Edition, Version 6 utilizing Network Video Recorders (NVR) Kantech Intevo. The NVR will have storage capacity based on 10 days of recorded activity.

Cameras will consist of both indoor and outdoor cameras and will communicate and be powered using IP/PoE via Cat-6 cabling.

Monitors will be coordinated with PPS Department of Security Services.

3.05 Lock-Down Alarm:

The LDS shall consist of a “button” located at the front desk to facilitate an immediate lock down of the school.

Specific card reader stations, as coordinated with PPS Department of Security Services, will be designed to be “double tap” to initiate school lock down.

4. Telecommunications/CATV

The Communications systems shall be comprised several sub-systems to create a communications system architecture. These systems shall include:

- Communications Raceway
- MDF/IDF (Telephone) Rooms
- Communications Backbone Cabling
- Communications Horizontal Cabling
- Communications Sub Systems c/o:
 - Wireless data/internet access
 - VoIP School Phone
 - Intercom
 - Public Address
 - Clock/Bell System
- Master Clock System

4.01 Communications Raceway

The communications raceway shall consist of using the following:

- EMT conduit shall be installed above grade; and where total bend angles exceed 180 degrees a pull box shall be installed. Pull boxes shall be installed for every 100’ of linear EMT.
- Outdoor underground PVC conduit allowed per NEC requirements; and be a minimum 4” conduit for all runs
- Provide Galvanized Rigid Steel (GRC) for elbows and penetrations out of the slab.

- Telecommunications Outlet Boxes shall be a minimum 4 inch square by 2-1/8 inch deep with trim rings provided as needed. Provide minimum of 1-inch conduit distribution to each data and phone device j-box location from the main communications pathway or accessible ceiling space
- For main communications pathway in accessible ceiling spaces utilize open cable tray or wire basket tray.

4.02 MDF/IDF Rooms

A minimum of a 3' working clearance shall be maintained around all equipment and racks.

A grounding busbar will be provided per electrical specifications.

Electrical Configurations shall include:

- Minimum of two dedicated quad electrical outlets wall mounted next to equipment rack.
- A minimum of one convenience electrical outlet located on each wall in the room spaced no more than 12 feet apart on a separate shared circuit

A VoIP phone shall be installed immediately adjacent to the door on the latch side.

Equipment racks shall consist of either free standing (floor mounted) -19" x 84" four post racks or wall mounted racks – minimum 36" tall by 24" deep with 19" mounting rails. Between and immediately adjacent to the racks, a minimum of a 10" vertical shall be provided and shall match the height of the cabinet.

Horizontal wire management shall be installed between every four (4) patch panels or between patch panels and equipment as indicated on the design drawings.

Each equipment rack shall have a rack mounted, vertical, 15amp power strip installed.

Ladder rack shall be a minimum 12" wide and will be installed above the racks/cabinets in the equipment rooms.

4.03 Communications Backbone Cabling:

Certified installation contractors will be required to provide a system with a 20-year warranty from the manufacturer. Labor will be a one-year warranty.

Backbone cabling shall be single-mode fiber optic cable with a minimum of 12-strands. Terminations of fiber optic cables shall be in either rack or wall mounted enclosures utilizing LC terminations. All fiber optic cabling shall be routed in innerduct.

Testing procedures shall be outlined in the PPS Design Standard.

4.04 Communications Horizontal Cabling

Certified installation contractors will be required to provide a system with a 20-year warranty from the manufacturer. Labor will be a one-year warranty.

Each Telecommunications Outlet (TO) shall have a minimum of two (2) Cat 6 cables. Cabling and termination (inserts) shall be blue as required by PPS based on system utilization.

Testing procedures shall be outlined in the PPS Design Standard.

Communications Sub Systems shall consist of the following:

- **Wireless data/internet access:**

One (1) Cisco wireless access point (WAP) per classroom or extended teaching and learning space will be provided. Each WAP shall be provide two (2) cat 6a cables in ceiling with a 20' loop of cable to allow repositioning of the WAP as needed. Cabling and termination (inserts) shall be yellow as required by PPS based on system utilization
- **VoIP School Phone:**

VoIP phone system hardware shall be owner-furnished/owner-installed (OFOI). Racks and patch panels will be sized to allow OFOI data/PoE switches to be installed with 20% spare capacity.
- **Intercom:**

The intercom system shall use the VoIP School Phone noted above.
- **Public Address:**

All speakers and zone controllers shall be compatible with the District's current Informacast Rapid Broadcast and Cisco VoIP Telephone systems.
- **Speaker placement shall be based on the following:**

Class rooms and large office areas will have individually addressable IP POE loudspeaker with an integral microphone.

Large common areas, hallways and exterior areas will have analog speakers connected to the network with zone controllers located in a Network MDF or HDF. Exterior analog speaker(s) will be zoned independently of interior analog speakers.

Exterior speakers to address field(s), courtyard(s), outdoor gathering areas and main entry.

Interior zones will not cover more than one floor unless an exception is granted by Owner.

4.05 Clock/Bell System

A Master Clock/Bell System shall be provided. Bell tones shall be emulated across the Public Address system (see above). Consultant shall confer with PPS for desired software/hardware to be used.

5. Fire Alarm System

The existing Silent Knight integrated fire alarm and emergency voice and alarm communications system (FA/EVACS) shall be removed and preserved for use the remodeled/expanded school. The demolition contractor shall prepare and submit an inventory of the components and devices that are to be stored. This inventory will be provided to bidders as owner-furnished/contractor-installed (OFCI) for preparation in their bids.

Due to new system technology by Silent Knight, the existing panel technology will be reviewed with possible upgrade to the new 6000 series panels. It is anticipated that existing power supplies, intelligent power supplies, and amplifiers can be re-used with only the FACP/EVAC (main panel), SLC cards and fire annunciators being upgraded.

System design specification and drawing notes will make clear that system design not allow unsynchronized strobe circuits to be used in large areas.

Automatic (smoke/heat) detection design will be based on the primary consideration of HVAC units, fire/smoke dampers (FSD), magnetic door holders, and elevator recall/emergency shut down (shunt trip).

The new fire pump will be monitored as required by Code.

Provide a supervised fire alarm system to protect the facility.

Addressable smoke detectors with spacing compliant with the current NFPA 72 requirements are required (above Code minimum) in:

- Corridors (providing smoke detection of the full corridor length linking an egress pathway to all the available exit doors).
- Hallways (providing smoke detection of the full hallway length linking an egress pathway to all the available corridors and exit doors)
- Stairways (providing smoke detection of the full hallway length linking an egress pathway to all the available corridors and exit doors)
- Storage rooms
- Telephone and IT equipment Rooms
- Computer classrooms
- Kiln Rooms
- Toilet / Rest Rooms
- Rooms used as pathways to link from one room to a corridor or hallway or exit

Addressable rate of rise heat detectors with spacing compliant with the current NFPA 72 requirements are required (above Code minimum) in:

- Storage rooms
- Shop materials storage areas
- Kiln rooms
- Shop finishing areas

Provide a minimum of 10% spare zones within the control panel for future zones. Any initiating device that is activated shall sound the audible and visual alarms in the building, close smoke doors, recall elevators, and actuate any smoke control systems.

Provide duct smoke detectors as required per divisions 22, and 23. Provide electrical connection and control from fire alarm system to all required fire smoke dampers. Verify control voltage and control transform requirements with divisions 22, and 23.

The alarm initiating devices shall be photoelectric type smoke detectors, combination rate of rise/fixed temperature detectors (ceiling mounted and duct detectors), and sprinkler waterflow devices, tamper switches and pressure switches on dry pipe system (if required).

Audible voice evacuation alerting alarms shall provide coverage in all areas. Voice message intelligibility throughout the school building is a primary concern. The fire alarm system shall meet all requirements of the Americans With Disability Act (ADA). All fire alarm system wiring shall be in conduit where it would otherwise be exposed to view or potential damage. Fire alarm cabling is expected to be run as exposed cable with suitable support, routing and protection above ceilings, and in framed wall void spaces. All fire alarm system wiring shall be physically separate from all other system wiring.

Sustainability Strategy

1. PV Solar Array

Provide a photovoltaic array with inverters configured as a UL Listed Utility Grid-Tied Interface in compliance with Pacific Power Net-Metering Policy. Comply with all state and local codes for photovoltaic installations. Photovoltaic equipment shall be provided and installed to comply with Oregon Energy Trust incentive programs in order to maximize solar incentive funding to the project. Installation shall be provided by an approved OET Solar Trade Ally. Current Design is estimated to be 170KW of array. Refer to project drawings for proposed array locations.

2. Power Monitoring for Possible Load Shed

Service feeder main and all sub-distribution switchboard feeder breakers shall be provided with power digital meters with centralized digital remote desktop computer monitoring of the buildings energy usage for trending analysis and energy management. Meter's will be integral to the distribution equipment. Interface points will be provided to BMS.



MADISON HIGH SCHOOL
AUDIO/VIDEO SYSTEMS SD NARRATIVE (DRAFT)
April 19, 2018

INTRODUCTION

This document summarizes current design assumptions and direction for Audio-Video (AV) systems for the Madison High School renovation project. It is intended to update this document after additional design direction has been received from the Owner and stakeholders as the Schematic Design phase progresses.

AV systems discussed herein include on the following spaces:

- Theater
- Main and Auxiliary Gymnasias
- Commons
- Band and Choir Classrooms
- Black Box/Drama Classroom

We understand that sound system upgrades are intended for the Stadium also, but that this area is still in the scoping stages.

GENERAL GOALS AND ASSUMPTIONS

The systems are expected to be high quality with good performance, although not exotic or esoteric. Low cost and simplicity of design and operation are primary goals. The AV capabilities are generic and are not intended to provide a detailed description of the systems and their implementation. The design process should be based on EASE or similar computer modeling, per PPS Guidelines. Recommendations and associated budgets should be expected to evolve during design, based on further Owner input and design direction.

Auditorium / Theater

- Audio
 - Central loudspeaker cluster (left/right clusters may also be needed) subwoofers optional.
 - Semi-distributed speakers for under-balcony coverage.
 - Portable stage monitor speakers.
 - Three wireless microphones; two handheld and one lavalier, for presentations.
 - Lectern gooseneck-style wired microphone for presentations.
 - Minimum two hanging microphones for audio recording.
 - Additional lavalier microphones for dramatic performances.
 - I/O plates at Stage and Orchestra Pit.
 - Production intercom system.
 - Assistive listening system.
- Video
 - One projection screen at stage.
 - Video projector at balcony level (long throw lenses).
 - I/O plates at Stage and Orchestra Pit.
- Control
 - “Plug-n-play” mode for simple events operated by non-technical persons.



- Console mode for use by technical operators. Console residing in sound booth with the option to relocate as needed.
- Portable control capability for audio mixing within the room, away from the Control Room and Sound Booth.
- See PPS Guidelines 27-41-18 for additional details and requirements.

Main and Auxiliary Gymnasias

- Audio
 - Central speaker cluster
 - Speech system for sporting events or presentations, assumed performance audio not required.
 - I/O plates at bleachers and end walls.
 - Assistive listening system.
- Video
 - Two projection screens in center of room, parallel to bleachers.
 - Video projectors in protective cages on east and west walls above bleachers.
- Control
 - “Plug-n-play” mode for simple events operated by non-technical persons.
 - Portable console mode for use by technical operators.
- See PPS Guidelines 27-41-17 for additional details.

Commons

- Audio – Main Commons Area
 - Overhead distributed speaker system..
- Audio – Presentation Areas
 - Overhead distributed speaker system or cluster, depending on acoustical conditions and area orientation.
 - Three wireless microphones; two handheld and one lavalier, for presentations.
 - Lectern gooseneck-style wired microphone for presentations.
 - I/O plates at lecture wall(s), and other locations as needed.
 - Assistive listening system.
- Video – Presentation Areas
 - One projection screen at lecture wall(s).
 - I/O plates at lecture wall(s), and other locations as needed.
- Control
 - “Plug-n-play” mode for simple events operated by non-technical persons.
- See PPS Guidelines 27-41-18 for additional details

Band and Choir Classrooms

- Standard Classroom AV, per PPS Guidelines 27-41-13, 27-41-16, and 27-41-16.10
 - i. To be provided in or coordinated with Electrical drawings.
 - ii. Consider upgraded video projector and larger screen.
- Two channel recording and playback.
- Hanging ceiling microphones for recording.
- Stereo speakers on front wall for playback.
- AV Input panel for microphones, laptop and other audio sources.
- Assistive listening system.

Black Box / Drama Classroom

- Standard Classroom AV, per PPS Guidelines 27-41-13, 27-41-16, and 27-41-16.10
 - i. To be provided in or coordinated with Electrical drawings.
 - ii. Consider upgraded video projector and larger screen.
- Two channel recording and playback.
- Wireless lavalier microphones for dramatic performances.
- Stereo speakers on front wall for playback (if needed).
- Distributed overhead (potentially on pipe grid) for use during dramatic performances.
- Assistive listening system.

GENERAL RECOMMENDATIONS

Video Displays – General

The most critical and permanent element of an AV system is the display screen. In fact, from the user's point of view, the screen is the very heart of the AV system.

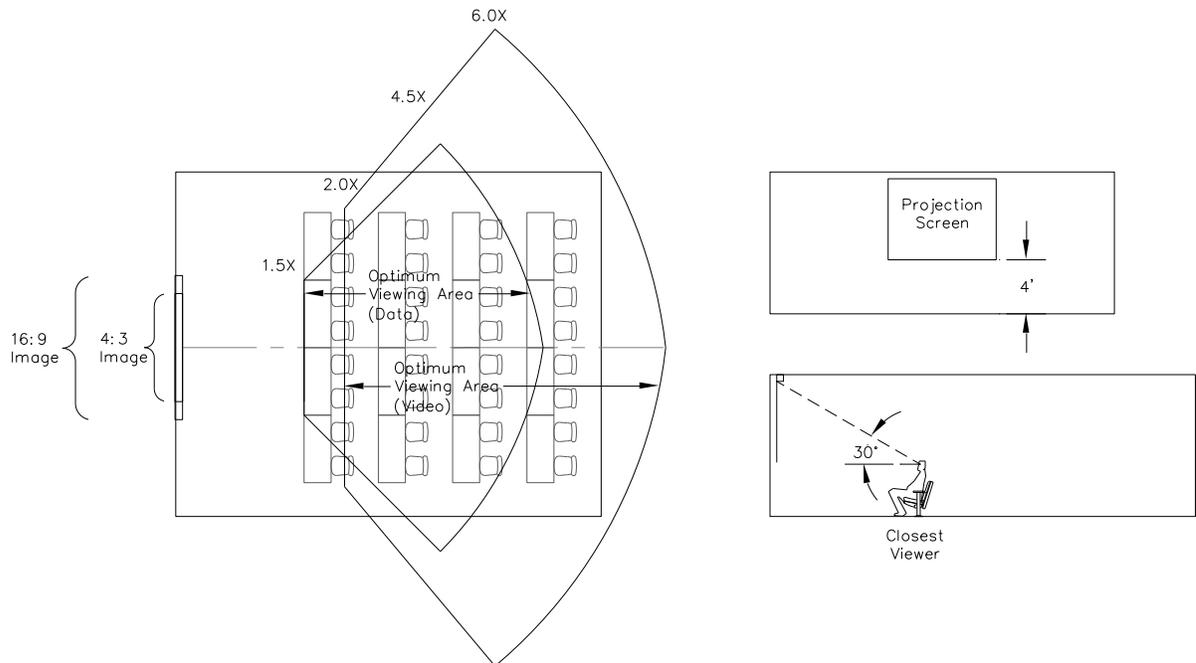
Image Size and Shape

The image size (projection screen or LCD display) must be large enough to provide good viewing to the farthest viewer and not too large for the nearest viewer, and placed at a reasonable viewing angle for all viewers. Greenbusch recommends screens be sized and located to meet the following criteria:

<i>Image Types</i>	<i>Viewing Distance</i>		<i>Maximum Viewing Angle</i>	
	<i>Max</i>	<i>Min</i>	<i>Horizontal</i>	<i>Vertical</i>
General images, such as <ul style="list-style-type: none"> • Lower resolution video • Most "Power-point" slides 	6 x Image Height	2 x Image Height	50°	±30°
Detailed images, such as <ul style="list-style-type: none"> • Typical computer screens • High-density text • Detailed items on a document camera • Maps • Spreadsheets • HDTV, such as Blu-ray disc 	4.5 x Image Height	1.5 x Image Height	45°	±30°

The screen must also be located at a height to provide good sight lines for all viewers. In general, for seated viewers in rooms with flat floors this means that the bottom of the screen should be at least 4 feet above the floor to avoid blocking of the image by persons sitting in front of viewers. In addition, the top of the screen should be less than 30 degrees above the horizon for all viewers to avoid discomfort.

These criteria are illustrated below:



In some larger rooms, the screen size may be limited by the ceiling heights, resulting in the screen being somewhat smaller than it should be. However, viewing conditions should be optimized as much as practical within architectural limitations.

Another consideration is the aspect ratio of the screens. Standard video has an aspect ratio of 1.33 (4 to 3, width to height). However, newer video technologies (such as HDTV and most computer-graphics formats) use a "widescreen" aspect ratio, with the most frequent ratios being 1.78 and 1.85 (approximately 16:9 and 16:10). This also matches the "widescreen" ratio used for most widescreen Blu-rays. A 16:9 ratio is recommended for all video displays.

Brightness and Contrast

The system must also provide sufficient brightness and contrast for the type of images being displayed, at the lighting levels expected for each type of presentation. This is a function of the "brightness" (light power) of the video display, and the lighting of the room. Maximizing contrast requires careful attention to the control of ambient lighting.

In general, a minimal design goal would be 25-30 foot-Lambert's for projection or 250-300 Nits for direct view displays, in dark rooms. Additional rated output should be planned as all displays systems lose light power as they age.

Video Projectors

The video projectors should be capable of displaying various scan rates and resolutions, from NTSC rates to high-resolution computer graphics. They will also need to provide sufficient light power to give sufficient contrast.

It is also important to carefully consider noise (of cooling fans) when choosing and locating the projectors, to avoid compromising the acoustics of the rooms. For the auditorium, it is recommended that the projector be mounted in the control booth or other enclosed space to keep the projector noise from intruding into the hall itself.



Lighting

Where front projection is used, the lighting will need to be dimmed during presentations, and nearly off for high-quality projection. It is very important to keep light off the video projection screens to the greatest extent possible. Careful design of the lighting and lighting controls will be necessary to achieve dark screens for the video display while simultaneously providing some lighting for the presenter and other functions.

The lighting should be zoned and dimmable (or bank-switched). The lighting over the seating area should be controlled independently of the lighting for the stage/presenter area (where the screen is located). This will provide the ability to have some light for note taking, while leaving the screen area adequately darkened for effective video presentation.

Windows and skylights should be equipped with blackout shades to block the incoming light.

Audio

The systems should be configured with automatic microphone mixers, which will automatically turn each microphone input on whenever a signal is detected on that input, and will mute that microphone input when no signal is found. This also allows the system to automatically reduce the master gain as more microphones turn on, to keep the threshold of feedback constant. Thus, with only one microphone active, the full potential gain is available, while with multiple microphones on, feedback stability is still maintained.

The systems should also have automatic gain controls, to help to maintain relatively constant volume (loudness) as the voice levels and microphone distance varies from talker to talker. These features will provide a "plug and play" mode of operation for non-technical users, for use with 1 to 6 microphones, with only the remote on/off and master volume control. The ability for technical users to control the system with an external mixing interface is recommended.

For large room systems, limiting or other method of protecting the equipment from being operated beyond its designed power capabilities should also be included. This will produce two benefits: it protects the equipment from damage, and it protects the listeners from discomfort or hearing damage from systems with high output capability.

For natural sound and to minimize feedback, it is especially important that microphones be matched to the design of the system, and that the systems be tuned using the selected microphones. Simple automatic level control should also be included.

Permanent distance learning and video-conferencing capability is not needed, nor are any of the rooms being designed for the more demanding acoustics such applications would require.

Loudspeakers

Based on the architectural geometry, Greenbusch recommends a centrally located speaker cluster above the stage for the auditorium with the addition of a semi-distributed speaker system to cover the areas under the balcony obstructed from direct line of the cluster. In the Main and Auxiliary Gymnasias, Greenbusch recommends the sound system be designed using a central speaker cluster. Subwoofers may also be required, depending on program requirements.



Assistive Listening

Permanent assistive listening systems should also be included, per ADA and ADAAG. Receivers can be shared between rooms, a quantity equal to or greater than 4% of the total seating capacity is typically required by Codes.

Control

Most users will be non-technical persons, who are somewhat unfamiliar with AV systems, so ease of use is paramount. Greenbusch recommends a wall mounted button panel for classrooms. Programmable touchscreens are recommended for more complex systems such as the Auditorium and Main Gymnasium.

Acoustics

Acoustics are critical for the sound systems to perform their intended purposes. It is especially important that noise and reverberation criteria be met to achieve sufficient intelligibility of speech, whether amplified or not.

Please refer to the Acoustical Narrative for acoustical recommendations and requirements.

AV Raceway and Infrastructure

Raceway (conduit) should be provided for AV device wiring, including loudspeakers, microphone outlets, video projectors, IO panels and interfaces, and control panels. In general, conduits will run directly home to the equipment rooms/racks/cabinets. Conduits for analog microphone circuits should be ferrous metal, for additional shielding.

In the equipment rooms, conduits should terminate in large terminal boxes mounted on the walls. Cable trays should be provided for wiring between terminal cabinets, and to and between equipment racks.

Equipment Rooms and Racks

The head-end equipment for AV should be located in locked equipment rooms and/or racks. This keeps equipment centrally located, secure from theft, tampering, and "knob twiddlers". For standard floor-standing racks, each rack is approximately 2 feet square, plus working and circulation clearance of at least 3 feet in front and back of the rack, for a minimum of 16 square feet (2 x 8) per rack.

In other rooms AV equipment could be located in a smaller pullout or swing out equipment racks in casework or AV closets.

The equipment space must be ventilated to maintain temperatures below 80 degrees and above 40 degrees, with sufficient humidity control to prevent condensation. Each rack must include at least two connections to the school data network.

Power and Data AV Systems

The AV systems should have dedicated power circuits for the associated equipment. Each circuit and all receptacles should have oversized, insulated grounds and dedicated neutrals. Special technical grounding should be provided for audio equipment. Each equipment rack should have a ground bar attached to the grounding system. Each rack and projector will also require at least two data ports, wired to the local area network.

BUDGET RECOMMENDATIONS

Since this costing is based on concepts rather than a design, it is intended to be a preliminary budgetary recommendation rather than a construction cost estimate. It will change as the design continues to evolve, and could vary from final bids due to bidding and market conditions. Costs shown are given as a range, to account for variations in future design decisions, and unknown conditions that are typical of renovations.

Room Type	Budget Range
Theater/Auditorium	\$150,000 - \$250,000
Gymnasia (both gyms combined)	\$100,000 - \$150,000
Commons/Cafeteria	\$25,000 – \$50,000
Band/Choir Classrooms (per room)	\$25,000 – \$35,000
Drama Classroom / Black Box	\$25,000 – \$50,000

The estimates are for the installed cost of complete systems, and include:

- AV equipment
- Wiring, equipment racks, and other installation materials
- Labor
- Profit and overhead for the AV contractor

Exclusions

The above estimates do not include the following items, which are expected to be included in the Division 26 (electrical) cost estimate or in other categories by the estimator:

- Owner-furnished items to be integrated with AV:
 - Portable projection systems.
 - Computers.
 - Classroom AV Carts and the video equipment therein.
- Casework related to AV:
 - Tables.
 - Cabinets.
 - Lecterns.
- Communication systems:
 - Data wiring and patching.
 - Data switches and routers.
- AV Raceway (such as conduits and boxes: Division 27):
 - Electrical power to feed AV, including:
 - AV racks: each requiring a 20amp, 120volt single phase, dedicated circuit, with special grounding conductor.
 - Video projector: each requiring a 15amp, 120volt single phase, dedicated circuit.
 - Floor boxes.
- Building permits or fees.
- Sales tax or other taxes.

- 
- Bidding or construction contingency.
 - Escalation (inflation), estimates are given in early 2018 dollars.
 - Profit and overhead for General Contractor or others tiered above the AV Contractor (such as markup by the General Contractor or Electrical Contractor).



**50% SD NARRATIVE
ACOUSTICAL NARRATIVE
April 19, 2018**

Introduction

The following narrative is intended to outline acoustical issues, which will impact the design of Madison High School. The evaluation also includes identification of current codes and acoustical design goals for educational facilities. Partner and Community Wrap-Around Services will include a Healthcare clinic and Teen Parent Services will include a Daycare for 16 students.

Nomenclature

Decibel, dB

The most common measure of sound level is expressed in decibels. The auditory response to sound is a complex process, which occurs over a wide range of frequencies and intensities. Decibel levels, or “dB”, are a form of shorthand that compresses this broad range of intensities into a convenient numerical scale.

The decibel scale is logarithmic, and as such, a doubling or halving of energy causes the sound level to change by 3 dB; it does not double or halve the sound level as might be expected. The minimum sound level variation perceptible to a human observer is generally around 3 dB. A 5-dB change is clearly perceptible, and an 8 to 10 dB change is associated with a perceived doubling or halving of loudness.

A-weighted Decibel, dBA

The human ear has a unique response to sound pressure. It is less sensitive to those sounds falling outside the speech frequency range. Sound level meters utilize a filtering system to approximate human perception of sound. Measurements made utilizing this filtering system are referred to as “A weighted” and are called “dBA”.

Reverberation Time, T60

T60 determines how rapidly sound decays in a room. Reverberation time is dependent on the physical volume and surface materials of a room. The reverberation time measurement determines, in seconds, the time required for the root mean square sound pressure to decrease by 60 dB after the source has been stopped.

Sound Transmission Class, STC

STC is a single number descriptor indicating overall effective Transmission Loss (TL) characteristics of a building element at speech frequencies (125 Hz - 4 kHz).

Transmission Loss, TL

TL describes the airborne sound insulation qualities of a building element separating two spaces. Apparent Transmission Loss (ATL) describes all sound transmission qualities of the element, including flanking paths. The TL of an element will usually be higher than the ATL due to contributions of flanking paths.



Regulatory and Non-Regulatory Project Requirements

During the construction period, sound levels generated by most construction equipment will be limited to 85 dBA at 50 feet between 7am and 6pm on weekdays and Saturday, as delineated in Section 18.10.060 of the Code of the City of Portland, Oregon. Sound levels from trucks are regulated by Section 18.10.020 and sound emission from pile drivers, pavement breakers, scrapers, concrete saws and rock drills are exempt during normal construction hours. Outside of these normal construction hours, construction sound emissions will be limited to the maximum permissible levels shown in Table 1.

Exterior Sound Levels after Construction is Complete

The existing Madison High School is sited on a parcel zoned Residential. Glenhaven Park is located to the North and Rose City Golf Course is to the West. Both are zoned Open Space. To the West is General Commercial and to the North and South are Residential. With the exception of five parcels zoned Mixed Commercial/Residential at the northwestern corner and three parcels zoned Storefront Commercial at the northeastern corner of the site, all other adjacent properties are zoned Residential. Chapter 18.10 of the Code of the City of Portland, Oregon, defines maximum permissible sound levels for non-construction noise generated within the site boundaries during the day (7am – 10pm) and night (10pm – 7am) as shown in Table 1 below.

Table 1. Maximum Permissible Sound Levels during the Day/Night, dBA

Zone Categories of Source	Zone Categories of Receiver			
	Residential	Open Space	Commercial	Industrial
Residential	55/50	55/50	60/55	65/60
Open Space	55/50	55/50	60/55	65/60
Commercial	60/55	60/55	70/65	70/65
Industrial	65/60	65/60	70/65	75/70

Source: Code of the City of Portland, Oregon, Chapter 18.10

Exterior mechanical equipment may require noise mitigation to satisfy Table 1 above, depending on type, size, location, and hours of operation. In addition, while sounds from crowds at athletic events (football games, etc.) are exempt from the Table 1 sound level limits, amplified sound is not. Therefore, it is possible that modifications to the existing public address system may trigger a code compliance review by the design team.

LEED v4 Acoustical Requirements-Exterior Noise
EQ Prerequisite Minimum acoustic performance (required)
Exterior Noise

- Measure noise levels at high noise sites. Document if site is above 60 dBA peak-hour Leq.
- This includes project sites 1/2 mile or less from significant noise source (aircraft, highways, trains, industry)



- Implement acoustic treatment to minimize noise intrusion from exterior noise sources.
- Control sound transmission between classrooms and other core learning spaces.

Short-term noise measurements may be required due to the proximity of I-84 and PDX Airport to verify whether special building envelope construction will be required.

Interior Acoustics

Aside from limits on exposure to sound levels that could damage hearing detailed in OAR Chapter 437 (8-hour average of 85 dBA), there are no federal, state, or local regulatory requirements for interior sound levels within the building. However, the District's plan to pursue LEED Gold or Silver certification based on LEED v4.0 will require meeting several performance requirements. These requirements are also compatible with the Portland Public School District Design Standards.

1. Indoor Environmental Quality Prerequisite –Required Minimum Acoustic Performance

- Maximum background sound level of 40 dBA (NC35) from HVAC systems.
- Satisfy reverberation time (T60) requirements defined in ANSI S12.60-2010, Part 1, in core learning spaces less than 20,000 cubic feet. These criteria are 0.6 seconds for rooms 10,000 cubic feet or less and 0.7 seconds for rooms between 10,000 and 20,000 cubic feet.
- Satisfy reverberation time (T60) requirements defined in NRC-CNRC Construction Technology Update No. 51, Acoustical Design of Rooms for Speech (2002), in core learning spaces 20,000 cubic feet or greater. These criteria range between 0.5 and 1.25 seconds based on the size and use of the space.
- NOTE: Exemptions to this prerequisite are allowed based on historical preservation.

2. Indoor Environmental Quality Credit – Acoustical Performance (1 point possible)

- Maximum background sound level of 35 dBA (NC30) from HVAC systems.
- Satisfy STC requirements in ANSI S12.60-2010, Part 1, in all core learning spaces, which range between STC 45 and STC 60 depending on the adjacent space use.
- Exterior windows must be rated STC 35 or greater, unless windows with a lower rating can be justified based on site conditions.



Evaluation

Based on measurements and observations during a site inspection, and consideration of the information provided by the Fine Arts staff, our evaluation of the existing conditions at Madison High School follow:

Table 2. Measured Reverberation Times

Space	Existing T60 at 1 kHz, Seconds
Auditorium	1.8
Commons	1.4
Gym	2.5

Source: *The Greenbusch Group, Inc.*

Auditorium

The size of the Auditorium is being reduced significantly from the existing condition. The new Auditorium will include approximately 500 seats.

Performing Arts staff had the following comments:

- A Musical is presented every other year
- No orchestra pit in the existing.
- Would like the stage to be shallower
- Would like Sound Booth to be open to the Auditorium.

The current design includes upper level seating along each side aisle. The rake of the main floor seating begins near the leading edge of the upper level with a partial railing wall along the outer aisles of the main seating. This configuration reduces the effectiveness of any wall shaping or diffusing surfaces to enhance lateral reflections. Canting the bottom surface of the upper floor seating could provide some benefit. Diffusion along the lower wall is partially blocked by the railing.

The side walls at the upper floor seating are currently shown as glazed. The glazing occurs in the area that could be useful for lateral reflections. Potentially reduce the size of the glazing to allow for acoustics.

Another option may be to consider raising the catwalks and the two overhead reflectors near the wall, could be angled in the vertical to mimic sidewall reflectors.

Rear wall should be either absorptive or diffusive.

The existing stage has no acoustical shell. This is essential for musical groups. In addition to projecting some of the sound into the audience, the shell also provides diffusion across the group, allowing the musicians to hear one another.

Band

Performing Arts staff had the following comments:

- Remove risers.
- Add practice rooms



- Teachers like the acoustics in the room.
- Sound isolation between upper level Practice room and Band/Choir offices could be better
- Sound isolation between Practice and Band/Choir not bad but could be improved.
- Current wall ceiling treatment is perforated. Does not appear to have absorption behind.
- Would like carpet on the floor.

Observations:

The ceiling height in the room is adequate.

Existing perforated treatments do not provide the best approach to wall and ceiling finishes. New finishes will consist of a combination of absorptive and diffusive panels. **We do not recommend carpeting the Band room floor. Carpet is a very frequency selective material, providing good absorption at the mid and high frequencies and very little at the low frequencies. The carpeting will make the room difficult to “balance” acoustically, resulting in a room that sounds “boomy”.** In addition, brass instruments typically empty spit valves at their seats. This creates an issue for the custodial staff.

Classrooms

It appears that partitions surrounding the first floor classrooms do not go through to the structure. This significantly affects the amount of sound isolation between classrooms. LEED requirements will require reconstructing these walls.

Gym

The ceiling in the appears to be Tectum. The overall reverberation time in the room is excessive. In addition, a strong flutter echo-a condition where sound reflects for a prolonged period between parallel surfaces- exists between the wall surfaces. This can be clearly seen in the graph of the measured reverberation times included at the end of this report.

Noise Control

Preliminary recommendations are made on 24 ga. metal stud. A stiffer stud will diminish the acoustical performance. Additional gypsum board will be needed if 20 ga. studs are used.

Performing Arts

Partitions surrounding the Auditorium, Black Box, Music and the Scene Shop should be STC 60+

- STC 60+ Either double stud with 2 layers of sheetrock on one side and three layers on the other side. Place batt insulation in both cavities. Or
Single stud with 2 layer of sheetrock on both sides. Support one side with a resilient clip. Place batt insulation in the cavity.



In the Music area you may want to consider modular rooms, such as those from Wenger.

Classrooms

Partitions between classrooms/labs should have a minimum STC 50. These partitions should extend to the structure above. It is our understanding that classrooms will have voice enhancement

- STC-50 Full height partition consisting of 3-5/8" metal studs (16" o.c.) with two 5/8" GWB on one side and one 5/8" GWB on the other side of the studs and batt insulation.
- STC 55 Special Ed classrooms. If additional sound isolation is desired for these areas, consider full height partitions-3 5/8" metal studs with one layer of 5/8" gypsum board on one side and a resilient clip such as Kinetics IsoMax and 5/8" gypsum board on the other side. Fill the cavity with batt insulation. Construct per manufacturer instructions with a gap around the perimeter of the resilient gypsum to allow the panels to "float". Caulk this gap to seal.
- Door will need to be acoustically rated

Partitions separating the classrooms from corridors should have a minimum STC 45.

- STC 45 Full height (to structure) partition consisting of 3-5/8" metal studs (16" o.c.) with 5/8" GWB on each side and batt insulation.

Classroom corridor doors should preferably be equipped with seals to minimize corridor sound transferred into the classrooms. Doors to sensory rooms should be STC 45.

Offices

Partitions between typical offices and shared offices, where speech privacy is not a concern, should have a minimum:

- STC 45 Metal studs with one gypsum board layer on each side and insulation in the stud cavity. Office partitions may terminate 6" above the ceiling considering ACT ceilings in each office.

Partitions separating conference rooms from the classrooms should extend to the structure.

Counseling/Conference

- STC-50 Full height partition consisting of 3-5/8" metal studs (16" o.c.) with two 5/8" GWB on one side and one 5/8" GWB on the other side of the studs and batt insulation.

Library

- STC-50 Full height partition consisting of 3-5/8" metal studs (16" o.c.) with two 5/8" GWB on one side and one 5/8" GWB on the other side of the studs and batt insulation.



Floor/Ceiling

Floors are also required to maintain an STC 50 and an IIC 50.

Interior Finishes

Commons

The ceiling in this area should be absorptive, minimum NRC 0.65. Exposed acoustical deck or a suspended ceiling will be acceptable.

Gymnasium

Absorption needs to remain on the ceiling in this area, assuming the existing treatment will be replaced, the minimum NRC sound be 0.65.

In order to minimize the potential for flutter echo, an absorptive treatment must be added along two adjacent lower wall surfaces. Flutter echo is only apparent at ear height so the treatment must be low. Placing treatment high on the wall will have no effect on the flutter echo condition. Consider placing bands of wall absorptive treatment on the lower walls from 3 feet to 7 feet from the floor level. A variety of acoustical wall treatment is available such as Tectum panel.

Auditorium

Overhead reflectors will be provided on the ceiling.

Side walls will be reflective or diffusive.

Rear walls will be absorptive or diffusive.

Music

The ceiling surface in both music rooms must be partially absorptive to control reverberation and diffusion.

Wall treatment will also be required in the form of a combination of absorption and diffusion. Installing a heavy velour curtain on one wall allows the teacher to vary the acoustics in the room as preferred. Evaluation will continue as the design progresses.

Carpeting is discouraged as the floor finish.

Lobby

The ceiling in the Lobby area should be absorptive, minimum NRC 0.65. Selective locations for wall treatment may also be beneficial.



Library

The ceiling in this area should be acoustically absorptive, minimum NRC of 0.60. A series of acoustical clouds suspended below the desk is acceptable. Consider a lowered cloud over the resource desk and the story telling area to create an area where conversation is less intrusive.

Typically stacks provide enough diffusion that additional absorption in the form of wall panels is not needed.

Floor is carpeted.

Classrooms

Classrooms should have reverberation times in the range of 0.6 to 0.7 seconds. Achieving this will require the addition of absorptive surfaces to the room. The most effective surface to treat will be the ceiling as this plane is exposed to the entire room. The treatment selected for the ceiling should have a minimum NRC 0.65.

Adding carpeting to a classroom floor will not significantly reduce reverberation time, especially at low frequencies, but carpeting will reduce noise resulting from students sliding their chairs or desks on the floor. However, carpeting in upper level classrooms will also be beneficial to reducing impact sounds in classrooms below. Carpeting is recommended on the upper level.

Administration

Ceilings in these areas should be absorptive, minimum NRC 0.65.

Carpet the floor.

Corridor

Acoustical ceiling, minimum NRC 0.65.

A 4 foot band of absorption along one wall in long corridors is preferred.

Toilets

Gypsum lids.

Hand dryers shall not be located on common walls.

HVAC Noise

While HVAC noise and vibration levels were generally low, localized areas of excessive HVAC noise were documented in the existing facility. It is assumed that the mechanical system would be replaced. Any acoustical deficiencies would be addressed and mitigation would be coordinated with the Mechanical Engineer, during design.



Table 3. Measured Mechanical Background Noise Levels

Space	Existing HVAC Noise Level, dBA
Auditorium	36
Commons	43
Band Room	33
Practice Room C	26
Practice Room B	25
Library	35
Classroom	40
Classroom	40
Classroom C-15 (2nd floor)	42
Classroom C-17 (2nd floor)	39
Gym	33
Auditorium	35
Cafeteria	50
Classroom 138	26
Classroom 150	25
Classroom 273	32
Library	33
Choir Room	33
Band Room	25

Source: The Greenbusch Group, Inc.

Mechanical Noise Control

Acoustical Design Criteria

We recommend including the following criteria for mechanical equipment noise with the project manual as defined in the latest edition of ASHRAE HVAC and Systems Guidebook. Reducing the background sound is also required by LEED V4. NC 35 is the Prerequisite requirement and NC 30 is the Enhanced requirement.

<u>Space</u>	<u>NC</u>	<u>dBA</u>
General Circulation Areas	45	50
Commons	35	40
Classrooms	30-35	35-40
Music	30	35
Gym	40	45
Administration	35	40



Air Moving Equipment

Noise generated by air handling units varies greatly with fan type and size. Plug fan configurations generally produce less low frequency noise than typical fan configurations, because the fan is enclosed in a plenum which can be lined with duct liner. Lined plenums are quite effective for attenuating low frequency noise.

Equipment should be internally spring isolated. Combination seismically restrained steel spring and neoprene isolators shall support equipment that is not available with internal isolation. Fans and motors shall be mounted on neoprene isolators within the cabinet.

All ductwork connections to the air handling units shall be made neoprene reinforced canvas flexible connections.

Sound Traps

Sound Traps (if required) should be located in a section of duct where a uniform velocity profile across the duct prevails. The air velocity at the face of the trap should not exceed 1000 ft/min.

Ductwork

All ductwork should be galvanized steel throughout, no exceptions. Fiberglass ductboard does not provide sufficient attenuation for sound transmission through the duct walls to contain fan noise. To prevent noise from being regenerated at fittings or by airflow induced vibration, air velocities in ductwork should not exceed the following values.

<u>Duct</u>	<u>Velocity, fpm</u>
Main Trunks	2000
Branches	<1600
Connection to Diffuser or Grille	400 (for NC 25) – 800 (NC 40-45)

Terminal Units

Fan powered units, if required, should be either internally spring isolated or suspended from the ceiling by spring isolators. Returns must be ducted. VAV terminal units should be suspended using neoprene or fiberglass isolation hangers encased in welded steel brackets. Acoustical lining should be considered downstream of VAV.

Dampers should preferably be located at least five feet upstream of diffusers and be followed by at least 5 feet of flexible ducts.

The terminal units should be located outside of the rooms designed at NC 30 and lower.

Grilles, Registers, Diffusers

Grilles, registers and diffusers should be selected 8 NC points below the room criterion to allow for generous room absorption effects usually applied to catalogue ratings.



Plumbing

Use cast iron DW&V piping throughout.

Use copper domestic water piping. Provide gas charged type shock arrestors at the termination of risers serving flush and solenoid valves, Zurn, Wade, Josam, or approved **equal**.

Piping within 50 feet of pumps should be suspended on combination spring and neoprene hangers. Saddle type hangers with insulation shields should provide sufficient isolation downstream from this point.

Vibration Control

In order to minimize structure-borne vibration levels associated with the operation of the mechanical systems we are assuming that all fans would be spring isolated. The air handler fans would likely require springs with a minimum 2" static deflection. In addition to internal spring isolation of the fans, fan enclosures or bases would also need to be placed on neoprene and cork sandwich pad. Where bolts are used to secure equipment, isolate bolts from equipment with neoprene washers and grommets. Allow no metal-to-metal contact between bolt and equipment.

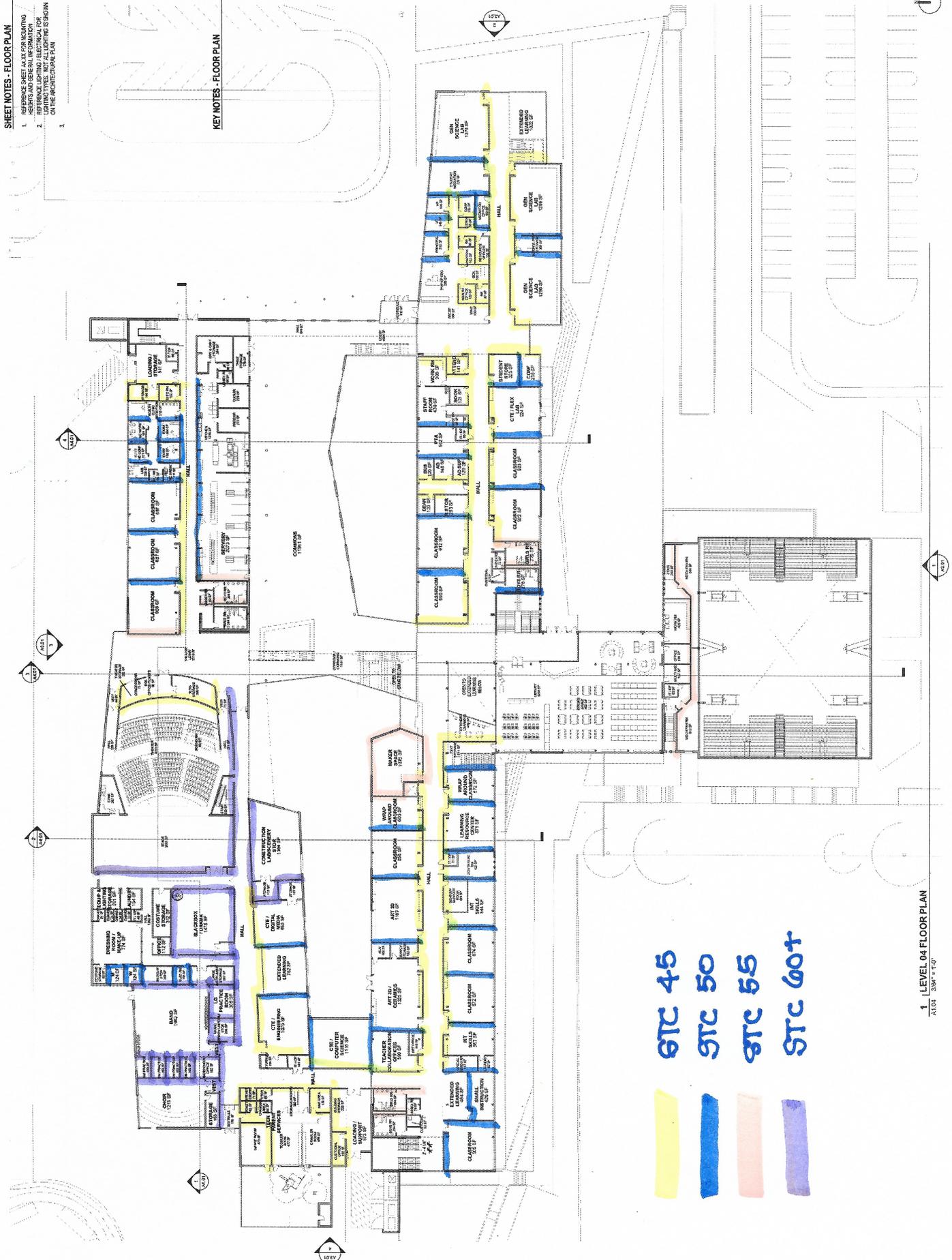
All pumps should be installed on a concrete inertia base with spring isolators with a minimum loaded deflection of 1".

All ductwork and piping within the first 50 feet of vibration isolated equipment should be suspended on combination spring and neoprene hangers with 1 inch static deflection. Unistrut and rod type hangers should be satisfactory downstream from the mechanical vibration isolated equipment.

SHEET NOTES - FLOOR PLAN
 1. REFERENCE SHEET AX FOR MOUNTING HEIGHTS AND GENERAL INFORMATION.
 2. LISTING TYPES, NOT ALL LISTINGS SHOWN ON THE ARCHITECTURAL PLAN

KEY NOTES - FLOOR PLAN

Key Plan



STC 45
 STC 50
 STC 55
 STC 60+

1 LEVEL 04 FLOOR PLAN
 A1.04 3/8" = 1'-0"

Sheet

Prepared For:
 Portland Public Schools



Project Name:
 Multisession High School

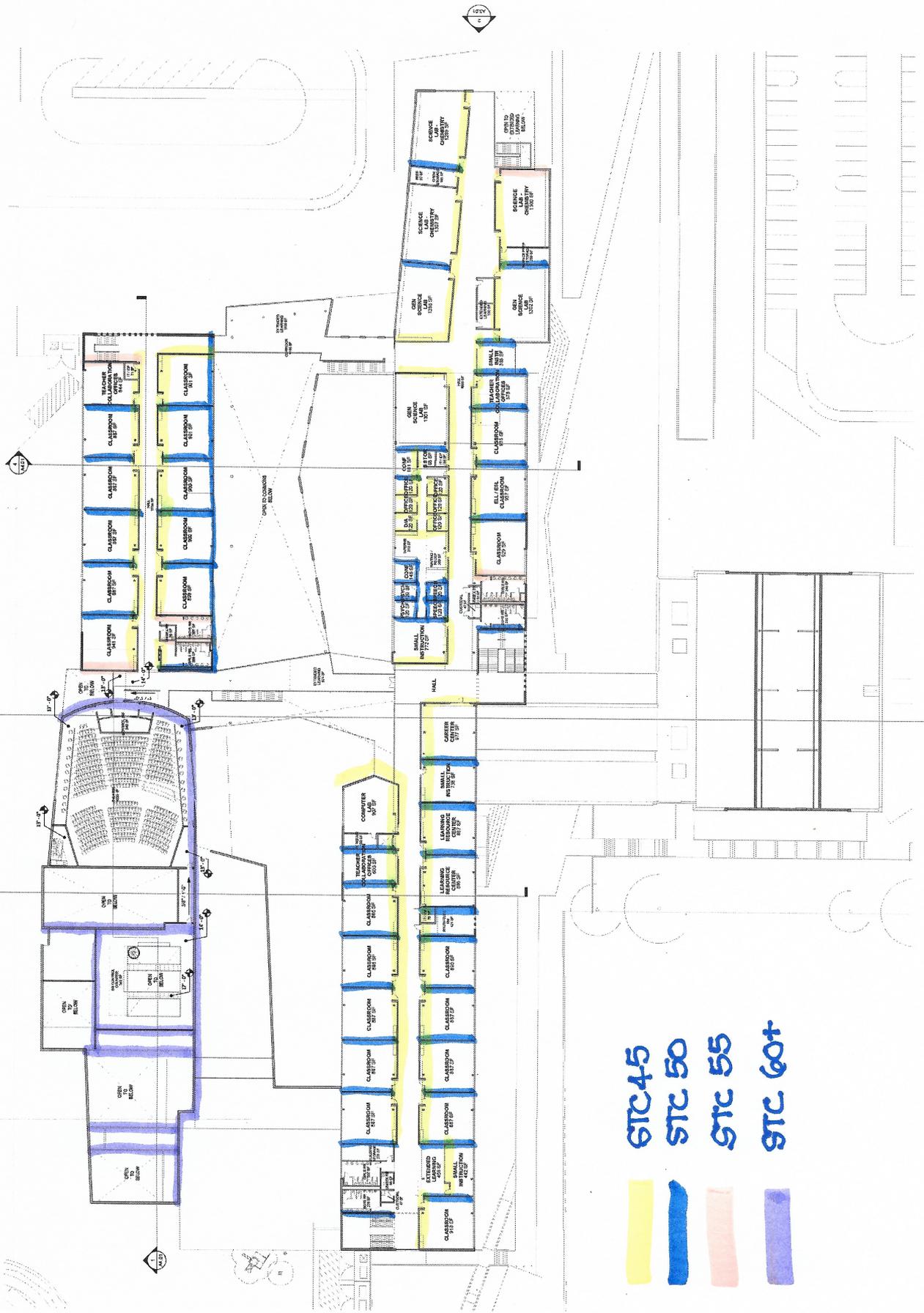
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Revisions to Sheet:
 No. Description Date

Sheet Title:
LEVEL 05 FLOOR PLAN

Sheet No.: **A1.05**
 Job No.: **4722-01**



- STC 45
- STC 50
- STC 55
- STC 60+

1 | LEVEL 05 FLOOR PLAN
 A105 306" x 140"

17

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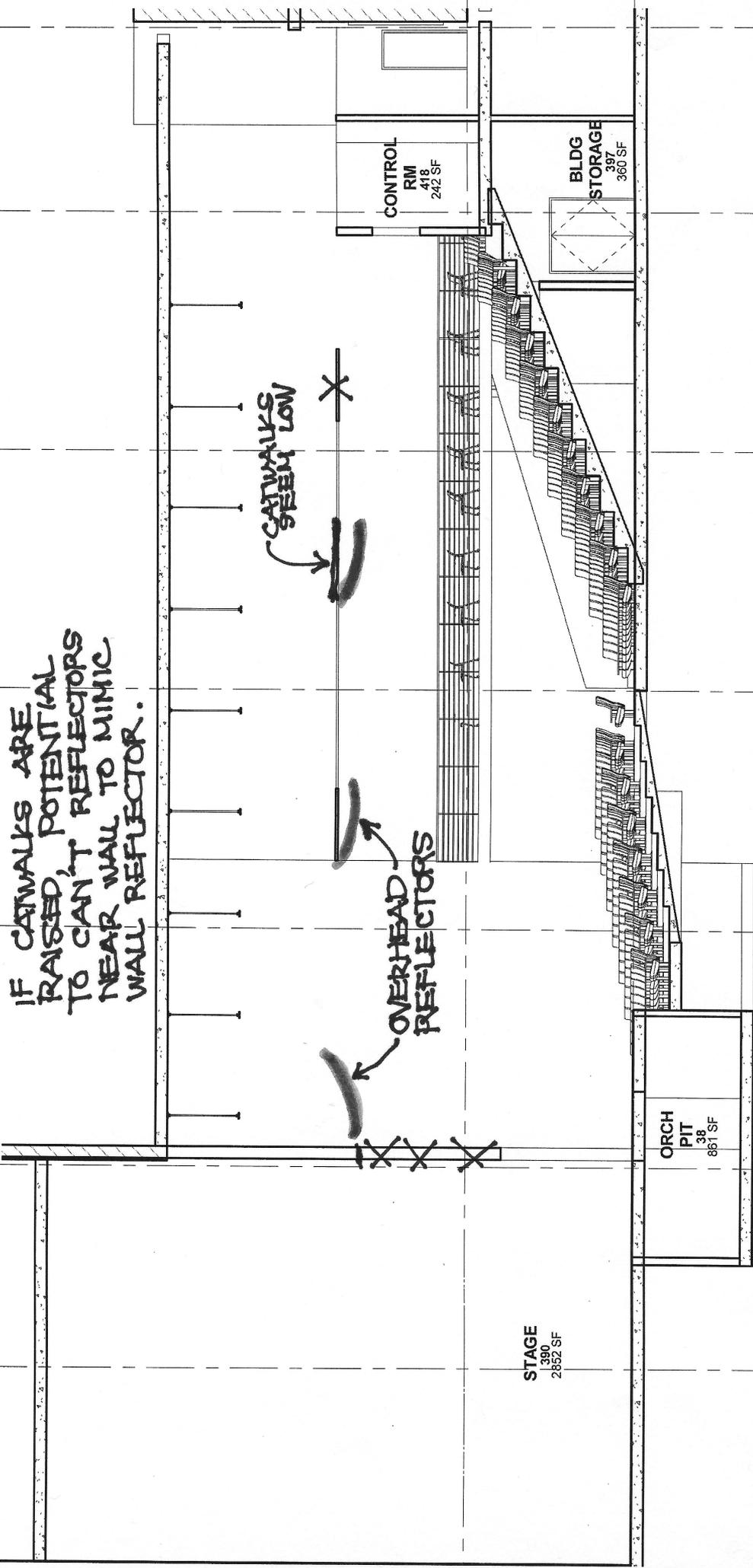
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IF CATWALKS ARE
RAISED, POTENTIAL
TO CAN'T REFLECTORS
TO NEAR WALL TO MIMIC
WALL REFLECTOR.

CATWALKS
SEEM LOW

OVERHEAD
REFLECTORS

CONTROL
RM
418
242 SF

BLDG
STORAGE
397
360 SF

STAGE
390
2852 SF

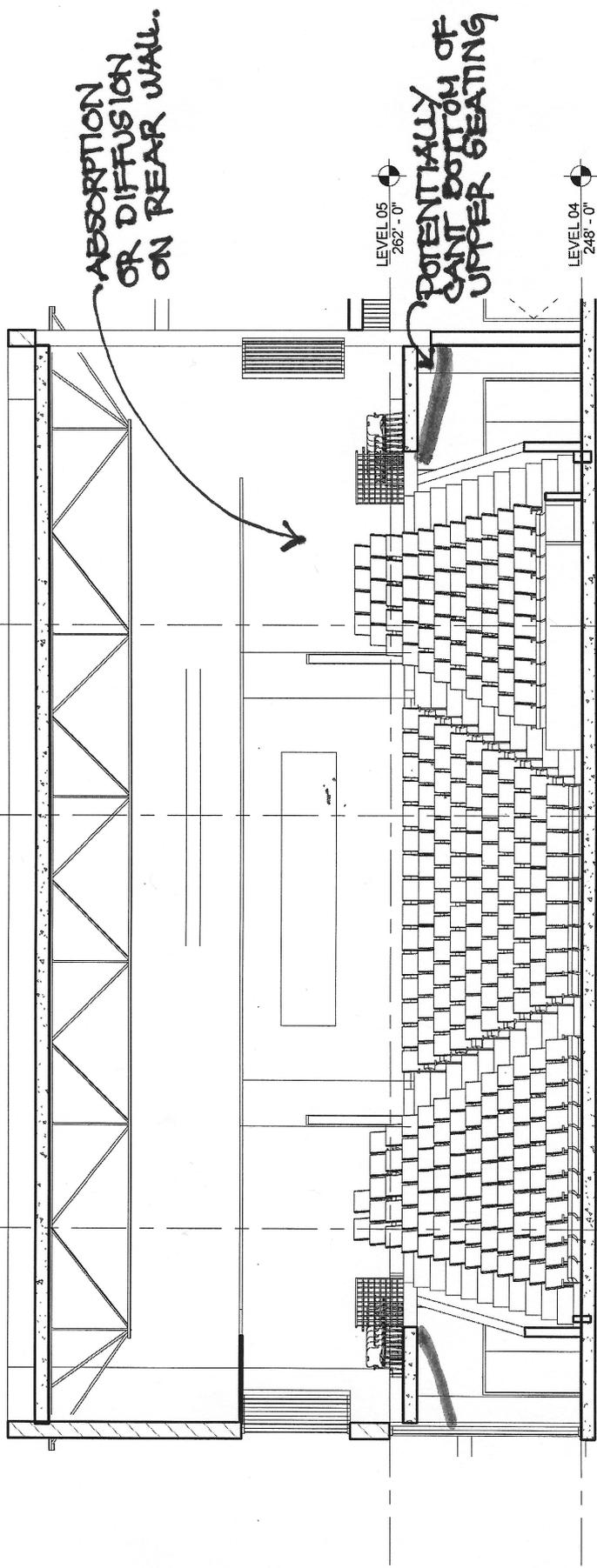
ORCH
PIT
38
861 SF

50% 90. MADISON

B

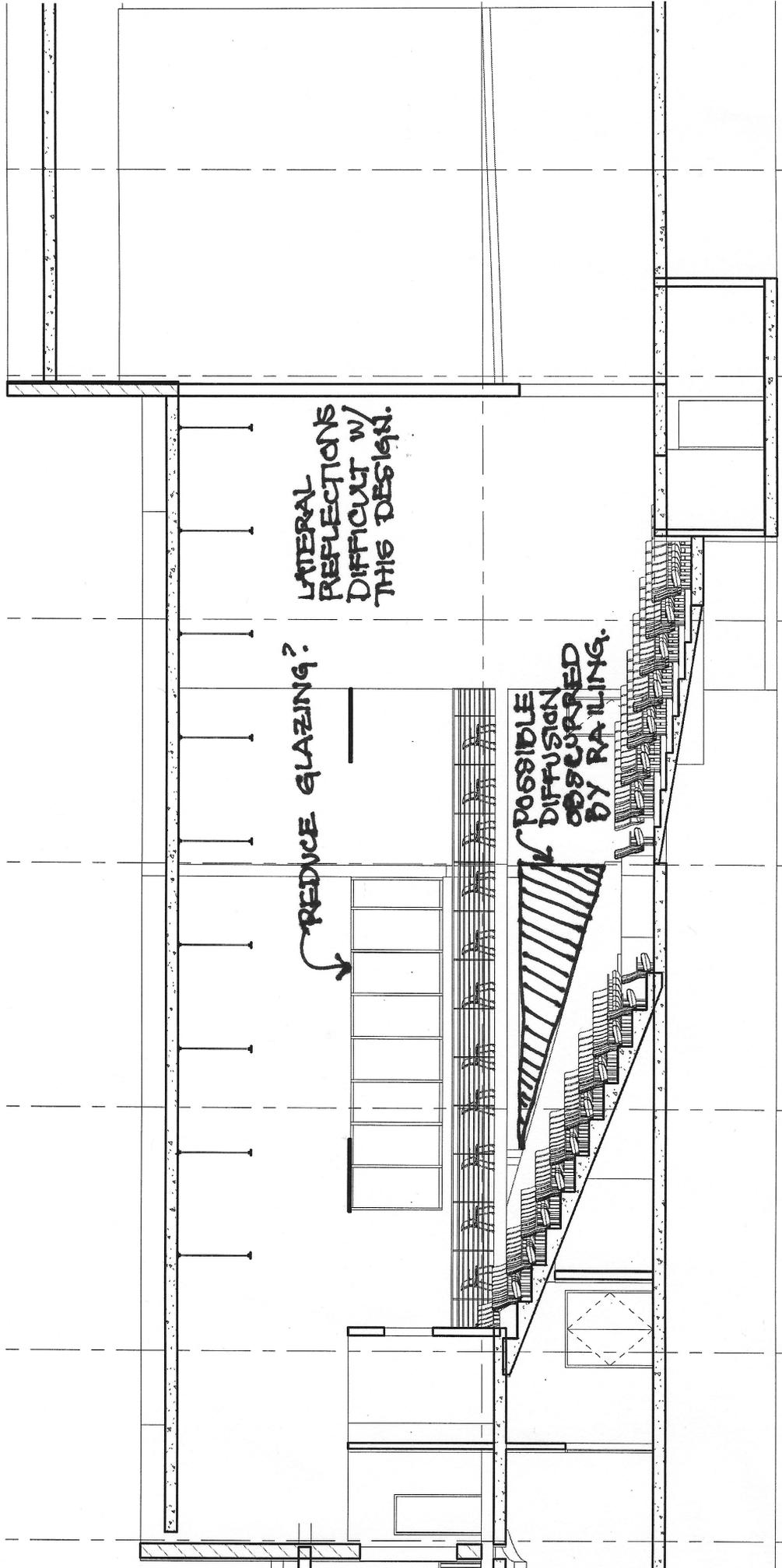
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D



50% SD MADISON

17 16 15 14 13 12 11



REDUCE GLAZING?

LATERAL REFLECTIONS DIFFICULT W/ THIS DESIGN.

POSSIBLE DIFFUSION OBSCURED BY RAILING.

50% SD MADISON

05" 04"

To: Randall Heeb, AIA – OPSIS Architecture / Portland, OR
Project: Madison High School – Modernization (PPS) / Portland, OR
Subject: 50% Schematic Design Narrative – Theatre and Drama Classroom
Date: April 19, 2018
From: K. Paul Luntsford, ASTC, LC

Codes and Standards

- The following codes are applicable to this project:
 1. National Electrical Code (NEC) – 2014
 2. International Fire Code (IFC) – 2015
 3. International Mechanical Code (IMC) – 2015
 4. Oregon State Energy Code
 5. Oregon State Electrical Code
 6. Oregon State Structural Code (2014)
 7. Oregon Administrative Code (OAC)
- The following standards are applicable to this project:
 1. ANSI 117.1 – Accessibility
 2. ASME A18.1, Platform Lifts and Chairlifts – 2008
 3. ANSI E1.4-1 Manual Counterweight Rigging – 2016
 4. ANSI E1.6-1 Powered Hoist Systems
 5. ANSI E1.1-1 Digital Data for Controlling Lighting (DMX)
 6. ANSI E1.17 Architecture for Control Networks (ACN)
 7. ANSI E1.20 Remote Device Management (RDM)
 8. ANSI E1.26 Shock Absorption of Floor for Live Performances
 9. ANSI E1.27-1 Portable Cords for Use with DMX-512
 10. ANSI E1.27-2 Permanent Cables for Use with DMX-512
 11. ANSI E1.28 Planning Followspot Locations
 12. ANSI E1.46 Prevention of Falls from Stages and Raised Platforms
 13. ANSI E1.55 Standards for Makeup Mirror Lighting

DRIVING FACTORS

General Motivations and Information

Based on information that the Owner provided to Opsis Architects, after limited discussions with designated performing arts education staff, a form of assembly space was identified to meet the diverse performance criteria and limited program area budget. The form and design of the Performing Arts Cluster (PAC) should endeavor to meet the needs of the programs listed below, to the extent that funding and square foot program allowances will permit.

Stakeholder User Groups

- **INSTRUMENTAL MUSIC:** Madison HS has a growing music education program. With multiple bands, currently present, the facility will need to incorporate the design aspects of music performance that are outside the confines of dramatic performance. This is true not only for the physical layout of the

stage and house, but for the circulation, rehearsal and storage aspects as well.

- **CHORAL MUSIC:** Choral music is also growing at the school, with a developing repertoire and patron following. Consequently, the design aspects of the auditorium, stage, rehearsal and storage elements of the building must reflect these dynamic educational and performance programs.
- **DRAMA:** As part of a high school educational program, robust drama performances are established. A new PAC should be built to reasonably accommodate present levels and additional growth of the drama program at the school. Technical theatre skills are already part of the teaching curriculum. The facility needs to respect traditional and alternative forms of dramatic performance. Community users will need support for drama performances. For community users now, dance and movement activities must have representation in the design.
- **DANCE:** Dance is an integral part of many performance events. Given the physiological impact to the body that jumps, slides and throws can impose, it is critical that the stage floor area be designed accordingly. Lighting, rigging, drapes and wing space in the main theatre must support dance. The Drama Classroom should match the stage for floor type and have sufficient headroom for lifts and jumps.
- **NON-PERFORMANCE EVENTS:** The auditorium will need to accommodate special activities from time to time, when the commons and/or gymnasium are either in use or are not the appropriate venues for the activity. Therefore, the technical systems within the auditorium and stage shall have a user-friendly layer of access and operation for the non-technical user. Seating quantity must be sufficient for assembly of at least one class year.
- **COMMUNITY:** community use of the new auditorium space is expected to take place. Therefore, storage, load-in and backstage support areas must be designed accordingly, and basic elements of technical systems must be very flexible and easy to use without special knowledge and training.

Auditorium

- 500 seat facility (fixed + wheelchairs), with Orchestra Level seating and Rear Tiered seating. Primary entrance is by two side vomitory channels. Two upper rear exits for ambulatory and non-ambulatory audience members are also included.
- A primary cross aisle separates the two seating areas. The cross aisle connects the two primary exits.
- Seating layout and relationship to stage is an Orchestra Pit Apron with standard proscenium format. This is intended to satisfy the traditional shape that is friendly to music while supporting a basic level of close-up theater for increased intimate relationship between actors and audience. Seating rake at the rear of house is sharply stepped to enhance the perception of intimacy.
- Direct ambulatory and non-ambulatory access from the auditorium to the stage is incorporated into the design.
- Catwalks for lighting systems, accessible from control booth and connected to onstage galleries.
- Side Box Boom lighting positions accessible from galleries and catwalks.
- An Orchestra Pit with pit filler deck panels shall be provided for music flexibility. Orchestra Pit Basement Level floor shall be a maximum of 9'-0" below finished floor level of stage. Pit shall be sized to accommodate (12) seated musicians, (6) standing musicians and (1) director. The Orchestra Pit must have (1) extra-wide stair for ingress / egress and a WC lift. A second stair may be required by code officials, but if not mandated, should not be included.

Main Stage

- Not less than 34' deep x 82' wide, plus an arbor pit @ 3'-3" W, with a proscenium opening of 44' (max) wide x 20' (max) high.
- A permanent stage apron extending 6'-6" beyond the arch line and a 7'-0" long (at centerline) orchestra pit filler extension plus curb (above orchestra pit).
- Side stage areas with connections to the auditorium and main stage
- Sprung stage floor, with sleepers, neoprene pads, plywood subfloor, tempered hardboard top and expansion joint covers.
- Tee-Bar guide rails for up to (23) manual counterweight sets, plus (7) motorized hoist rigging sets for (4) Electrics and (3) Acoustic Ceiling Shell units.
- (3) Onstage Fly and Loading Galleries for Rigging and Lighting and Set access.
- (1) lightweight service catwalk onstage, for service access to motor hoist units at underside of stage loft roof.

Backstage Support Spaces

- Shall include makeup, dressing, storage, shared Green room, Stage Set Prep and backstage circulation corridors.
- Placement and circulation shall allow travel between performance and rehearsal areas, including offstage class and support areas, without the need to pass through the Main Lobby or other areas where audiences may congregate or pass through.

Theatre Lighting Systems

- General Lighting in Main Auditorium shall be a combination of dimmable LED downlights and switched LED worklights. General lighting shall be controlled by a central dimmer/relay/data system which will be part of an overall lighting control network in the auditorium-theater venue.
- For maintenance purposes, the design will attempt to locate the maximum practical amount of house and worklight fixtures where they may be serviced from catwalks or other stable platforms. LED general lighting in open ceiling high areas shall be rated for ultra long service life in excess of 20 years under standard usage.
- Worklighting shall be provided at all catwalks and galleries and technical access corridors. Worklighting shall be provided in two modes: white general lighting and blue safety lighting (low near floor level).
- Stage Lighting shall consist of conventional instruments with standard and intelligent accessories, along with LED units. Modern variable parameter intelligent color changers and automated lighting shall be contemplated and listed a part of the design solution for stage lighting, even if initial construction funding does not presently permit complete inclusion.
- A modern, solid-state dimming and control system consisting of a wall-mounted cabinet with modular dimmers/relays shall be provided for house and work-lighting control. Stage Lighting may additionally be controlled by means of distributed digital dimmer bars and packs at the locations where the stage lighting fixtures are hung. A digital data network (Ethernet-based) shall be distributed throughout the venue, using conventional IEEE standards and equipment, although the network shall not be connected to the general building network(s). The network shall distribute ACN-RDM/DMX.

- Worklights shall be controlled by means of digitally driven solid-state relays which are part of the master lighting control network.
- A stage lighting console shall be included which shall allow for control of conventional dimmers as well as control of intelligent lighting accessories and automated instruments.
- Convenience push-button stations shall be located at selected doorways to allow activation of basic room lighting. A master control station shall be located in the control booth and at a Stage Manager's Panel onstage to allow a higher level of basic lighting control. Worklighting shall have local access stations at key points along catwalks and galleries and backstage doors, and shall have mimic control at the master lighting station in the control Booth and Stage Manager's Panel.
- Basic minimum occupancy lighting shall be activated by occupancy detectors such that a code-minimum complement of lighting shall always be on when the theater is occupied for any reason, and shall not shut off until 15 minutes after the occupancy detectors no longer are activated.

Stage Rigging and Drapes

- Stage shall have a manual counterweight system using weighted arbors on steel T-tracks. Selected rigging sets, such as onstage electrics and orchestra Concert Shells shall be motor-driven due to weight and safety concerns.
- Rigging system shall include sets for electrics, Masking Borders, Masking Side Legs, General Purpose Scenery, Scrim, Cyclorama, Grand Drape, Upstage Drape, Paintable Drop, Concert Shell, Side Masking Tabs and Side Lighting sets.
- Drapes shall be professional grade fabrics, Inherently Flame Resistant (IFR) with professional theatre fabrication requirements.
- Tracks shall be professional grade, smooth, quiet and durable.

Orchestra Shell

- Acoustic Reflector Panels, known as Orchestra Shells, shall be rigged to deploy for use, raise up into storage or lower for adjustment. Each of (3) units shall be heavy duty and shall be sized and located to provide acoustic projection and onstage ensemble for music performers. Shells shall have integral LED down-lighting for musician's benefit.
- Portable acoustic towers, matching the fabrication and appearance of the Orchestra Shell, shall provide lateral reflection and diffusion of music among performers and toward audience. Towers shall have counterweighted bases, be storable in a nested and folded fashion and shall have a special transport device to move them into position and back into their storage area.

Orchestra Pit & Trap Filler System

- Heavy-duty stage deck panels shall be fitted into the opening for the Orchestra pit. Decks shall be sturdy and rigid, yet be easily removed.
- Deck panels ("Traps") shall be provided at the stage to infill three openings in the main stage floor.
- A safety net system shall be included to limit the risk of injury from falling when the pit deck or trap hole areas are open.
- Adjustable acoustic curtains for sound control shall be included along the rear wall of the Orchestra Pit space.
- Safety blue floor lighting and normal work-lighting provisions, locally and remote controllable.

- The musician performance area and the under-trap area shall be a common space with no wall separating them.

Fixed Upholstered Seating

- Durable and attractive seating units, permanently attached to the floor, shall be included in the design. Aisles and spacing between rows shall meet or exceed code requirements for egress.
- Seating units shall have gravity/spring-assist lift upholstered seats, solid armrests and abuse resistant upholstered seat backs. Color selection of materials and finishes shall be by Architect.
- Selected seating units shall be removable on single-seat skids to allow for placement of wheelchairs. Selected seating units shall have transfer arms for partially ambulatory persons.
- Selected seating units at aisle ends shall have integral safety lighting for aisles.

Drama Classroom / Black Box Space

- Flexible teaching and rehearsal space, consisting of flat floor area, basic walls, and a perimeter / center crossover catwalk system at +14'-0" above the floor level. Perimeter catwalk shall be the location where control booth provisions are located.
- Technical catwalk area shall be accessible.
- While not intended for public performances, the space will have enough technical systems to allow appropriate teaching of movement, color, texture, position, blocking and other aspects of dramatic, artistic and technical theatre.
- Fitted with stage lighting, house lighting, work-lighting, dimming and controls and other technical systems for teaching, rehearsal and recital activities.
- All lighting and technical systems shall be mounted on, or accessible from the catwalk system.
- Battens shall be included at the perimeter for tied-on masking drapes to create crossovers where and when desirable.
- Flat sprung wood floor, black walls, black ceiling.
- Located adjacent to back of house support spaces.
- Furnished with assortment of adjustable draperies as required.

Respectfully Submitted,

PLA Designs, Inc.

K. Paul Luntsford, ASTC, LC

Principal





Project: Madison High School - Theater, Drama Class/Black Box, Dance Room and Music Room
Subject: Opinion of Probable Equipment Cost - 50% SCHEMATIC DESIGN

Date: April 19, 2018

SECTION	SECTION TITLE	ESSENTIAL MINIMUM
DIV 9		
09 65 51	'SFF-1' Sprung Flooring System - Main Theater (Includes Install)	\$ 46,130
09 65 51	'SFF-2' Semi-Sprung Flooring System - Black Box (Includes Install)	\$ 17,167
09 65 51	'DF-1' - Fully Resilient Flooring System - Dance Studio (Includes Install)	\$ 54,592
Sections 09 65 51 Subtotal		\$ 117,889
DIV 11		
11 61 60	Mobilization, Prep and Engineering	\$ 5,000
11 61 61	Stage Rigging and Drapes (Includes Install)	\$ 412,173
11 61 62	Acoustic Concert Reflector System (Includes Install)	\$ 98,000
11 61 63	Orchestra Pit Filler System (Includes Install)	\$ 33,000
11 61 61	Black Box Hardware & Softgoods (includes Install)	\$ 16,500
11 61 61	Band / Choir Room Hardware & Softgoods (Includes Install)	\$ 6,700
11 61 71	Stage Lighting Instruments - Main Theater (Includes Install)	\$ 128,822
11 61 71	Stage Lighting Instruments - Black Box (Includes Install)	\$ 32,040
11 61 71	Stage Lighting Accessories - Main Theater (Delivered to Owner)	\$ 9,387
Sections 11 61 60, 11 61 61, 11 61 62, & 11 61 63 Subtotal		\$ 741,622
DIV 12		
12 61 13	Fixed, Upholstered Seating - Main Theater (Includes Install)	\$ 114,752
Section 12 61 13 Subtotal		\$ 114,752
DIV 26		
26 09 61	Stage and House Lighting Dimming and Control - Main Theater (NO Install)	\$ 174,024
26 09 62	Stage Lighting Distribution Devices - Main Theater (NO Install)	\$ 47,040
26 09 61	Stage and House Lighting Dimming & Controls - Black Box (No Install)	\$ 82,454
26 09 62	Stage Lighting Distribution Devices - Black Box (No Install)	\$ 7,600
Sections 26 09 61, 26 09 62, 26 09 63 & 26 09 64 Subtotal		\$ 311,118
26 09 69	General Illumination - Theater (NO Install)	\$ 143,284
26 09 69	General Illumination - Black Box (NO Install)	\$ 14,224
Section 26 09 69 Subtotal		\$ 157,508

NOTES:

NOTE 1: Reserved for Future Use

NOTE 2: Costing provided for Divisions 9, 11, & 12 work include delivery and installation.

NOTE 3: Costing provided for Division 26 is for EQUIPMENT ONLY. Installation labor for equipment wiring and raceway and raceway are not included. Recommend allowance for misc materials and equipment install labor of not

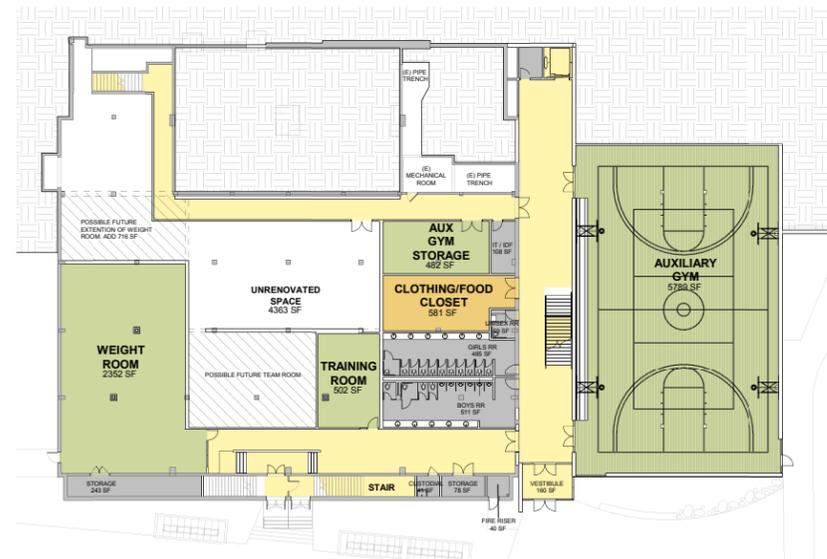
NOTE 4: Reserved for Future Use

Main Theater	\$ 1,211,612
Black Box / Drama Classroom	\$ 169,985
Dance/Aerobics Studio	\$ 54,592
Band / Choir Room Adjustable Acoustic Drapes	\$ 6,700

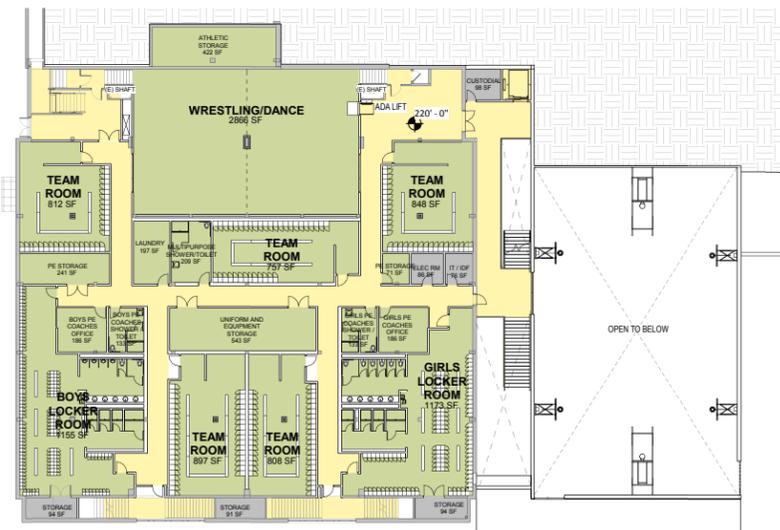
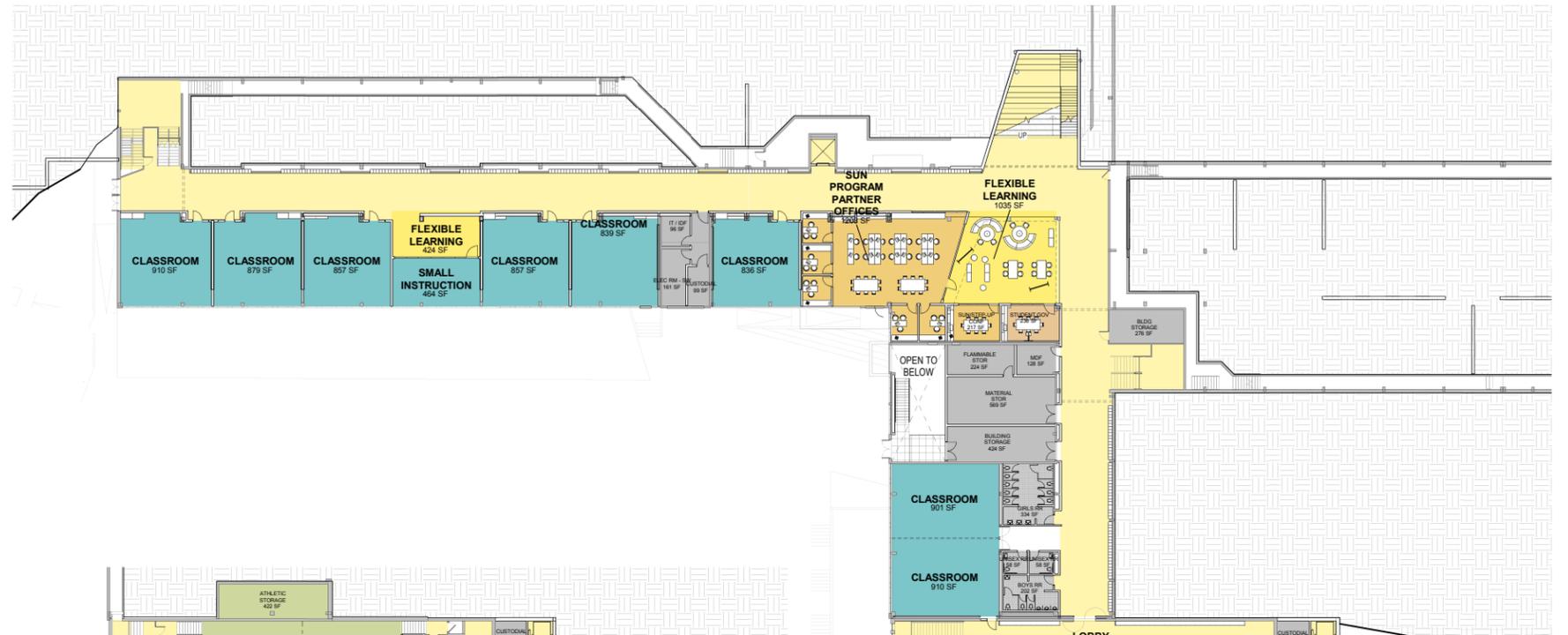
\$ 1,442,888

DOES NOT INCLUDE CATWALKS OR GALLERIES IN THEATRE & DRAMA CLASS / BLACK BOX.

Notes #2 & #3 APPLY



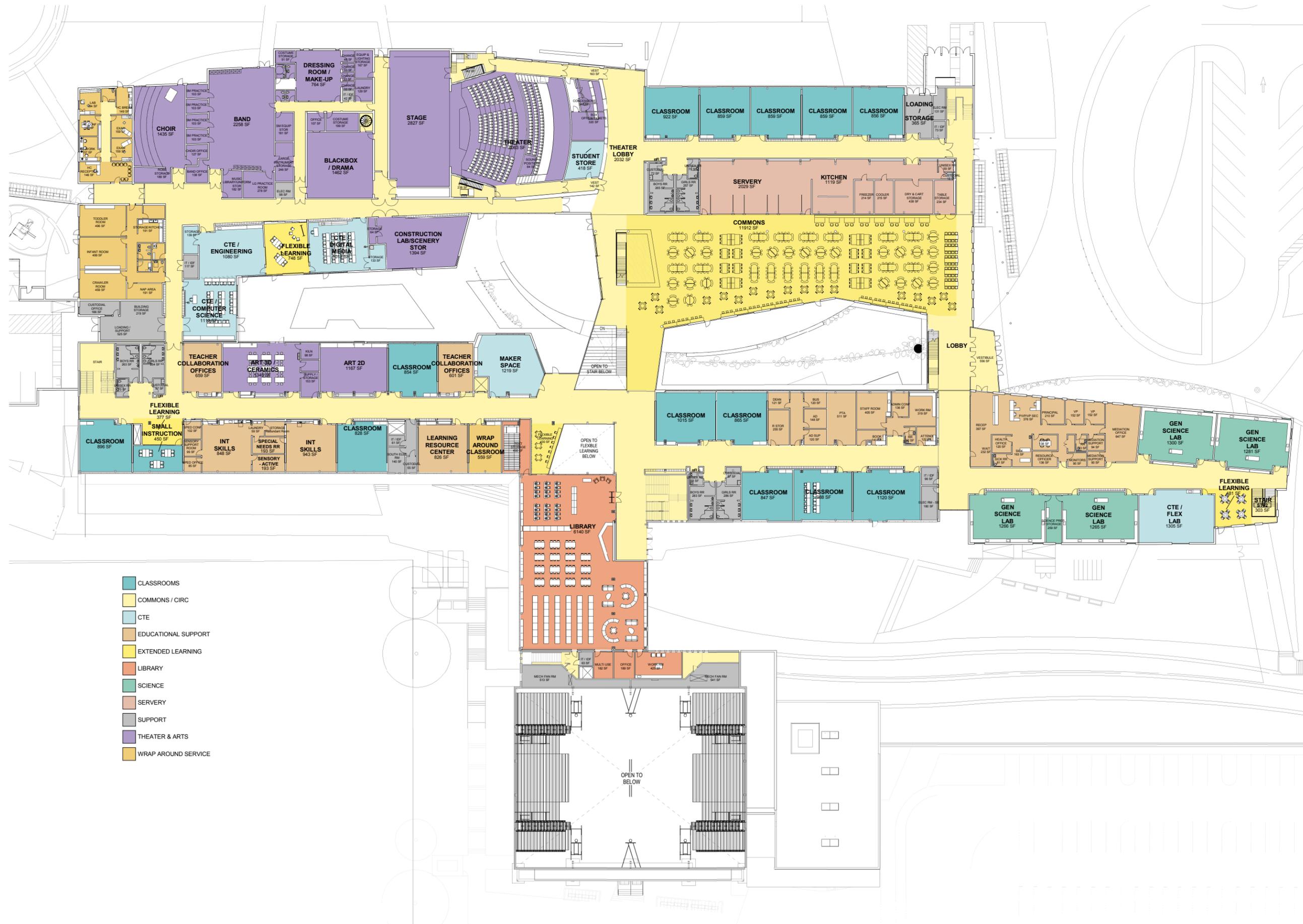
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AP1.1 1" = 20'-0"



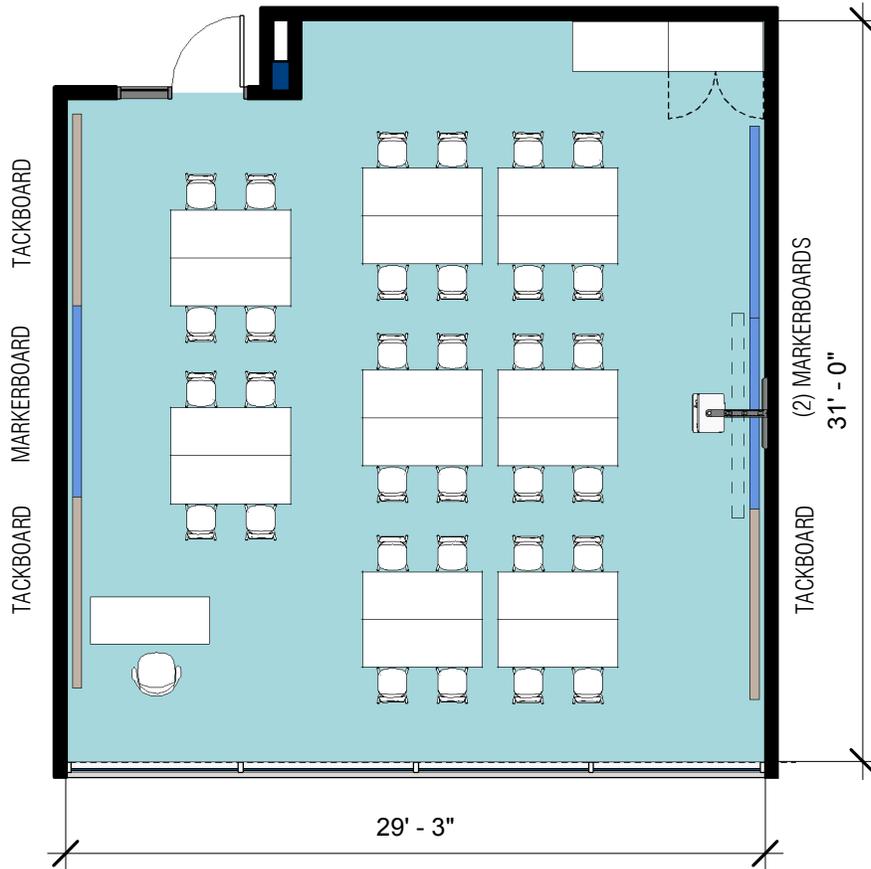
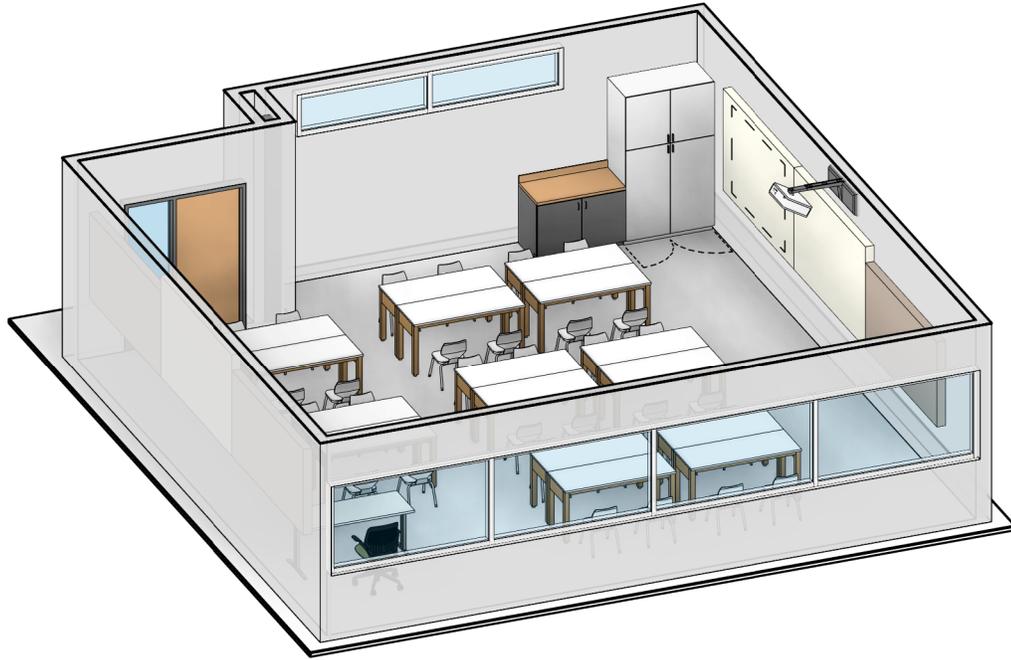
2 | FLOOR PLAN - LEVEL 2
AP1.1 1" = 20'-0"



3 | FLOOR PLAN - LEVEL 3
AP1.1 1" = 20'-0"



- CLASSROOMS
- COMMONS / CIRC
- CTE
- EDUCATIONAL SUPPORT
- EXTENDED LEARNING
- LIBRARY
- SCIENCE
- SERVERY
- SUPPORT
- THEATER & ARTS
- WRAP AROUND SERVICE

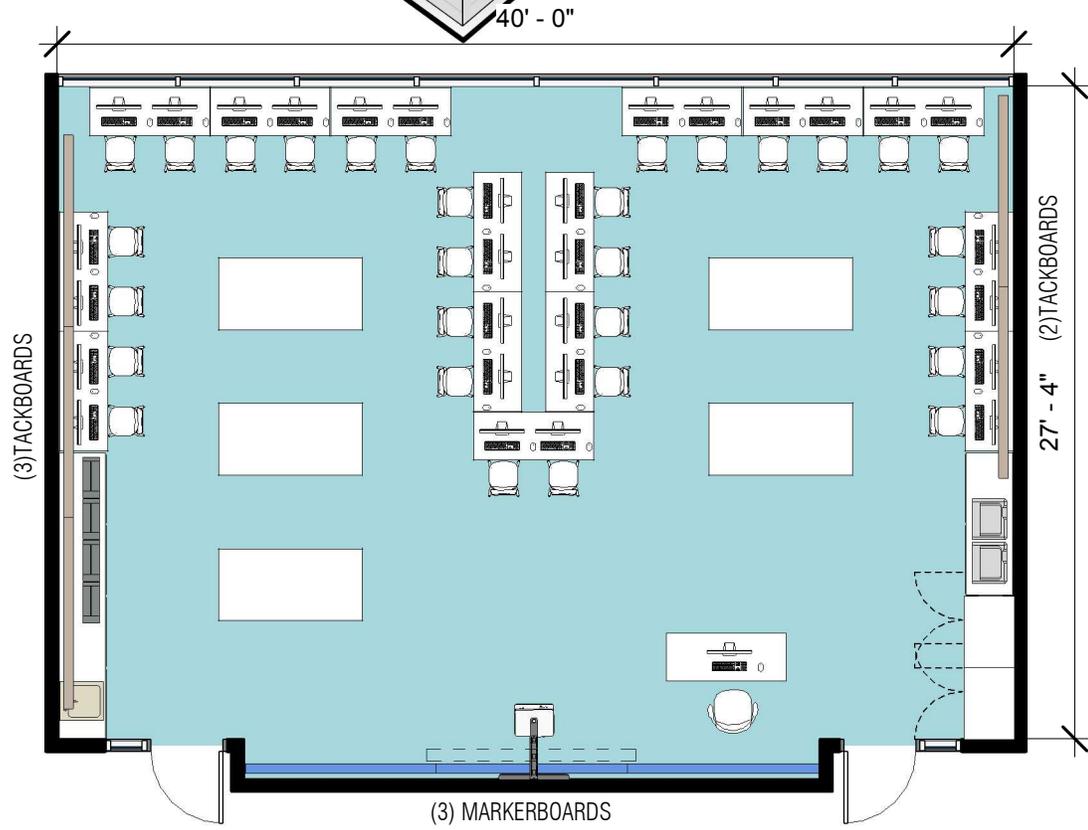


4/20/2018

Classroom - 890SF - 32 students

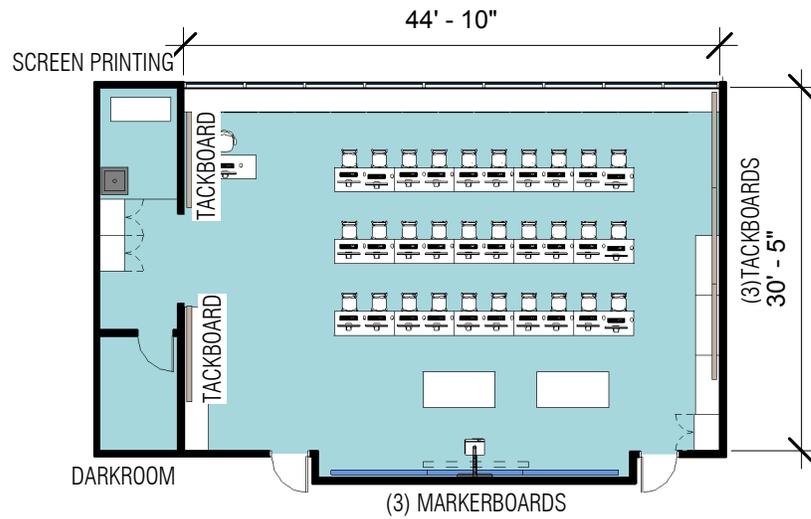
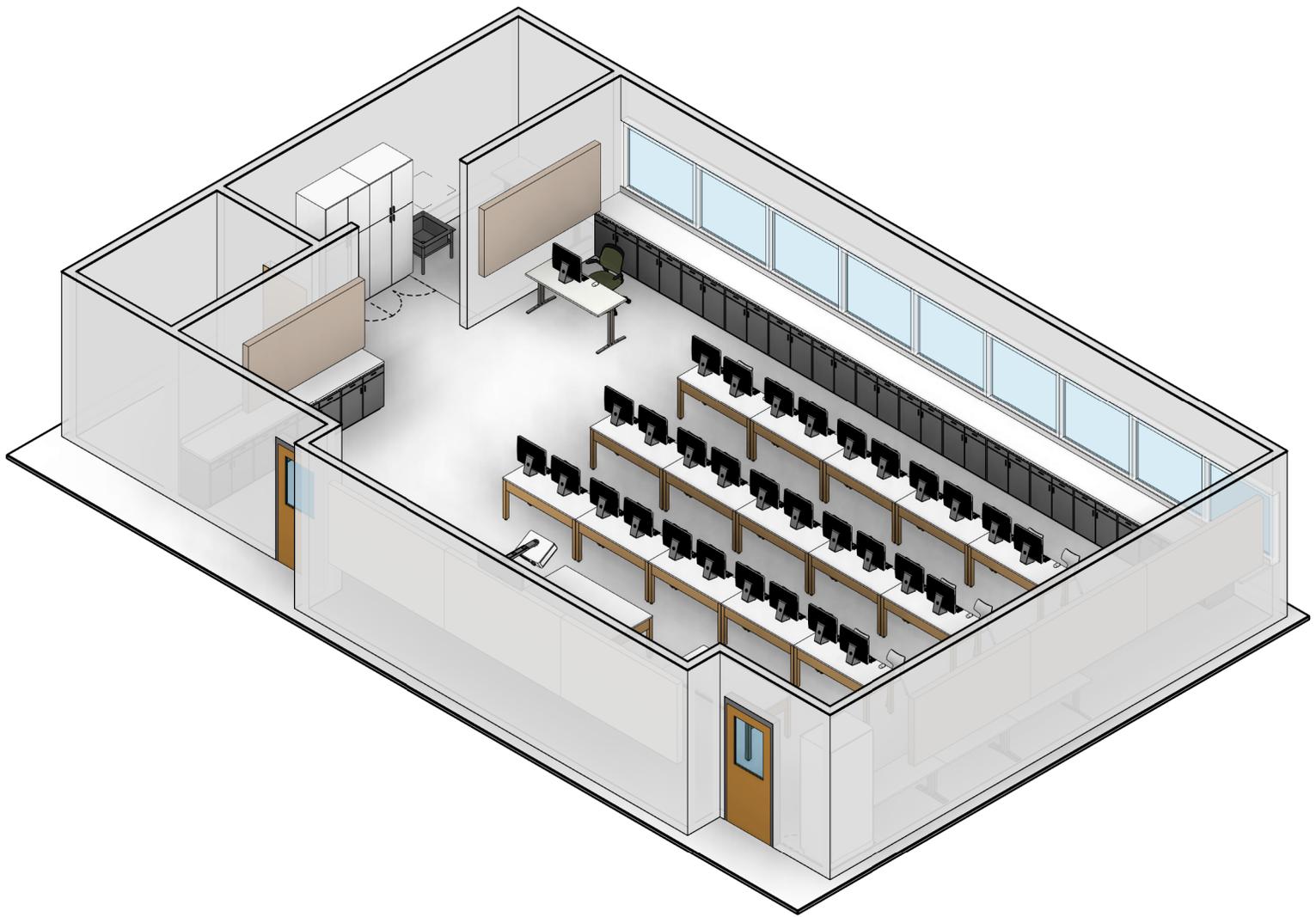
opsis architecture | **DAO architecture**

PROGRAM		ROOM SIZE	
Room Name	General Classroom	Area	890 SF
Program Group	Core Program	Dimensions	
Adjacency		OCCUPANCY	
Description		Hours	
EQUIPMENT		Occ. Load	
Fixed	projection surface; short throw projector; clock/intercom;	Security	
Mobile	computers; laptops; computer carts; TV; document camera	BUILDING	
SYSTEMS		Ceiling	
HVAC		Walls	(1) wall w/windows; tackboards per PPS standards; min. of (2) 4'x8' magnetic whiteboards
Plumbing		Floor	hard surface, durable
Electrical	outlets to power computing devices and equipment; 12 outlets per room equipment matrix	Doors	doors with 2'-0" wide sidelite windows
Lighting	direct/indirect; natural daylighting	Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; (1) 3'-0" x 10'-0" clerestory window at each classroom
Audio/Visual	sound reinforcement; speaker/sound system	Comments	
Tele/Data	phone; wireless access point; data outlets		
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		



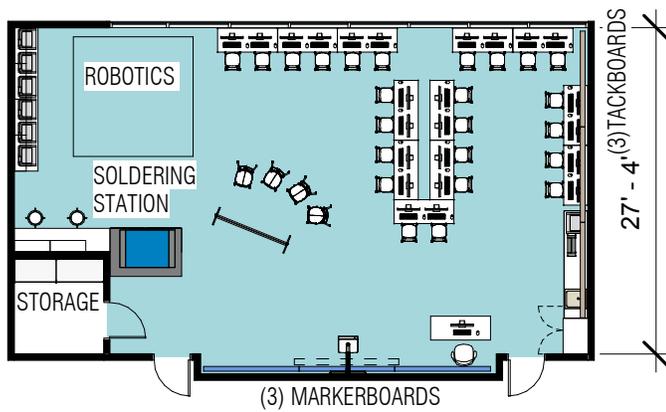
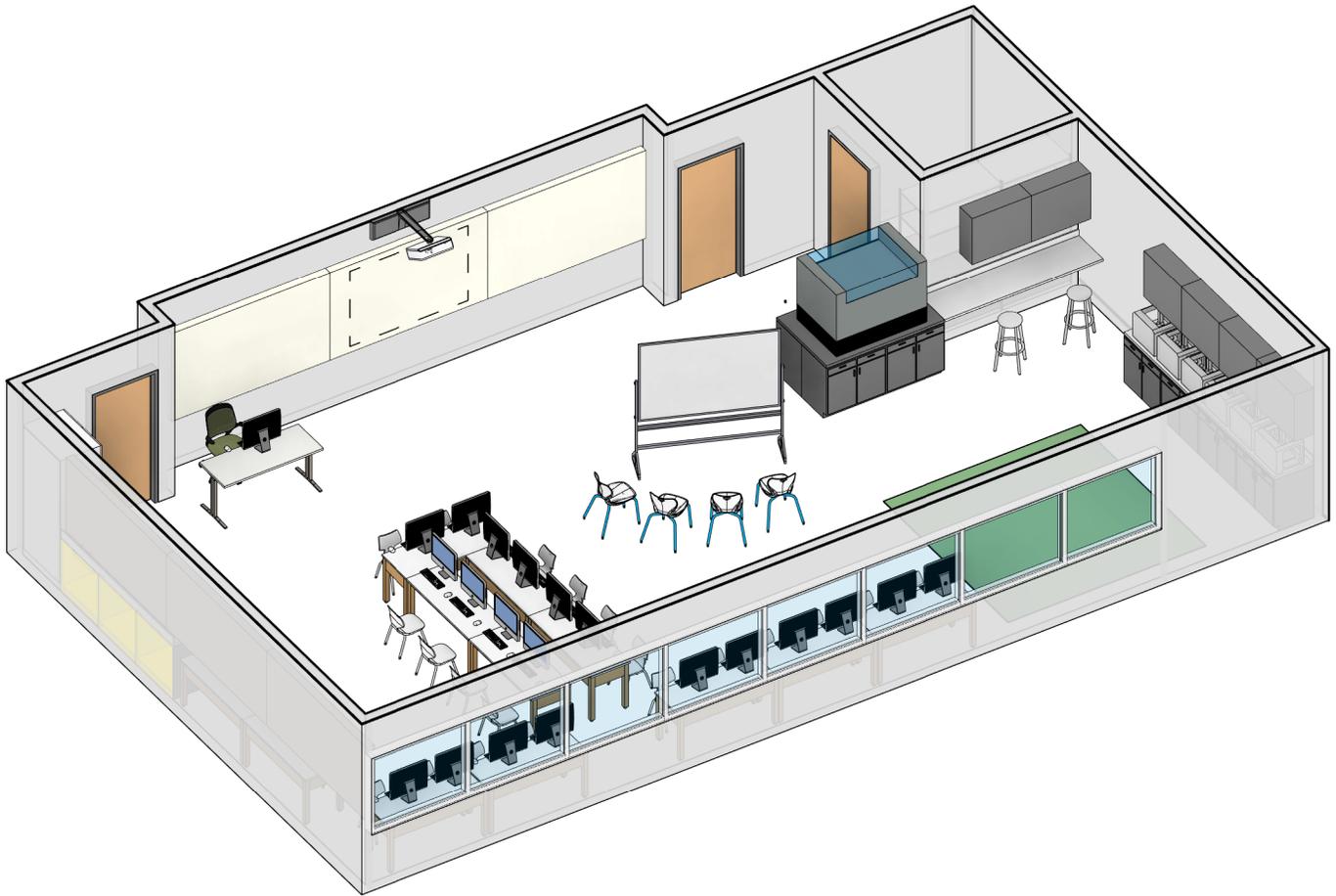
4/20/2018

PROGRAM		ROOM SIZE	
Room Name	CTE Computer Sciences	Area	1,200 SF
Program Group	Core Program	Dimensions	
Adjacency	Engineering, Digital Media CTE Programs; storage		
Description	coding, 3D modeling and animation, production of forms; robotics	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	perimeter computer stations for 30 students; (2) 3D printers, (4) vinyl cutters, heat press; projection surface, short throw projector; clock/intercom	Occ. Load	30 students
Mobile	document camera	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	(1) sink	Walls	(1) wall w/windows; tackboards per PPS standards; min. of (2) 4'x8' magnetic whiteboards; teaching wall should be the long wall
Electrical	outlets to power computing devices and equipment	Floor	hard surface, durable
Lighting	direct/indirect; natural daylighting	Doors	doors with 2'-0" wide sidelite windows
Audio/Visual	sound reinforcement; speaker/sound system	Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves
Tele/Data	phone; wireless access point; data outlets	Comments	needs additional secure storage outside classroom; needs additional pin-up space
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		



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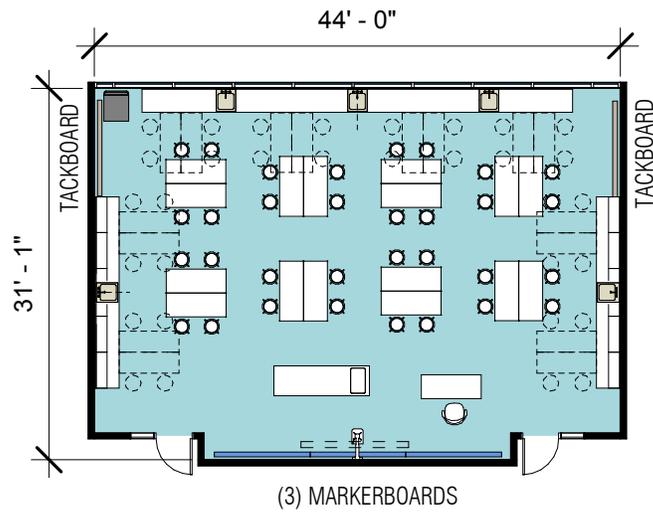
PROGRAM		ROOM SIZE	
Room Name	CTE Digital Media	Area	1,200 SF +
Program Group	Core Program	Dimensions	
Adjacency	Engineering, Computer Sciences CTE programs; storage;		
Description	graphic design, screen printing	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	Computer stations	Occ. Load	
Mobile		Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
	(1) sink; allow for (1) large format mobile sink		(1) wall w/windows; tackboards per PPS standards; min. of (2) magnetic whiteboards; teaching wall should be the long wall
Plumbing		Walls	
Electrical	outlets to power computing devices and equipment	Floor	hard surface, durable
Lighting	direct/indirect; natural daylighting	Doors	doors with 2'-0" wide sidelite windows
Audio/Visual	sound reinforcement; speaker/sound system	Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves
Tele/Data	phone; wireless access point; data outlets	Comments	need space for screen printing; small dark room
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		



4/20/2018

PROGRAM		ROOM SIZE	
Room Name	CTE Engineering	Area	1,200 SF +
Program Group	Core Program	Dimensions	
Adjacency	Computer Sciences, Digital Media CTE programs; storage		
Description	coding, 3D modeling and animation, production of forms; robotics	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	perimeter computer stations; (7) 3D printers, (1) vinyl cutters; soldering station; projection surface, short throw projector; clock/intercom; future equipment: laser cutter, CNC machine;	Occ. Load	
Mobile	dedicated test course for robotics	Security	
SYSTEMS		BUILDING	
HVAC	venting requirements for soldering	Ceiling	
Plumbing	(1) sink	Walls	(1) wall w/windows; tackboards per PPS standards; min. of (2) magnetic whiteboards; teaching wall should be the long wall
Electrical	outlets to power computing devices and equipment	Floor	hard surface, durable
Lighting	direct/indirect; natural daylighting	Doors	doors with 2'-0" wide sidelite windows
Audio/Visual	sound reinforcement; speaker/sound system	Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves
Tele/Data	phone; wireless access point; data outlets	Comments	needs additional secure storage outside classroom for tools
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		

PROGRAM		ROOM SIZE	
Room Name	CTE Sustainable Agriculture	Area	1,200 SF
Program Group	Core Program	Dimensions	
Adjacency	ground floor science labs; greenhouse		
Description		OCCUPANCY	
EQUIPMENT		Hours	
Fixed	vertical plant wall; refrigerator	Occ. Load	
Mobile	mobile shelving	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	(1) sink	Walls	(1) wall w/windows; tackboards per PPS standards; min. of (2) magnetic whiteboards; teaching wall should be the long wall
Electrical	verify power requirements for growing lights	Floor	hard surface, durable
Lighting	direct/indirect; natural daylighting	Doors	doors with re-lite windows
Audio/Visual		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves
Tele/Data		Comments	garage door to the outside preferred; could partner with earth science or biology lab?
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		

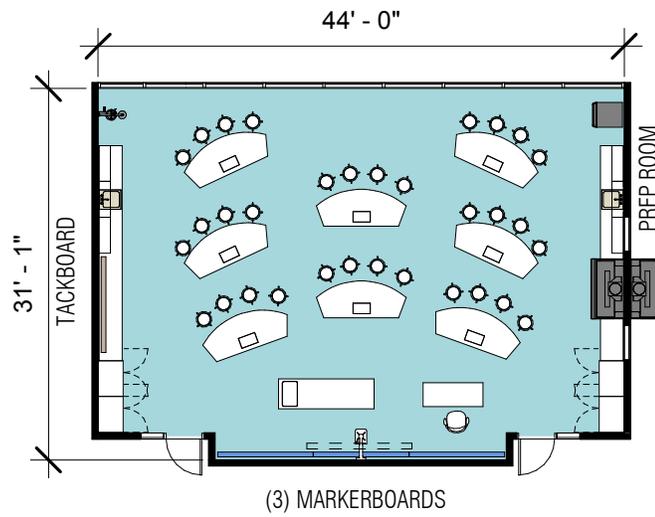
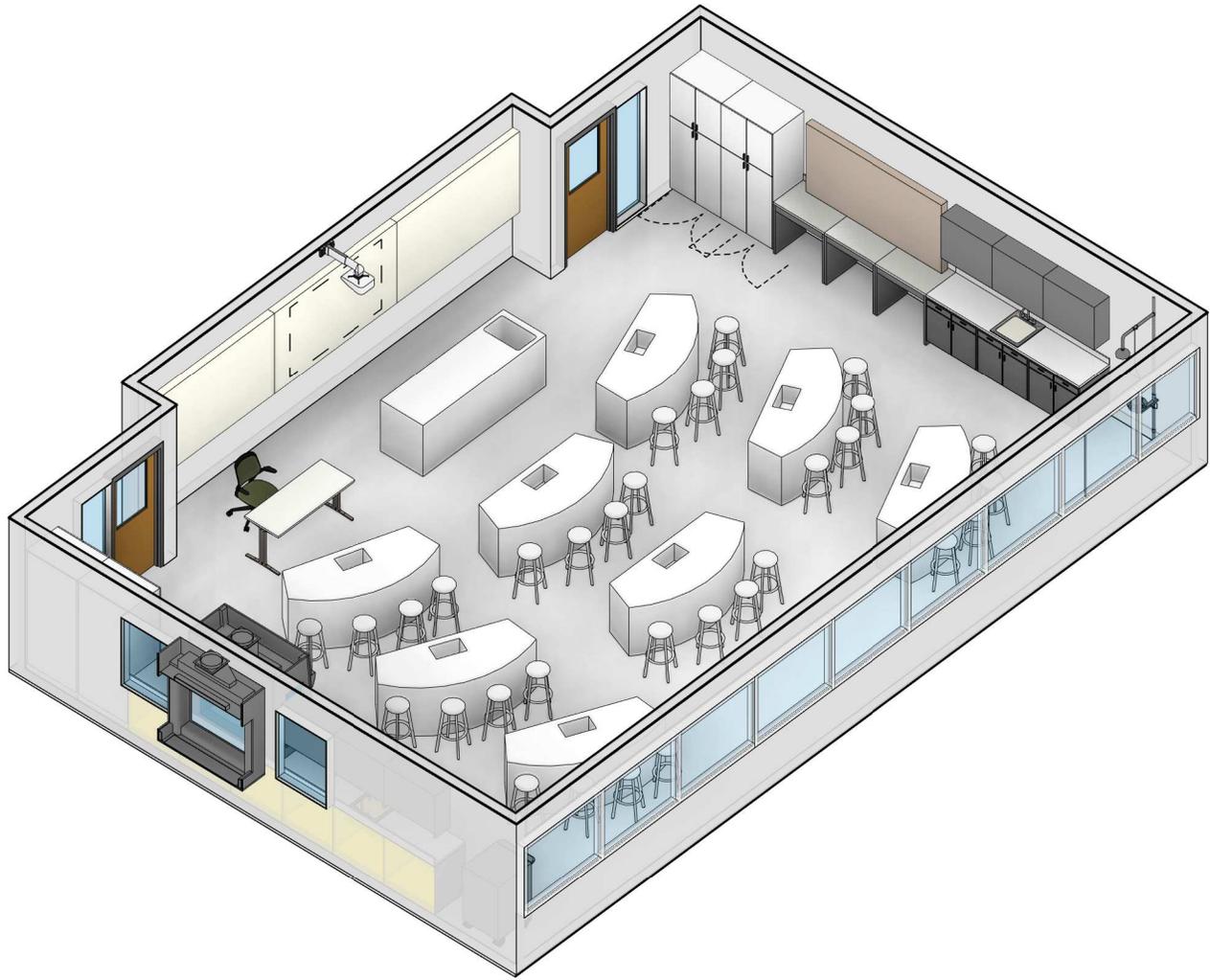


GEN SCIENCE LAB - 1,320 SF
32 STUDENTS

4/20/2018

PROGRAM	Room Name Program Group Adjacency Description	Science Lab Core Program Science spaces; Flexible Learning Areas support varying curriculum over time including core academic, career preparation and elective programming	ROOM SIZE	Area Dimensions	1,500 SF
EQUIPMENT	Fixed Mobile	gas and air spigots; projection screen; digital projector; fire extinguisher; cabinets w/ doors and drawers; lockable teacher cabinet blanket cabinet; goggle sanitizer; beaker drying rack; microwave; rod and socket assembly; laptops; computer carts	OCCUPANCY	Hours Occ. Load	22 min. w/ counter space; 28 min. w/out counter space; student groups ranging 2-4
SYSTEMS	HVAC Plumbing Electrical Lighting Audio/Visual Communications Acoustics	(6) sinks min.per classroom, (1) for teacher station outlets to power computing devices and equipment; outlets in perimeter counters; overhead power; 32 outlets per room equipment matrix natural daylighting; direct/indirect; task lighting as required audio reinforcement; video outlet near demonstration area; wireless access point; telephone; clock/intercom acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously	BUILDING	Ceiling Walls Floor Doors Windows Comments	(1) wall w/windows; extra window space for biology; min. of (2) 4x8 tackboards; min. of (2) 4'x16' magnetic whiteboards doors with re-lite windows natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves chemical resistant surfaces for Biology; easily movable furniture for floor space for Physics

4/20/2018

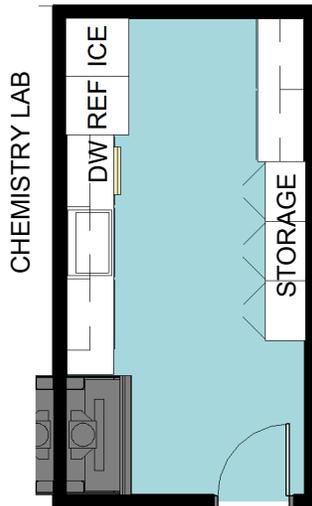
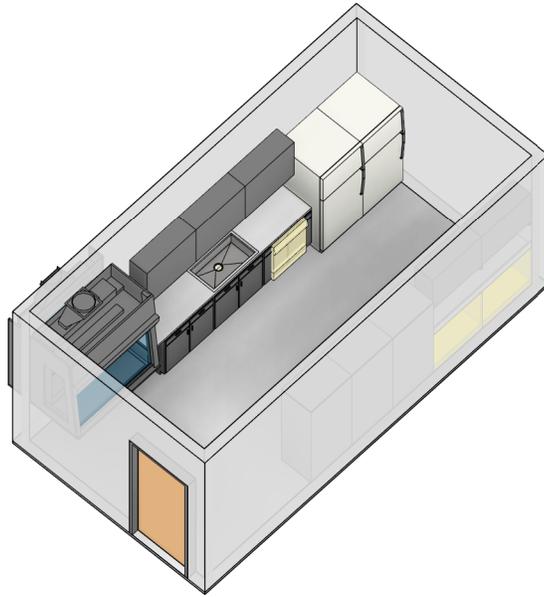


CHEM LAB - 1,320 SF
3 ROWS 32 STUDENTS

4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Science Lab Chemistry	Area	1,500 SF
Program Group	Core Program	Dimensions	
Adjacency	Prep Room; Chemical Storage; Flexible Learning Areas		
Description	support varying curriculum over time including core academic, career preparation and elective programming	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	teacher instructional station; fume hood; gas and air spigots; projection screen; digital projector; fire extinguisher; cabinets w/doors and drawers; lockable teacher cabinet	Occ. Load	up to 40 students; as low as 32 w/fixed island counters
Mobile	blanket cabinet; goggle sanitizer; beaker drying rack; microwave; rod and socket assembly; computers; laptops; computer carts	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	(6) sinks min.per classroom, (1) for teacher station; eywash stations; emergency shower; potentially acid trap	Walls	(1) wall w/windows; min. of (2) 4x8 tackboards; min. of (2) 4'x16' magnetic whiteboards
Electrical	outlets to power computing devices and equipment; outlets at perimeter counters; overhead power; 32 outlets per room equipment matrix	Floor	
Lighting	natural daylighting; direct/indirect; task lighting as required	Doors	doors with re-lite windows
Audio/Visual	audio reinforcement	Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades; potentially light shelves
Tele/Data	video outlet near demonstration area; wireless access point; telephone; clock/intercom	Comments	chemical resistant surfaces for chemistry
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		

4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Prep Room

Core Program
 Science Classrooms;
 Chemical Storage

ROOM SIZE

Area
 Dimensions

200 SF

Description

EQUIPMENT

Fixed

fume hood; gas, air spigots;
 deep freezer; refrigerator; dish
 washer; water purifier; secure
 flammable and chemical
 storage cabinet

OCCUPANCY

Hours
 Occ. Load

Mobile

Security

secure

SYSTEMS

HVAC
 Plumbing

Electrical

Lighting

Audio/Visual
 Tele/Data

Acoustics

direct/indirect; task lighting as
 required

acoustic isolation between
 rooms; acoustic treatment
 throughout to eliminate
 background noise

BUILDING

Ceiling
 Walls

Floor

Doors

Windows
 Comments

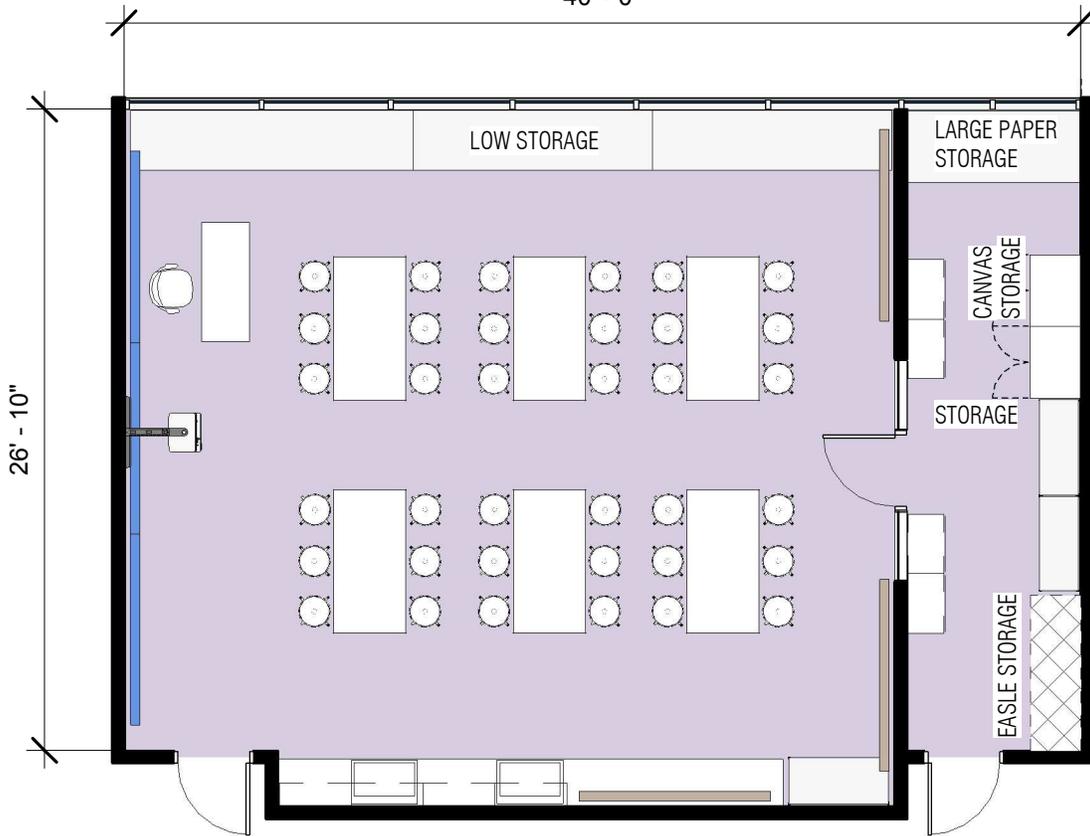
hard surface, durable,
 chemical resistant

none required

4/20/2018



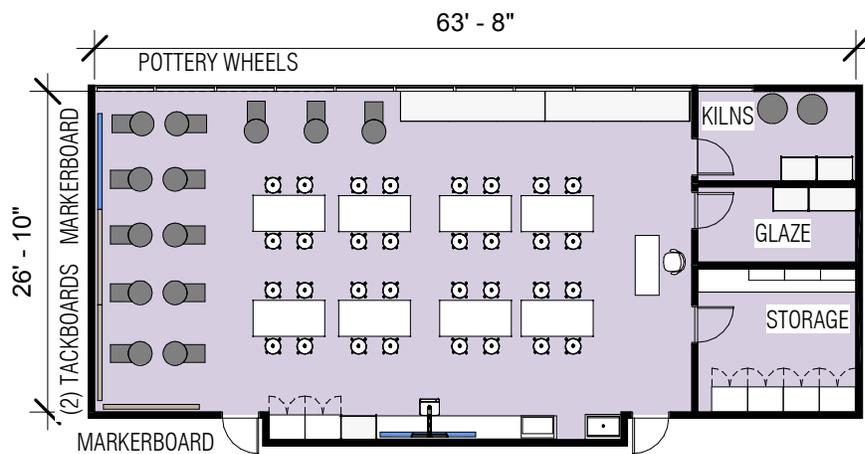
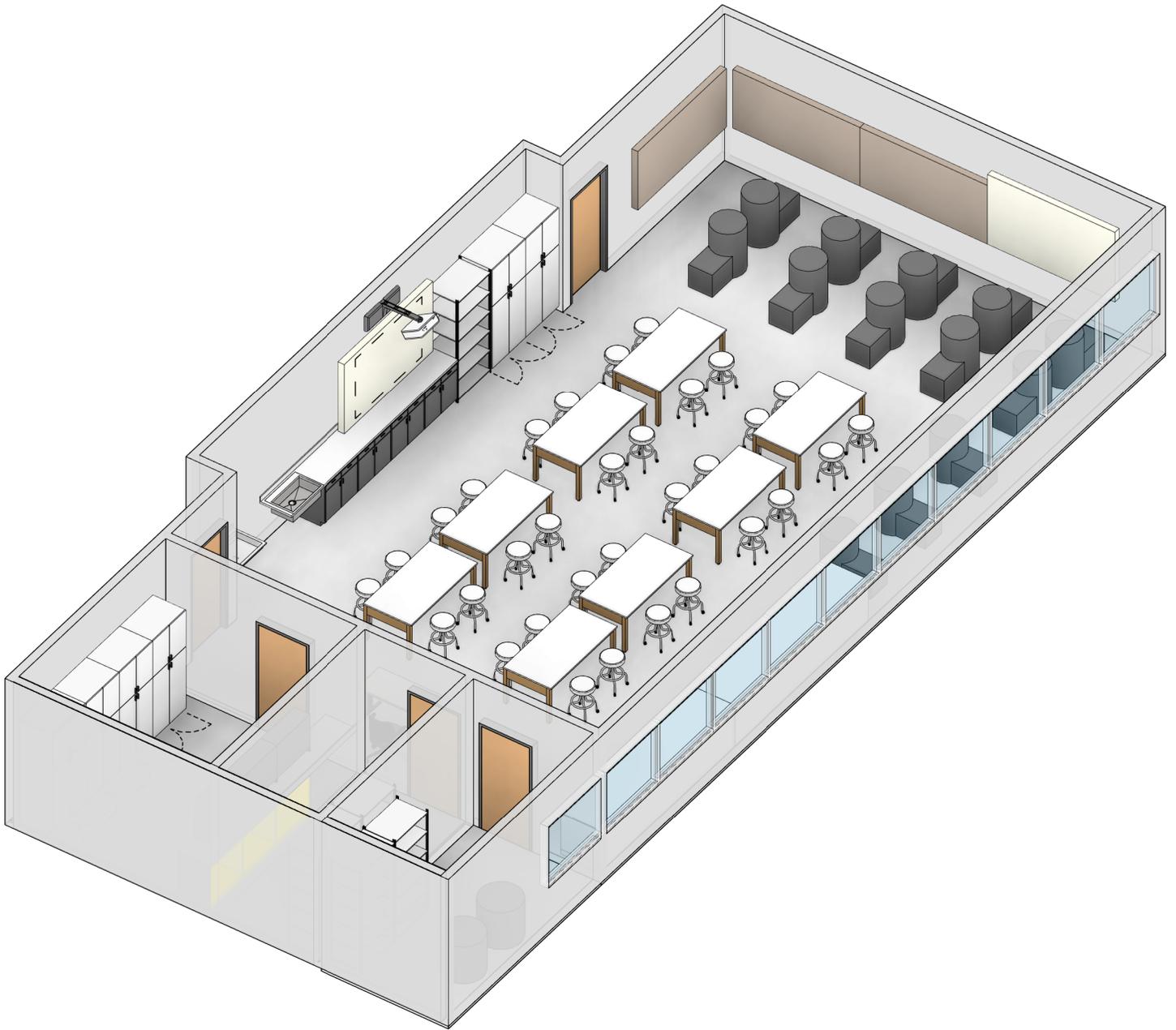
40' - 0"



26' - 10"

4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Art Room 2D	Area	1,200 SF
Program Group	Fine & Performing Arts	Dimensions	
Adjacency	cluster w/ other art rooms and flex areas; art offices; art storage rooms; restrooms; staff toilet		
Description		OCCUPANCY	
EQUIPMENT		Hours	
Fixed	cabinets with doors and drawers of various sizes; large format storage 42"x36"; canvas storage; easel storage; pottery wheels	Occ. Load	
Mobile	teacher desk, chair & computer; computers, laptops or mobile computer carts	Security	
SYSTEMS		BUILDING	
HVAC	ventilation for painting spaces	Ceiling	
Plumbing	(2) sinks with plaster trap	Walls	(1) wall w/windows; tackable surfaces all walls; min. of (2) 4'x8' magnetic whiteboards at teaching wall
Electrical		Floor	polished concrete
Lighting	natural daylighting; direct/indirect; task lighting as required	Doors	door w/vision panel
Audio/Visual		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades
Tele/Data		Comments	storage room for 2D art supplies in cabinets w/doors and drawers, some oversized material storage; easle storage for full capacity class
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		

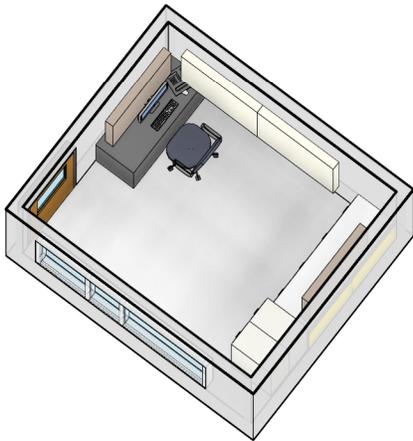


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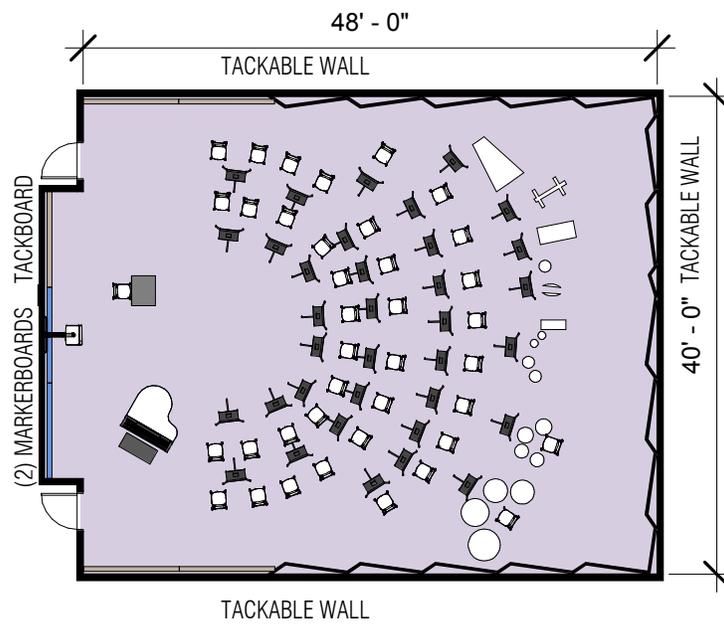
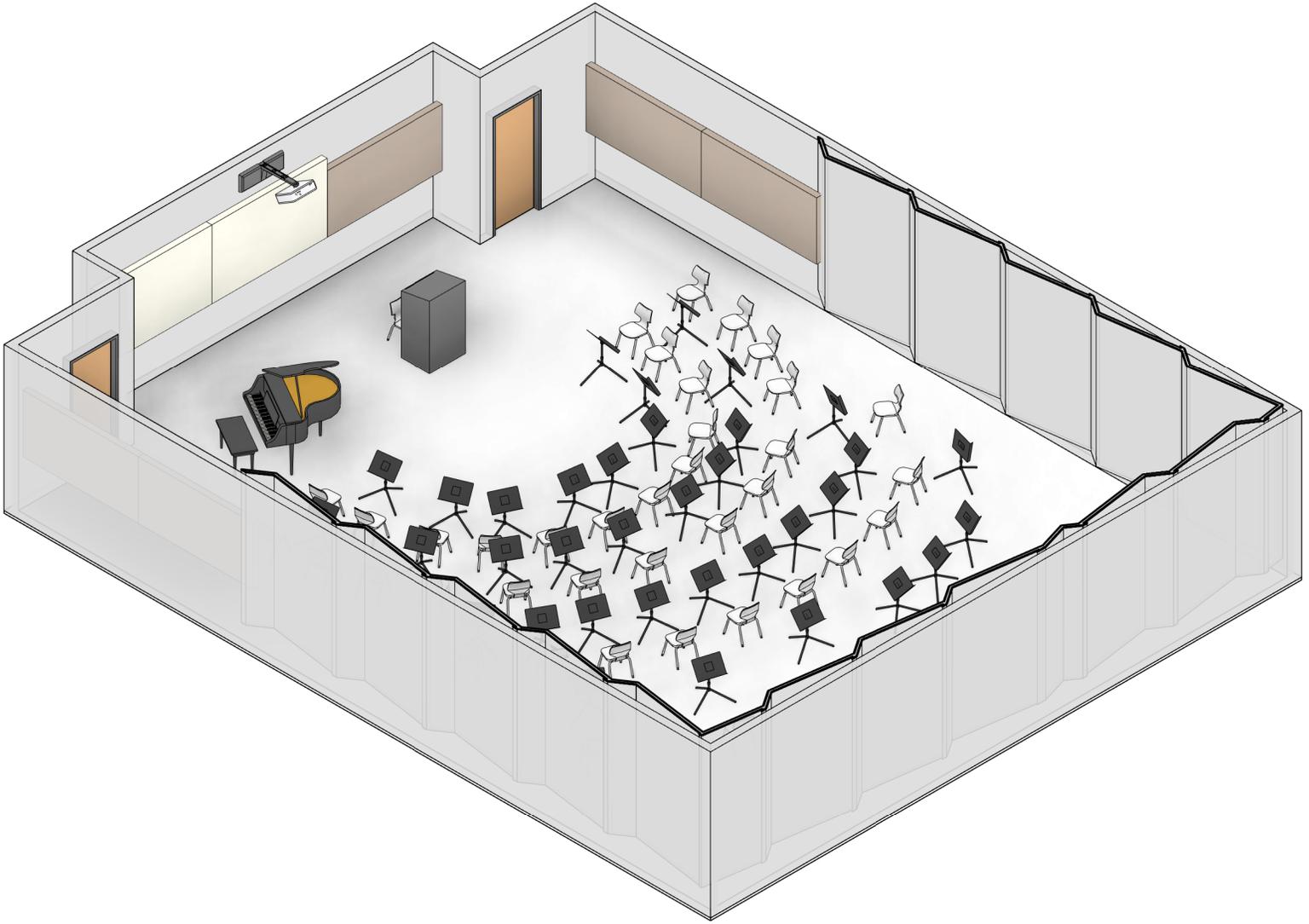
PROGRAM		ROOM SIZE	
Room Name	Art Room 3D	Area	1,500 SF
Program Group	Fine & Performing Arts	Dimensions	
Adjacency		OCCUPANCY	
Description		Hours	
EQUIPMENT		Occ. Load	
Fixed	(15) pottery wheels; (2) slab rollers; (1) wedging table	Security	
Mobile	teacher desk, chair & computer; (2) 4 drawer portable file cabinets - some for 42"x36";		
SYSTEMS		BUILDING	
HVAC	venting requirements	Ceiling	
Plumbing	(2) utility sinks min.; floor drains with clay traps; eyewash; exterior hose bib	Walls	(1) wall w/windows; tackable surface on all walls; min. of (2) 4'x8' magnetic whiteboard on teaching wall; shelves and surfaces for display
Electrical		Floor	hard surface
Lighting	direct/indirect; task lighting as required	Doors	door w/vision panel
Audio/Visual		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades
Tele/Data Acoustics		Comments	requires Glazing Room

4/20/2018

PROGRAM	Room Name	Kiln Room	ROOM SIZE	Area	100 SF
	Program Group	Fine & Performing Arts		Dimensions	
	Adjacency	3D Art Room; Art Office; Art Storage; Glaze Room			
	Description	for firing/storage of ceramics			
EQUIPMENT	Fixed	portable open racks	OCCUPANCY	Hours	
	Mobile			Occ. Load	
SYSTEMS	HVAC	TBD		Security	
	Plumbing		BUILDING	Ceiling	
	Electrical			Walls	durable
	Lighting			Floor	hard surface
	Audio/Visual			Doors	
	Communications			Windows	not required
	Acoustics			Comments	

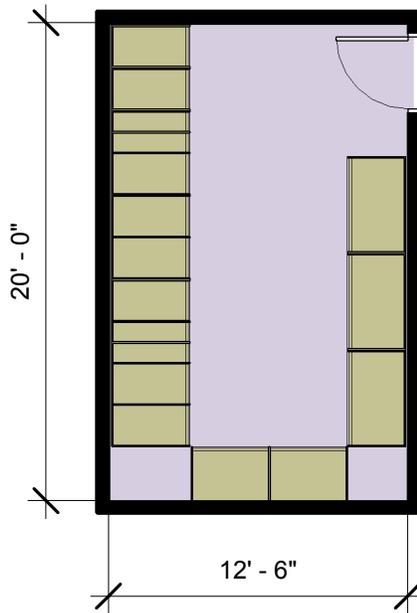
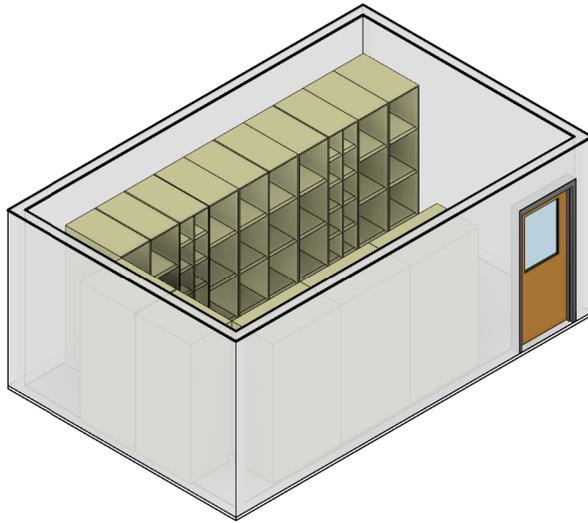


PROGRAM	Room Name Program Group	Art Office Fine & Performing Arts	ROOM SIZE	Area Dimensions	120 SF
	Adjacency Description	Art Classrooms			
EQUIPMENT	Fixed	lockable teacher cabinet; cabinets with doors and drawers; four drawer portable file cabinets	OCCUPANCY	Hours	
	Mobile	desk, chair; computer		Occ. Load	
SYSTEMS	HVAC Plumbing Electrical Lighting	TBD	BUILDING	Security Ceiling Walls	min. of (2) 4'x8' tackboards; min. of (1) 4'x4' magnetic whiteboard;
	Audio/Visual Communications Acoustics	direct/indirect; task lighting as required acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise;		Floor Doors Windows	hard surface door w/vision panel
				Comments	



4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Band Room	Area	1,805 SF existing
Program Group	Fine & Performing Arts	Dimensions	
Adjacency	isolated, near Choir Room	OCCUPANCY	
Description	instrument instruction	Hours	
EQUIPMENT			
Fixed	cabinets with doors and drawers of various sizes; teacher cabinet w/ locking doors; cabinets w/ open shelves;	Occ. Load	up to 80
Mobile	alt. mobile teacher cart; portable file cabinets	Security	
SYSTEMS		BUILDING	
HVAC	(1) oversized sink	Ceiling	
Plumbing		Walls	(1) wall w/windows; tackable surface on all walls; min. of (2) 4'x8' magnetic whiteboard on teaching wall
Electrical		Floor	carpet preferred
Lighting	direct/indirect; task lighting as required	Doors	
Audio/Visual		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades
Tele/Data		Comments	no risers
Acoustics	needs excellent acoustics, tune for each music discipline; acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		



PROGRAM

Room Name
Program Group
Adjacency
Description

Large Instrument Storage
Fine & Performing Arts
Band Room; Practice Rooms
secure instrument storage

EQUIPMENT

Fixed

locking cubbies of various sizes with transparent doors

Mobile

SYSTEMS

HVAC
Plumbing
Electrical

Lighting

direct/indirect; task lighting as required

Audio/Visual
Tele/Data

Acoustics

acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise;

ROOM SIZE

Area
Dimensions

250 SF

OCCUPANCY

Hours
Occ. Load
Security

BUILDING

Ceiling
Walls
Floor

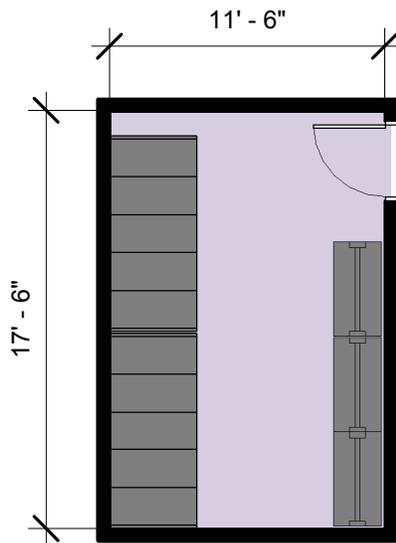
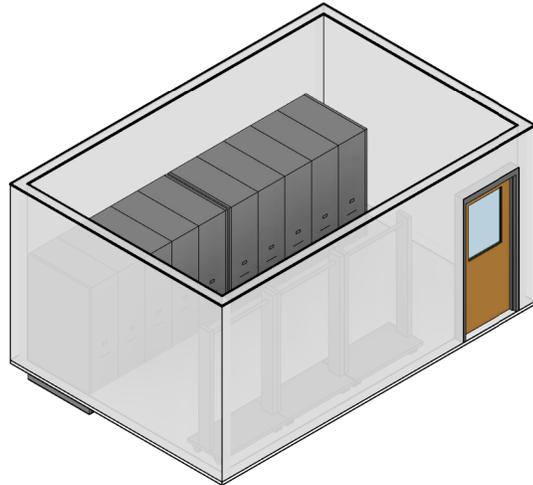
durable
hard surface

Doors

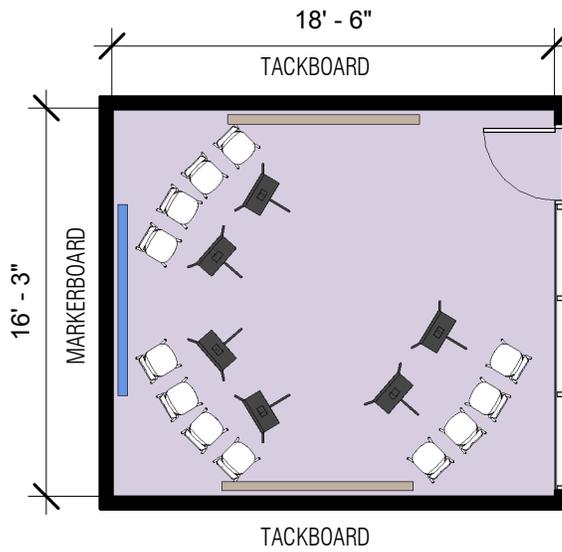
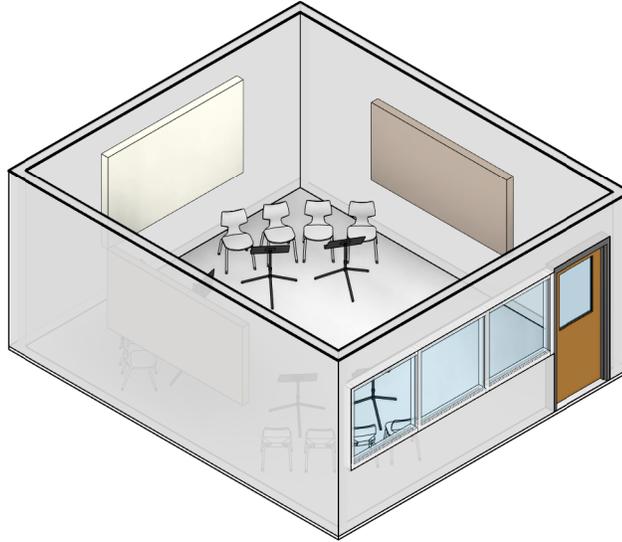
door w/vision panel

Windows
Comments

not required



PROGRAM		ROOM SIZE	
Room Name	Music Library & Uniform Storage	Area	200 SF
Program Group	Fine & Performing Arts	Dimensions	
Adjacency	Band Room		
Description	secure sheet music and marching band uniform storage	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	cabinets w/ doors and drawers; some oversized materials; open cabinet shelving for students	Occ. Load	
Mobile	portable clothing racks; portable file cabinet space	Security	
SYSTEMS		BUILDING	
HVAC	good ventilation required	Ceiling	
Plumbing		Walls	durable
Electrical		Floor	hard surface
Lighting	direct/indirect; task lighting as required	Doors	door w/vision panel
Audio/Visual		Windows	not required
Tele/Data		Comments	
Acoustics	no special provisions required		



PROGRAM

Room Name

Practice Rooms for Band - Large

ROOM SIZE

Area

300 SF

Program Group

Fine & Performing Arts

Dimensions

Adjacency

Band Room

Description

large practice room

OCCUPANCY

EQUIPMENT

Hours

Fixed

Occ. Load

Mobile

Security

SYSTEMS

BUILDING

HVAC

Ceiling

Plumbing

Walls

(1) wall w/interior windows; tackable surface on all walls; min. of (2) 4'x4' magnetic whiteboard on teaching wall

Electrical

direct/indirect; task lighting as required

Floor

hard surface

Lighting

Doors

acoustic door w/vision panel

Audio/Visual

Windows

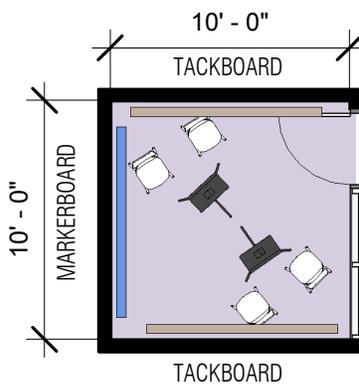
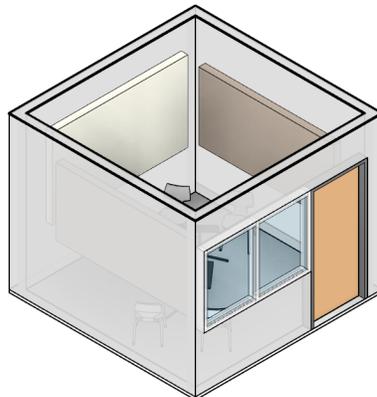
not required

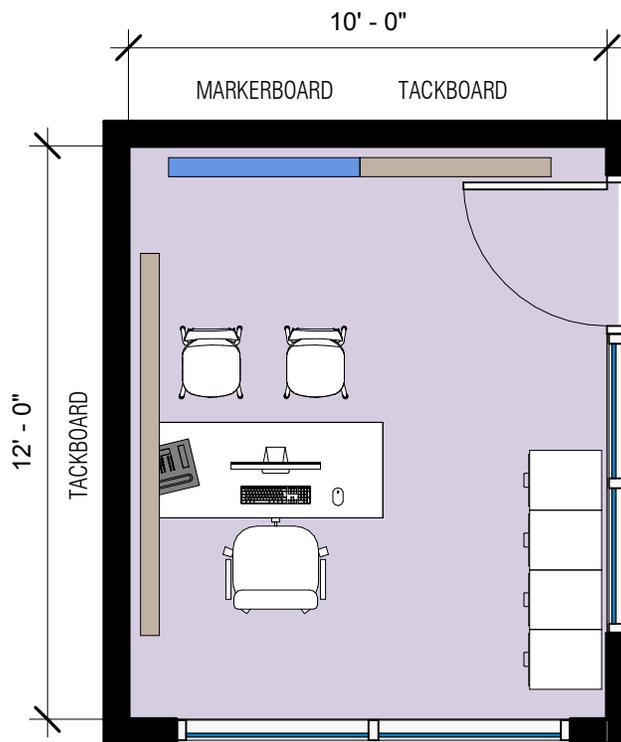
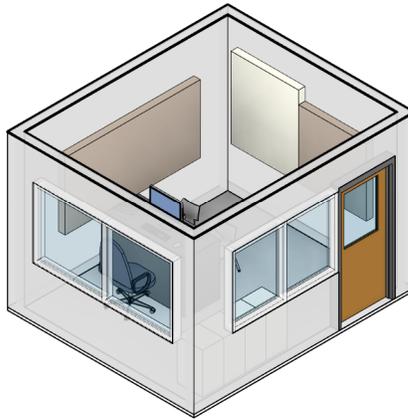
Tele/Data

Comments

Acoustics

need excellent acoustics; acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise





PROGRAM

Room Name
Program Group
Adjacency
Description

Music Office
Fine & Performing Arts
Band, Orchestra and Choir
Rooms
support for Band and Choir
Rooms

ROOM SIZE

Area
Dimensions

120 SF

EQUIPMENT

Fixed
Mobile

lockable teacher cabinet;
cabinets with doors and
drawers
desk, chair; computer or
laptop; file cabinets; desk,
chair

OCCUPANCY

Hours
Occ. Load
Security

SYSTEMS

HVAC

Plumbing

Electrical

Lighting

Audio/Visual

Tele/Data

Acoustics

not required
direct/indirect; task lighting as
required

acoustic isolation between
rooms; acoustic treatment
throughout to eliminate
background noise;

BUILDING

Ceiling

Walls

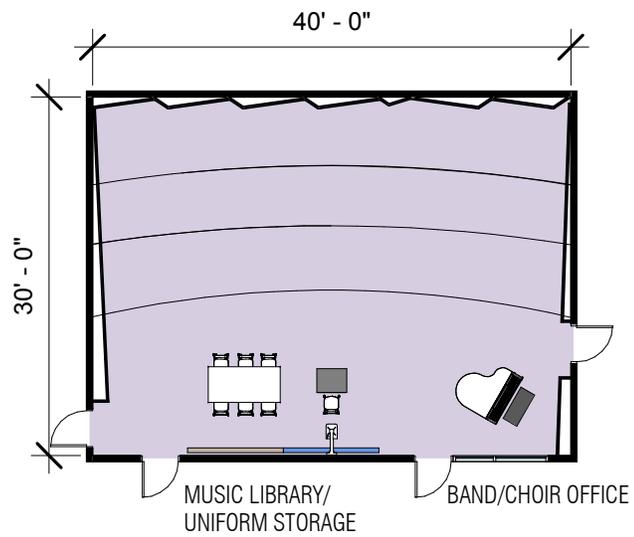
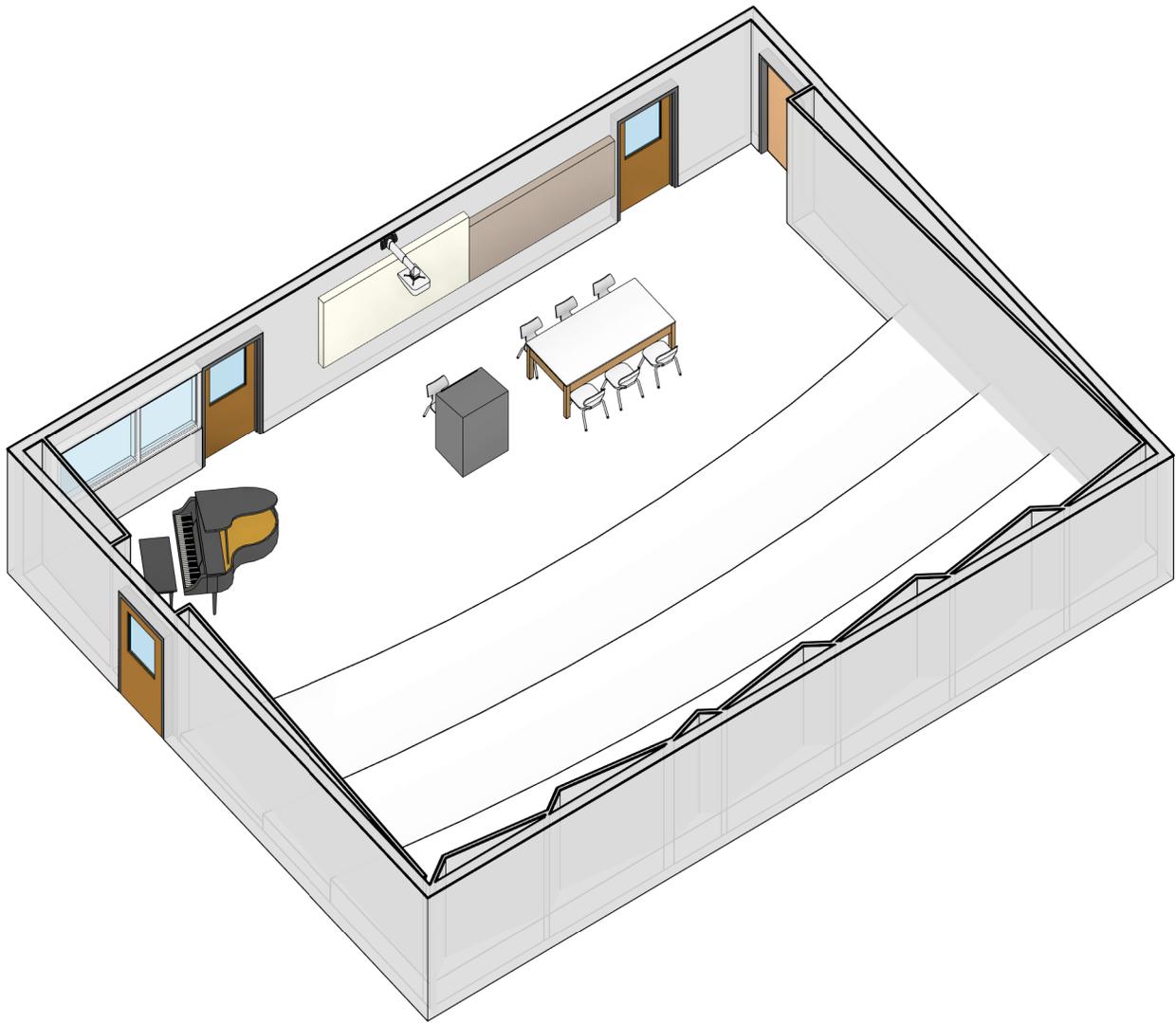
Floor

Doors

Windows

Comments

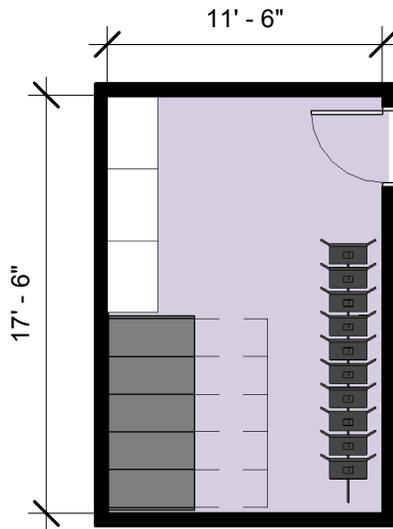
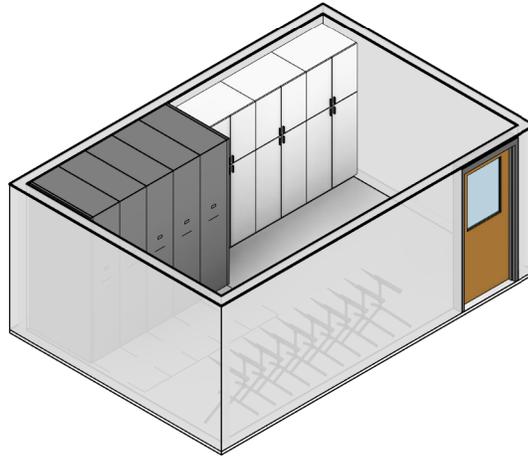
(1) wall w/windows; tackable
surface on all walls; min. of (2)
4'x4' magnetic whiteboards
hard surface
door w/vision panel
natural light w/sunshade to
minimize glare; high/low
operable windows; operable
window shades



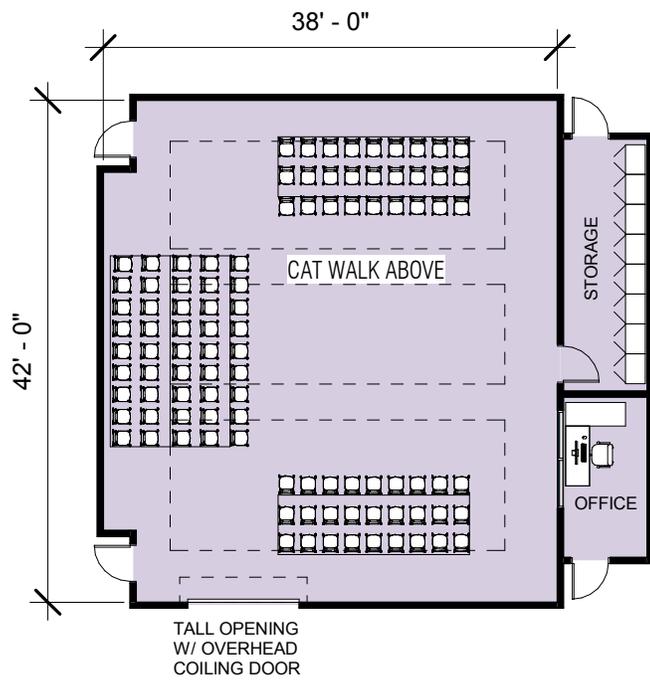
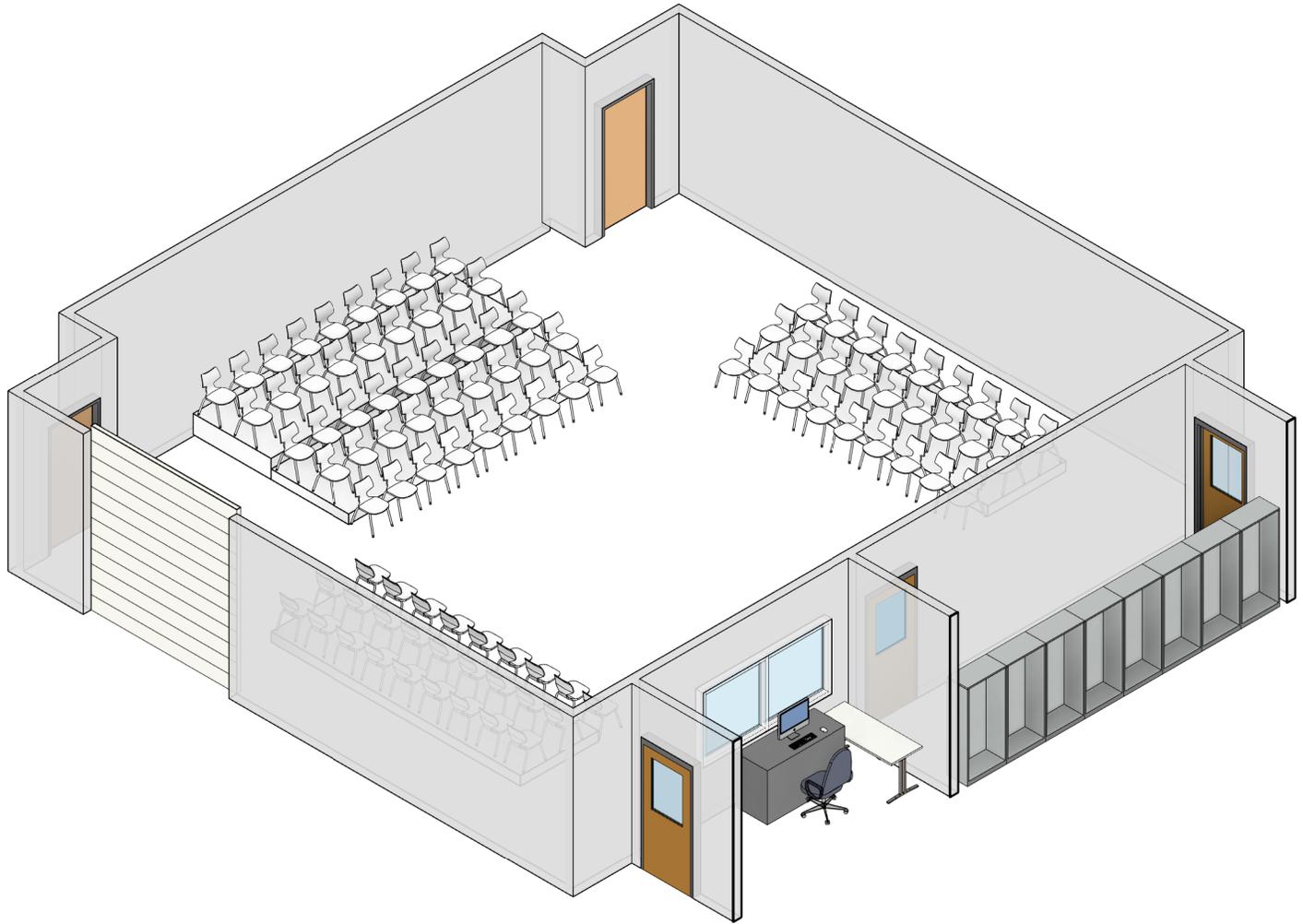
4/20/2018

Choir Room

PROGRAM	Choir Room	ROOM SIZE	1,090 SF existing
Room Name	Core Program	Area	
Program Group	isolated, near Band Room	Dimensions	
Adjacency	choir instruction	OCCUPANCY	
Description		Hours	
EQUIPMENT			
Fixed	risers; cabinets with doors and drawers of various sizes; teacher cabinet w/ locking doors; cabinets w/ open shelves;	Occ. Load	
Mobile	alt. mobile teacher cart; portable file cabinets	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing		Walls	(1) wall w/windows; tackable surface on all walls; min. of (2) 4'x8' magnetic whiteboard on teaching wall
Electrical		Floor	carpet preferred
Lighting	direct/indirect; task lighting as required	Doors	
Audio/Visual		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades
Tele/Data		Comments	no ED Spec information available
Acoustics	needs excellent acoustics; acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		



PROGRAM		ROOM SIZE	
Room Name	Equipment & Robe Storage	Area	200 SF
Program Group		Dimensions	
Adjacency			
Description		OCCUPANCY	
EQUIPMENT		Hours	
Fixed	cabinets with doors and drawers; open adjustable shelves	Occ. Load	
Mobile	music stands storage	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required	Walls	durable
Electrical		Floor	hard surface
Lighting	direct/indirect; task lighting as required	Doors	
Audio/Visual		Windows	not required
Tele/Data		Comments	potentially high density shelving
Acoustics	no special requirements		

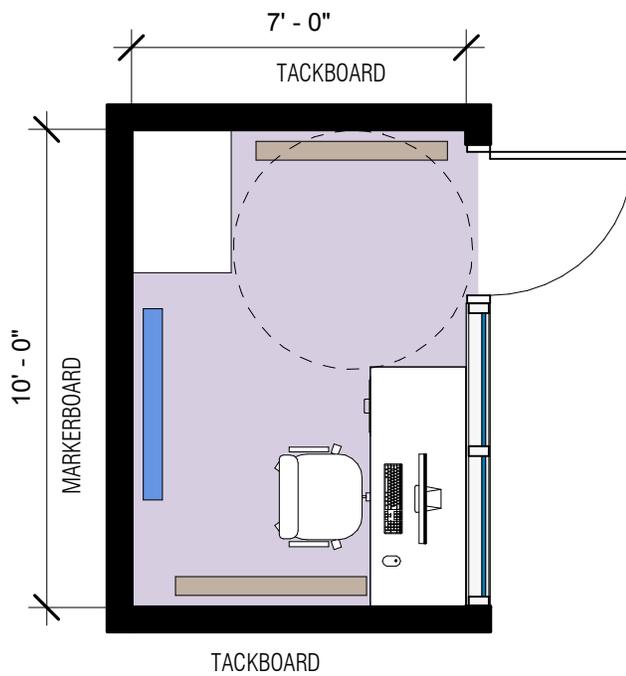
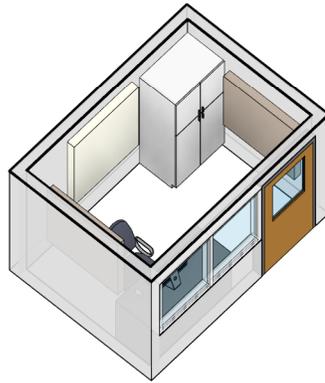


Performing Arts

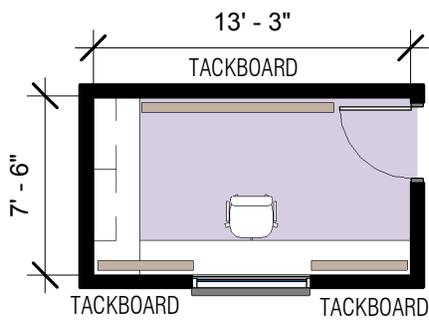
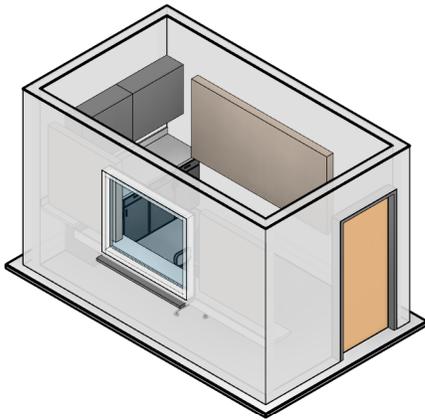
4/20/2018

Drama Classroom

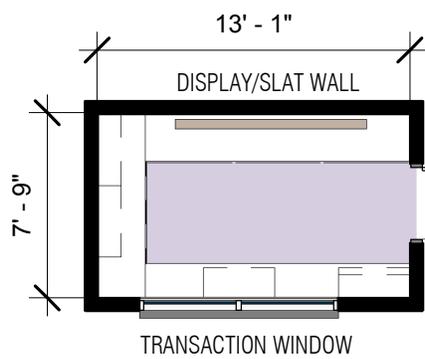
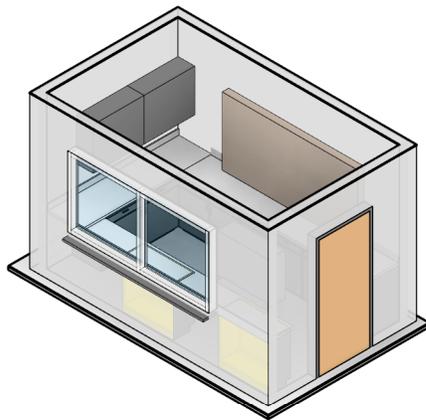
PROGRAM		ROOM SIZE	
Room Name	Black Box	Area	1,600 SF
Program Group	Fine & Performing Arts	Dimensions	
Adjacency	Scenery Construction/Production Storage; Dressing Rooms		
Description	small group performances; instructional venue for Drame curriculum	OCCUPANCY	
EQUIPMENT		Hours	
Fixed		Occ. Load	
Mobile	seating adjustable to a variety of audience sizes and configurations	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required	Walls	painted black
Electrical	electrical outlets	Floor	hard surface; consider acoustics; wood floor preferred
Lighting	direct/indirect; task lighting as required	Doors	
Audio/Visual	potential to stream videos	Windows	not required
Tele/Data		Comments	seating for 100-125; double height and catwalk preferred
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously		



PROGRAM		ROOM SIZE	
Room Name	Theater Office	Area	70 SF
Program Group	Fine & Performing Arts	Dimensions	
Adjacency	Theater		
Description	work space for Theater/Drama teacher	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	teacher cabinet; cabinets with doors and drawers; file cabinets; desk, chair	Occ. Load	
Mobile	desk, chair; computer or laptop	Security	
SYSTEMS		BUILDING	
HVAC	not required	Ceiling	
Plumbing		Walls	(1) wall w/windows; tackable surface on all walls; min. of (1) 4'x8' magnetic whiteboard
Electrical		Floor	hard surface
Lighting	direct/indirect; task lighting as required	Doors	door w/vision panel
Audio/Visual		Windows	natural light w/sunshade to minimize glare; high/low operable windows; operable window shades
Tele/Data		Comments	
Acoustics	acoustic isolation between rooms; acoustic treatment throughout to eliminate background noise;		



PROGRAM		ROOM SIZE	
Room Name	Box Office	Area	100 SF
Program Group	Fine & Performing Arts	Dimensions	
Adjacency	Theater Lobby		
Description	selling/distributing tickets for public theater performances	OCCUPANCY	
		Hours	independent from school hours
EQUIPMENT			
Fixed	teacher cabinet; cabinets with doors and drawers of various sizes; adjust. Shelves; secure lockbox	Occ. Load	
Mobile	computer: laptop preferred	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required	Walls	(1) wall w/service window(s); tackable surface on all walls;
Electrical	digital marquee; electrical outlets	Floor	hard surface
Lighting	direct/indirect; task lighting as required	Doors	
Audio/Visual		Windows	secure service window(s)
Tele/Data		Comments	
Acoustics	acoustic isolation between rooms		



PROGRAM

Room Name
 Program Group
 Adjacency
 Description

Concession Stand
 Fine & Performing Arts
 adjacent to Commons near
 Theater
 selling food and souvenirs for
 theatrical and other events

ROOM SIZE

Area
 Dimensions

100 SF

OCCUPANCY

Hours

independent from school hours

EQUIPMENT

Fixed

display wall (slat wall system or
 open angled shelving); shelves
 to display goods; cabinets
 w/doors wherever possible;
 countertop space; cash drawer

Occ. Load

Mobile

coffee maker

Security

SYSTEMS

HVAC

(1) sink

BUILDING

Ceiling

Plumbing

Walls

display on at least (1) wall;
 transaction counter opposite
 display wall

Electrical

electrical outlets

Floor

hard surface

Lighting

direct/indirect; task lighting as
 required

Doors

coiling door

Audio/Visual

Windows

transaction window

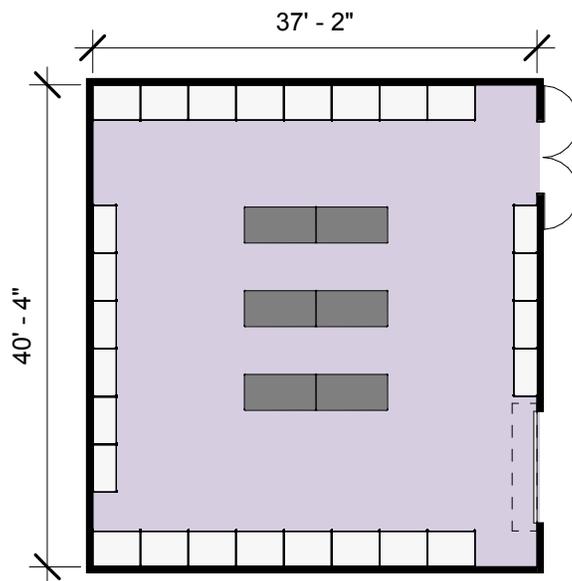
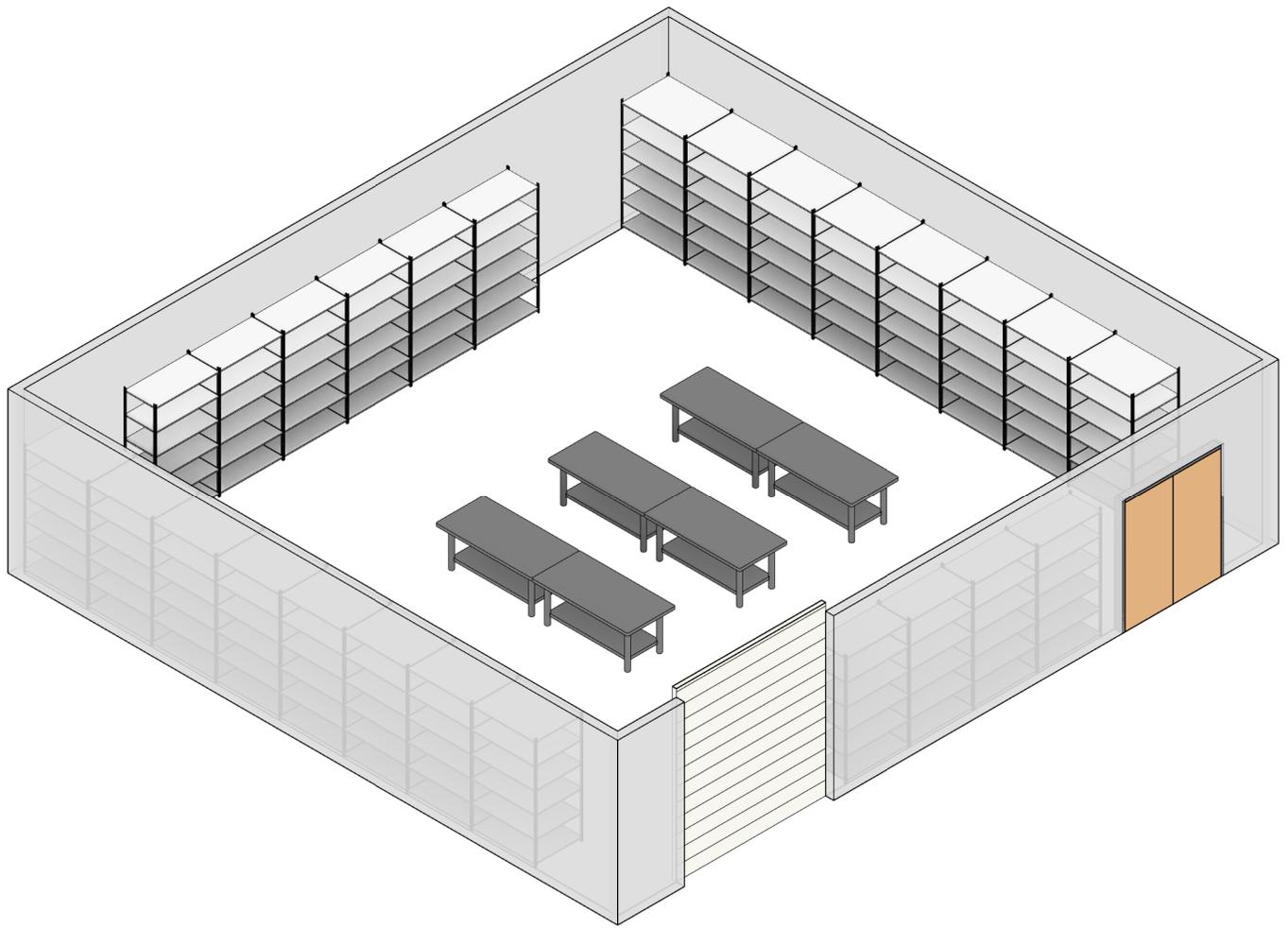
Tele/Data

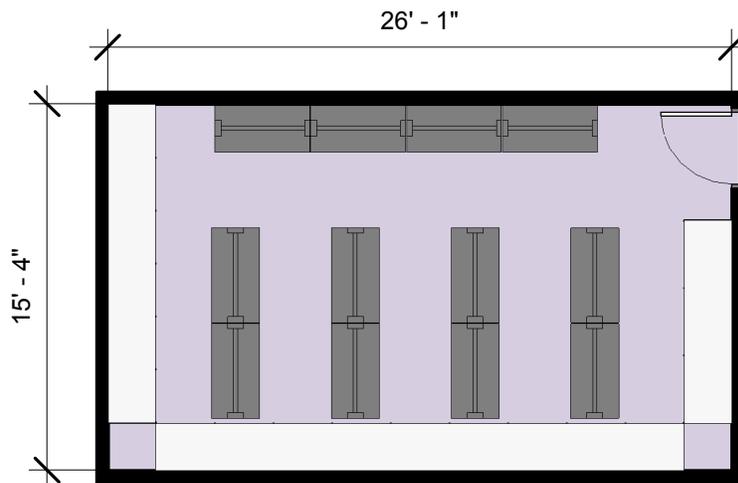
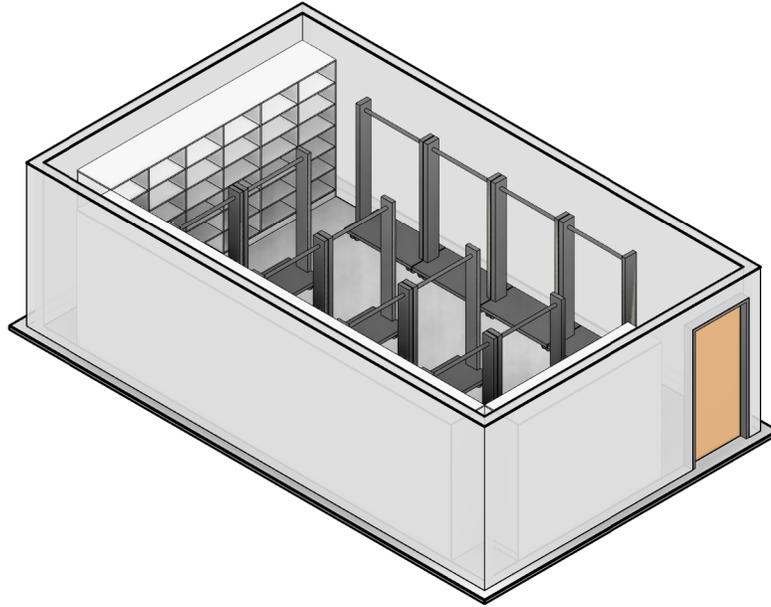
Comments

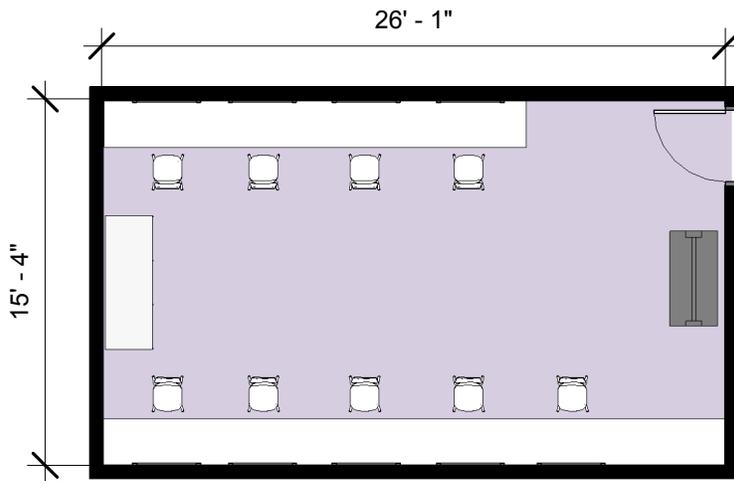
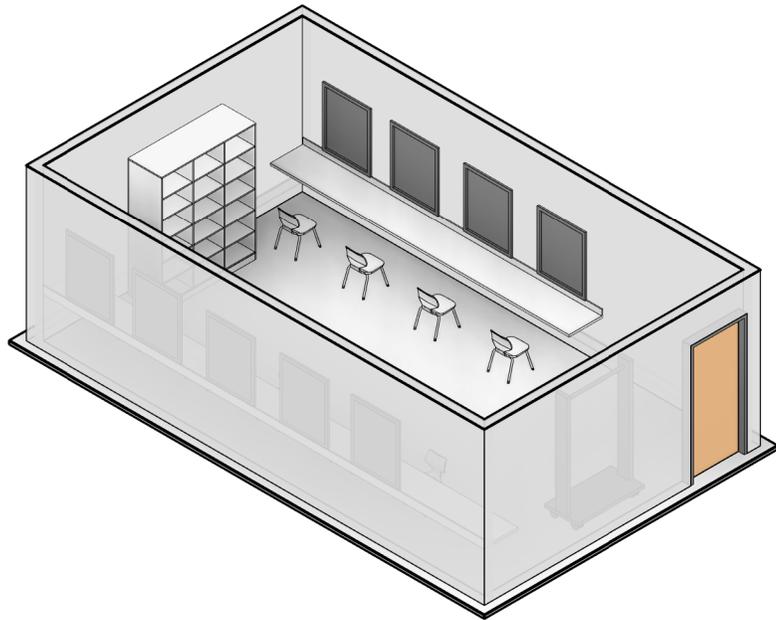
specialty signage; lockable
 storage

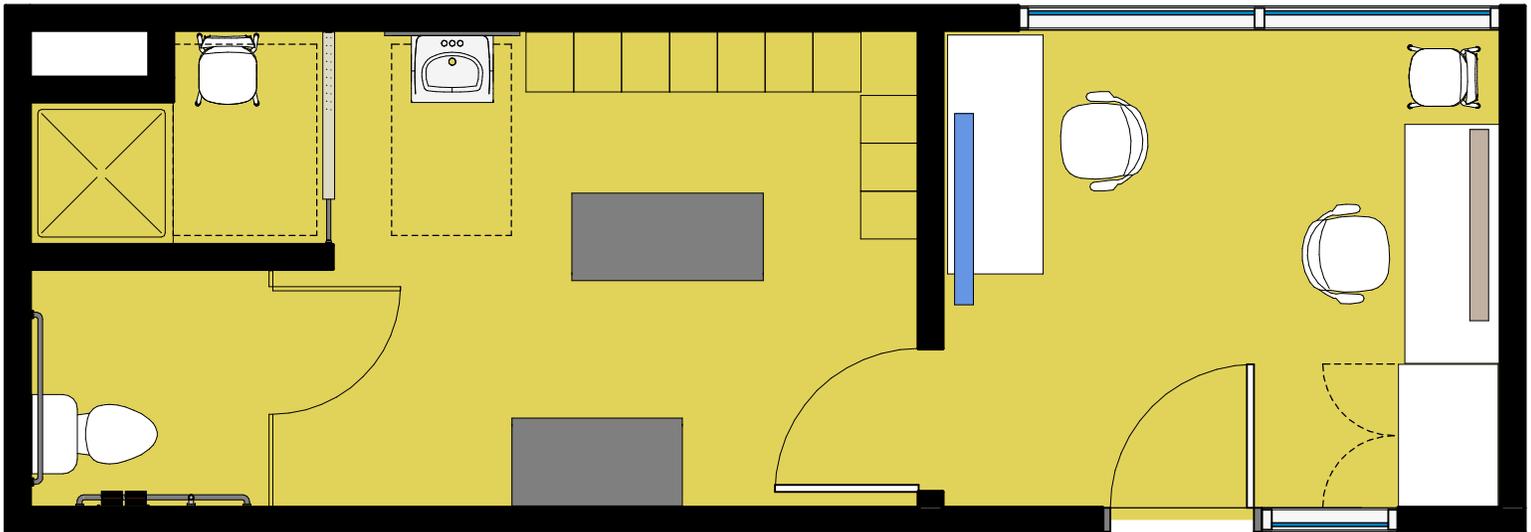
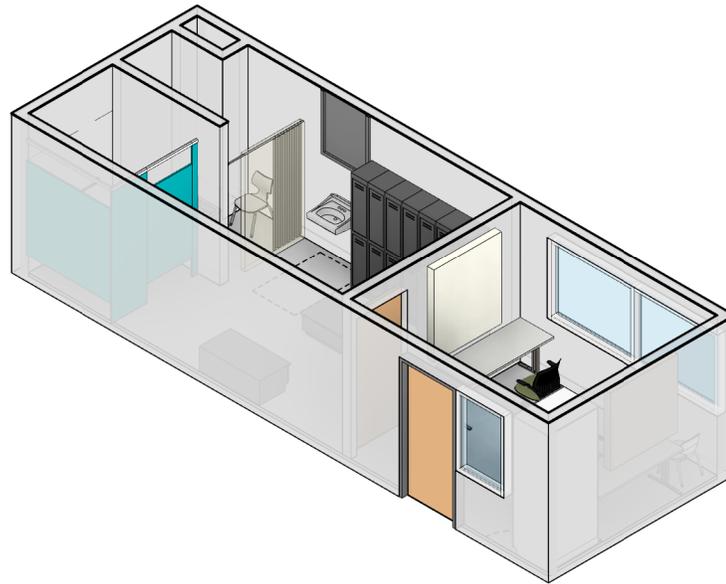
Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout space







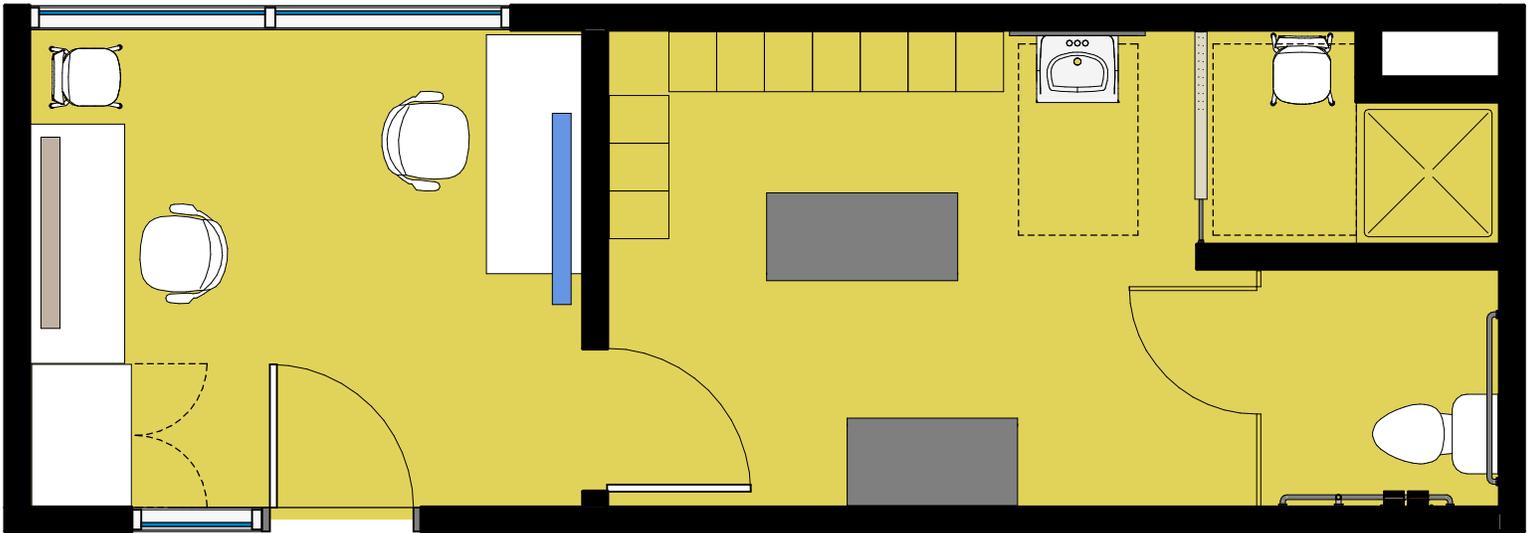
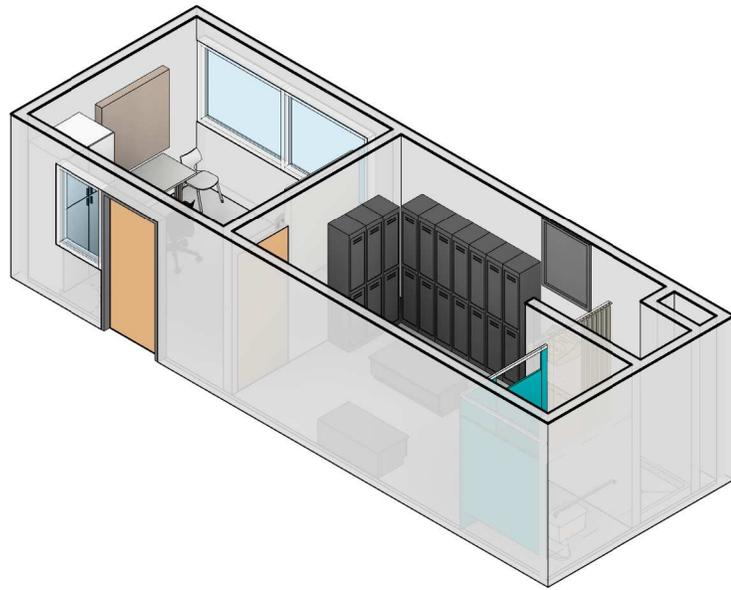


Physical Education

4/20/2018

Boy's PE Coaches Office/Toilet/Shower opsis architecture | DAO architecture

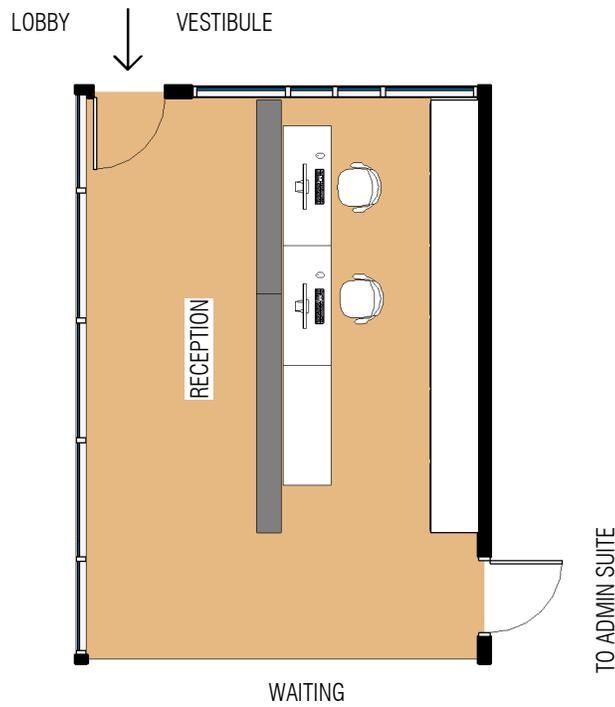
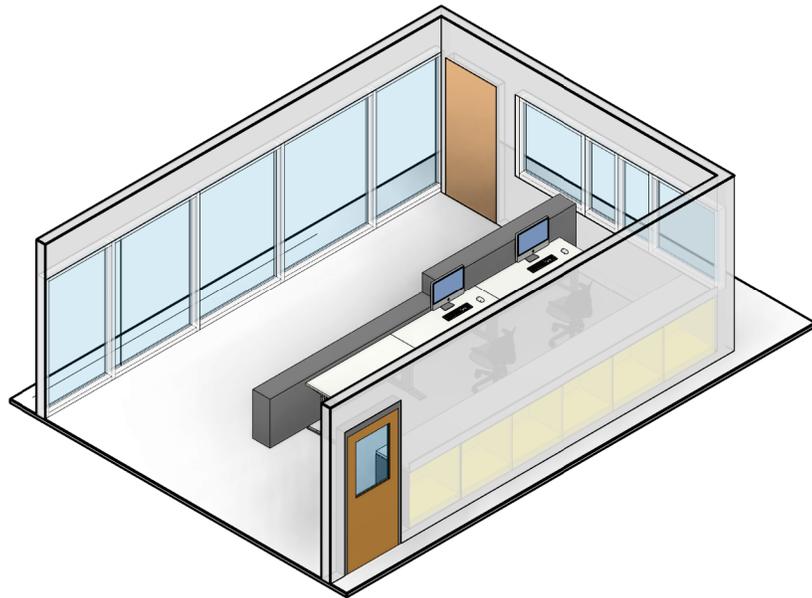
PROGRAM		ROOM SIZE	
Room Name	PE Coaches Office/Toilet/Shower/...	Area	300 SF
Program Group	Physical Education	Dimensions	
Adjacency	Locker Room; Gymnasium; outdoor fields		
Description	office and changing area for PE staff, coaches and officials	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	tall, lockable teacher's cabinet for personal storage; cabinets w/ doors and drawers; file cabinets; desk, chair; laptops	Occ. Load	
Mobile	chairs; desk; file cabinets;	Security	access by key
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	(1) sink; (1) water closet; (1) shower; for adjacent for adjacent toilet room	Walls	durable surface materials; min. of (1) 4'x6' magnetic whiteboard; min (1) 4'x4' tackboard or (1) wall of tackable wall surface
Electrical	electrical outlets	Floor	hard surface
Lighting	provide lighting appropriate for tasks and activities; lighting should be consistent to allow access to all parts of space	Doors	door w/vision panel
Audio/Visual		Windows	provide interior windows for supervision into locker rooms
Tele/Data		Comments	part of locker room footprint
Acoustics	acoustics should be designed to increase the ability to hear well throughout the space		



Physical Education

4/20/2018

PROGRAM		ROOM SIZE	
Room Name	PE Coaches Office/Toilet/Shower/...	Area	300 SF
Program Group	Physical Education	Dimensions	
Adjacency	Locker Room; Gymnasium; outdoor fields		
Description	office and changing area for PE staff, coaches and officials	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	tall, lockable teacher's cabinet for personal storage; cabinets w/ doors and drawers; file cabinets; desk, chair; laptops	Occ. Load	
Mobile	chairs; desk; file cabinets;	Security	access by key
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	(1) sink; (1) water closet; (1) shower; for adjacent for adjacent toilet room	Walls	durable surface materials; min. of (1) 4'x6' magnetic whiteboard; min (1) 4'x4' tackboard or (1) wall of tackable wall surface
Electrical	electrical outlets	Floor	hard surface
Lighting	provide lighting appropriate for tasks and activities; lighting should be consistent to allow access to all parts of space	Doors	door w/vision panel
Audio/Visual		Windows	provide interior windows for supervision into locker rooms
Tele/Data		Comments	part of locker room footprint
Acoustics	acoustics should be designed to increase the ability to hear well throughout the space		



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency
 Description

Reception

Education Support
 main entry to building; waiting
 visibility/supervision to front
 door for security

ROOM SIZE

Area
 Dimensions

400 SF

EQUIPMENT

Fixed

reception desk with lockable
 storage drawers and doors

Mobile

desk, chair; computer

SYSTEMS

HVAC

Plumbing

Electrical

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

Tele/Data

Acoustics

acoustic treatment to increase
 ability to hear well throughout
 space

OCCUPANCY

Hours

Occ. Load

Security

card reader access

BUILDING

Ceiling

Walls

durable wall construction/finish;
 windows to provide views and
 daylight; provide space for
 display and signage

Floor

hard surface or entry mat
 flooring

Doors

doors w/ windows

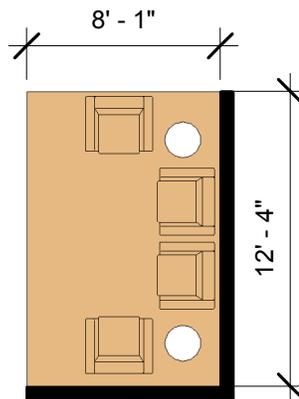
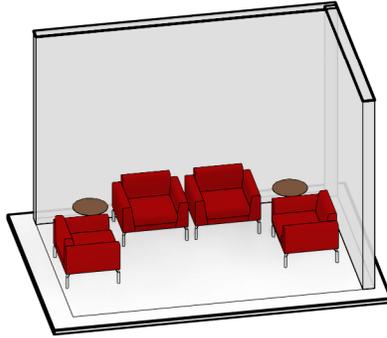
Windows

natural light w/sunshade to
 minimize glare; operable
 window shades

Comments

ADA automatic door opener;

4/20/2018



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency
Description

Waiting

Education Support
lobby; reception
place for students and parents
to wait for assistance

ROOM SIZE

Area
Dimensions

100 SF

OCCUPANCY

Hours
Occ. Load
Security

card reader access

EQUIPMENT

Fixed
Mobile

SYSTEMS

HVAC

BUILDING

Ceiling

Plumbing

Walls

natural light; (1) wall w/
tackable surface; display
area/wall

Electrical

Floor

carpet

Lighting

direct/indirect; task lighting as
required

Doors

door w/ windows

Audio/Visual

Windows

natural light w/sunshade to
minimize glare; operable
window shades; operable
windows

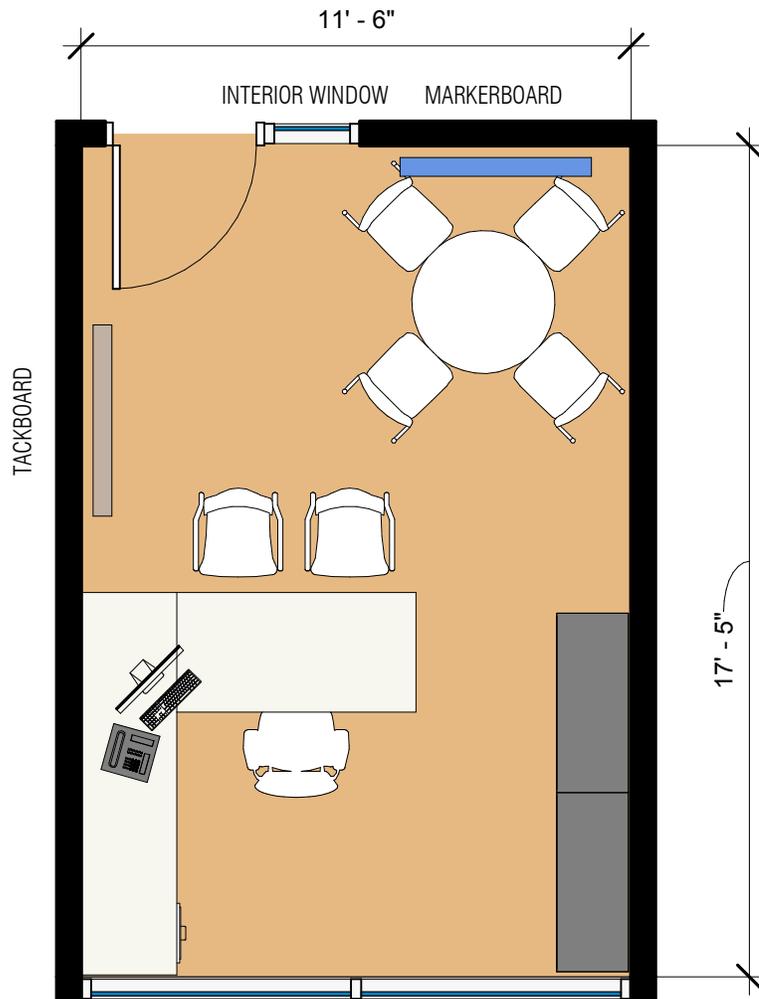
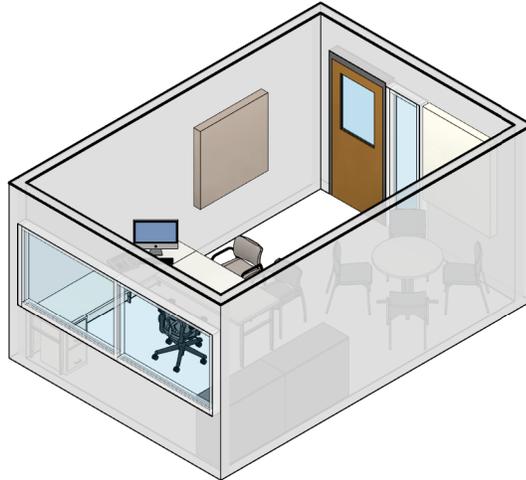
Tele/Data

Comments

soft seating; tables and chairs;
ADA automatic door opener;
multiple doors for access into
school for security

Acoustics

acoustic treatment to increase
ability to hear well throughout
space



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Principal's Office
 Education Support
 Principal's Secretary; Vice
 Principal's Office
 workspace for principal; space
 for private conferences;
 supervision of front
 entry/parking lot;

Description

ROOM SIZE

Area
 Dimensions

200 SF

EQUIPMENT

Fixed
 Mobile

computer, laptop

SYSTEMS

HVAC
 Plumbing

not required
 electrical outlets

Electrical

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

ability to video conference

Tele/Data

Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room;
 room should be acoustically
 separated

OCCUPANCY

Hours
 Occ. Load
 Security

BUILDING

Ceiling

Walls

Floor

Doors

Windows

Comments

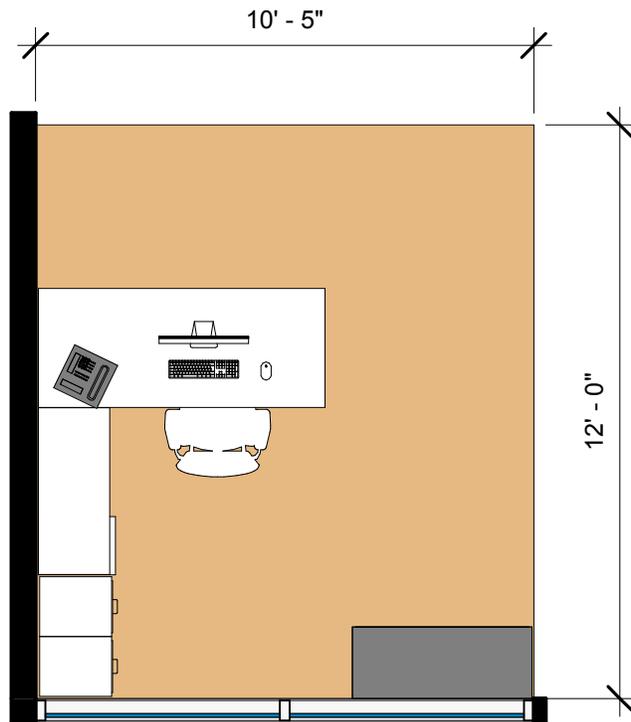
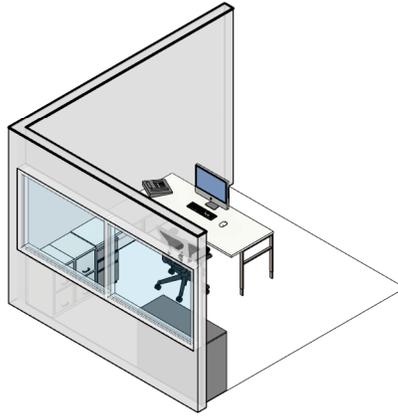
(1) wall w/windows w/ views;
 min. (1) 4'x4' tackboard; min.
 of (1) 4'x4' magnetic
 whiteboards; (1) interior
 window to assistant area

carpet

door w/vision panel
 natural light w/sunshade to
 minimize glare; high/low
 operable windows; operable
 window shades

second access/exit

4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Principal's Secretary
 Education Support
 Administration Area, next to
 Principal's Office
 assistant to the Principal;
 clerical work; point of contact
 for students and parents; office
 manager functions;
 supervision to front door/lobby

Description

ROOM SIZE

Area
 Dimensions

125 SF

EQUIPMENT

Fixed
 Mobile

lockable cabinets
 computer, laptop

SYSTEMS

HVAC
 Plumbing
 Electrical

not required
 electrical outlets

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

Tele/Data

Acoustics

OCCUPANCY

Hours
 Occ. Load
 Security

BUILDING

Ceiling
 Walls

tackable wall surface; interior
 windows for connectivity to main
 hallways or main entrance
 carpet

Floor

Doors

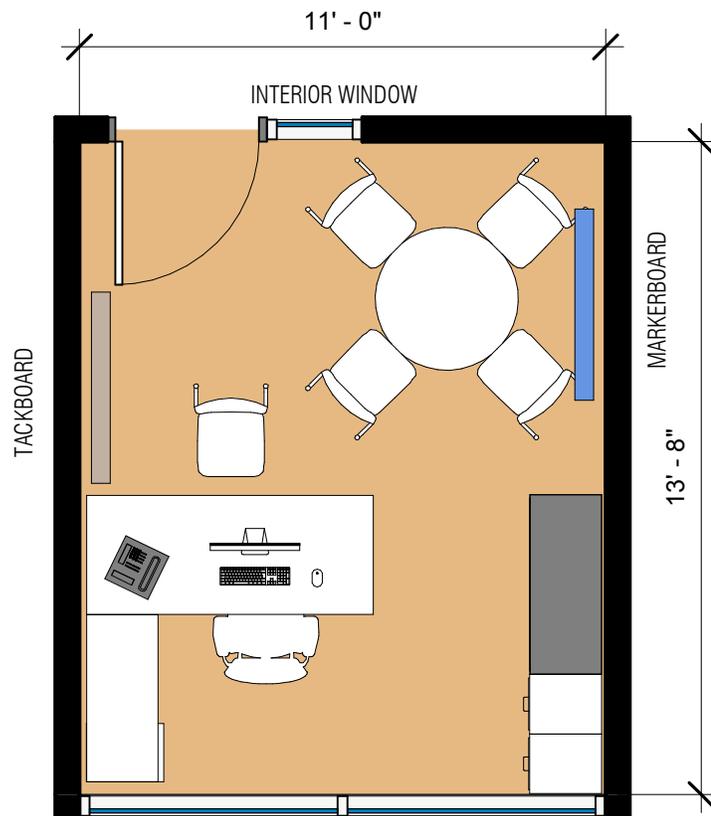
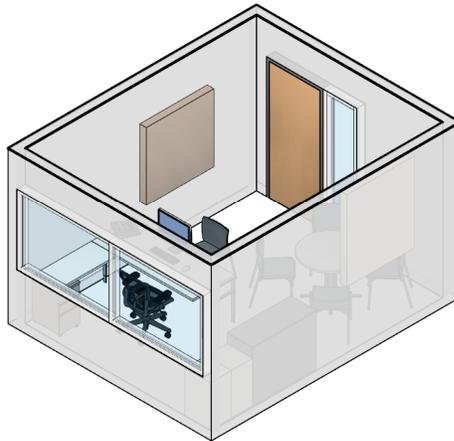
door w/vision panel if enclosed
 space

Windows

sized to provide ample natural
 light; operable windows;
 operable window shades

Comments

4/20/2018



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency

Vice Pricipal's Office
Education Support
Administration Area

ROOM SIZE

Area
Dimensions

(2) x 150 SF

Description

interaction w/ students and parents; dealing w/ disciplinary issues; interaction w/ principal; private office; space to meet with (2) or more people;

OCCUPANCY

EQUIPMENT

Fixed

lockable coat closet; cabinet w/ doors and drawers; open shelving

Hours

Mobile

computer, laptop; bookshelves

Occ. Load
Security

SYSTEMS

HVAC

Plumbing

BUILDING

Ceiling

Electrical

Walls

min. of (1) 4'x4' tackboard or (1) wall of tackable wall surface; min of (1) magnetic whiteboard

Lighting

direct/indirect; task lighting as required

Floor

carpet

Audio/Visual

Doors

door w/ window sized to provide ample natural light; operable windows; operable window shades

Tele/Data

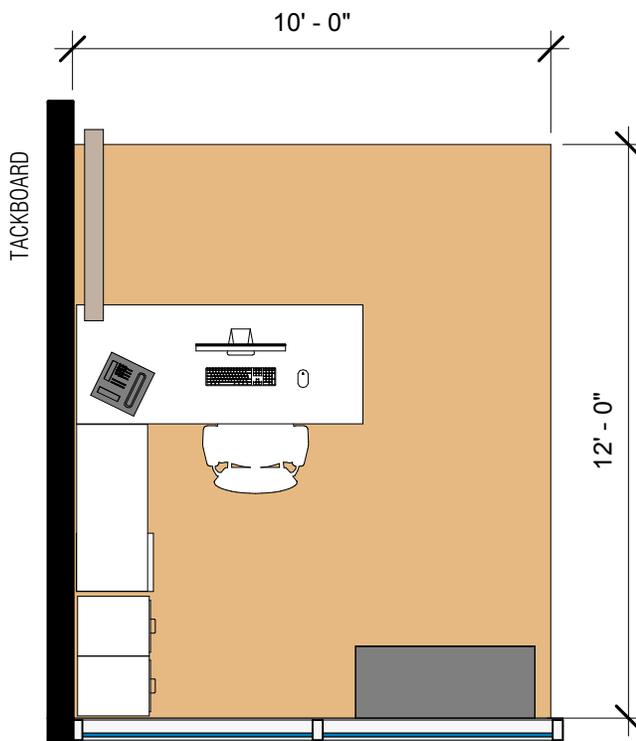
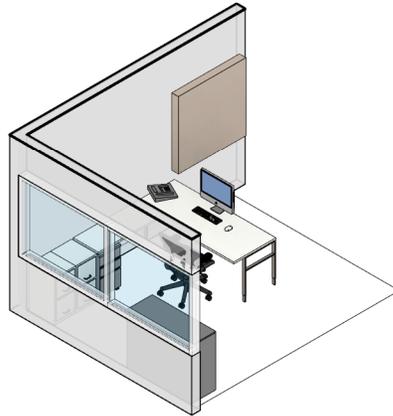
Windows

second access/exit

Acoustics

acoustics should be designed to increase the ability to hear well throughout the room

Comments



? **63- Vice Pricipal's Secretary**
120 SF

4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Vice Principal's Secretary
 Education Support
 Administration Area, next to
 Vice Principal's Office
 assistant to the Vice Principal;
 clerical work; point of contact
 for students and parents;
 information center

Description

ROOM SIZE

Area
 Dimensions

(2) x 120 SF

EQUIPMENT

Fixed
 Mobile

lockable cabinets
 computer, laptop

SYSTEMS

HVAC
 Plumbing
 Electrical

not required
 electrical outlets

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

Tele/Data

Acoustics

OCCUPANCY

Hours
 Occ. Load
 Security

BUILDING

Ceiling
 Walls

Floor

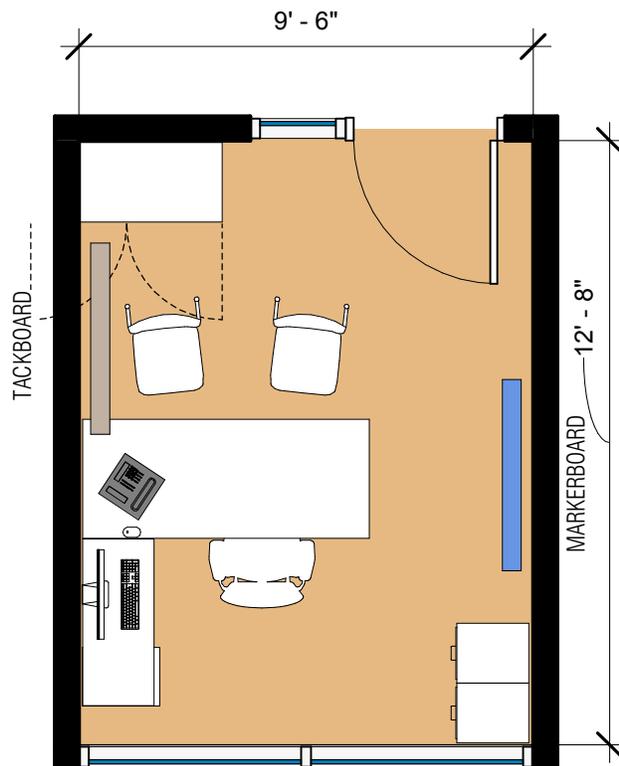
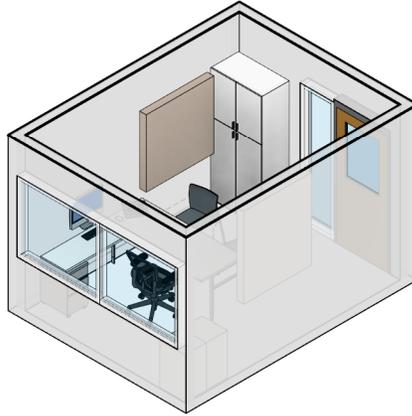
Doors

Windows

Comments

tackable wall surface; interior
 windows for connectivity to main
 hallways or main entrance
 carpet

door w/vision panel if enclosed
 space
 sized to provide ample natural
 light; operable windows;
 operable window shades



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency

Dean of Students
Education Support
Administration Area, near Vice
Principals

Description

head of administrative services
and student discipline; space
for private conferences and
calls; interaction w/ students
and parents; space to meet
with (2) or more people;

ROOM SIZE

Area
Dimensions

120 SF

EQUIPMENT

Fixed

lockable coat closet; cabinet w/
doors and drawers; open
shelving

Mobile

computer, laptop; bookshelves

SYSTEMS

HVAC
Plumbing

not required

Electrical

Lighting

Audio/Visual

Tele/Data

Acoustics

direct/indirect; task lighting as
required

acoustics should be designed
to increase the ability to hear
well throughout the room;
room should be acoustically
separated

OCCUPANCY

Hours

Occ. Load
Security

BUILDING

Ceiling

Walls

Floor

Doors

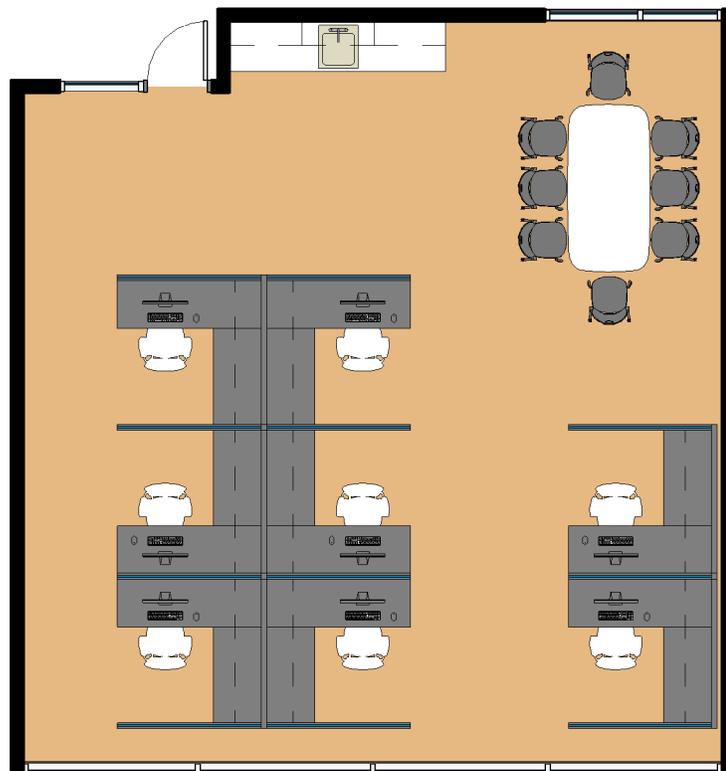
Windows

Comments

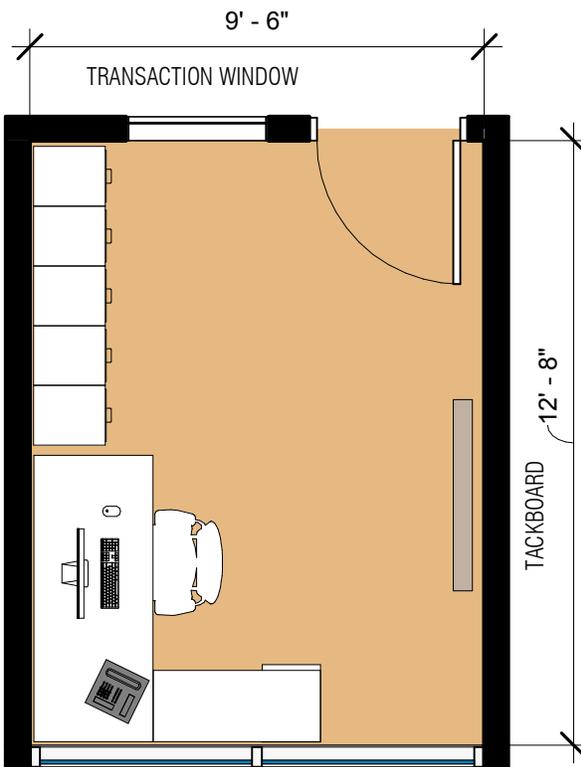
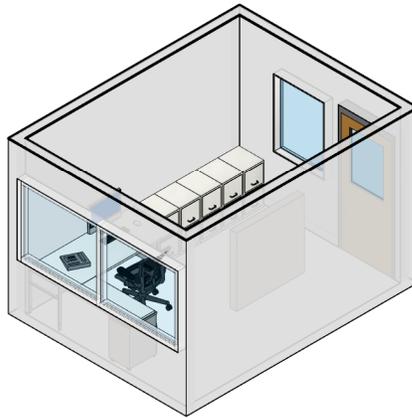
min. of (1) 4'x4' tackboard or
(1) wall of tackable wall
surface; min of (1) magnetic
whiteboard

carpet

door w/ window
sized to provide ample natural
light; operable windows;
operable window shades



4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Attendance Office
 Education Support
 Administration Area, close to
 lobby/reception
 point of contact for parents
 and students for school
 attendance records; individual
 workspace

Description

ROOM SIZE

Area
 Dimensions

120 SF

EQUIPMENT

Fixed

lockable storage: lockable
 cabinet w/ doors and drawers;
 open shelving

Mobile

computer, laptop; file cabinets
 for student files

SYSTEMS

HVAC
 Plumbing

not required

Electrical

Lighting

direct/indirect; task lighting as
 required

Audio/Visual
 Tele/Data

Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room

OCCUPANCY

Hours

Occ. Load

Security

secure

BUILDING

Ceiling

Walls

interior window, sliding or
 roll-up window for
 student/parent interaction; min.
 of (1) tackboard or (1) wall tack
 surface

Floor

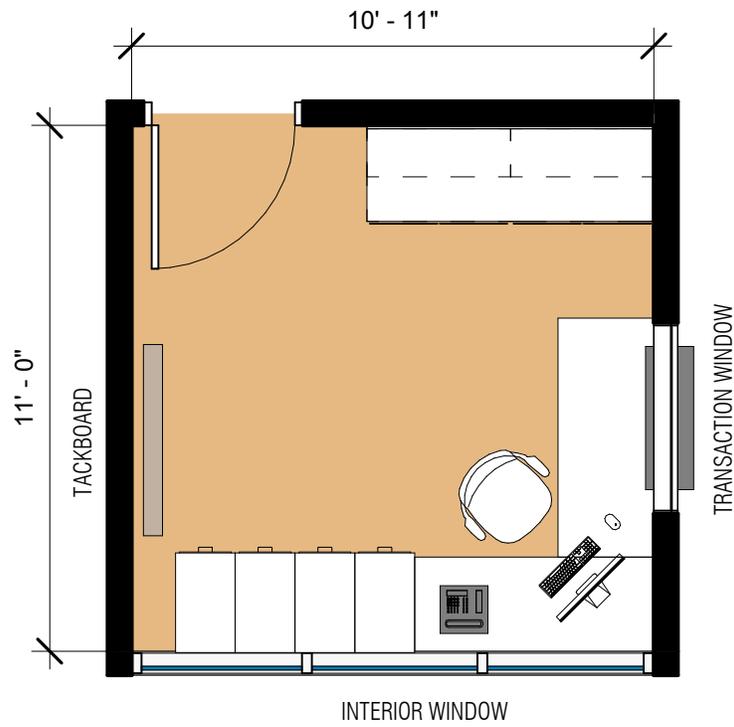
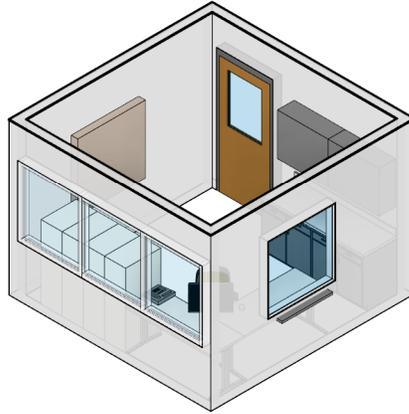
carpet

Doors

door w/ window

Windows

Comments



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Bookkeeper

Education Support
 Administration Area
 responsible for financial
 transactions; general
 accounting duties; collection of
 funds; maintaining financial
 records of student activities

Description

ROOM SIZE

Area
 Dimensions

120 SF

EQUIPMENT

Fixed

lockable storage for personal
 items; storage for petty cash;
 lockable cabinets w/ doors and
 drawers;

Mobile

computer, laptop; file cabinets
 for student files

OCCUPANCY

Hours

Occ. Load

SYSTEMS

HVAC
 Plumbing

not required

BUILDING

Ceiling

secure

Electrical

Walls

interior window, sliding or
 roll-up window for
 student/parent interaction; min.
 of (1) tackboard or (1) wall tack
 surface

Lighting

direct/indirect; task lighting as
 required

Floor

carpet

Audio/Visual
 Tele/Data

Doors
 Windows

door w/ window

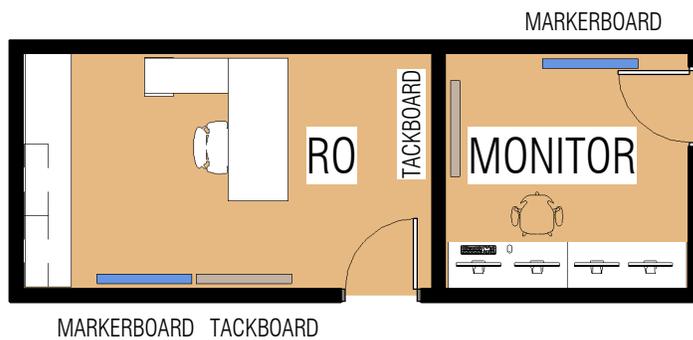
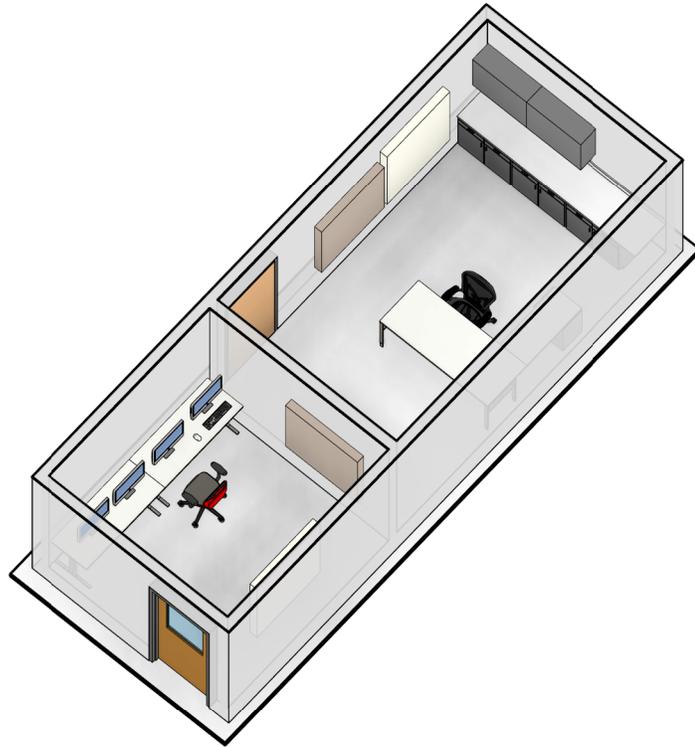
Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room

Comments

safe

4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency
 Description

Resource Officer/Campus Monitor
 Education Support
 main entry; exterior areas (parking, etc.)
 dedicated room to monitor school's activities; safety and security

ROOM SIZE

Area
 Dimensions

200 SF

EQUIPMENT

Fixed
 Mobile

lockable cabinets w/ doors and drawers; lockable cabinet for personal items
 computers; file cabinets

OCCUPANCY

Hours
 Occ. Load
 Security

secure

SYSTEMS

HVAC
 Plumbing

not required

BUILDING

Ceiling

Electrical

electrical outlets

Walls

min. of (1) tackboard or (1) wall tack surface; min of (1) magnetic markerboard

Lighting

direct/indirect; task lighting as required

Floor

carpet

Audio/Visual
 Tele/Data

Doors
 Windows

door w/ window

Acoustics

acoustics should be designed to increase the ability to hear well throughout the room

Comments

PROGRAM

Room Name
Program Group
Adjacency
Description

Resource Officer/Campus Monitor
Education Support
main entry; exterior areas (parking, etc.)
dedicated room to monitor school's activities; safety and security

ROOM SIZE

Area
Dimensions

100 SF

EQUIPMENT

Fixed

lockable cabinets w/ doors and drawers; lockable cabinet for personal items

Mobile

computers; file cabinets

SYSTEMS

HVAC
Plumbing

not required

Electrical

electrical outlets

Lighting

direct/indirect; task lighting as required

Audio/Visual
Tele/Data

Acoustics

acoustics should be designed to increase the ability to hear well throughout the room

OCCUPANCY

Hours
Occ. Load
Security

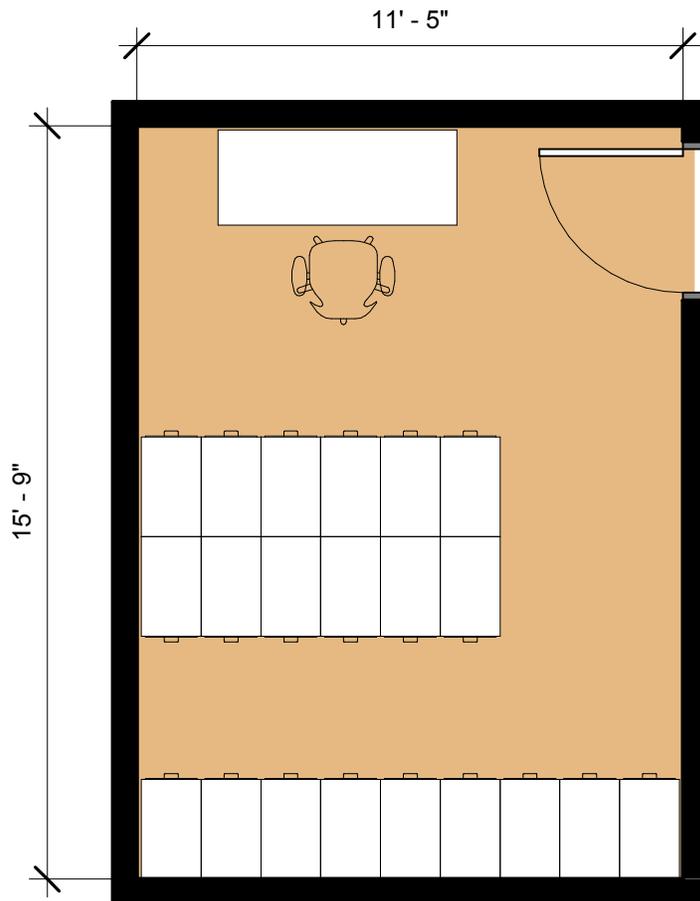
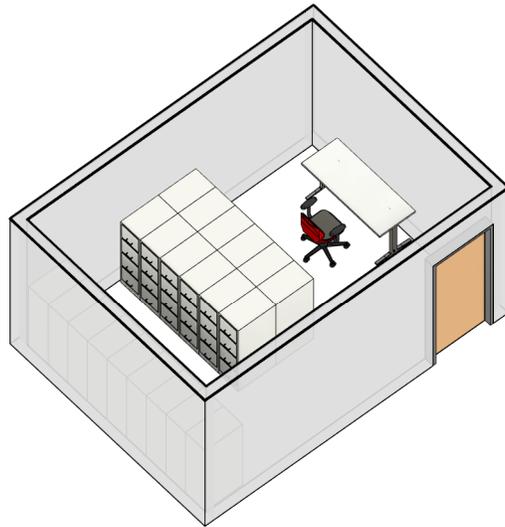
secure

BUILDING

Ceiling
Walls
Floor
Doors
Windows

min. of (1) tackboard or (1) wall tack surface; min of (1) magnetic markerboard
carpet
door w/ window

Comments



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency

Description

Records Storage

Education Support
Administration Area
secure student file storage;
space for viewing files; meet
ODE requirements to securely
store records on site

ROOM SIZE

Area
Dimensions

200 SF

EQUIPMENT

Fixed
Mobile

lockable file cabinets
table, chair

SYSTEMS

HVAC
Plumbing
Electrical

not required

Lighting

direct/indirect; task lighting as
required

Audio/Visual
Tele/Data
Acoustics

OCCUPANCY

Hours
Occ. Load
Security

secure

BUILDING

Ceiling
Walls

durable wall
construction/finishes

Floor

hard surface flooring

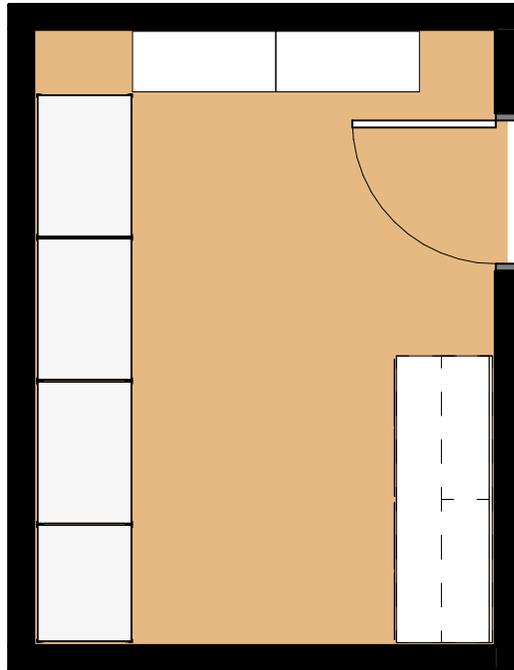
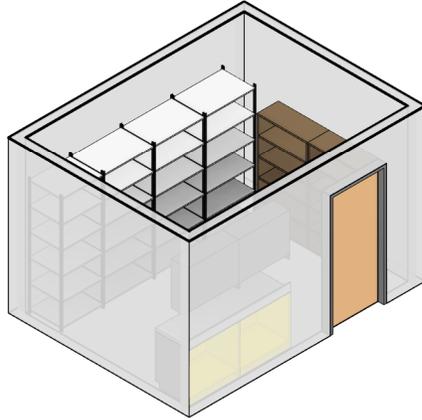
Doors

door w/ window

Windows

Comments

fireproof



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency

Description

Records Storage

Education Support
Administration Area
secure student file storage;
space for viewing files; meet
ODE requirements to securely
store records on site

ROOM SIZE

Area
Dimensions

200 SF

EQUIPMENT

Fixed
Mobile

lockable file cabinets
table, chair

SYSTEMS

HVAC
Plumbing
Electrical

not required

Lighting

direct/indirect; task lighting as
required

Audio/Visual
Tele/Data
Acoustics

OCCUPANCY

Hours
Occ. Load
Security

secure

BUILDING

Ceiling
Walls

durable wall
construction/finishes

Floor

hard surface flooring

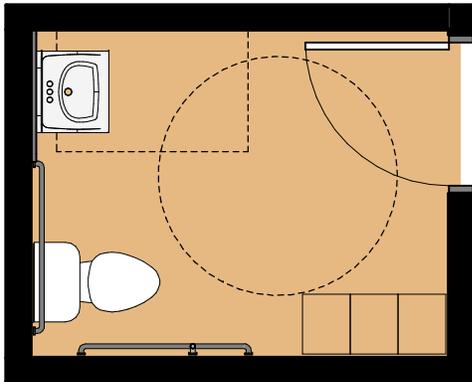
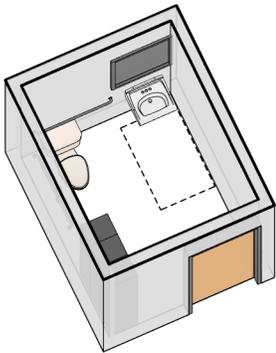
Doors

door w/ window

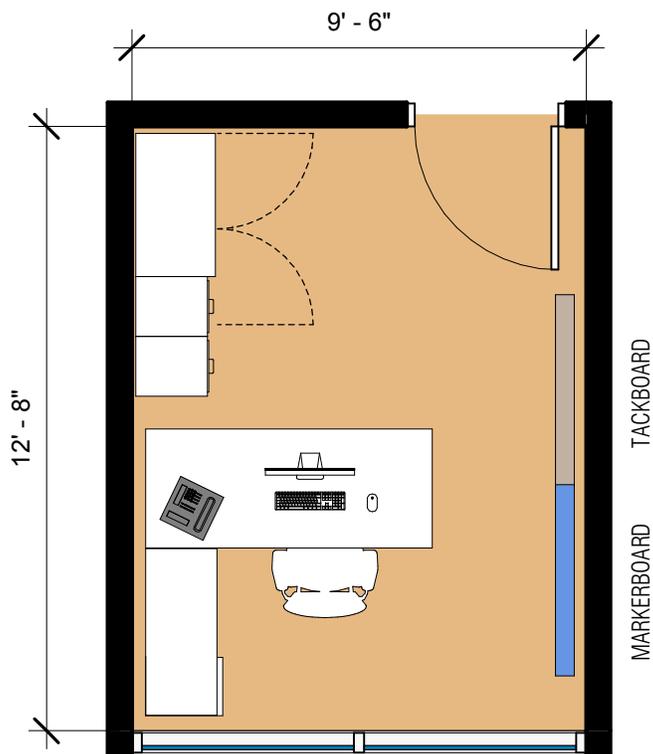
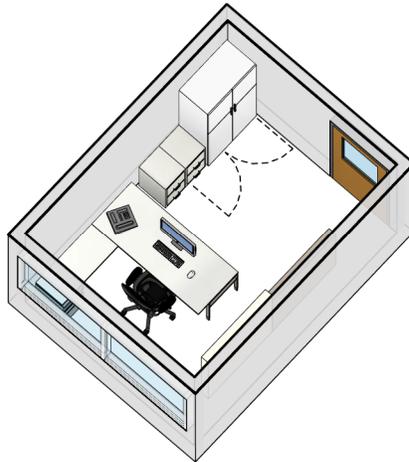
Windows

Comments

fireproof



PROGRAM		ROOM SIZE	
Room Name	Toilet Room	Area	(4) x 60 SF
Program Group	Education Support	Dimensions	
Adjacency	(2) in Administration Area; (2) in Counseling Area		
Description	private, staff only restrooms		
EQUIPMENT		OCCUPANCY	
Fixed	half height lockers w/ hasps for locks	Hours	
Mobile	computers; file cabinets	Occ. Load	
SYSTEMS		Security	privacy lock, access controlled
HVAC		BUILDING	
Plumbing	not required	Ceiling	
Electrical	electrical outlets	Walls	48"h wainscot (FRP or plastic laminate)
Lighting	direct/indirect; task lighting as required	Floor	slip resistant hard surface flooring
Audio/Visual		Doors	
Tele/Data		Windows	
Acoustics	acoustic isolation	Comments	floor drains



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Business Office

Education Support
 Administration Area
 manages non-teaching
 activities; manages staff;
 outside partnerships and
 financial mangement

Description

ROOM SIZE

Area
 Dimensions

120 SF

EQUIPMENT

Fixed

lockable cabinets; adjustable
 shelving preferred; lockable
 coat closet; clock/intercom

Mobile

computer, laptop;
 bookshelves; file cabinets

SYSTEMS

HVAC
 Plumbing

not required

Electrical

electrical outlets

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

Tele/Data

data outlets; phone

Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room;
 room should be acoustically
 separated

OCCUPANCY

Hours

Occ. Load

Security

secure

BUILDING

Ceiling

Walls

min. of (1) tackboard or (1)
 wall tack surface; min of (1)
 4'x4' markerboard

Floor

carpet

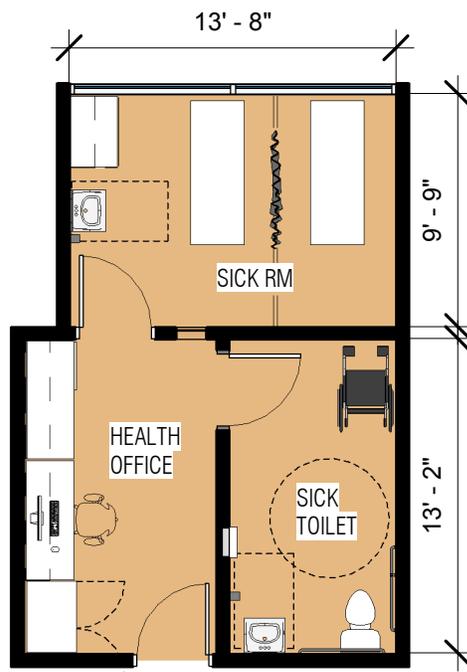
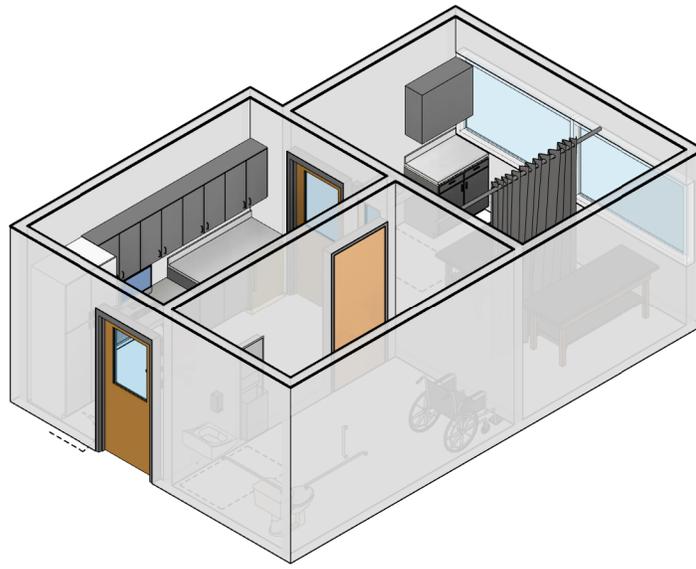
Doors

door w/ window
 sized to provide ample natural
 light; operable windows;
 window shades

Windows

Comments

4/20/2018



4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Health Office	Area	120 SF
Program Group	Education Support	Dimensions	
Adjacency	Sick Room, Sick Toilet, Administration Area		
Description	office area for staff to do paperwork and store personal items		
EQUIPMENT		OCCUPANCY	
Fixed	lockable cabinets or drawers; adjustable shelving; clothes closet; clock/intercom	Hours	
Mobile	computer, laptop; mobile file cabinets; uc refrigerator	Occ. Load	
SYSTEMS		Security	
HVAC		BUILDING	
Plumbing	not required	Ceiling	
Electrical	electrical outlets	Walls	durable finish: paint or wainscot (FRP or plastic laminate); tackable surface
Lighting	direct/indirect; task lighting as required	Floor	hard surface flooring
Audio/Visual		Doors	door w/ window sized to provide ample natural light; operable windows; window shades
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room	Comments	

PROGRAM

Room Name
 Program Group
 Adjacency

Description

Records Storage

Education Support
 Health Office, Sick Toilet,
 Administration Area
 place for ill students to rest or
 wait until released from school;
 first aid and medicine
 dispensing

ROOM SIZE

Area
 Dimensions

150 SF

EQUIPMENT

Fixed

Mobile

SYSTEMS

HVAC

Plumbing

Electrical

Lighting

Audio/Visual

Tele/Data

Acoustics

privacy curtains; cabinets;
 clock/intercom; refrigerator

cots/beds

not required

electrical outlets

direct/indirect; task lighting as
 required

data outlets;

acoustics should be designed
 to increase the ability to hear
 well throughout the room

OCCUPANCY

Hours

Occ. Load

Security

BUILDING

Ceiling

Walls

Floor

Doors

Windows

Comments

durable finish: paint or
 wainscot (FRP or plastic
 laminate)

slip resistant hard surface
 flooring

door w/ window

interior window to Health
 Office for supervision; window
 shades

wheelchair storage; paper
 towel dispenser; soap
 dispenser

4/20/2018

PROGRAM

Room Name
Program Group
Adjacency
Description

Records Storage
Education Support
Health Office, Sick Room,
Administration Area
restroom for ill students

ROOM SIZE

Area
Dimensions

100 SF

EQUIPMENT

Fixed
Mobile

OCCUPANCY

Hours
Occ. Load
Security

occupancy indicator

SYSTEMS

HVAC
Plumbing

wall hung sink; toilet

BUILDING

Ceiling

Electrical

electrical outlet

Walls

durable finish: paint or
wainscot (FRP or plastic
laminated)

Lighting

direct/indirect; task lighting as
required

Floor

slip resistant hard surface
flooring

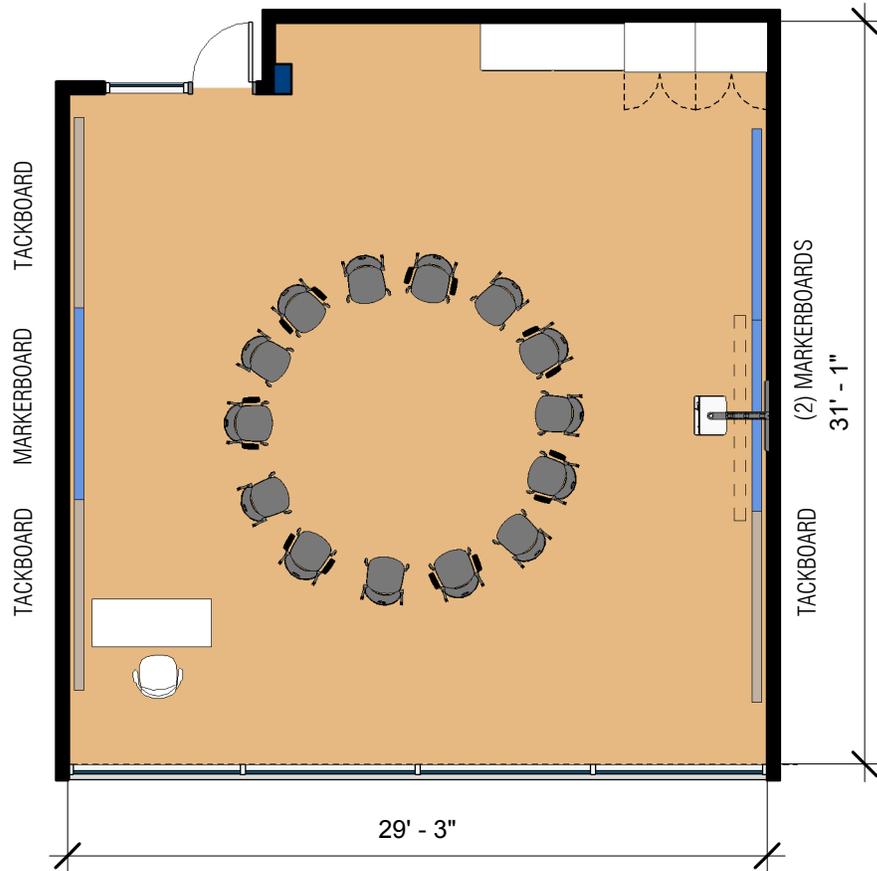
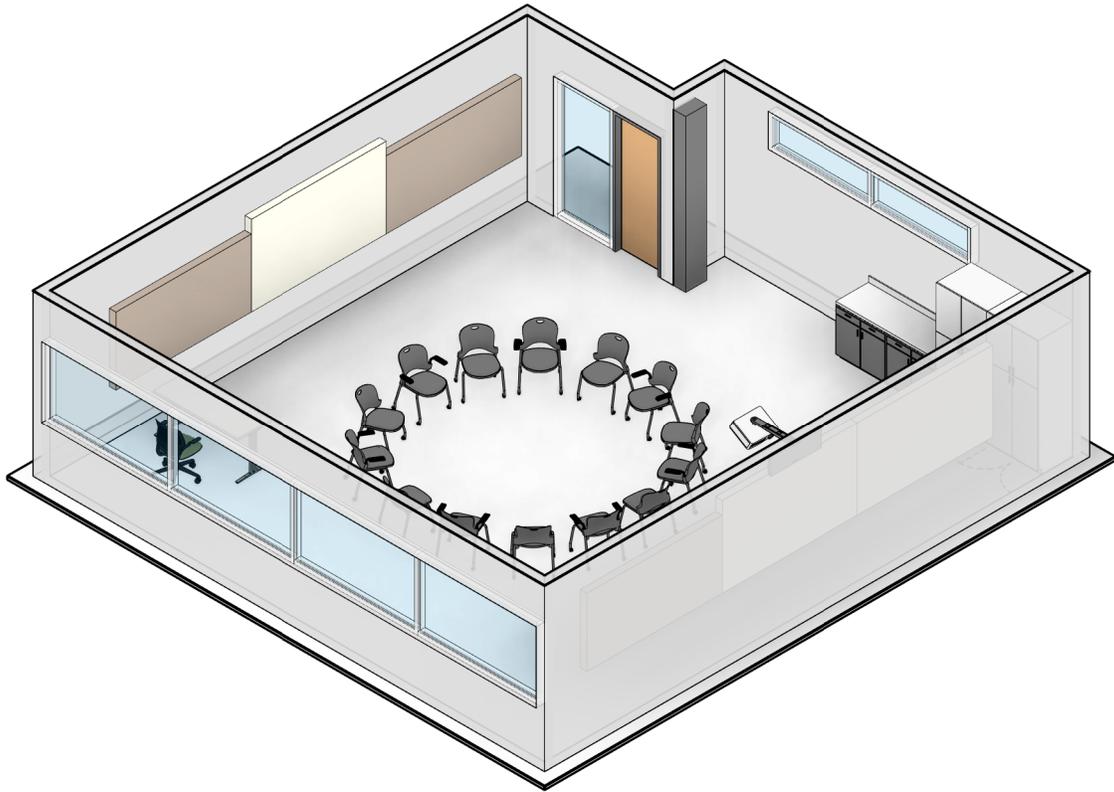
Audio/Visual
Tele/Data

Doors
Windows

Acoustics

Comments

toilet accessories; paper towel
dispenser; soap dispenser



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency
Description

Student Support/Mediation
Education Support
within Administration Area;
Resource Officer

dedicated space for students
w/ disciplinary issues; space
for student monitor/staff

ROOM SIZE

Area
Dimensions

300 SF

EQUIPMENT

Fixed
Mobile

shelving; clock/intercom
tables, chairs, desk

OCCUPANCY

Hours
Occ. Load
Security

SYSTEMS

HVAC
Plumbing

not required

BUILDING

Ceiling

Electrical

electrical outlets

Walls

min. of (1) 4'x8' magnetic
markerboard; tackable wall
surface on all walls

Lighting

direct/indirect; task lighting as
required

Floor

hard surface flooring

Audio/Visual

security camera

Doors

Tele/Data

data outlets; phone

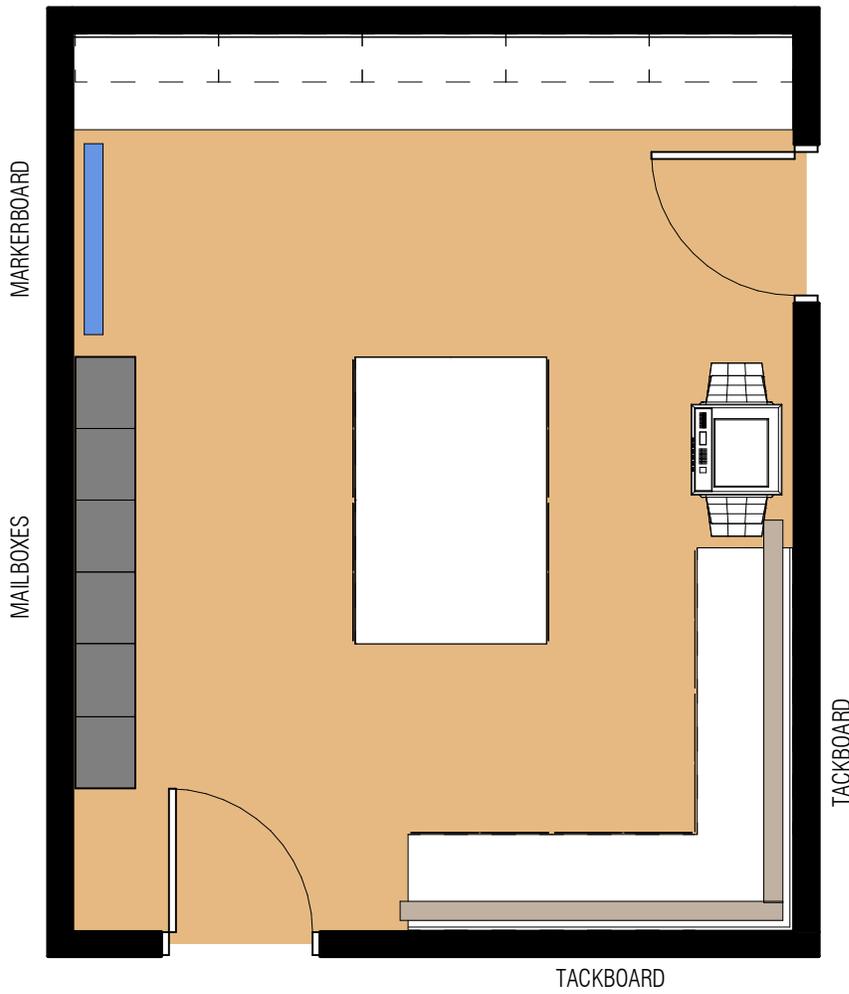
Windows

interior windows for
supervision; window shades

Acoustics

acoustics should be designed
to increase the ability to hear
well throughout the room

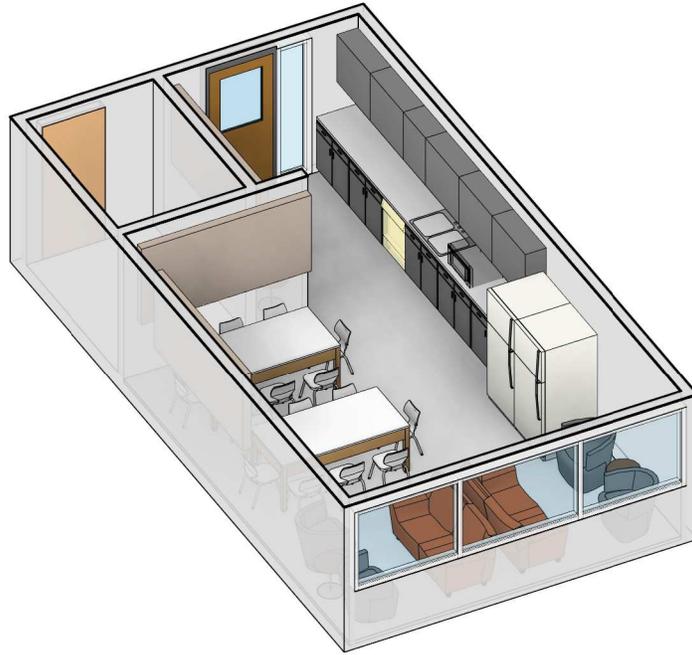
Comments



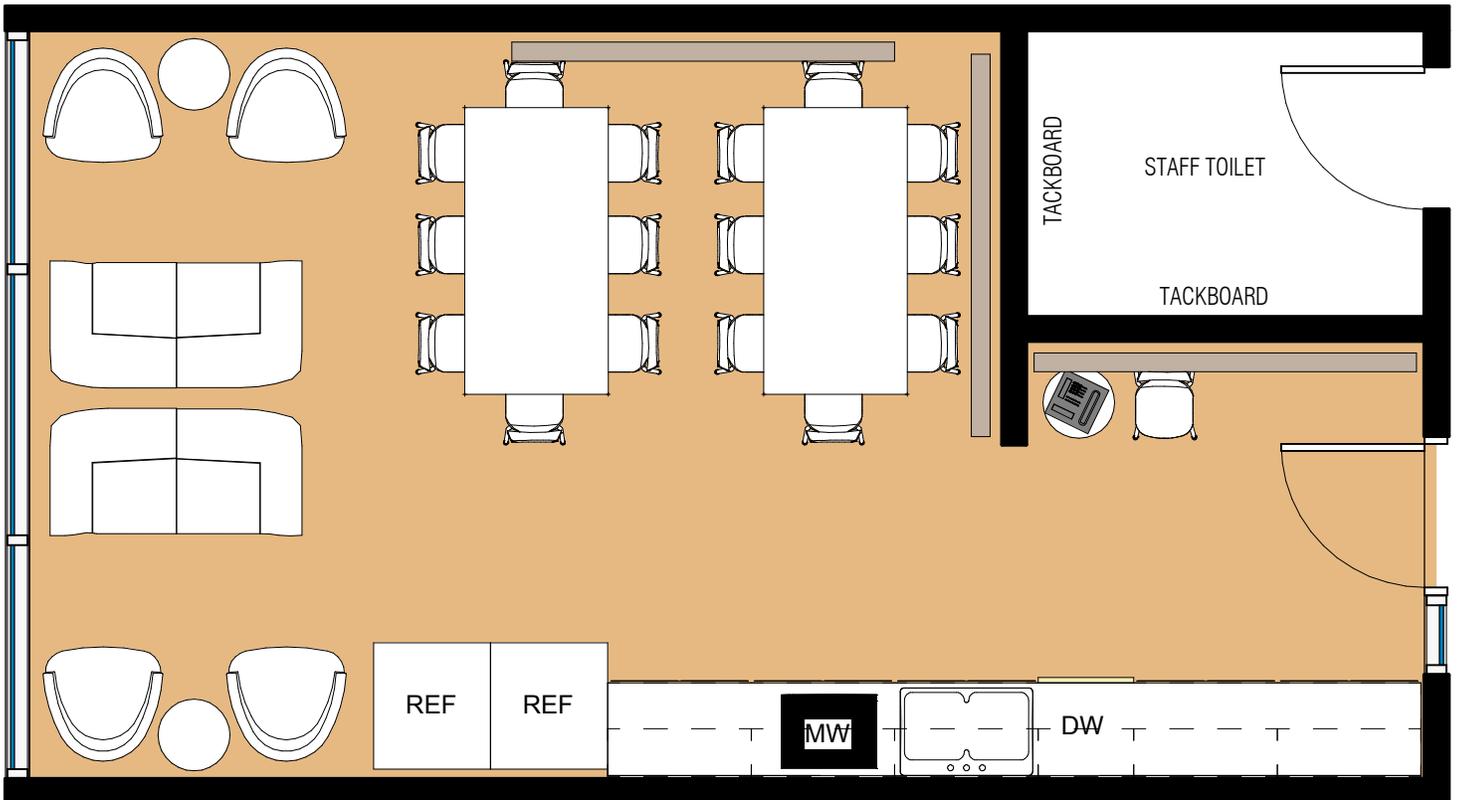
4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Workroom/Mail/Delivery/ Process Center	Area	300 SF
Program Group	Education Support	Dimensions	
Adjacency	within Administration Area; Staff Room; Entry/Main Office		
Description	provides a wide variety of support services for the staff and the school; paper storage		
EQUIPMENT		OCCUPANCY	
Fixed	maximized shelving on all walls; open adjust. shelving for paper; upper and lower cabinets w/ doors and drawers; deeper counters for equipment; wall mounted TV(?); clock/intercom; copier	Hours	
Mobile	recycling bins; binding machines; laminator; paper cutters; electric staplers; chairs/stools	Occ. Load	
SYSTEMS		Security	
HVAC	adequate air circulation for equipment	BUILDING	
Plumbing	wall hung sink; toilet	Ceiling	
Electrical	electrical outlets	Walls	tackable wall surface on all walls; (1) markerboard
Lighting	direct/indirect; task lighting as required	Floor	hard surface flooring
Audio/Visual		Doors	doors w/windows high windows w/view; ability to control natural light; operable windows for circulation; window shades
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room	Comments	multiple entrances

4/20/2018

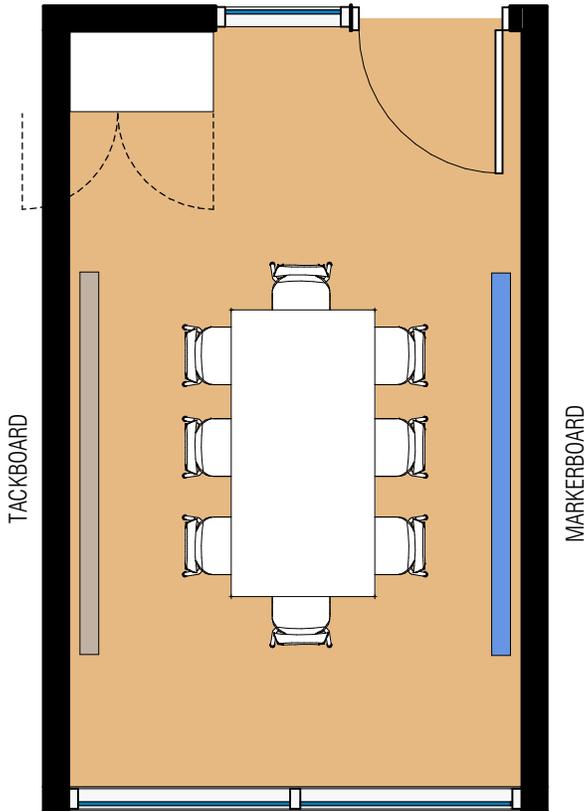
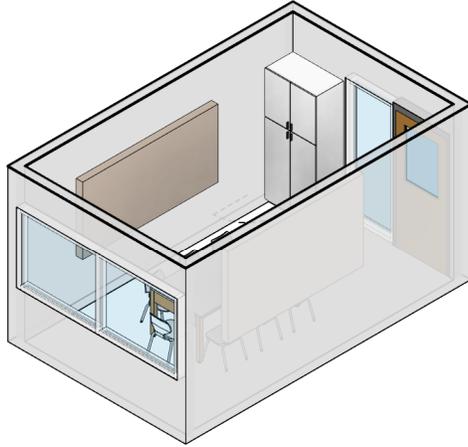


TACKBOARD



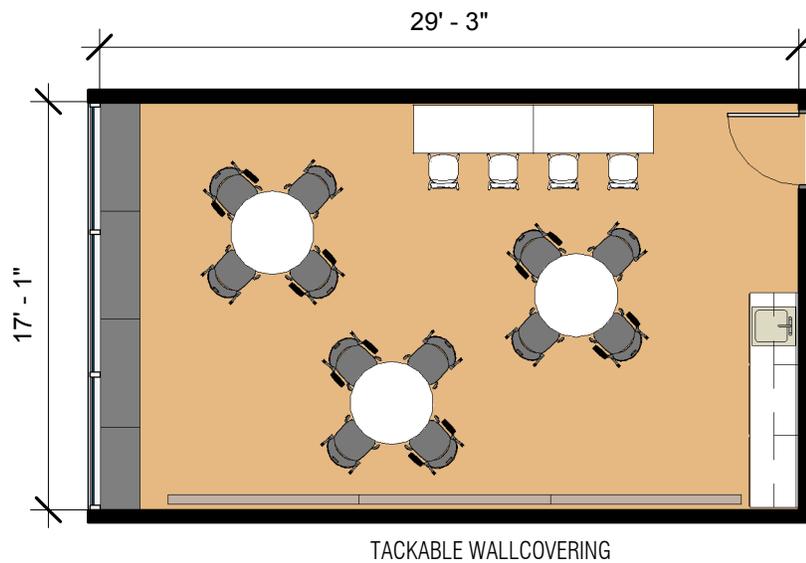
4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Staff Room	Area	400 SF
Program Group	Education Support	Dimensions	
Adjacency	Workroom, Staff Toilets		
Description	community space; social interaction for lunch and break times for staff; food preparation and storage		
EQUIPMENT		OCCUPANCY	
Fixed	upper and lower cabinets w/ lockable doors and drawers, w/adj. shelving for food storage, dishes, glassware; clock/intercom; copier; refrigerator; freezer; microwave	Hours	
Mobile	soft seating, phone table; tables/desks, chairs	Occ. Load	
SYSTEMS		BUILDING	
HVAC		Security	
Plumbing	double sink; dishwasher	Ceiling	
Electrical	electrical outlets	Walls	(1) wall w/ windows; tackable wall surface on min. of (2) walls; (1) markerboard
Lighting	direct/indirect; task lighting as required	Floor	hard surface flooring
Audio/Visual		Doors	doors w/windows sized to provide ample natural light; operable windows; window shades
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room	Comments	exterior/courtyard access; phone alcove; paper towel dispenser, soap dispenser



4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Conference Room	Area	(2) x 150 SF
Program Group	Education Support	Dimensions	
Adjacency	Administration Area		
Description	separate meeting area for staff; make-up testing room		
EQUIPMENT		OCCUPANCY	
Fixed	lockable cabinets w/ doors for storage	Hours	
Mobile	soft seating, phone table; tables/desks, chairs	Occ. Load	
SYSTEMS		Security	
HVAC		BUILDING	
Plumbing		Ceiling	
Electrical	electrical outlets	Walls	tackable wall surface on min. of (2) walls; min. of (1) 4'x8' magnetic markerboard; glass walls for transparency
Lighting	direct/indirect; task lighting as required	Floor	carpet
Audio/Visual		Doors	door w/window sized to provide ample natural light; operable windows; window shades
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically separated	Comments	



4/20/2018

PROGRAM

Room Name **Parent Volunteers/Family Resource/PTA/Boosters/...**

Program Group Education Support

Adjacency close to front entrance/main office or community area

Description small meeting space; workspace; storage;

ROOM SIZE

500 SF

Area

Dimensions

EQUIPMENT

Fixed lockable cabinets w/ doors for storage; open shelving preferred; clock/intercom

Mobile computer, laptops w/ secure storage

OCCUPANCY

Hours

Occ. Load

Security

SYSTEMS

HVAC

Plumbing sink preferred

Electrical electrical outlets

Lighting direct/indirect; task lighting as required

Audio/Visual Tele/Data data outlets; phone

Acoustics acoustics should be designed to increase the ability to hear well throughout the room

BUILDING

Ceiling

Walls tackable wall covering on min. of (1) wall

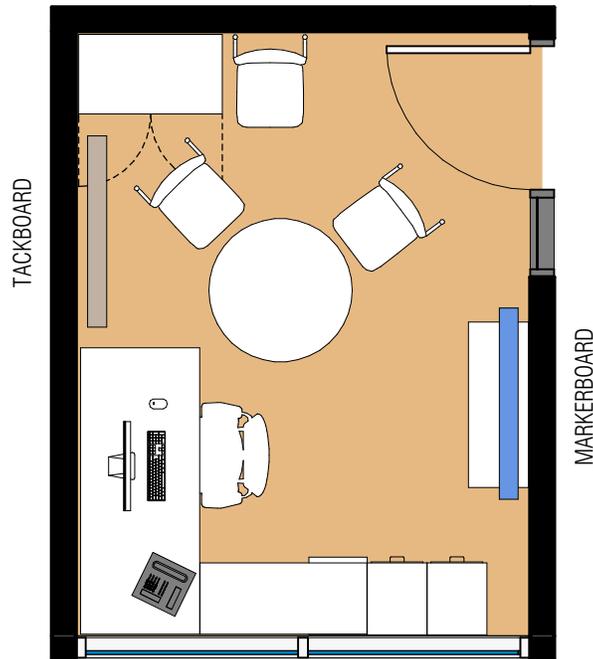
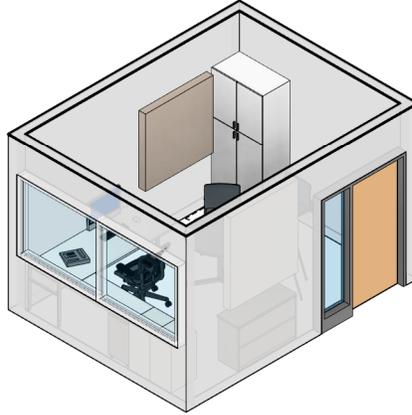
Floor per PPS Design Guidelines

Doors door w/window

Windows window shades

Comments

4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

Counseling Office

Education Support
 within Counseling Area, near
 college/career counseling
 work w/ students and parents;
 private student and parent
 conferences; private phone
 calls

Description

ROOM SIZE

Area
 Dimensions

(5) x 120 SF

EQUIPMENT

Fixed

cabinets w/ doors; lockable
 coat closet; open shelving;
 clock/intercom; copier
 preferred

Mobile

computer, file cabinets

SYSTEMS

HVAC

Plumbing

not required

Electrical

electrical outlets

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

Tele/Data

data outlets; phone

Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room;
 room should be acoustically
 separated

OCCUPANCY

Hours

Occ. Load
 Security

BUILDING

Ceiling

Walls

min. of (1) 4'x4' tackboard ;
 min of (1) 4'x4' markerboard

Floor

carpet

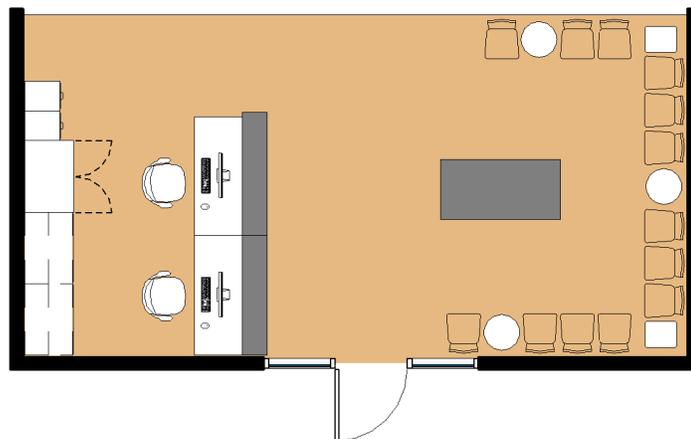
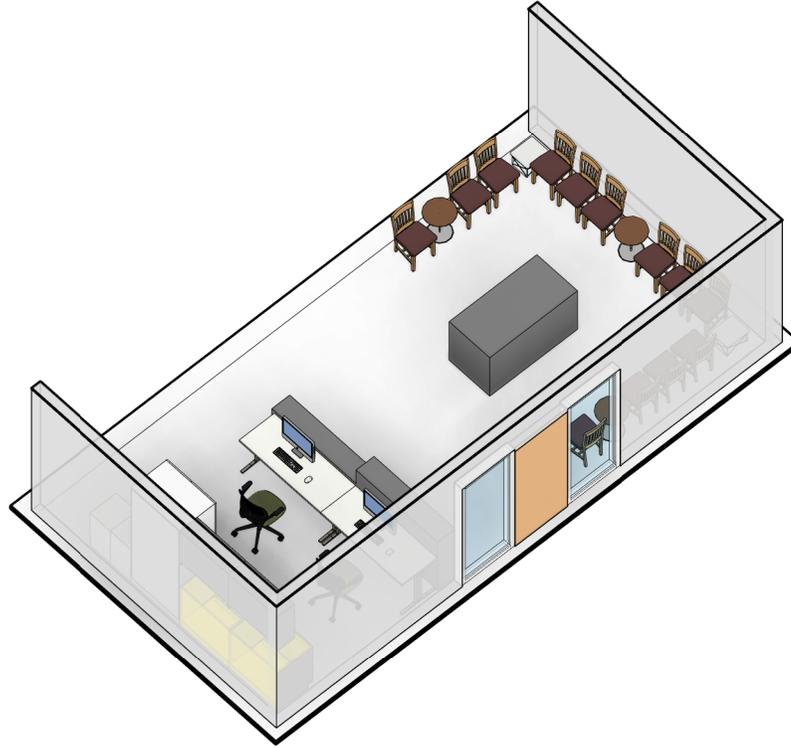
Doors

door w/ window
 sized to provide ample natural
 light; operable windows;
 window shades

Windows

Comments

4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency

**Counseling
 Secretary/Waiting**
 Education Support
 centrally located within
 Counseling Area or adjacent to
 counselor offices
 1-2 workstations; area for
 students and parents to wait to
 meet w/ counselors; counselor
 support; data processing;
 registration

Description

ROOM SIZE

Area 400 SF
 Dimensions

EQUIPMENT

Fixed

cabinets w/ doors; lockable
 coat closet; open shelving;
 clock/intercom; copier
 preferred

Mobile

computer, file cabinets

SYSTEMS

HVAC
 Plumbing
 Electrical
 Lighting
 Audio/Visual

not required
 electrical outlets
 direct/indirect; task lighting as
 required

Tele/Data

data outlets; phone

Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room

OCCUPANCY

Hours

Occ. Load
 Security

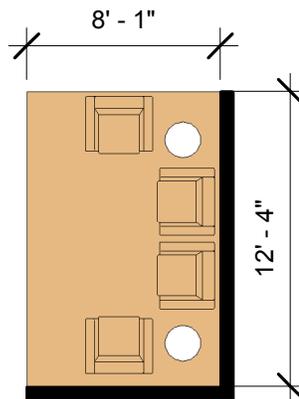
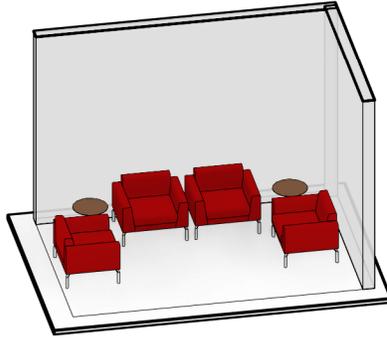
BUILDING

Ceiling
 Walls
 Floor
 Doors

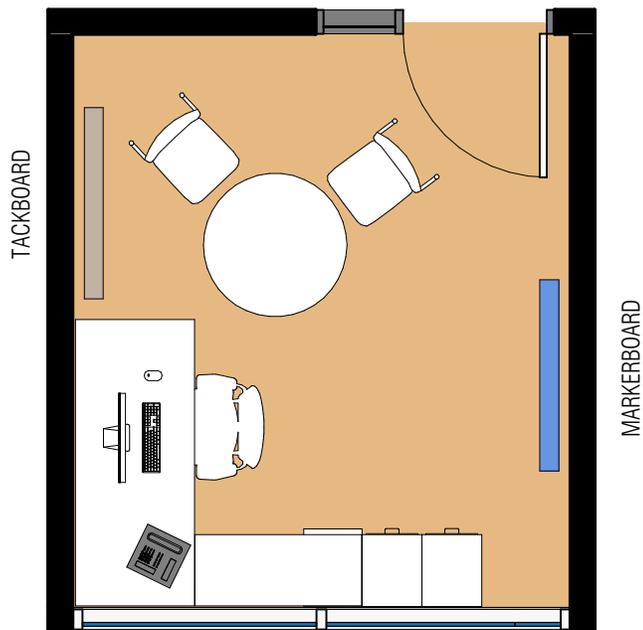
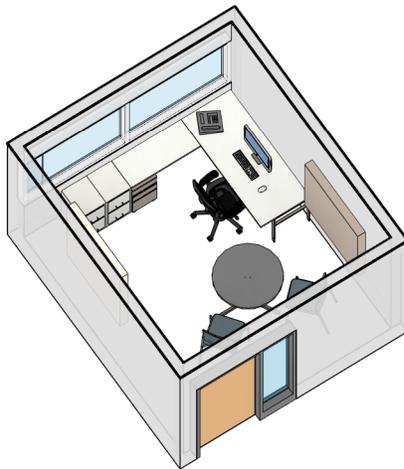
tackable wall surface;
 carpet
 door w/ window
 sized to provide ample natural
 light; operable windows;
 window shades; interior
 windows for transparency

Windows

Comments



4/20/2018



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency
 Description

Drug/Alcohol Counselor Office
 Education Support within Counseling Area, or near Health Clinic
 counseling for drug and/or alcohol issues; private phone calls; private meetings

ROOM SIZE

Area 125 SF
 Dimensions

EQUIPMENT

Fixed
 Mobile

cabinets w/ doors; lockable file cabinets; clock/intercom; computer, laptop

OCCUPANCY

Hours
 Occ. Load
 Security

SYSTEMS

HVAC
 Plumbing

not required

BUILDING

Ceiling

Electrical

electrical outlets

Walls

min. of (1) 4'x4' tackboard; min of (1) 4'x4' magnetic markerboard

Lighting

direct/indirect; task lighting as required

Floor

hard surface flooring

Audio/Visual

Doors

door w/ window sized to provide ample natural light; operable windows; window shades; privacy blinds for interior windows

Tele/Data

data outlets; phone

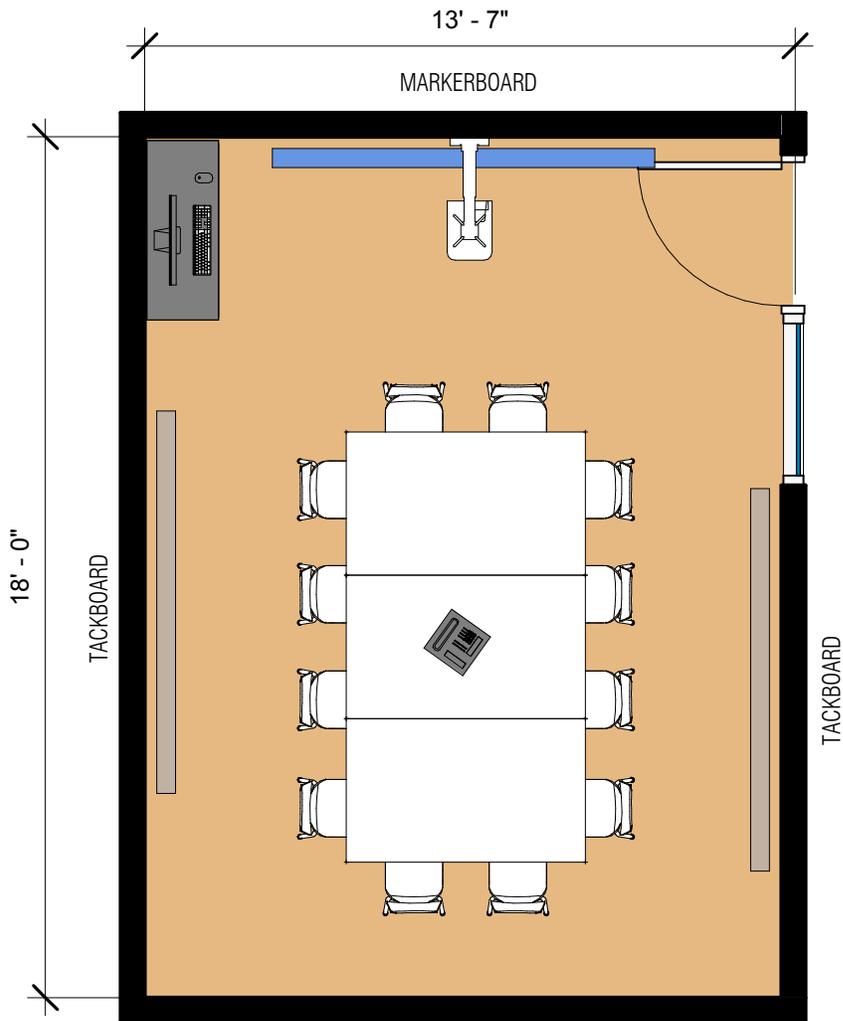
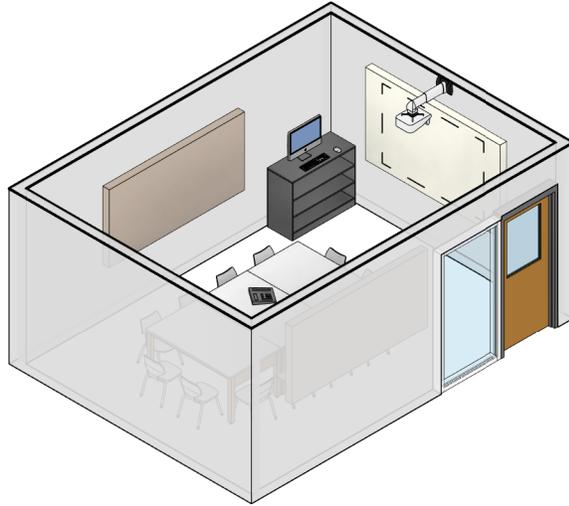
Windows

Acoustics

acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically separated

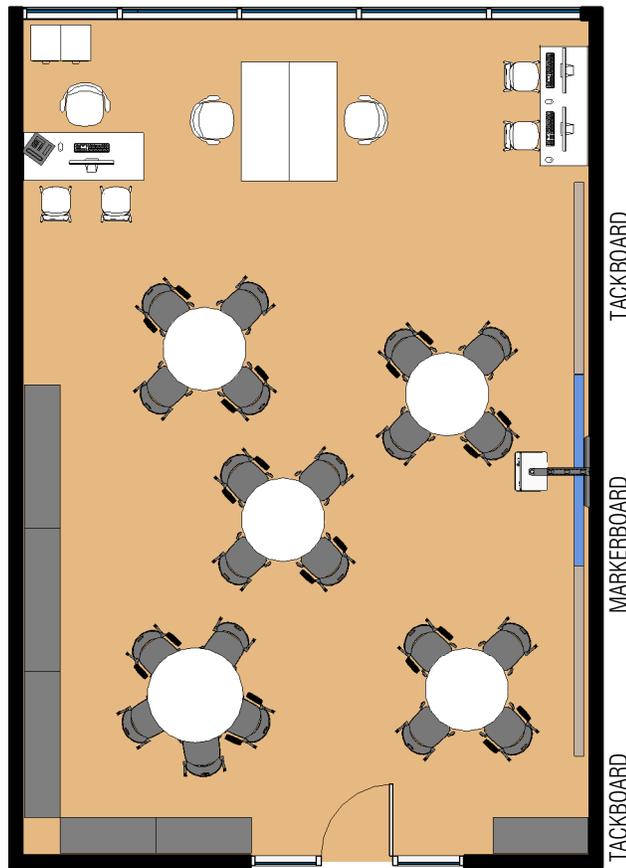
Comments

4/20/2018



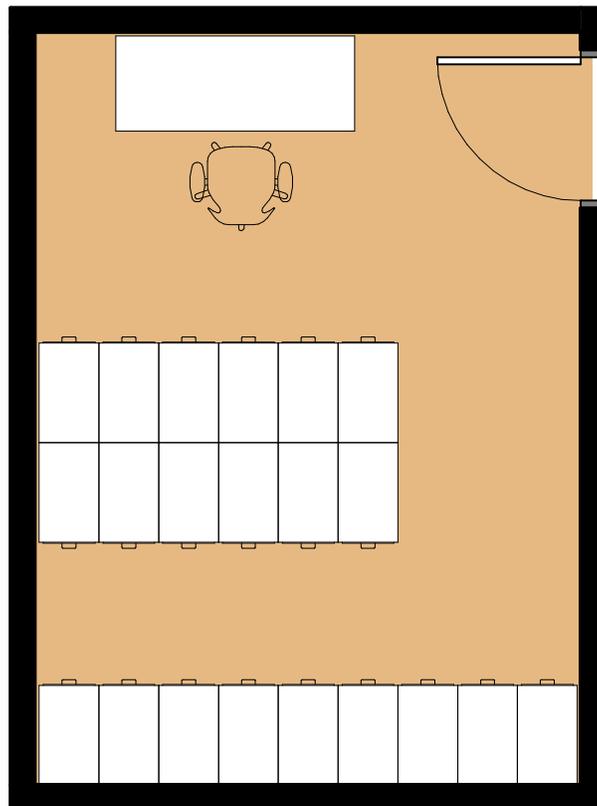
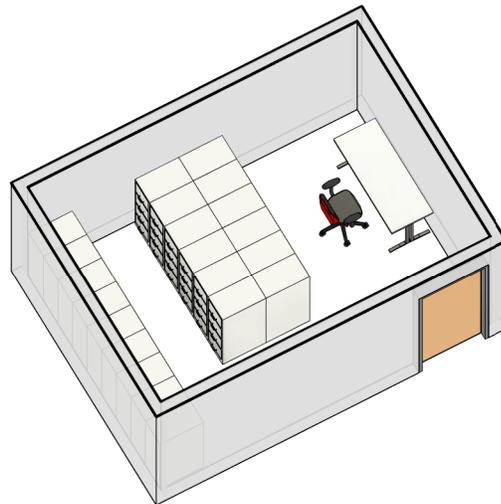
4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Counseling Conference Rooms	Area	150 SF (medium); 240 SF (large)
Program Group	Education Support	Dimensions	
Adjacency	within Counseling Area		
Description	counseling for drug and/or alcohol issues; private phone calls; private meetings		
EQUIPMENT		OCCUPANCY	
Fixed	shelving; short throw projector; clock/intercom	Hours	
Mobile	computer, laptop	Occ. Load	
SYSTEMS		Security	
HVAC		BUILDING	
Plumbing	not required	Ceiling	
Electrical	electrical outlets	Walls	tackable wall surface on min. of (2) walls; min of (1) 4'x8' magnetic markerboard (to be utilized as projection screen)
Lighting	direct/indirect; task lighting as required	Floor	carpet
Audio/Visual	sound reinforcement	Doors	door w/ window sized to provide ample natural light; operable windows; window shades; privacy blinds for interior windows
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically separated	Comments	



4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Career Center	Area	700 SF
Program Group	Education Support	Dimensions	
Adjacency	central location for student access		
Description	resource center for students looking at post high school opportunities; easy access to computers to do research; meeting area for students and college recruiters		
EQUIPMENT		OCCUPANCY	
Fixed	open shelving for forms/paperwork; 30"x40" format sized drawers/flat file; short throw projector; wall mounted TV; clock/intercom	Hours	
Mobile	computers; (1) teacher desk; chairs; brochure racks/kiosks; cabinets w/doors	Occ. Load	
SYSTEMS		Security	
HVAC		BUILDING	
Plumbing	not required	Ceiling	
Electrical	electrical outlets	Walls	tackable wall surface covering all walls; min. (1) wall w/ windows
Lighting	direct/indirect; task lighting as required	Floor	hard surface flooring
Audio/Visual	sound reinforcement	Doors	door w/ window sized to provide ample natural light; operable windows; window shades; interior windows
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically separated	Comments	space for 3-4 parent volunteers



4/20/2018

PROGRAM

Room Name
Program Group
Adjacency

Secure Records Storage

Education Support
Counseling Area

Description

separate secure location for student files and other records; digital records exchange

ROOM SIZE

Area
Dimensions

180 SF

EQUIPMENT

Fixed
Mobile

lockable file cabinets; shelving; storage racks;
table, chair

SYSTEMS

HVAC
Plumbing
Electrical

not required

Lighting

direct/indirect; task lighting as required

Audio/Visual
Tele/Data
Acoustics

OCCUPANCY

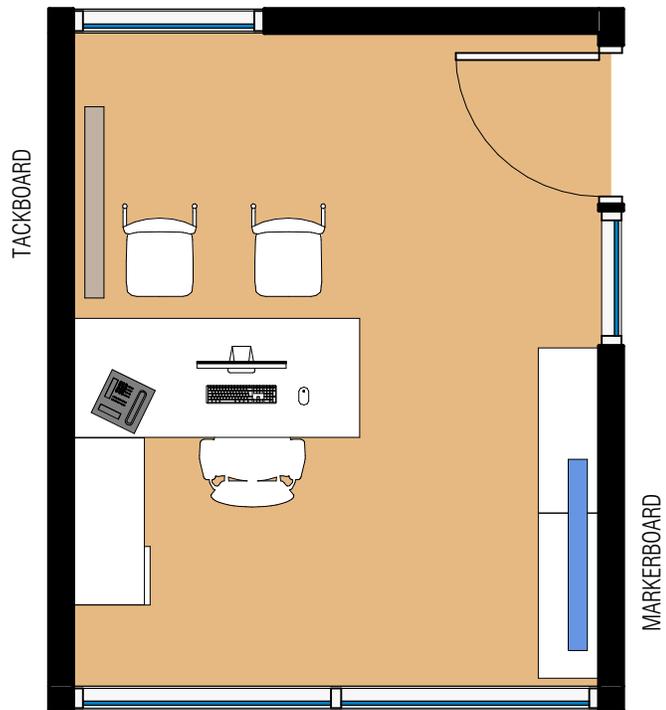
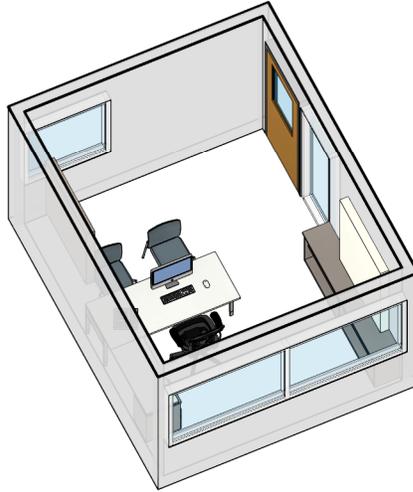
Hours
Occ. Load
Security

secure

BUILDING

Ceiling
Walls
Floor
Doors
Windows
Comments

durable wall construction/finishes
hard surface flooring
door w/ window
window shades
fireproof



4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency
 Description

Athletic Director
 Education Support
 near Administration Area;
 access to Gym
 office space for Athletic
 Director

ROOM SIZE

Area
 Dimensions

150 SF

EQUIPMENT

Fixed

lockable cabinets for supplies
 and personal items; cabinets
 w/ doors and drawers; shelving
 preferred; clock/intercom

Mobile

computer, laptop w/ secure
 storage

SYSTEMS

HVAC
 Plumbing

not required

Electrical

electrical outlets

Lighting

direct/indirect; task lighting as
 required

Audio/Visual

ability to video conference

Tele/Data

data outlets; phone

Acoustics

acoustics should be designed
 to increase the ability to hear
 well throughout the room

OCCUPANCY

Hours

Occ. Load

Security

BUILDING

Ceiling

Walls

Floor

Doors

Windows

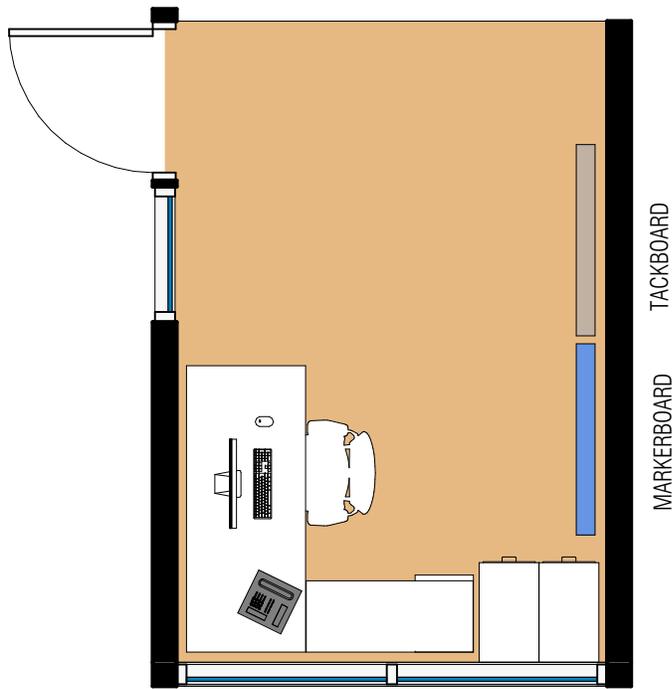
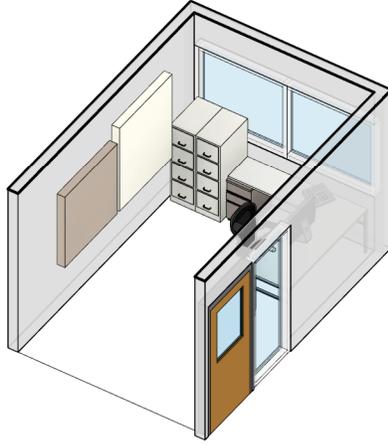
Comments

min. (1) 4'x4' tackboard; min.
 of (1) 4'x4' magnetic
 whiteboards; (1) interior
 window to assistant area

hard surface flooring

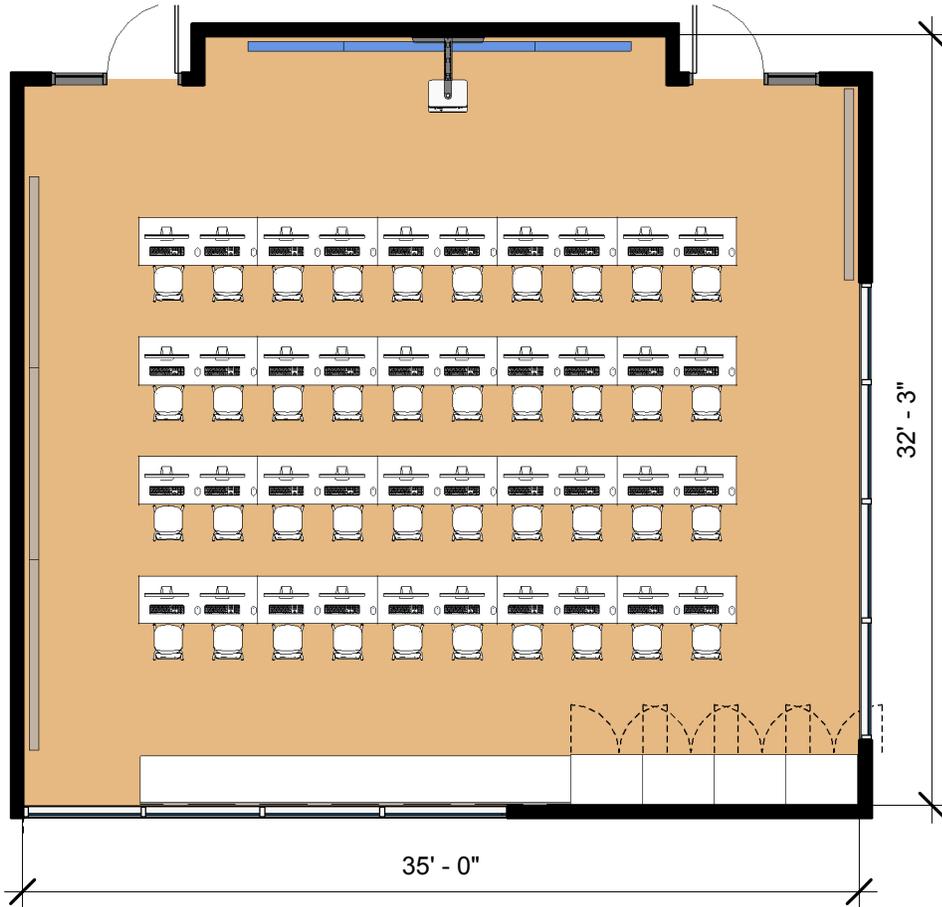
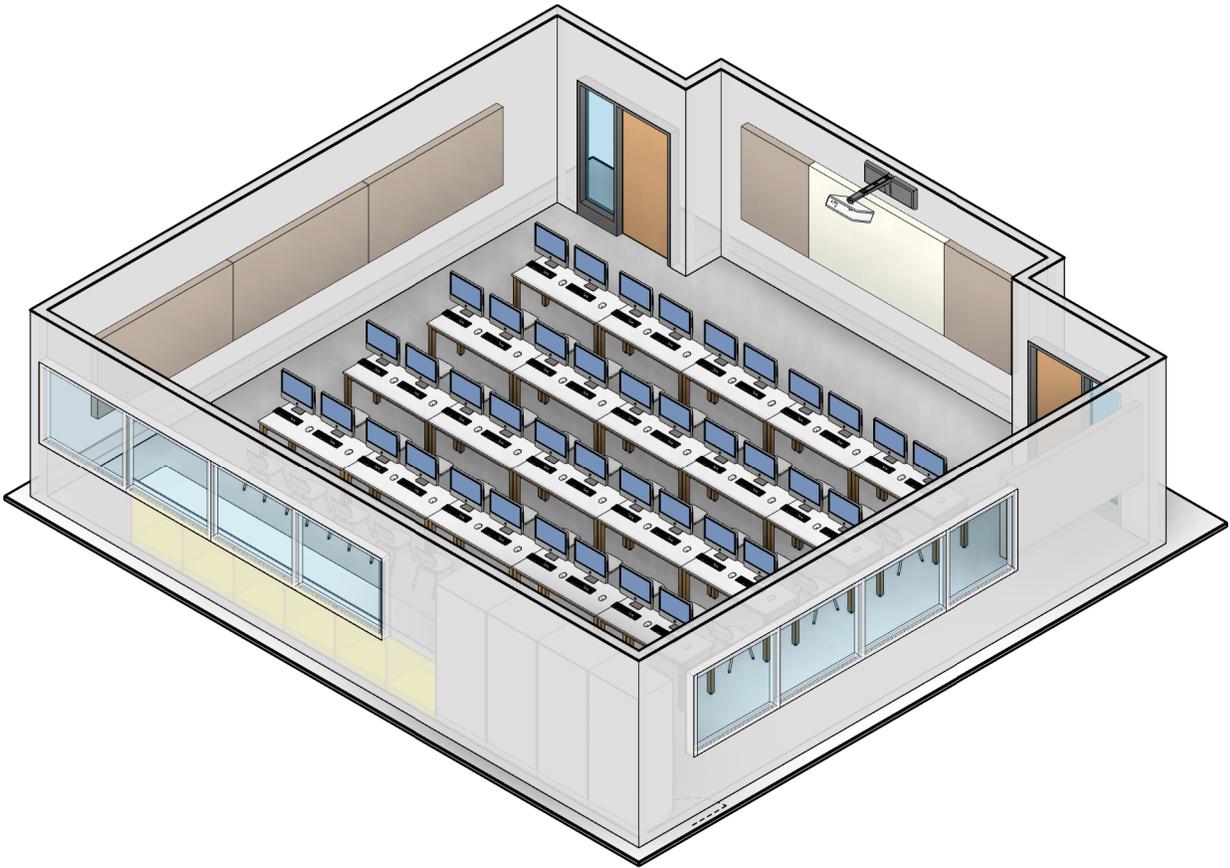
door w/vision panel
 interior window to AD support;
 window shades

4/20/2018



4/20/2018

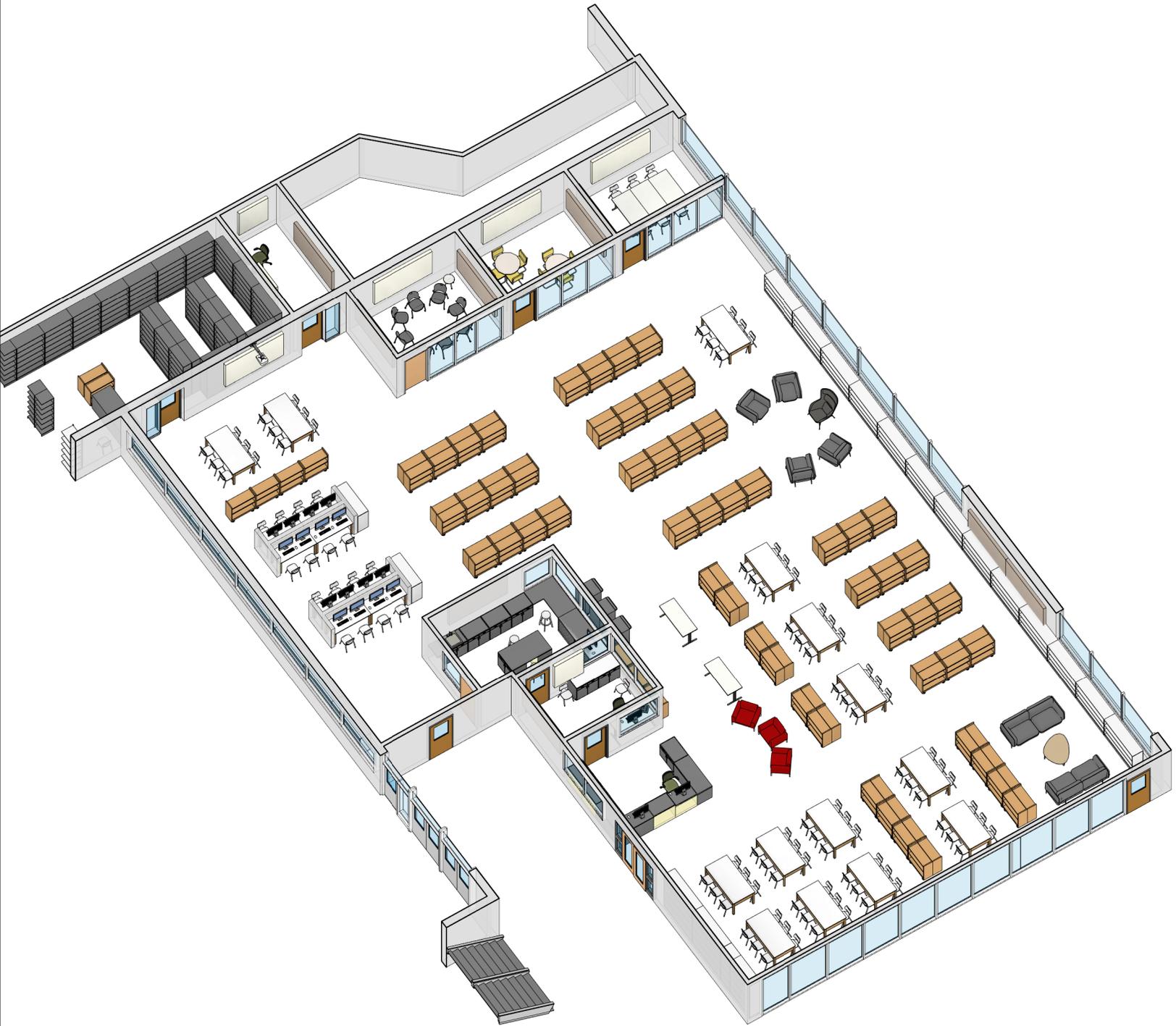
PROGRAM		ROOM SIZE	
Room Name	Athletic Director Support	Area	120 SF
Program Group	Education Support	Dimensions	
Adjacency	near Administration Area; Athletic Director		
Description	workspace for Athletic Director support staff		
EQUIPMENT		OCCUPANCY	
Fixed	lockable file cabinets; lockable cabinets for supplies and personal items; cabinets w/ doors; clock/intercom	Hours	
Mobile	computer, laptop w/ secure storage	Occ. Load	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required		
Electrical	electrical outlets	Walls	min. (1) 4'x4' tackboard; min. of (1) 4'x4' magnetic whiteboards; (1) interior window to assistant area
Lighting	direct/indirect; task lighting as required	Floor	hard surface flooring
Audio/Visual	ability to video conference	Doors	door w/vision panel interior window to Athletic Director Office; window shades
Tele/Data	data outlets; phone	Windows	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room	Comments	



4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Computer Lab	Area	(4) x 1,100 SF (Ed Spec); acutal: (2) 1,100 SF
Program Group	Education Support	Dimensions	
Adjacency	near library/media center, near career prep area		
Description	class based computer instruction in support of academic program; computer based assessment; group based projects or research; secure storage of 1,700 mobile devices in summer		
EQUIPMENT		OCCUPANCY	
Fixed	secure storage cabinets for devices; lower and upper cabinets w/doors; adj. shelving; counter tops; computers; file cabinet; short throw projector; clock/intercom	Hours	
Mobile	computer carts; laptop w/ secure storage preferred	Occ. Load	
SYSTEMS		Security	secure
HVAC		BUILDING	
Plumbing	not required	Ceiling	
Electrical	electrical outlets	Walls	min. of (1) wall w/ windows; tackable wall surface on a minimum of (2) walls; min. of (2) 4'x16' magnetic white boards on teaching wall (utilized as screen)
Lighting	direct/indirect; task lighting as required	Floor	hard surface flooring
Audio/Visual	audio reinforcement	Doors	doors w/ 2'-0" wide sidelites sized to provide ample natural light; operable windows; window shades; interior windows
Tele/Data	data outlets; wireless access point; phone	Windows	
Acoustics	acoustic treatment throughout to eliminate background noise; ability to conduct large and small group instruction simultaneously; acoustics should be designed to increase the ability to hear well throughout the room;	Comments	

4/20/2018



4/20/2018

Library

opsis architecture | **DAO architecture**

PROGRAM

Room Name

Program Group
Adjacency

Description

Library

Education Support

centrally located; provides an inviting space for students to gather for academic and social situations; hub for collaboration and creation

ROOM SIZE

Area

Dimensions

8,000 SF/4,500 SF optional;
actual 7,630 SF**OCCUPANCY****EQUIPMENT**

Fixed

Mobile

shelving; circulation desk; projection screen; short throw projector; video display; clock/intercom

mobile book shelving; document camera; audio playback system

Hours

Occ. Load

Security

school hours and after hour use

security gates; library detection system

SYSTEMS

HVAC

Plumbing

Electrical

Lighting

Audio/Visual

Tele/Data

Acoustics

not required

provide lighting appropriate for tasks and activities; consistent lighting to allow access to all parts of the space

sound reinforcement

data outlets; wireless access point; telephone/intercom

acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically separated

BUILDING

Ceiling

Walls

Floor

Doors

Windows

Comments

windows w/ views; tackable surfaces wherever possible; min. of (1) 4'x16' magnetic whiteboard;

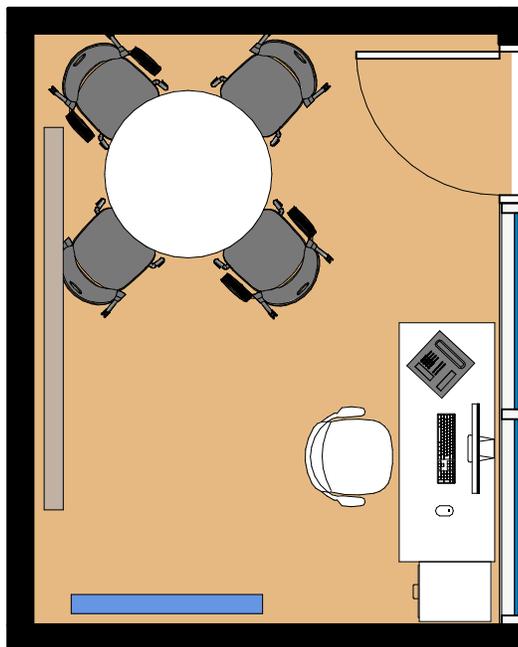
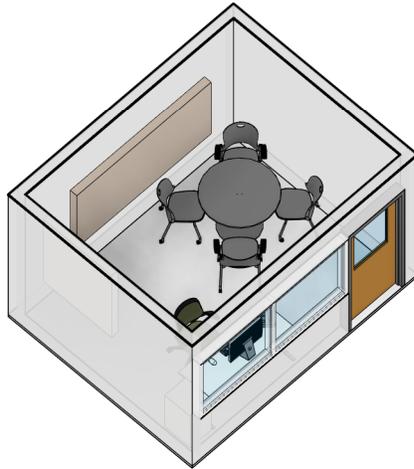
carpet

doors w/vision panels

natural light w/sunshade to minimize glare; high/low operable windows; motorized window shades at tall windows

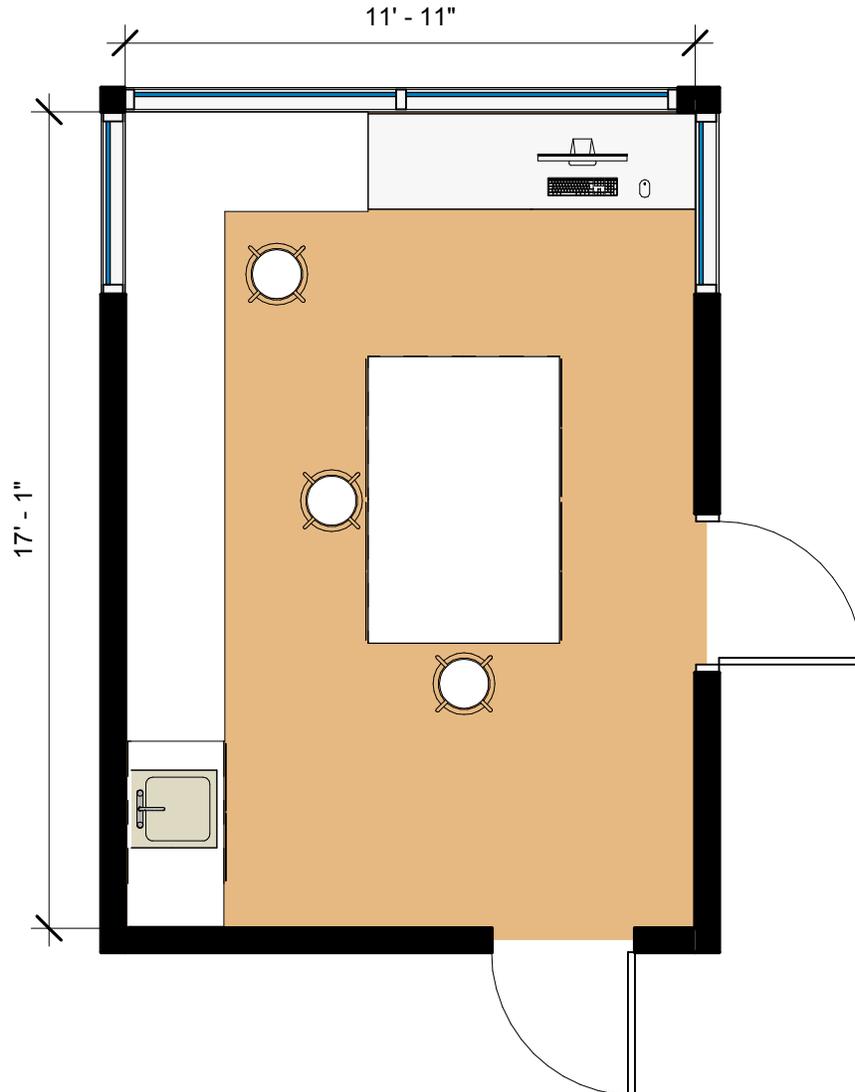
common area outside the library used for additional instruction

4/20/2018



PROGRAM		ROOM SIZE	
Room Name	Library Office	Area	(2) x 120 SF
Program Group	Education Support	Dimensions	
Adjacency	adjacent/within library		
Description	dedicated private space for library staff; can double as breakout and small conference space	OCCUPANCY	
		Hours	school hours and after hour use
EQUIPMENT			
Fixed	cabinets w/ doors and drawers; teacher locking storage preferred; computer; clock/intercom	Occ. Load	
Mobile	shelving; laptop w/ secure storage preferred	Security	locked
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required	Walls	min. of (1) 4'x4' magnetic markerboard; min. of (1) 4'x4' tackboard or one wall w/ tackable wall surface
Electrical	electrical outlets	Floor	carpet
Lighting	provide lighting appropriate for tasks and activities; consistent lighting to allow access to all parts of the space	Doors	door w/window
Audio/Visual		Windows	interior window w/shades for visual connection and supervision to library and circulation desk
Tele/Data	data outlets; telephone/intercom	Comments	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically separated		

4/20/2018



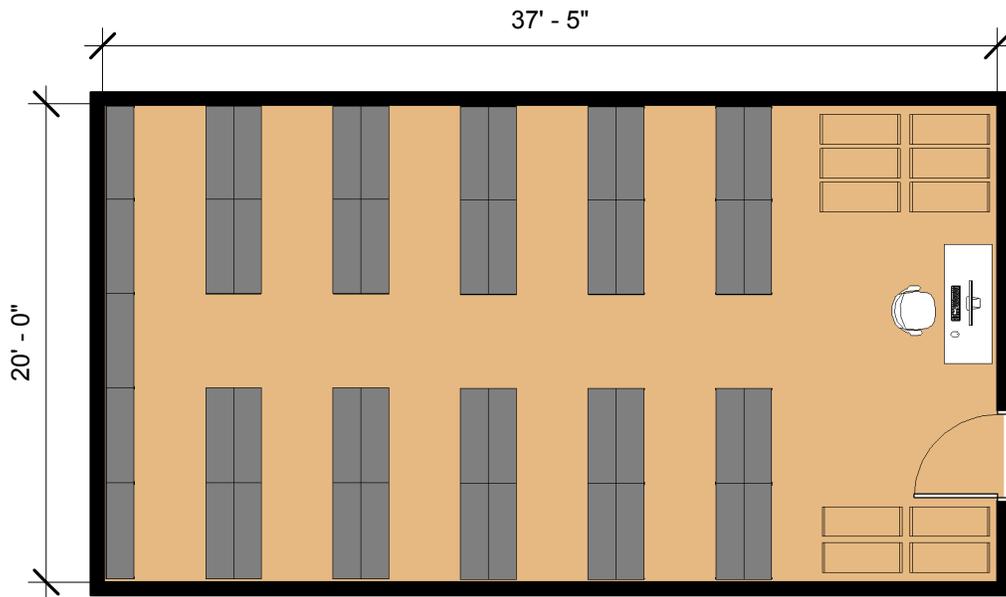
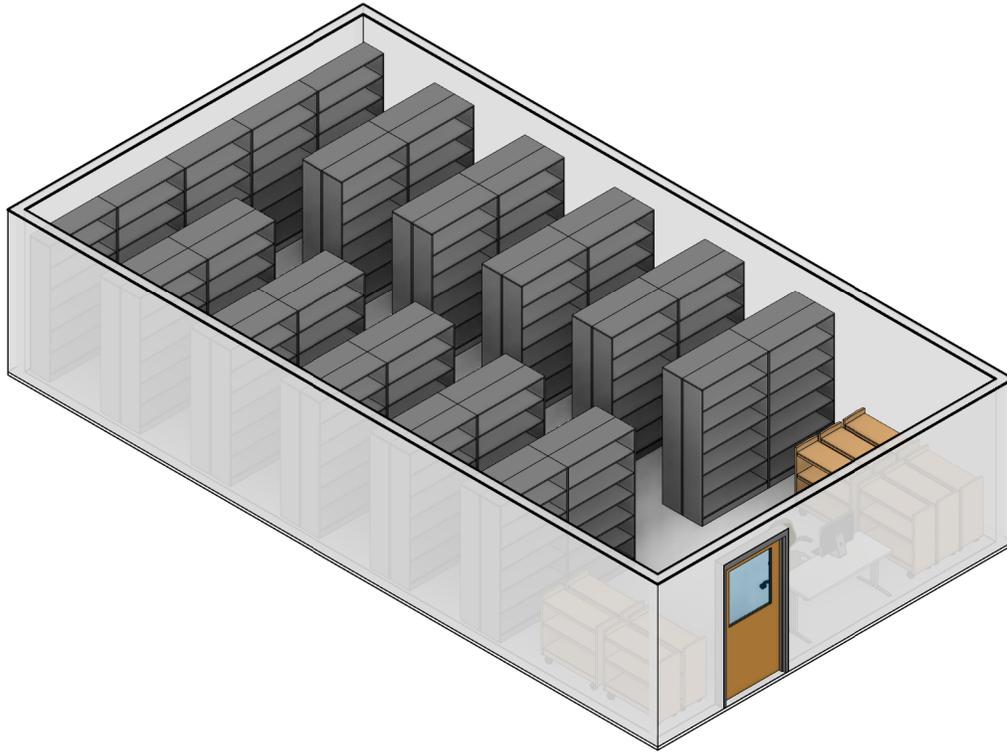
Support

Workroom

4/20/2018

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PROGRAM		ROOM SIZE	
Room Name	Library Workroom	Area	200 SF
Program Group	Education Support	Dimensions	
Adjacency	adjacent to library		
Description	book repair/maintenance; production space for creative activities	OCCUPANCY	
EQUIPMENT		Hours	school hours and after hour use
Fixed	lockable cabinets w/ doors and drawers; computer; deep island counter; deep cabinets for oversized materials; flat files; shelving, storage racks; clock/intercom	Occ. Load	
Mobile	file cabinets; laptop w/ secure storage preferred; paper cutter, laminator	Security	locked
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	sink	Walls	
Electrical	electrical outlets	Floor	hard surface
Lighting	provide lighting appropriate for tasks and activities; consistent lighting to allow access to all parts of the space	Doors	door w/window
Audio/Visual		Windows	interior window w/ shades for visual connection to library
Tele/Data	data outlets; telephone/intercom	Comments	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room		



Support

4/20/2018

Text Storage

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PROGRAM

Room Name
Program Group
Adjacency

Text Storage

Education Support
adjacent to library
text book, lit set, math set
storage; shipping and
receiving

ROOM SIZE

Area
Dimensions

750 SF

Description

OCCUPANCY

EQUIPMENT

Hours

school hours and after hour
use

Fixed

open adjustable shelving,
extended to ceiling; countertop
space; transaction space for
book check-in and check-out

Occ. Load

Mobile

Security

locked

SYSTEMS

BUILDING

HVAC
Plumbing
Electrical

not required
electrical outlets

Ceiling
Walls
Floor

hard surface

Lighting

provide lighting appropriate for
tasks and activities; consistent
lighting to allow access to all
parts of the space

Doors

door w/window

Audio/Visual

Windows

window/transaction window for
book check-in/-out

Tele/Data

Comments

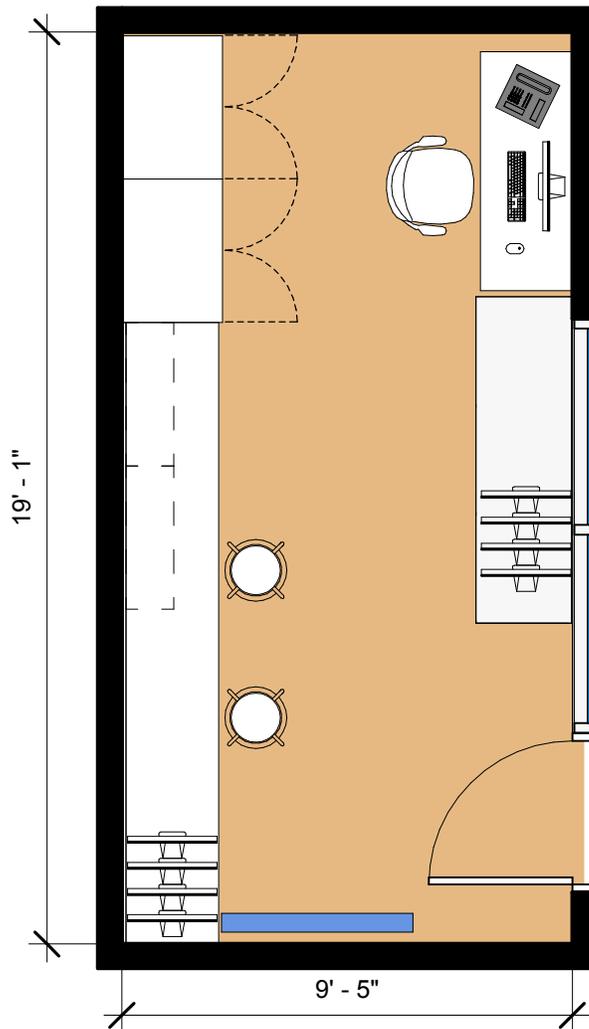
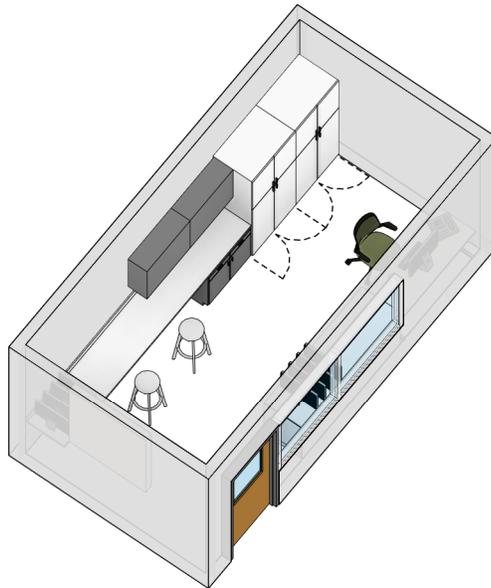
Acoustics

telephone/intercom
acoustics should be designed
to increase the ability to hear
well throughout the room;
ability to conduct large and
small group instruction

PROGRAM		ROOM SIZE	
Room Name	Library Collaboration Space	Area	400 SF
Program Group	Education Support	Dimensions	
Adjacency	near/adjacent to library		
Description	classroom activities; supports library and library instruction; supports small and large group instruction	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	cabinets w/ doors and drawers; adjustable shelving; computers for students/teacher	Occ. Load	
Mobile	carts; laptop w/ secure storage preferred;	Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required	Walls	min. of (1) wall w/ windows providing views; min. of (2) 4'x16' magnetic markerboards; tackable wall surface all walls
Electrical	electrical outlets	Floor	hard surface
Lighting	provide lighting appropriate for tasks and activities; consistent lighting to allow access to all parts of the space	Doors	doors w/windows
Audio/Visual	voice enhancement	Windows	sized to provide ample natural light; operable windows; window shades; interior windows for connectivity to library
Tele/Data	telephone/intercom	Comments	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; ability to conduct large and small group instruction simultaneously; reduction of background noise		

4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Multi Use Room	Area	(3) x 150 SF
Program Group	Education Support	Dimensions	
Adjacency	adjacent/within library		
Description	flexible room that can serve as conference room, quiet and collaboration space	OCCUPANCY	
EQUIPMENT		Hours	school hours and after hour use
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing	not required	Walls	min. of (1) 4'x8' interactive markerboard; tackable wall surfaces; movable glass walls
Electrical	electrical outlets	Floor	hard surface
Lighting	provide lighting appropriate for tasks and activities; consistent lighting to allow access to all parts of the space	Doors	glass door
Audio/Visual		Windows	interior window w/shades for visual connection and supervision to library and circulation desk
Tele/Data	telephone/intercom	Comments	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; ability to conduct large and small group instruction simultaneously		



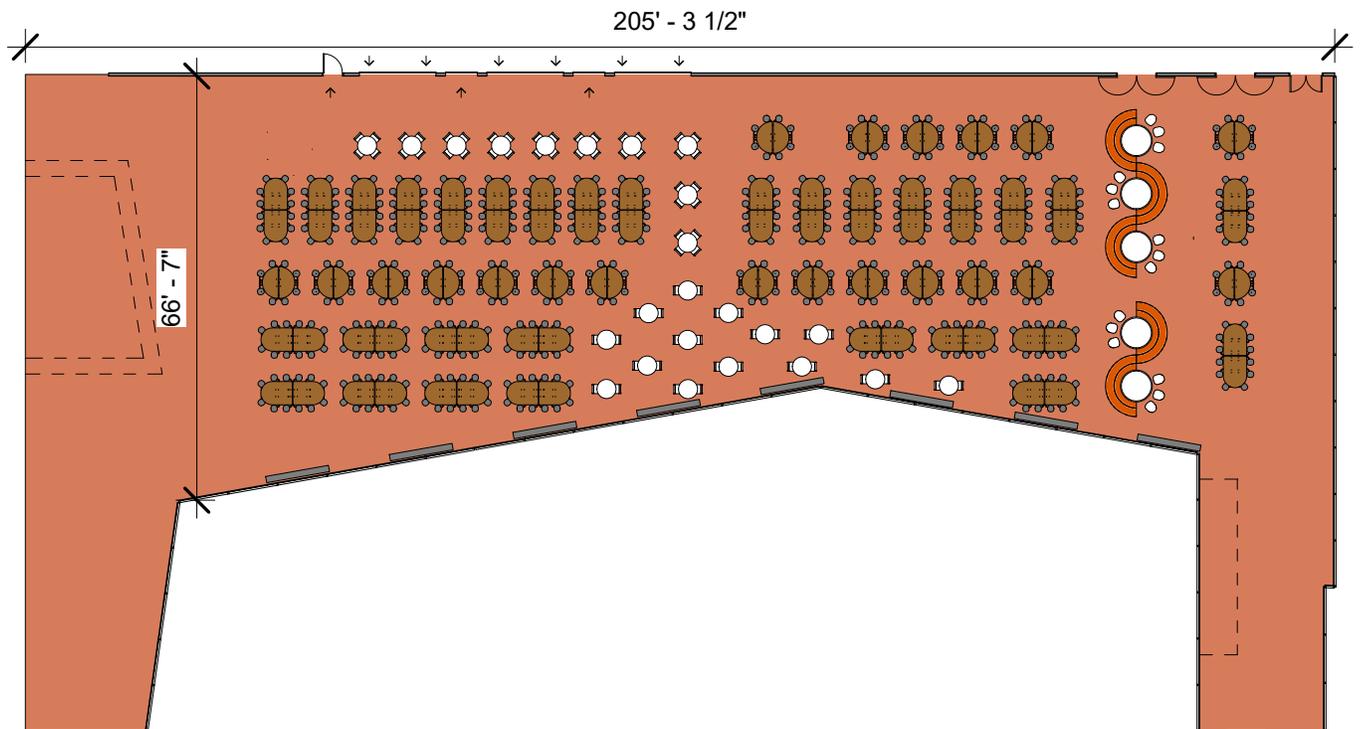
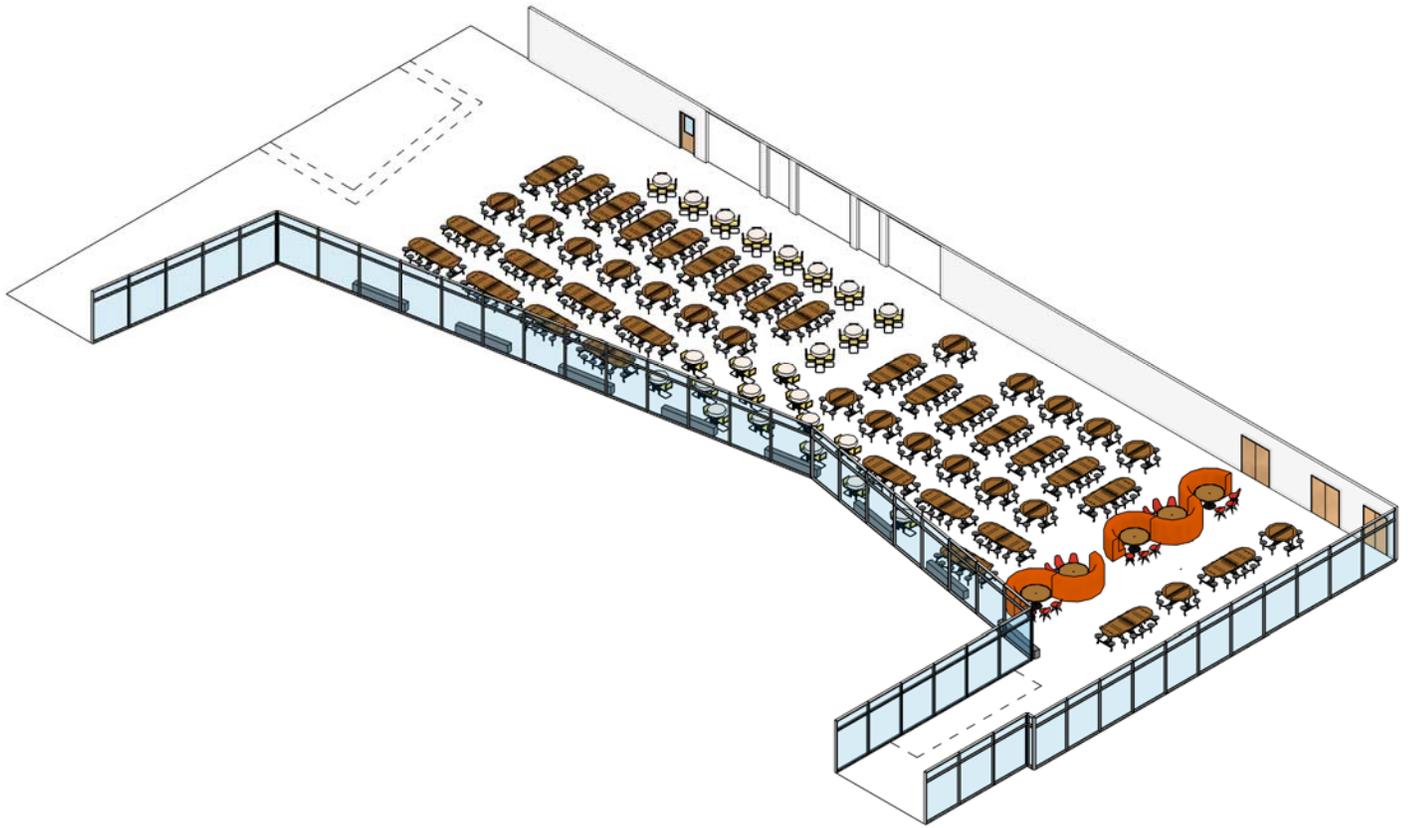
Support

IT Office

4/20/2018

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PROGRAM	IT Repair/Tech Coordinator	ROOM SIZE	
Room Name		Area	180 SF
Program Group	Education Support	Dimensions	
Adjacency	adjacent to library		
Description	dedicated location to repair and maintain technology of entire school; office/workspace for technology coordinator	OCCUPANCY	
EQUIPMENT		Hours	
Fixed	countertop workspace; lockable cabinets w/ doors; adjustable shelving; computers	Occ. Load	
Mobile	laptop w/ secure storage preferred;	Security	locked
SYSTEMS		BUILDING	
HVAC	adequate ventilation	Ceiling	
Plumbing	not required	Walls	min. of (1) 4'x4' magnetic markerboard
Electrical	electrical outlets	Floor	hard surface
Lighting	provide lighting appropriate for tasks and activities; consistent lighting to allow access to all parts of the space	Doors	door w/window
Audio/Visual	potential to stream videos	Windows	interior window (relite) for connectivity
Tele/Data	telephone/intercom	Comments	
Acoustics	acoustics should be designed to increase the ability to hear well throughout the room; room should be acoustically isolated		

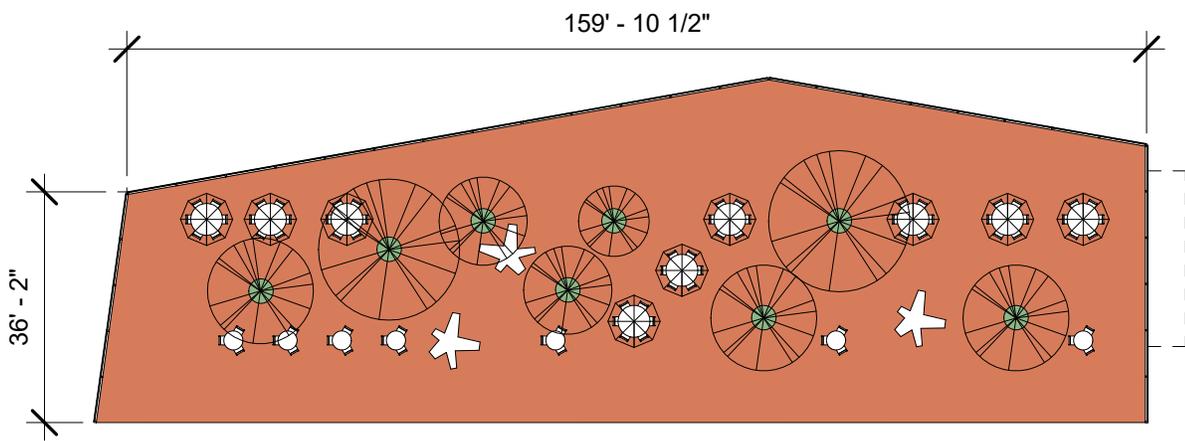
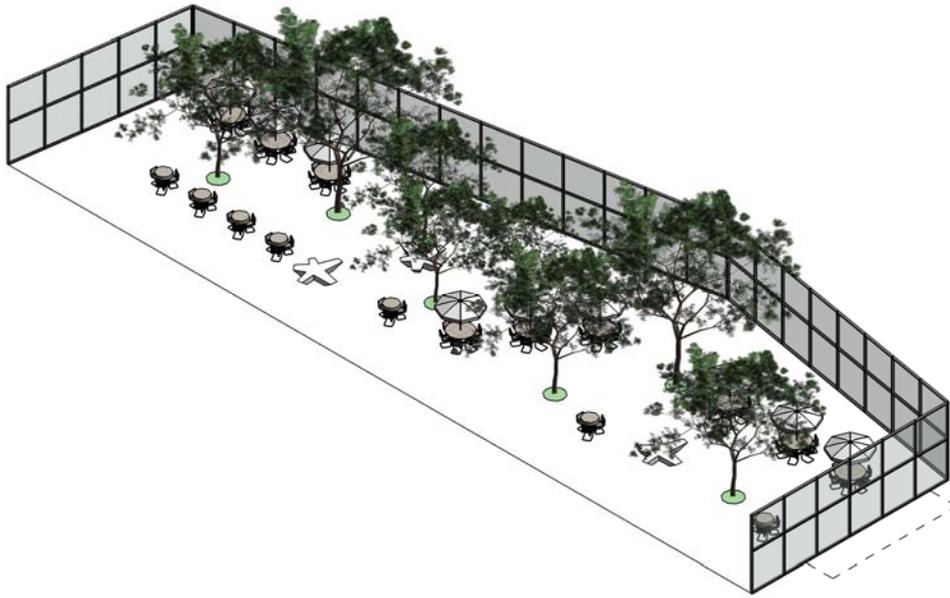


Student Center / Commons

4/20/2018

Commons

PROGRAM		ROOM SIZE	
Room Name	Student Center/Commons	Area	7800 SF
Program Group	Student Center/Commons	Dimensions	
Adjacency	Loading dock, connectivity to outdoors and outdoor eating spaces for 100, kitchen, restrooms, gymnasiums; centrally located		
Description	large, open and comfortable area, durable without feeling industrial	OCCUPANCY	
EQUIPMENT	Kitchen equipment, paper towel dispensers, soap dispenser, trash compactor, dumpsters, shelving, recycling bins or built-in recycling station	Hours	
Fixed		Occ. Load	Ed Spec: 600, designing for 1,700
Mobile		Security	
SYSTEMS	sink, hand washing sink(s), drinking fountains with bottle fill stations	BUILDING	
HVAC	power/data outlets, wireless access point	Ceiling	
Plumbing	natural light	Walls	minimum (1) full wall of tackable wall surface or dispersed throughout commons area, wainscotting
Electrical	clock/intercom	Floor	hard surface flooring
Lighting		Doors	doors with windows
Audio/Visual	acoustic isolation	Windows	operable windows, shading control
Tele/Data		Comments	raised area for performance/presentation; enclosed area for trash cans
Acoustics			



Student Center / Commons

4/20/2018

Exterior Courtyard

opsis architecture | DAO architecture

PROGRAM

Room Name
Program Group
Adjacency
Description

Exterior Courtyard
Student Center/Commons
Student Center/Commons

ROOM SIZE

Area
Dimensions

OCCUPANCY

Hours
Occ. Load 100 min

EQUIPMENT

Fixed
Mobile

variety of seating with umbrellas to accommodate 100

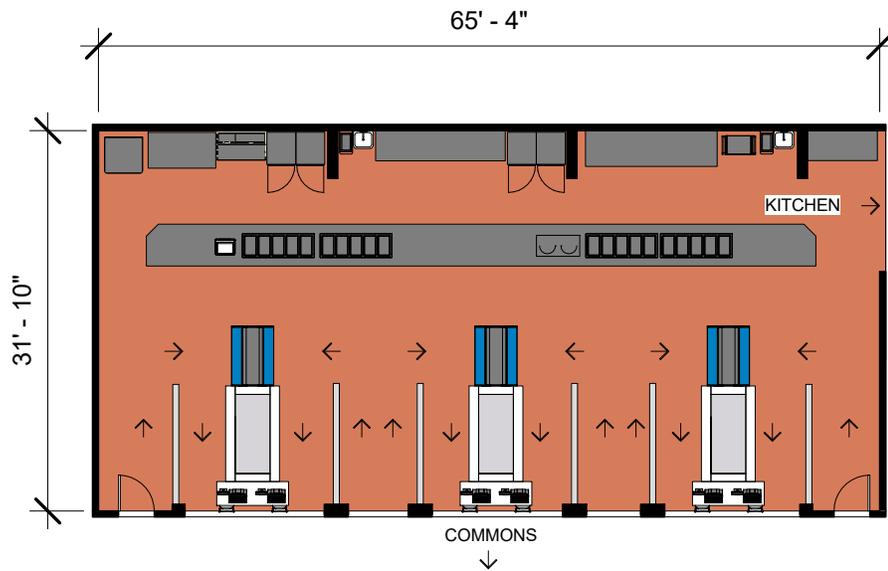
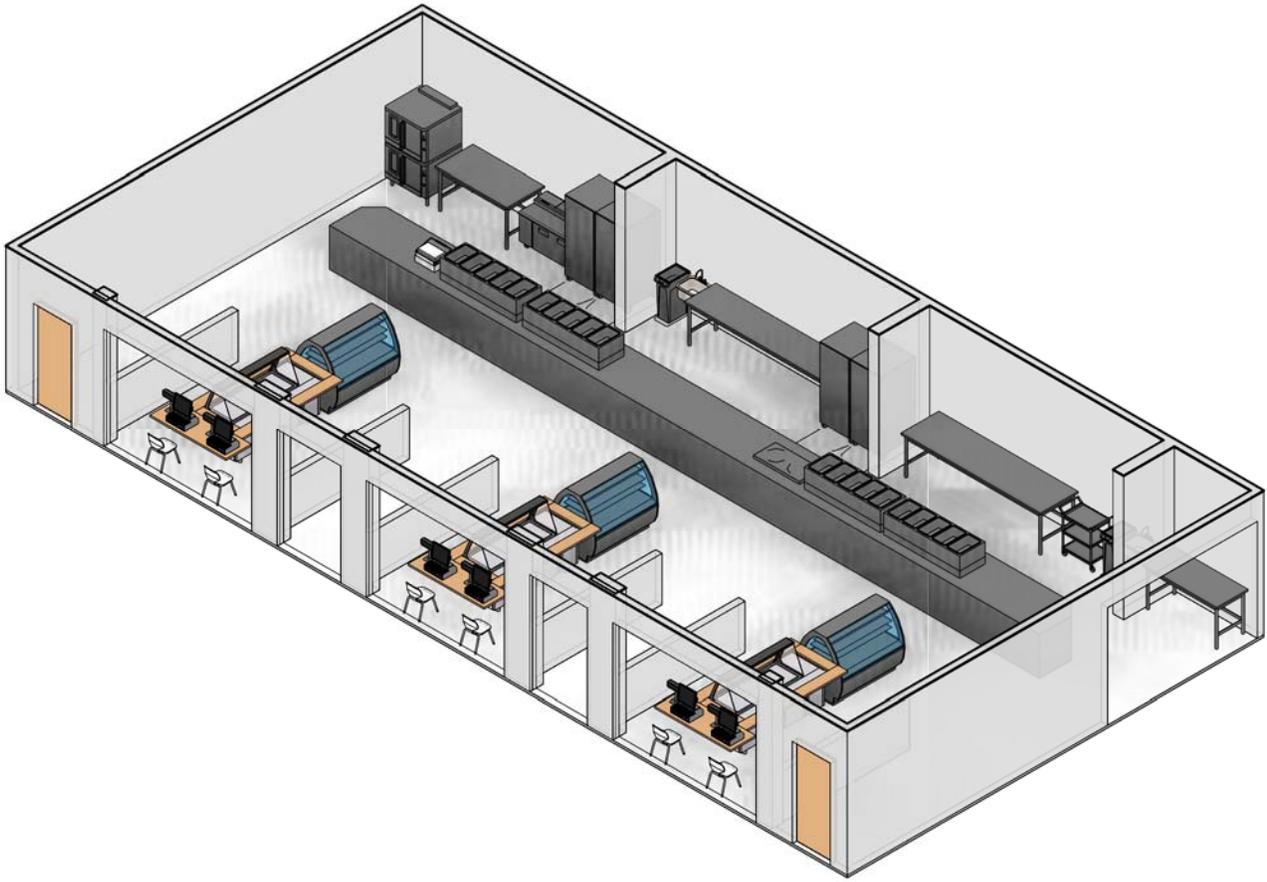
Security

SYSTEMS

HVAC
Plumbing
Electrical
Lighting
Audio/Visual
Tele/Data
Acoustics

BUILDING

Ceiling
Walls
Floor
Doors
Windows
Comments

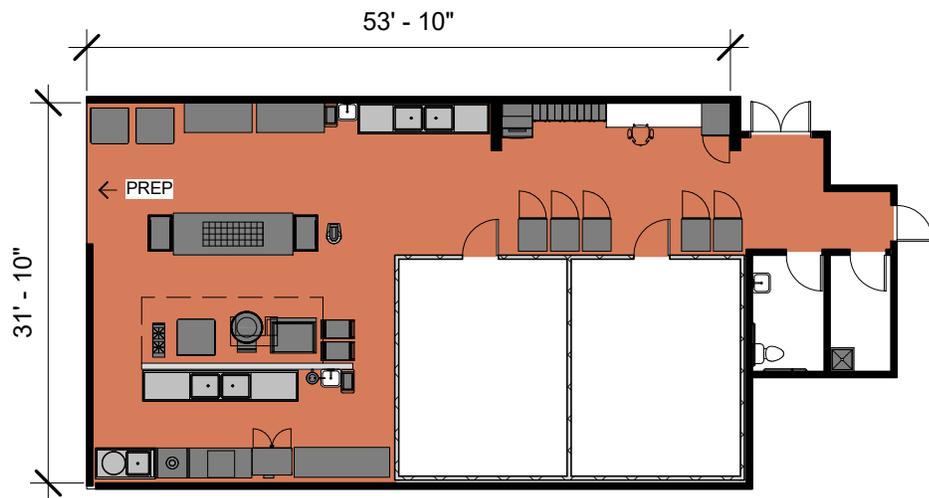
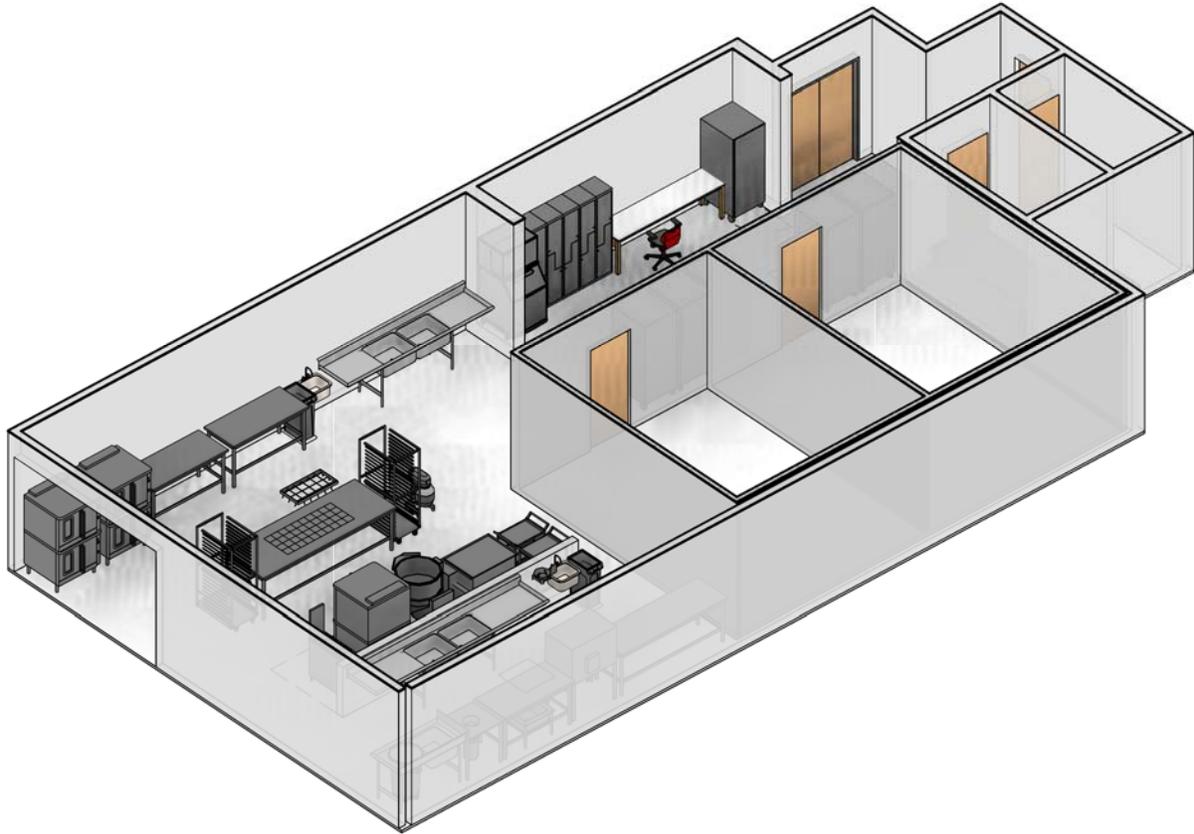


Student Center / Commons

4/20/2018

Main Servery

PROGRAM		ROOM SIZE	
Room Name	Main Servery	Area	1700 SF (1,800 SF preferred)
Program Group	Student Center/Commons	Dimensions	
Adjacency	Commons, Kitchen and Food Prep, Dish Washing, school center		
Description		OCCUPANCY	
EQUIPMENT	Kitchen equipment, paper towel dispenser, soap dispenser, (6) pay stations/kiosks preferred	Hours	
Fixed		Occ. Load	
Mobile		Security	secure/lockable
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing	natural light	Walls	paneling or durable finish
Electrical	clock/intercom	Floor	hard surface flooring, slip resistant
Lighting		Doors	secure/lockable (coiling doors), visions windows and kickplates
Audio/Visual	designed to increase ability to hear throughout the space	Windows	secure/lockable (coiling windows)
Tele/Data		Comments	
Acoustics			



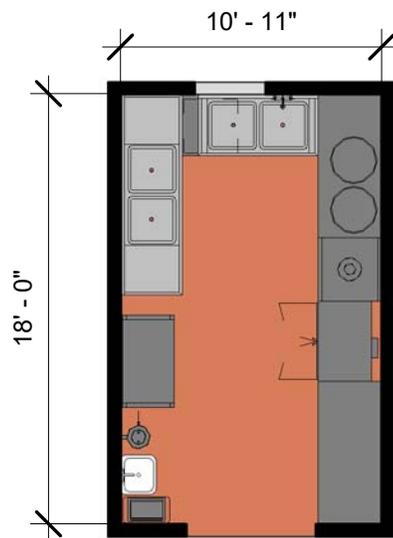
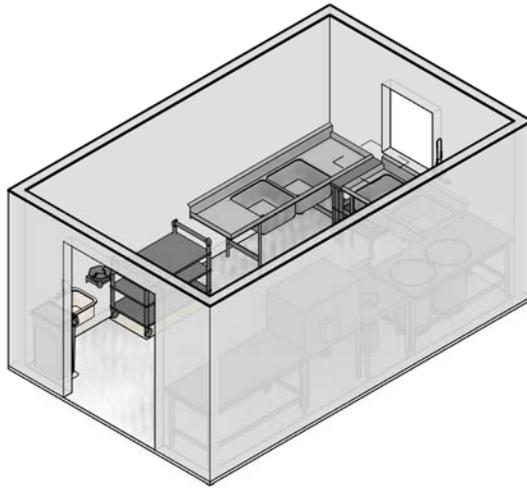
Student Center / Commons

4/20/2018

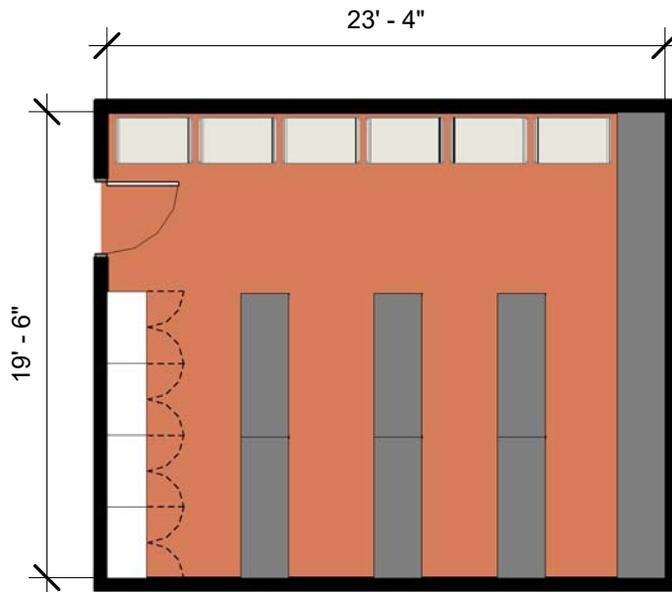
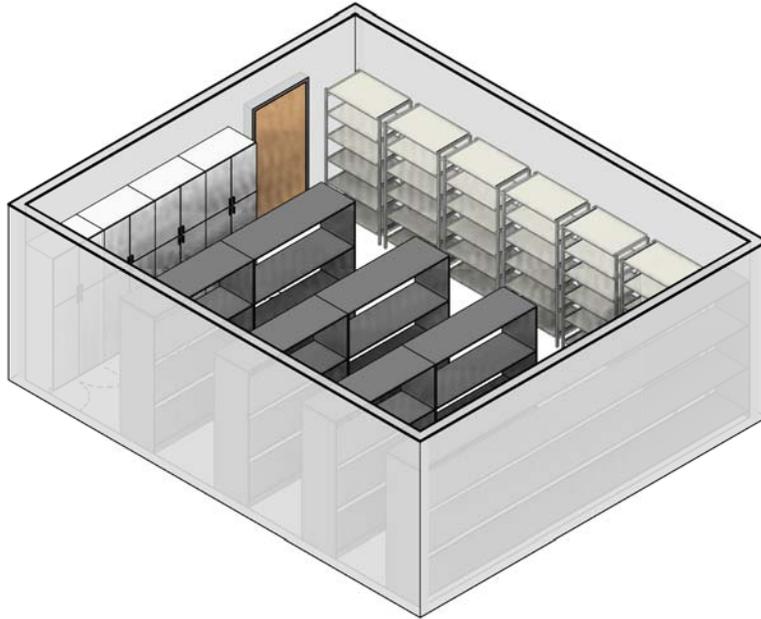
Food Prep/Kitchen

opsis architecture | DAO architecture

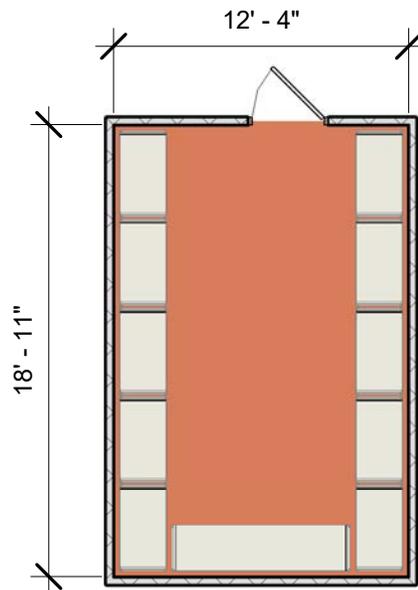
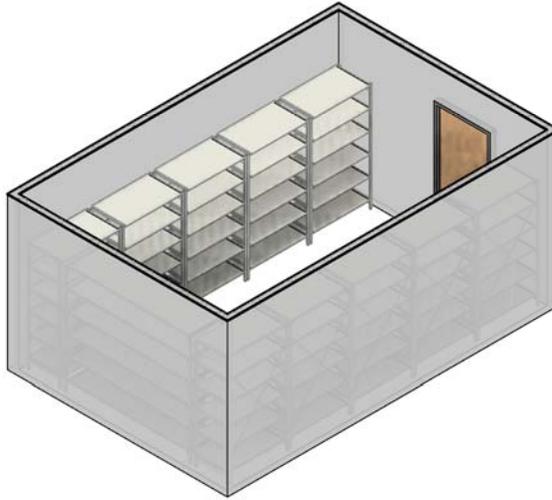
PROGRAM	Food Prep/Kitchen	ROOM SIZE	1500 SF
Room Name	Student Center/Commons	Area	
Program Group	Loading dock	Dimensions	
Adjacency		OCCUPANCY	
Description	Kitchen equipment, paper towel dispensers, soap dispenser, trash compactor, dumpsters, shelving, (3) prep tables	Hours	
EQUIPMENT		Occ. Load	10-12 kitchen staff
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	sink,	Ceiling	cleanable acoustic ceiling tile
HVAC	power/data outlets, wireless access point	Walls	per equipment; paneling (i.e. FRP) at all other wall space 4'-0" high min.
Plumbing	gasketed	Floor	hard surface flooring, slip resistant
Electrical	clock/intercom	Doors	kickplates
Lighting		Windows	shade control, operable
Audio/Visual		Comments	
Tele/Data			
Acoustics			



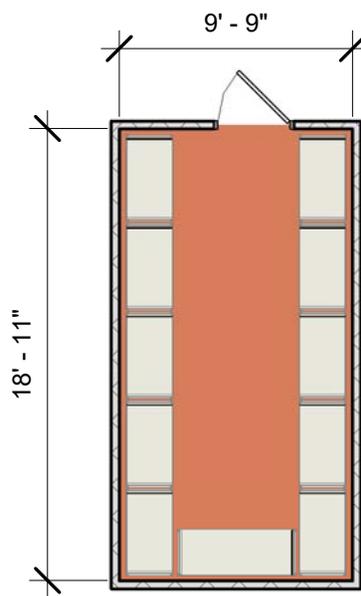
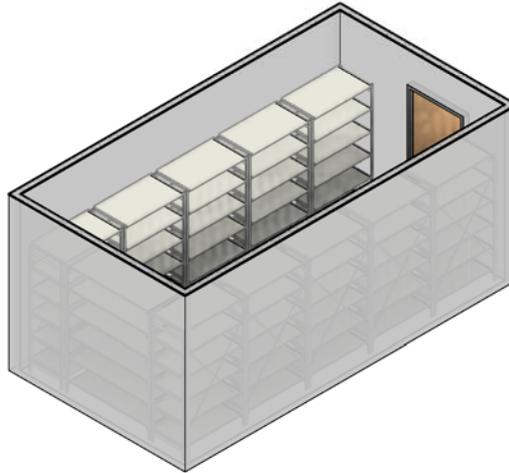
PROGRAM	Dish Washing	ROOM SIZE	
Room Name	Student Center/Commons	Area	200 SF
Program Group	Food Prep/Kitchen, Main Servery	Dimensions	
Adjacency		OCCUPANCY	
Description	Kitchen equipment, paper towel dispenser, soap dispenser, shelving	Hours	
EQUIPMENT		Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	sink	Ceiling	
HVAC	power/data outlets	Walls	per equipment; paneling (i.e. FRP) at all other wall space 4'-0" high min.
Plumbing	gasketed	Floor	hard surface flooring, slip resistant
Electrical		Doors	
Lighting		Windows	36" wide dish return window with sill height 1" higher than dish table
Audio/Visual		Comments	
Tele/Data			
Acoustics			



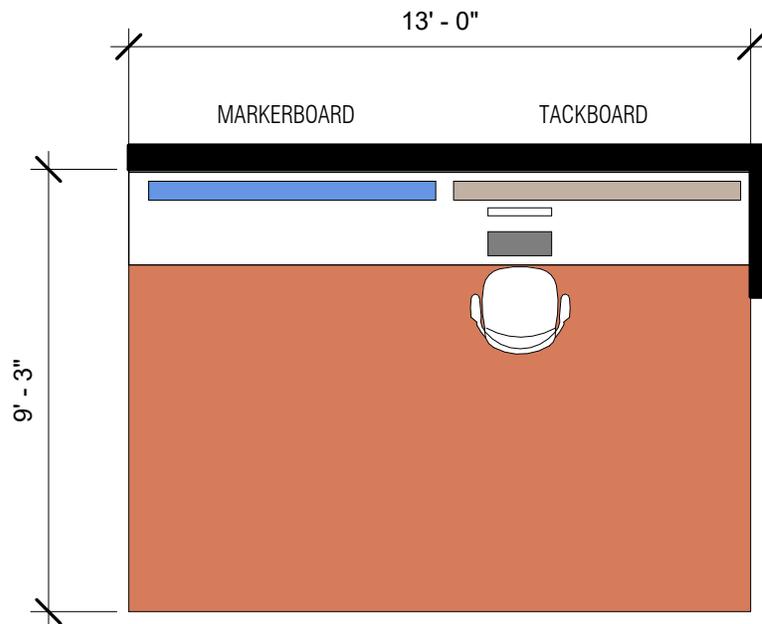
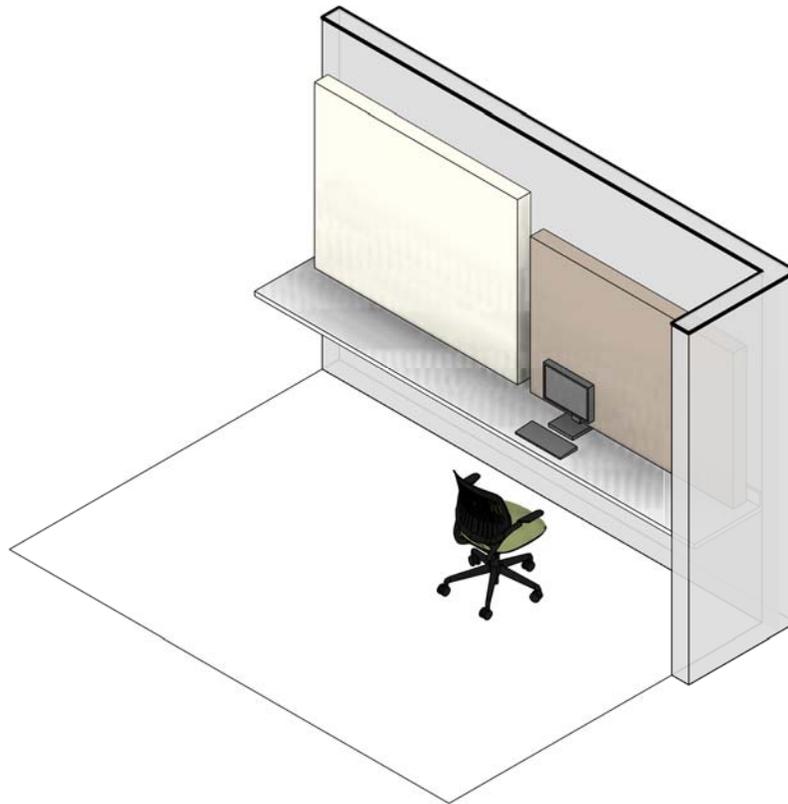
PROGRAM		ROOM SIZE	
Room Name	Dry Storage/Cart Storage	Area	500 SF
Program Group	Student Center/Commons	Dimensions	
Adjacency	Food Prep/Kitchen, Cooler, Freezer		
Description		OCCUPANCY	
EQUIPMENT	shelving, heavy duty storage racks	Hours	
Fixed	carts	Occ. Load	
Mobile		Security	secure
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	paneling (i.e. FRP) or protective finish
Electrical		Floor	hard surface flooring
Lighting		Doors	42" wide, window, kickplates; consider double doors for cart access
Audio/Visual		Windows	
Tele/Data		Comments	
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Walk-In Cooler	Area	200 SF
Program Group	Student Center/Commons	Dimensions	
Adjacency	Kitchen, Walk-In Freezer, loading dock area		
Description		OCCUPANCY	
EQUIPMENT	shelving, racks	Hours	
Fixed		Occ. Load	
Mobile		Security	secure
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical		Floor	hard surface flooring, slip resistant; recessed slab per cooler manufacturer
Lighting		Doors	
Audio/Visual		Windows	
Tele/Data		Comments	Ability to monitor temperature
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Walk-In Freezer	Area	200 SF
Program Group	Student Center/Commons	Dimensions	
Adjacency	Kitchen, Walk-In Cooler, loading dock area		
Description		OCCUPANCY	
EQUIPMENT	shelving or dunnage racks	Hours	
Fixed		Occ. Load	
Mobile		Security	secure
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical		Floor	hard surface flooring, slip resistant; recessed slab per cooler manufacturer
Lighting		Doors	
Audio/Visual		Windows	
Tele/Data		Comments	
Acoustics			



PROGRAM

Room Name
Program Group
Adjacency
Description

Commons Office
Student Center/Commons
kitchen (location separate from food)
office space for kitchen staff
cabinets or drawers, marker board, tackable surfaces
desk, chair, computer

ROOM SIZE

Area
Dimensions

120 SF

EQUIPMENT

Fixed
Mobile

OCCUPANCY

Hours
Occ. Load
Security

secure

SYSTEMS

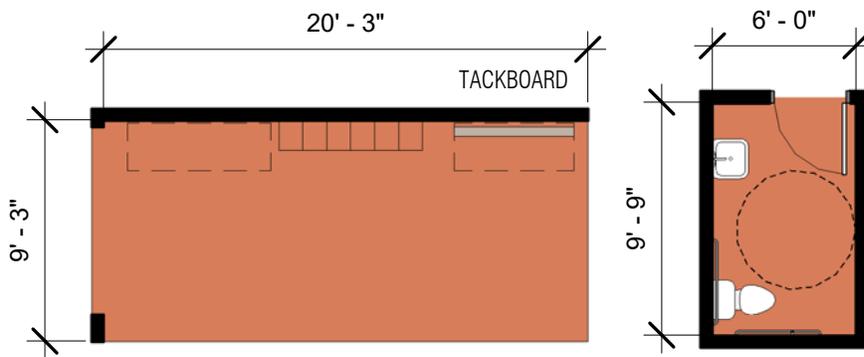
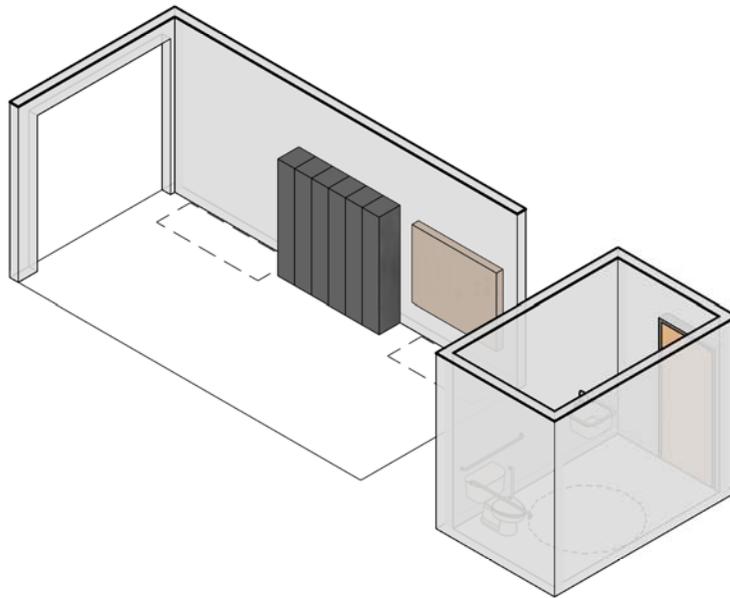
HVAC
Plumbing
Electrical
Lighting
Audio/Visual
Tele/Data
Acoustics

power/data outlets, wireless access point
natural light
clock/intercom

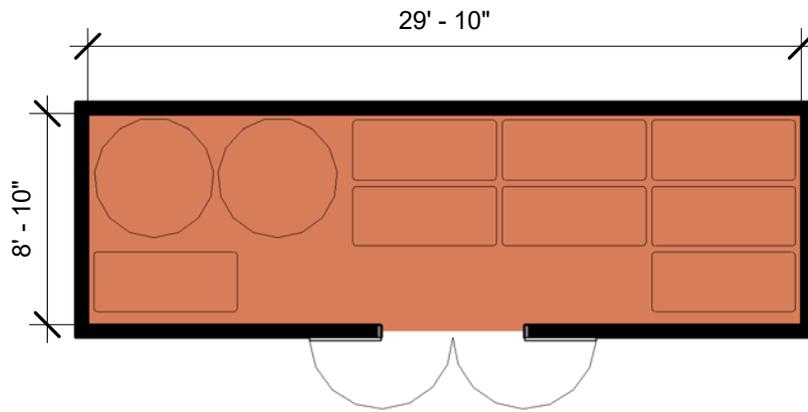
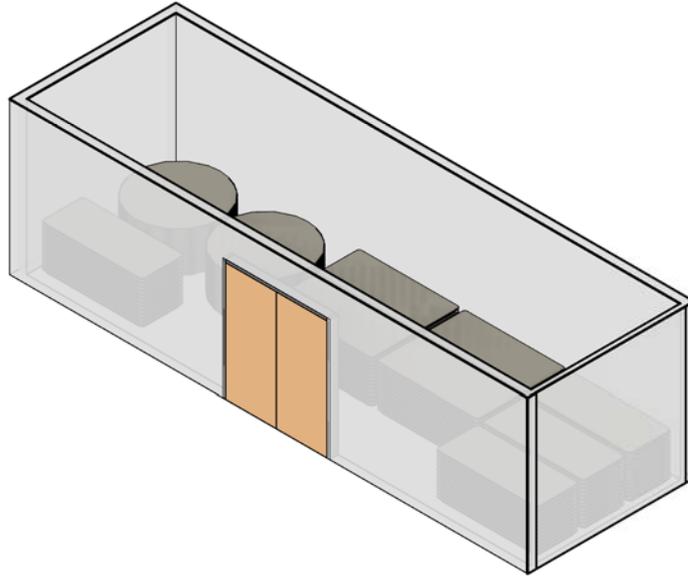
BUILDING

Ceiling
Walls
Floor
Doors
Windows
Comments

minimum (1) 4'x4' tack board
door with window
shade control



PROGRAM	Staff Lockers/Dressing Room	ROOM SIZE	
Room Name	Student Center/Commons	Area	150 SF
Program Group	Kitchen, Kitchen Office	Dimensions	
Adjacency		OCCUPANCY	
Description	min (8) 1/2 height lockers with hasps for padlocks, paper towel dispenser, soap dispenser, tackable surfaces, table, chairs	Hours	
EQUIPMENT		Occ. Load	5-7 staff
Fixed		Security	secure
Mobile		BUILDING	
SYSTEMS		Ceiling	
HVAC	power/data outlets, clock/intercom, telephone	Walls	minimum (1) 4'x4' tack board
Plumbing		Floor	hard surface flooring
Electrical	clock/intercom	Doors	solid door, kick plates
Lighting		Windows	
Audio/Visual		Comments	
Tele/Data			
Acoustics			



PROGRAM

Room Name
Program Group
Adjacency
Description

Table Storage

Student Center/Commons
Commons

EQUIPMENT

Fixed
Mobile

storage racks

SYSTEMS

HVAC
Plumbing
Electrical

Lighting

Audio/Visual
Tele/Data
Acoustics

ROOM SIZE

Area
Dimensions

250 SF

OCCUPANCY

Hours
Occ. Load
Security

secure

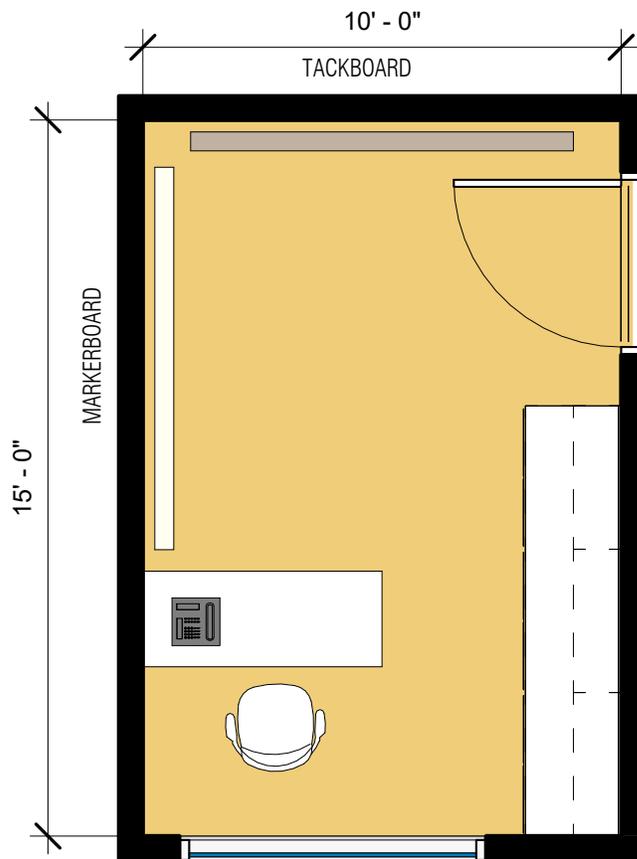
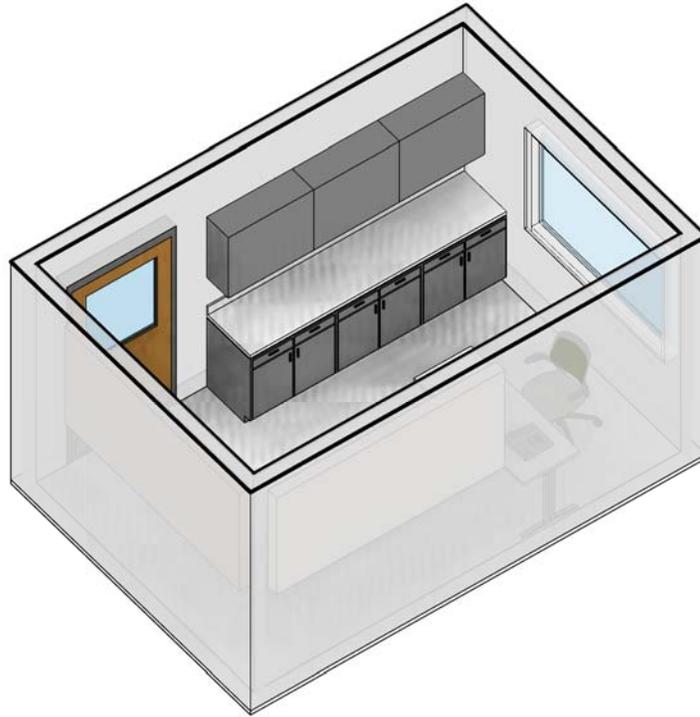
BUILDING

Ceiling
Walls
Floor

Doors

hard surface flooring
large double doors that swing 180
degrees

Windows
Comments



Partner and Community Uses

4/20/2018

PROGRAM

Room Name
 Program Group
 Adjacency
 Description

Partner Program Office
 Partner and Community Uses
 Central Administration

ROOM SIZE

Area
 Dimensions

150 SF (optional)

OCCUPANCY

Hours
 Occ. Load
 Security

EQUIPMENT

Fixed
 Mobile

marker board, tackable surfaces,
 cabinets, wall mounted TV
 (optional)

SYSTEMS

HVAC
 Plumbing
 Electrical
 Lighting
 Audio/Visual
 Tele/Data
 Acoustics

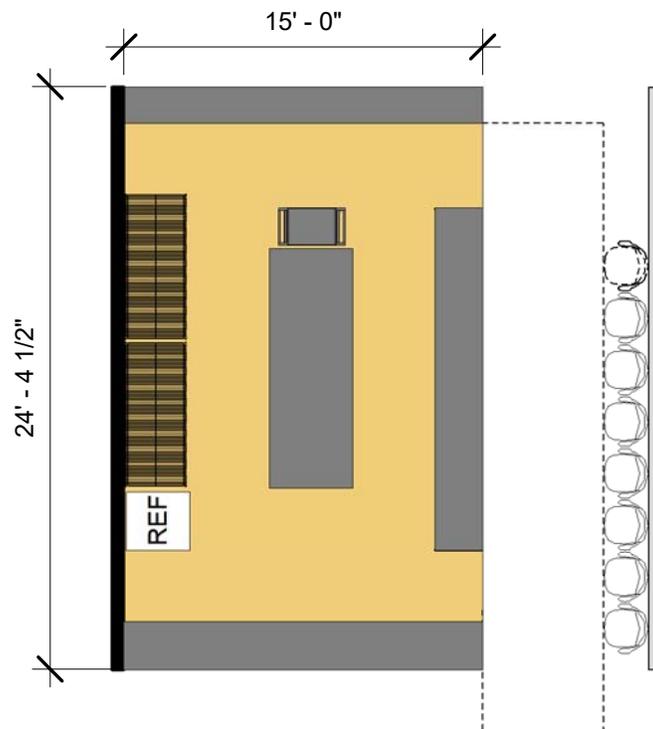
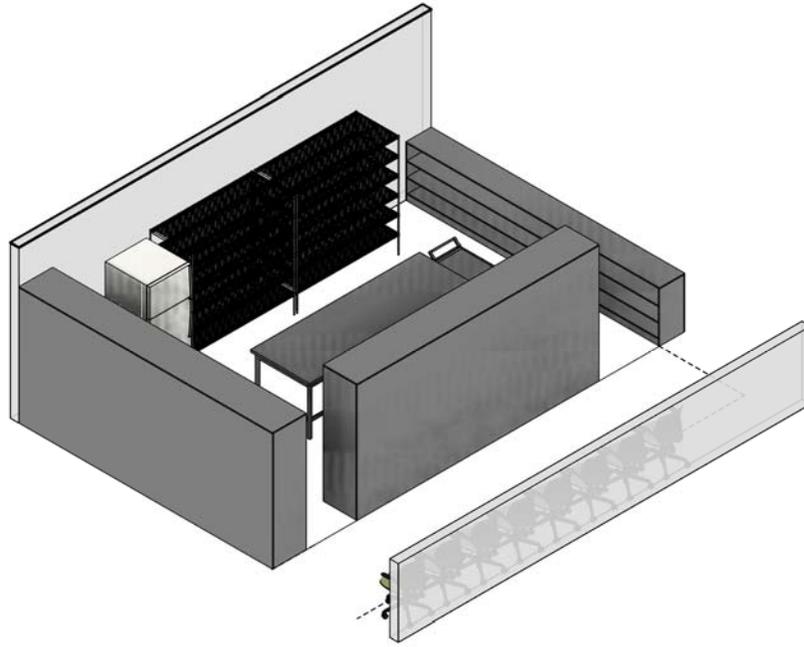
power/data outlets, wireless
 access point

clock/intercom
 telephone

BUILDING

Ceiling
 Walls
 Floor
 Doors
 Windows
 Comments

shade control
 multiple desks/stations?



Partner and Community Uses

4/20/2018

Pantry

PROGRAM

Room Name
Program Group
Adjacency
Description

Pantry
Partner and Community Uses
Basement / private entrance,
garden, cooking demonstration
space

ROOM SIZE

Area
Dimensions

200 SF (optional)

EQUIPMENT

Fixed
Mobile

shelving
portable robe racks, portable
clothing racks

OCCUPANCY

Hours
Occ. Load
Security

accessible to community
Wednesday evenings 6-8PM

SYSTEMS

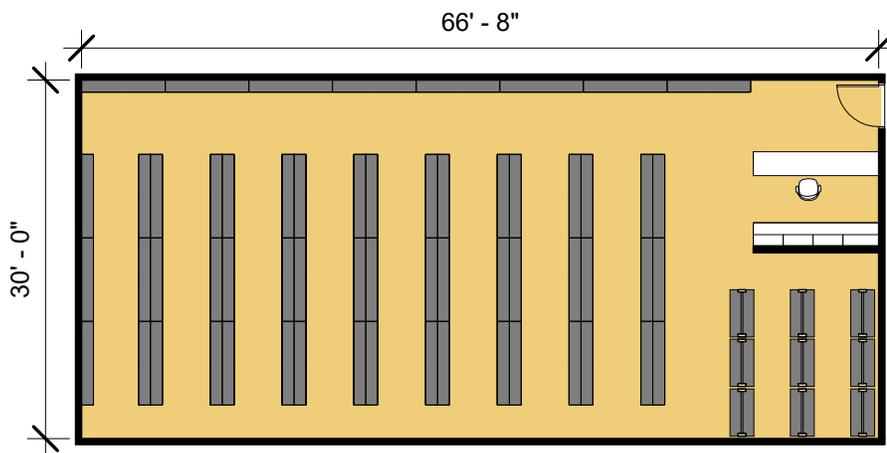
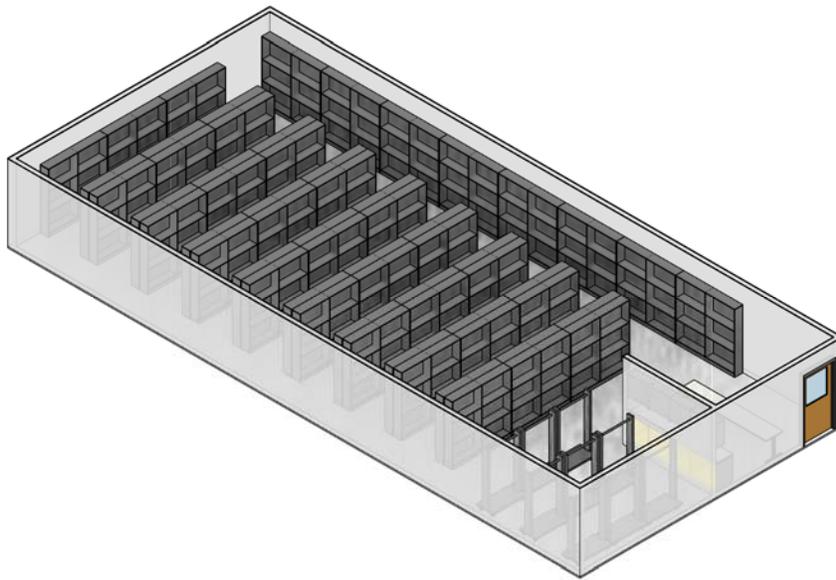
HVAC
Plumbing
Electrical
Lighting
Audio/Visual
Tele/Data
Acoustics

(1) power/data outlet

BUILDING

Ceiling
Walls
Floor
Doors
Windows
Comments

seems undersized



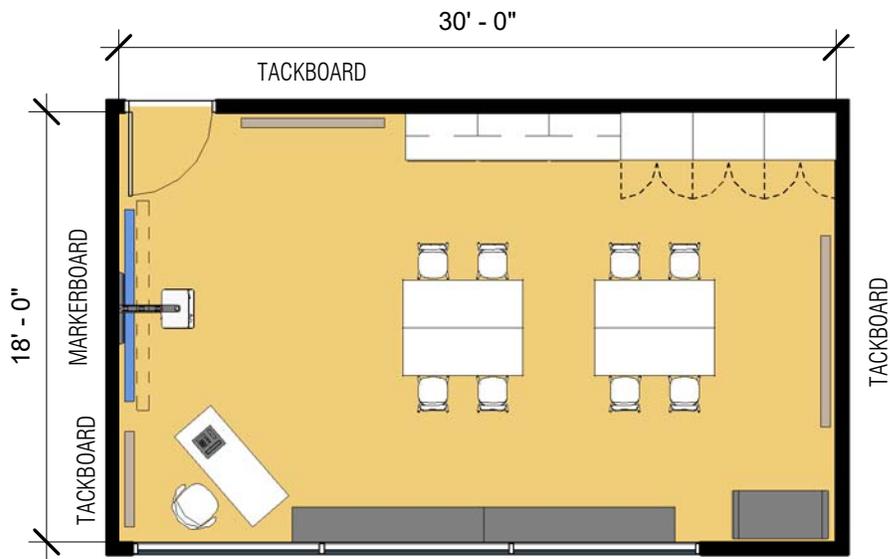
Partner and Community Uses

4/20/2018

Clothing/Food Closet

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PROGRAM	Clothing/Food Closet	ROOM SIZE	1,200 SF (2,000 SF preferred)
Room Name	Partner and Community Uses	Area	
Program Group	Central administration	Dimensions	
Adjacency		OCCUPANCY	
Description	shelving, storage racks, cabinets	Hours	
EQUIPMENT	portable clothing racks	Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	power/data outlets	Ceiling	
HVAC		Walls	
Plumbing		Floor	
Electrical		Doors	
Lighting		Windows	
Audio/Visual		Comments	
Tele/Data			
Acoustics			



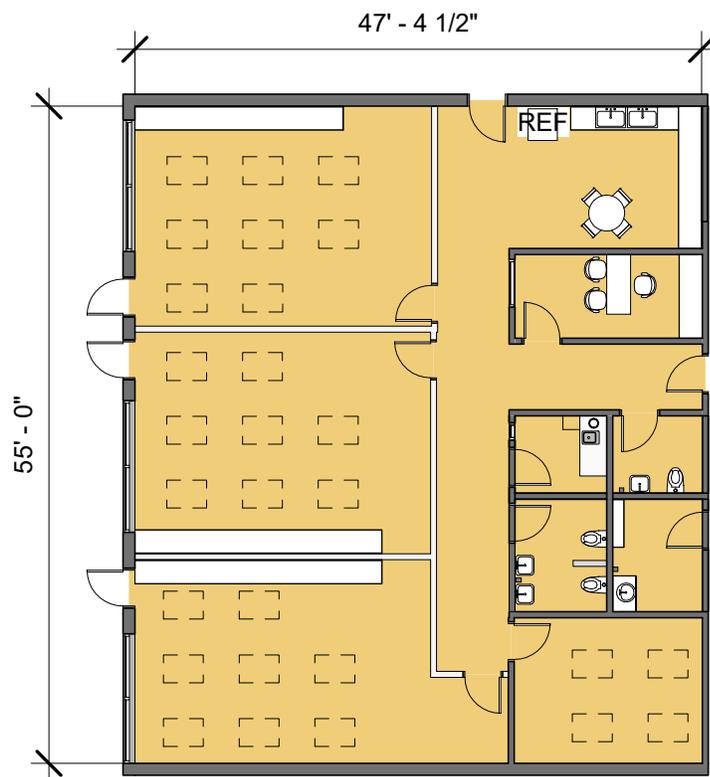
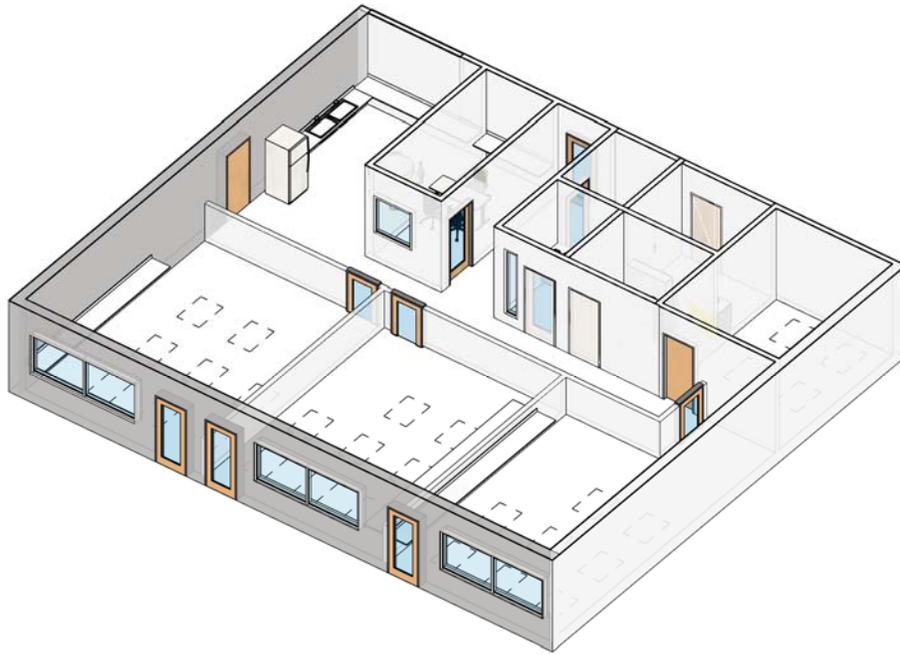
Partner and Community Uses

4/20/2018

After School Instruction

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PROGRAM	After School Instruction	ROOM SIZE	(4) @ 500 SF (optional)
Room Name	Partner and Community Uses	Area	
Program Group	Central administration	Dimensions	
Adjacency		OCCUPANCY	
Description	marker board, tackable surfaces, large format storage, cabinets, teacher locking storage, space for file cabinet	Hours	
EQUIPMENT	mobile cart/storage	Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	(12) power/data outlets, wireless access point	Ceiling	
HVAC		Walls	
Plumbing	digital projector, document camera, speaker sound system	Floor	
Electrical	telephone, clock/intercom	Doors	
Lighting	sound reinforcement	Windows	shade control
Audio/Visual		Comments	Does this require its own classroom? Or can it use other teaching spaces after hours?
Tele/Data			
Acoustics			

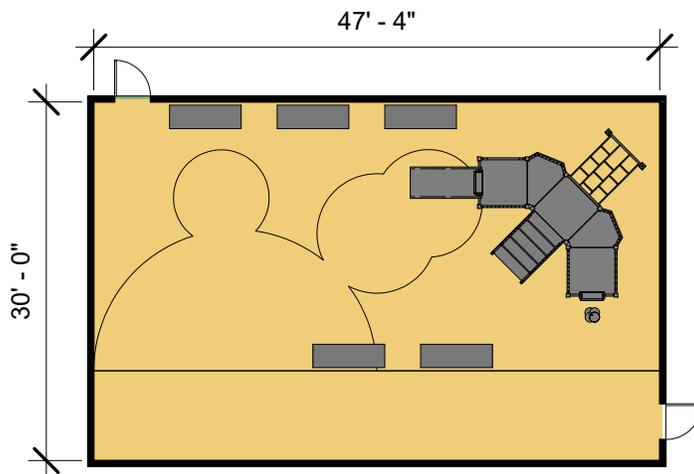
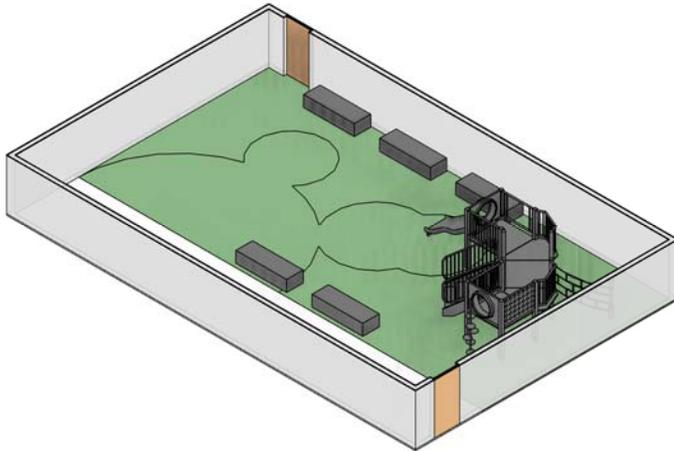


Partner and Community Uses

4/20/2018

Teen Parent Services - 3

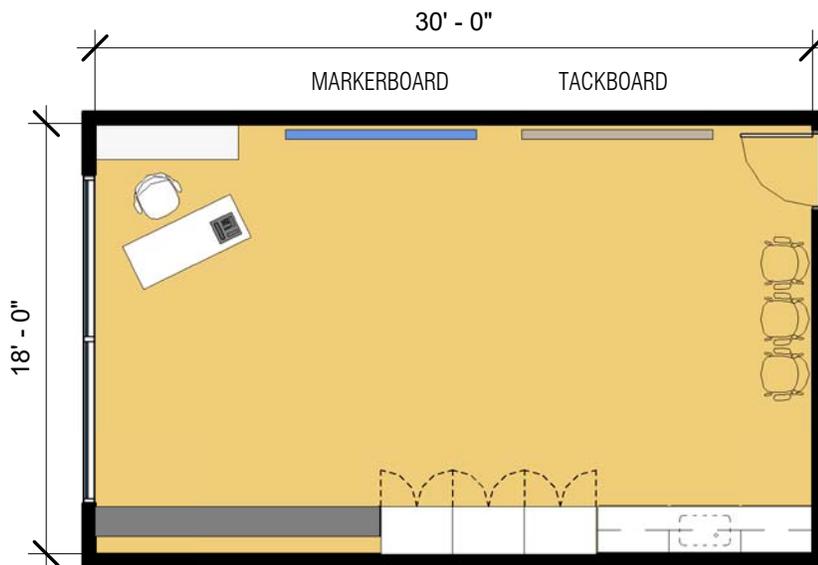
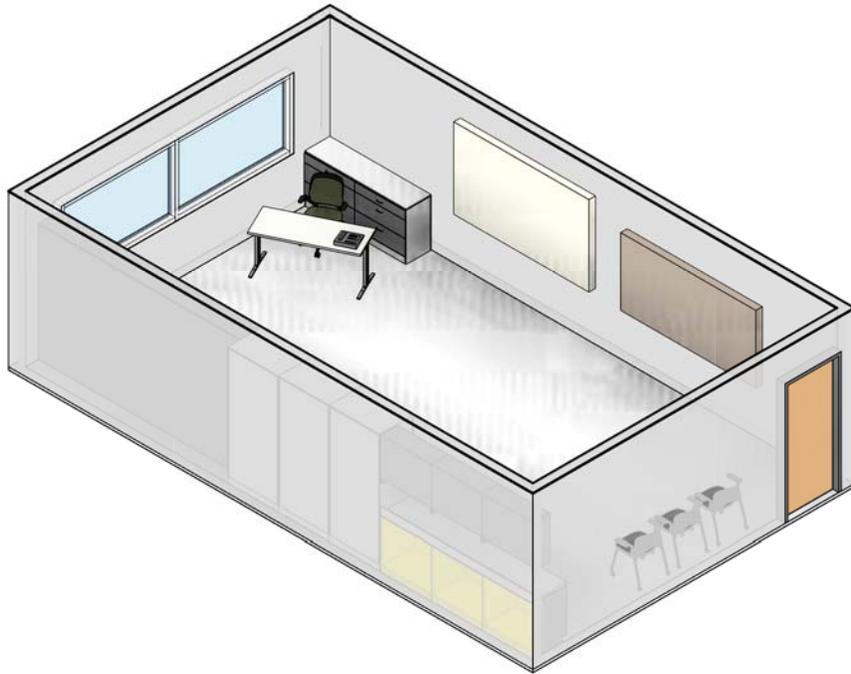
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4/20/2018

PROGRAM	ROOM SIZE	
Child Care Outdoor Space		75 sq ft of space for each child using the area at one time, or if groups of children are scheduled at different times for outdoor play, there shall be 75 SF times one-third of the center's capacity
Room Name	Area	
Program Group Adjacency Description	Wrap-Around Service	Dimensions
		OCCUPANCY
EQUIPMENT	all pieces of playground equipment shall be surrounded by a resilient surface of an acceptable depth or by rubber mats	Hours
Fixed Mobile		Occ. Load Security
SYSTEMS	well drained	BUILDING
HVAC		Ceiling
Plumbing		Walls
Electrical Lighting Audio/Visual		Floor Doors Windows
Tele/Data		Comments
Acoustics		enclosed by a barrier (fence, wall, or building) at least four feet high; spacing between vertical slats of a fence shall be no greater than 4 inches
		keep area free of litter, solid waste and refuse, ditches, or other conditions presenting a potential hazard

* Information from the Oregon Department of Education, Early Learning Division - Chapter 414
 See more information from Albina "Head Start," and Franklin High School

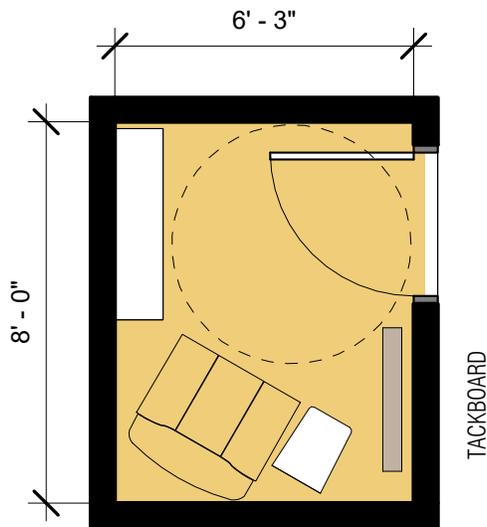
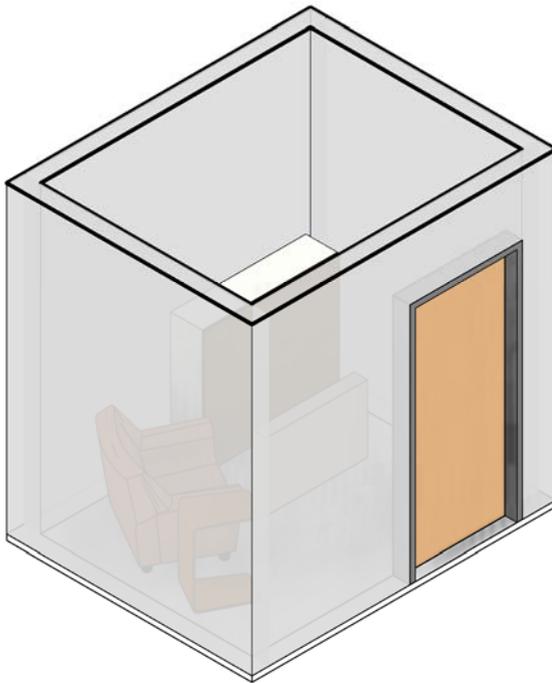


Wrap-Around Services

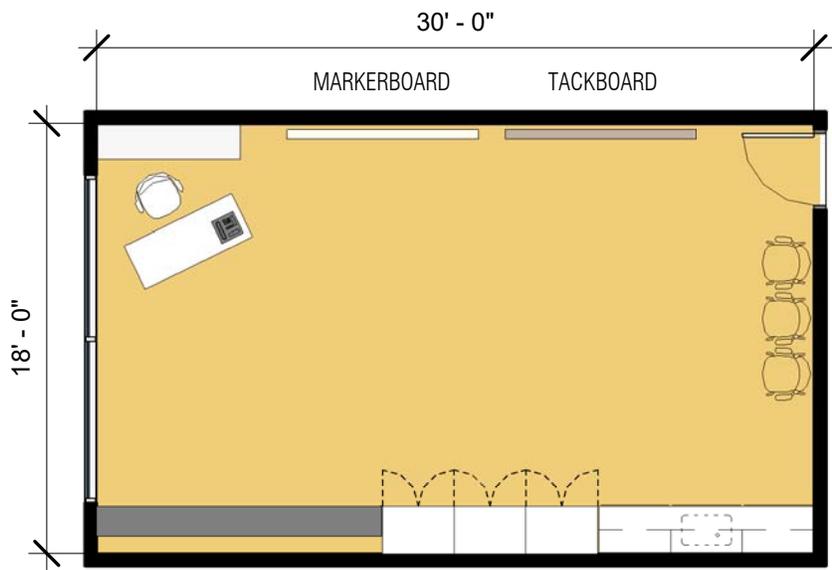
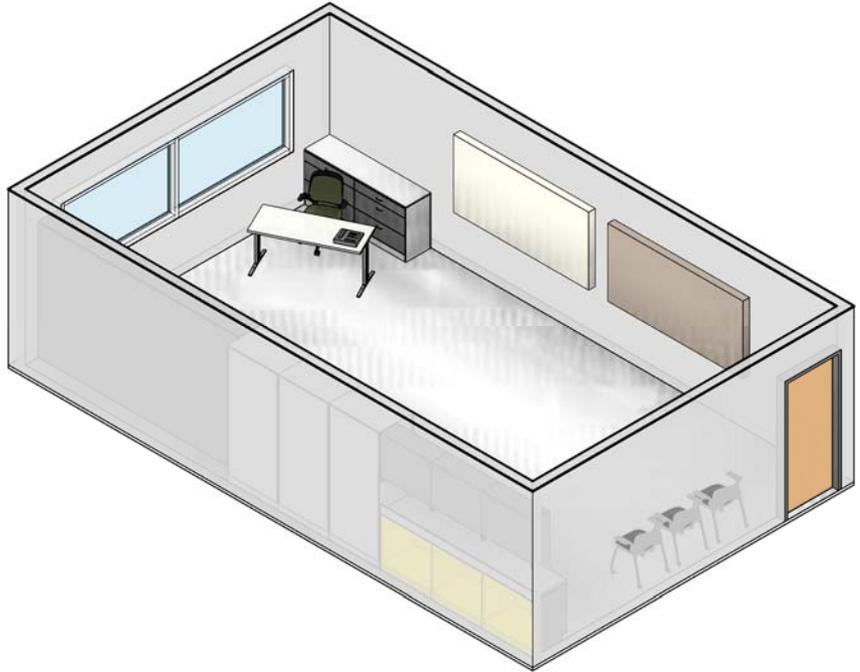
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Infant Room

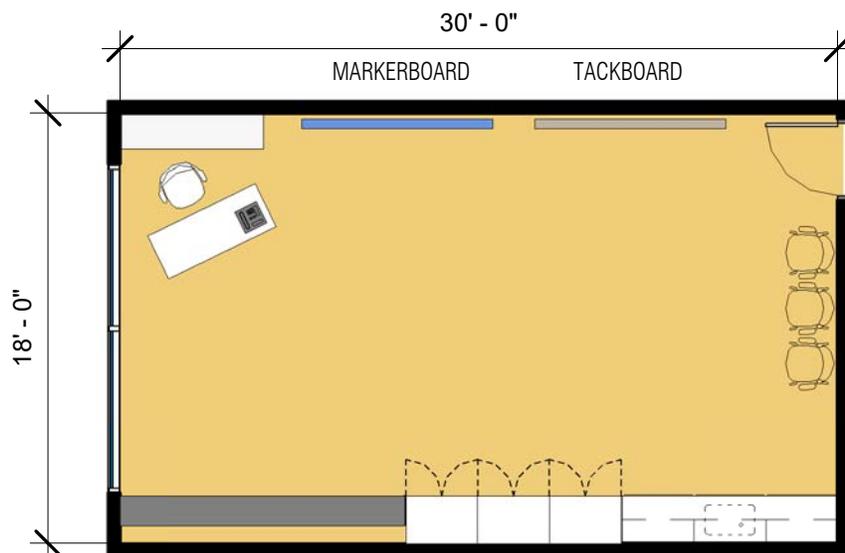
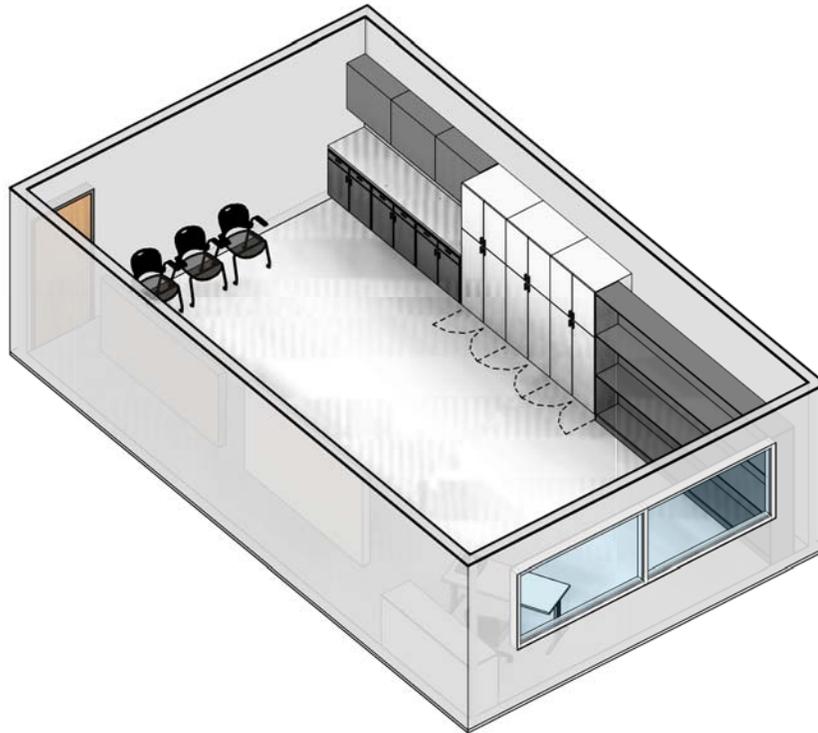
PROGRAM		ROOM SIZE	
Room Name	Infant Room	Area	500 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	marker board, tackable surfaces, shelving (preferred/optional) , large format storage, cabinets	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	telephone	Ceiling	
Plumbing		Walls	
Electrical	clock/intercom	Floor	
Lighting		Doors	
Audio/Visual		Windows	window shades
Tele/Data		Comments	
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Breast Feeding Room	Area	50 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	Lockable cabinets with doors for temporary storage of personal belongings, Refrigerator (optional); comfortable, soft seating	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing		Walls	completely walled space, no windows; tackable wall surface area, min. (6) sq ft
Electrical		Floor	
Lighting		Doors	solid, lockable door
Audio/Visual		Windows	
Tele/Data		Comments	
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Toddler Room	Area	500 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	marker board, tackable surfaces, shelving (preferred/optional), large format storage, cabinets	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	telephone, power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	clock/intercom	Floor	
Lighting		Doors	
Audio/Visual		Windows	window shades
Tele/Data		Comments	
Acoustics			

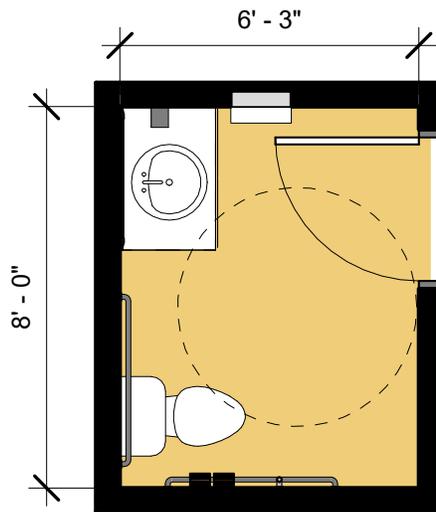
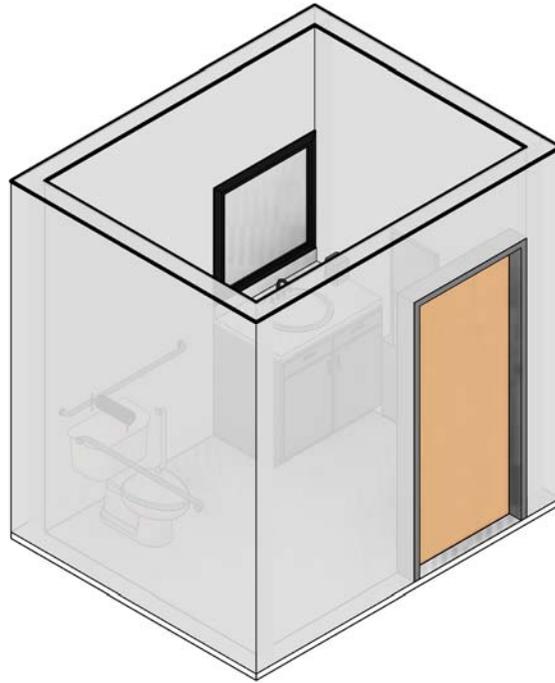


Wrap Around Service Providers

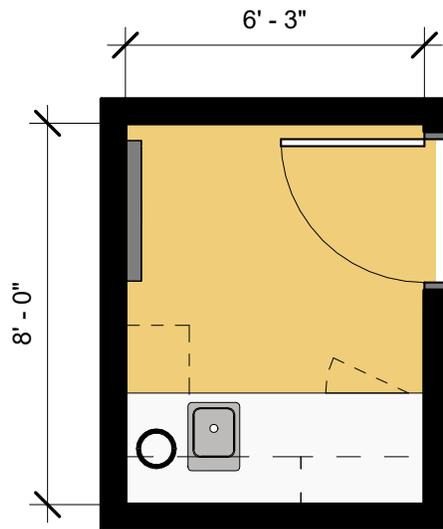
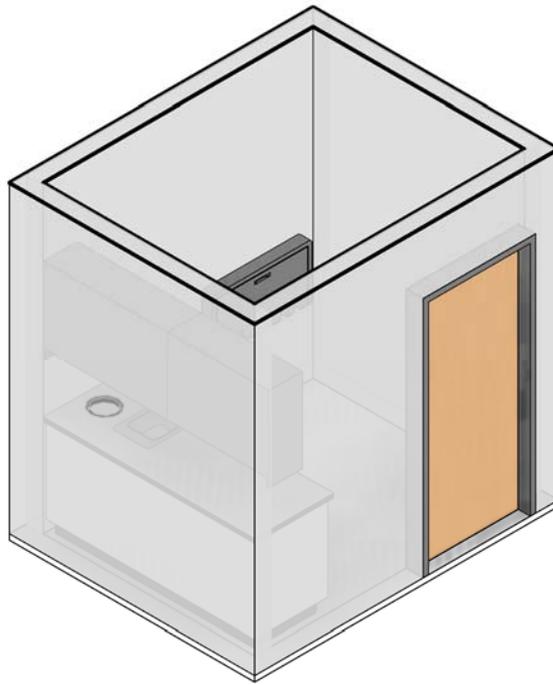
4/20/2018

Crawler Room

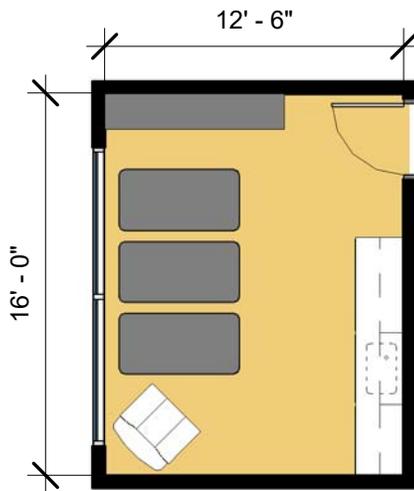
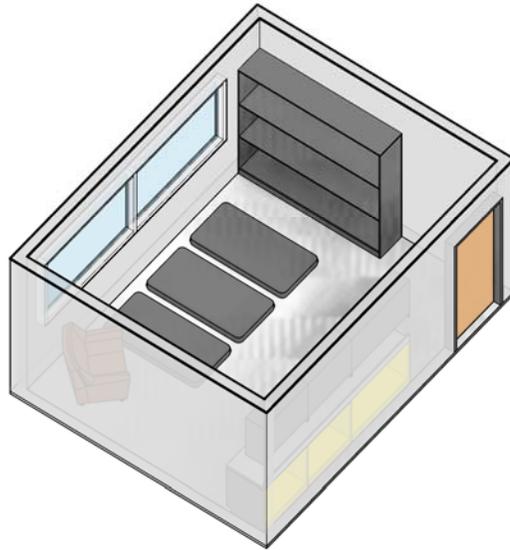
PROGRAM		ROOM SIZE	
Room Name	Crawler Room	Area	500 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	marker board, tackable surfaces, shelving (preferred/optional), large format storage	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	telephone, power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	clock/intercom	Floor	
Lighting		Doors	
Audio/Visual		Windows	window shades
Tele/Data		Comments	
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Child Care Toilet	Area	50 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	toilet accessories, paper towel dispenser, soap dispenser	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink, toilet	BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical		Floor	
Lighting		Doors	
Audio/Visual		Windows	
Tele/Data		Comments	
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Changing Area	Area	50 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	shelving, cabinets (preferred/optional)	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	clock/intercom	Floor	
Lighting		Doors	
Audio/Visual		Windows	
Tele/Data		Comments	
Acoustics			

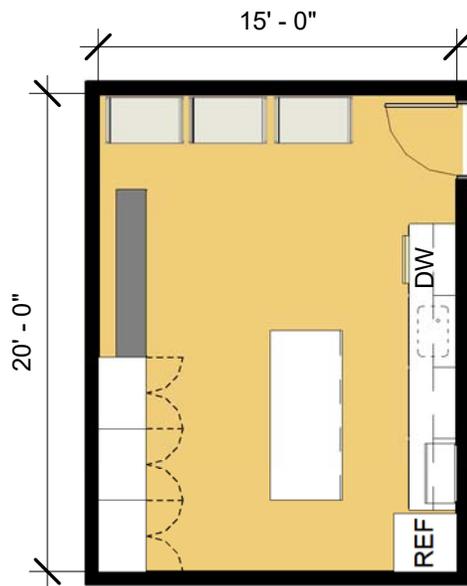
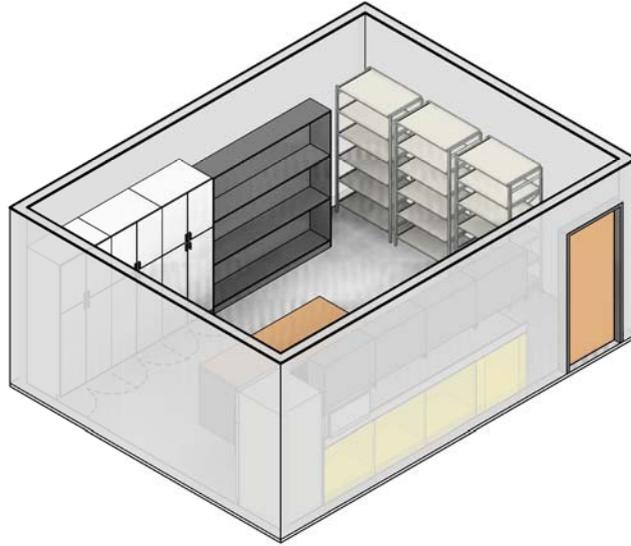


Wrap-Around Services

4/20/2018

Nap Area

PROGRAM		ROOM SIZE	
Room Name	Nap Area	Area	200 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	shelving, cabinets (preferred/optional)	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	clock/intercom, audio playback system	Floor	
Lighting		Doors	
Audio/Visual	audio reinforcement (preferred/optional)	Windows	
Tele/Data		Comments	
Acoustics			



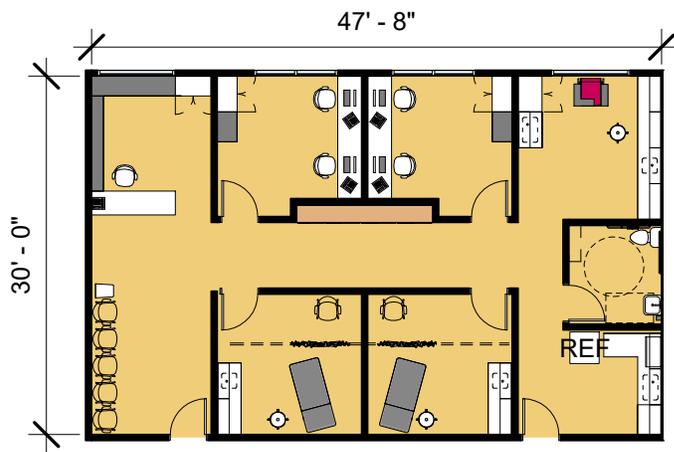
Wrap-Around Services

4/20/2018

Storage/Kitchen

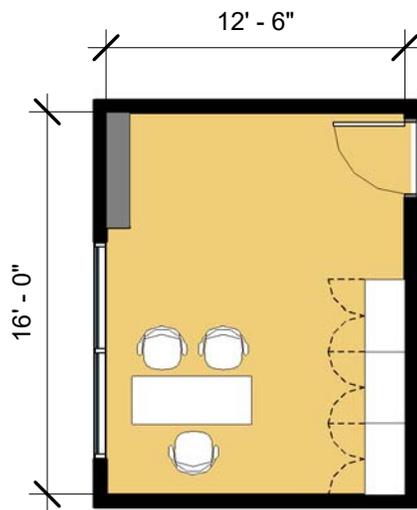
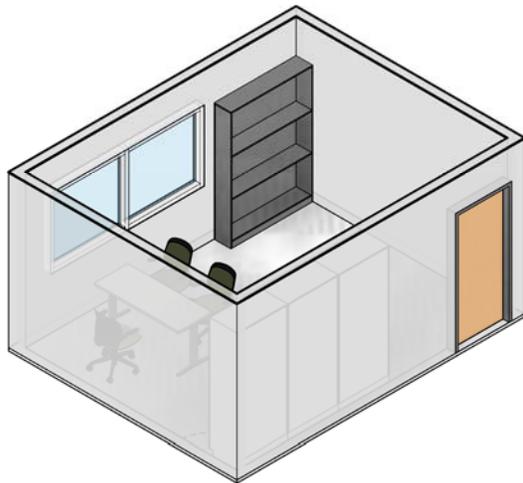
opsis architecture | DAO architecture

PROGRAM		ROOM SIZE	
Room Name	Storage/Kitchen	Area	300 SF
Program Group	Wrap-Around Service/Teen Parent Services	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	shelving, cabinets (preferred/optional), heavy duty racks, refrigerator, dishwasher, microwave	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	clock/intercom, audio playback system	Floor	
Lighting		Doors	
Audio/Visual	audio reinforment (preferred/optional),	Windows	
Tele/Data		Comments	
Acoustics			



? 224- Health Clinic
1423 SF

PROGRAM	Health Clinic	ROOM SIZE	
Room Name		Area	1600 SF
Program Group	Wrap-Around Service	Dimensions	
Adjacency		OCCUPANCY	
Description		Hours	
EQUIPMENT	cabinets, sink, refrigerator, freezer, dishwasher, microwave	Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS		Ceiling	
HVAC	power/data outlets, wireless access point	Walls	
Plumbing		Floor	
Electrical		Doors	
Lighting	telephone, clock/intercom	Windows	shade control
Audio/Visual		Comments	existing has more casework
Tele/Data			
Acoustics			



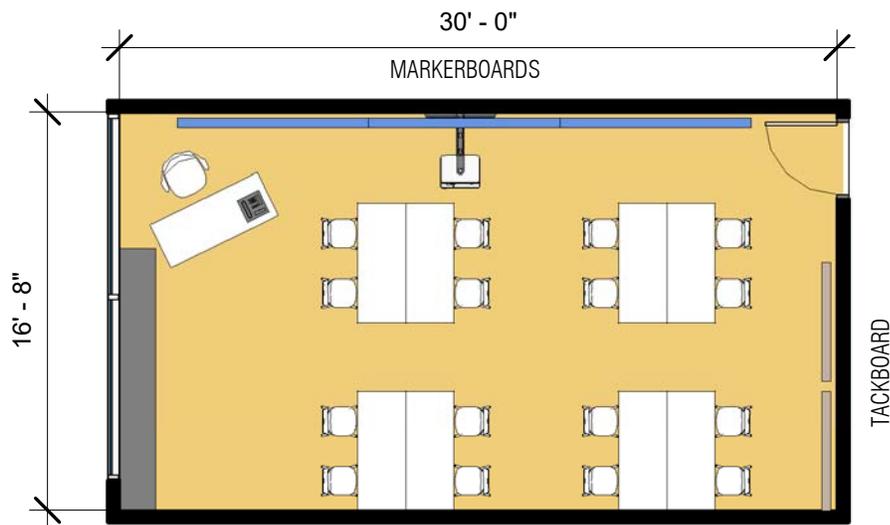
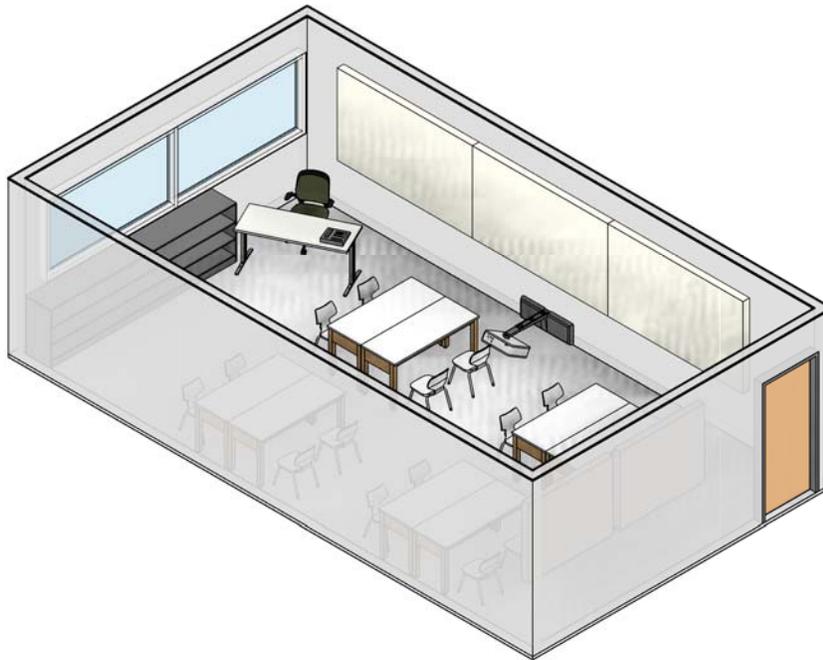
Wrap Around Service Providers

4/20/2018

Office

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PROGRAM		ROOM SIZE	
			(5) 200 SF (preferred)
Room Name	Office Space for Social Service Providers (includes SUN, STEPUP, and ESL)	Area	
Program Group	Wrap-Around Service	Dimensions	
Adjacency	main entrance, central administration, college counseling and career center		
Description		OCCUPANCY	
EQUIPMENT		Hours	
Fixed	open work stations, large work table	Occ. Load	
Mobile		Security	secure access for after school programs
SYSTEMS		BUILDING	
HVAC		Ceiling	
Plumbing		Walls	
Electrical		Floor	
Lighting		Doors	
Audio/Visual	classrooms for during/after school programs to have projectors and all necessary technology	Windows	
Tele/Data		Comments	Per SUN Stakeholder Mtg: large shared space is preferred for tutoring, with spaces for small work groups and one-on-one meetings. It is preferred that classrooms used after school be close together.
Acoustics			



PROGRAM

Room Name
Program Group
Adjacency
Description

Classrooms
Wrap-Around Service

ROOM SIZE

Area
Dimensions

(2) @ 500 SF

EQUIPMENT

Fixed
Mobile

OCCUPANCY

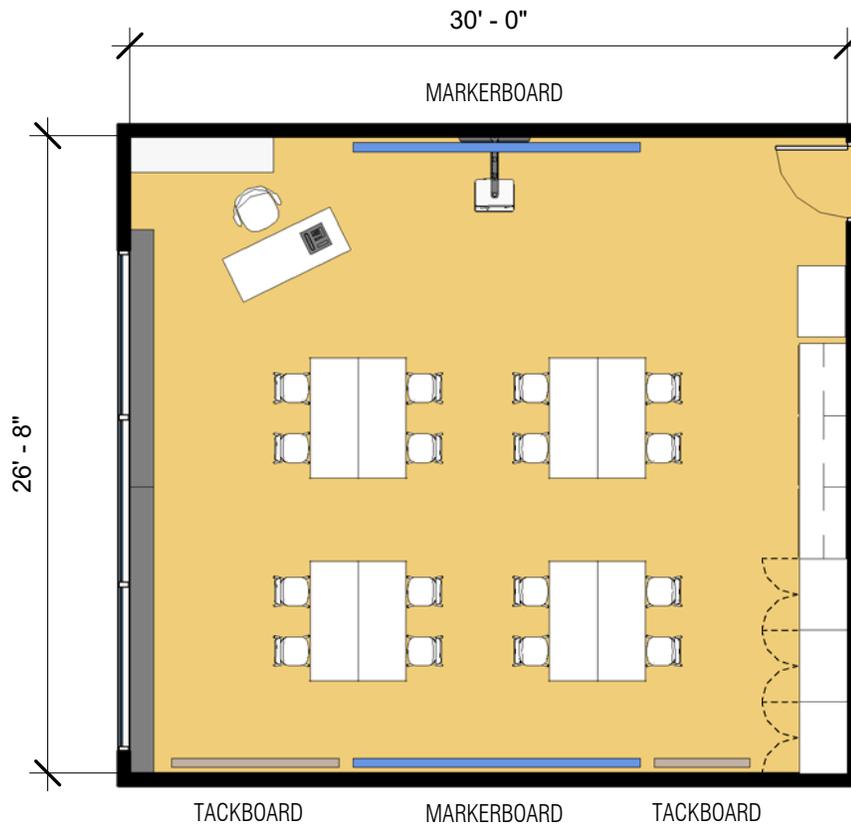
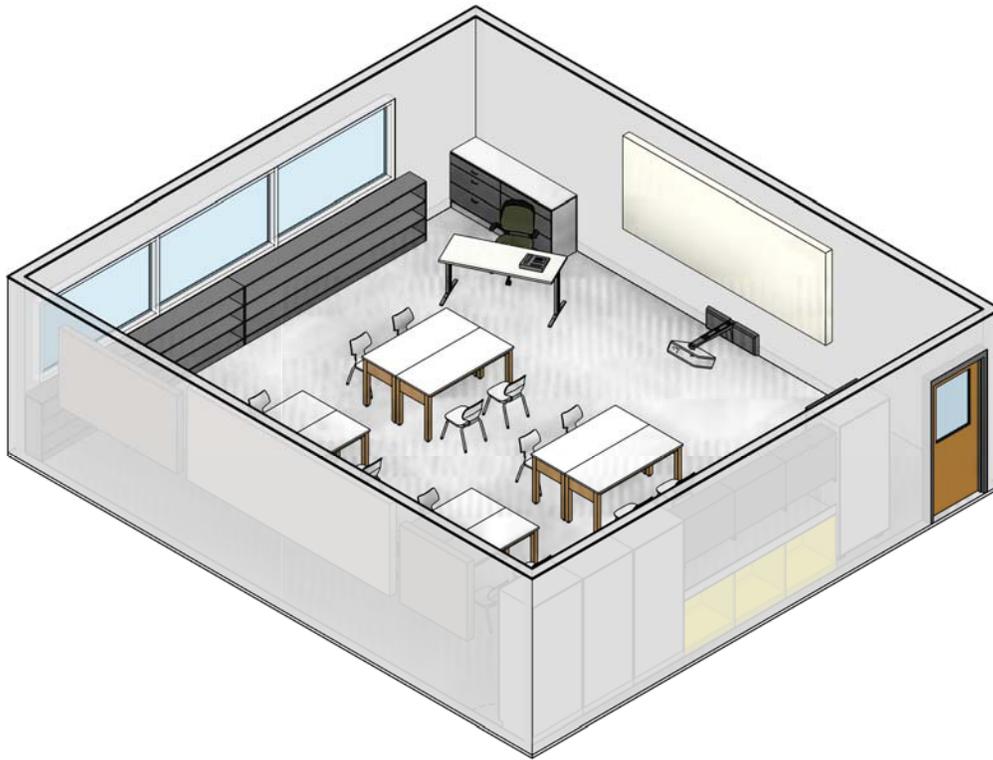
Hours
Occ. Load
Security

SYSTEMS

HVAC
Plumbing
Electrical
Lighting
Audio/Visual
Tele/Data
Acoustics

BUILDING

Ceiling
Walls
Floor
Doors
Windows
Comments



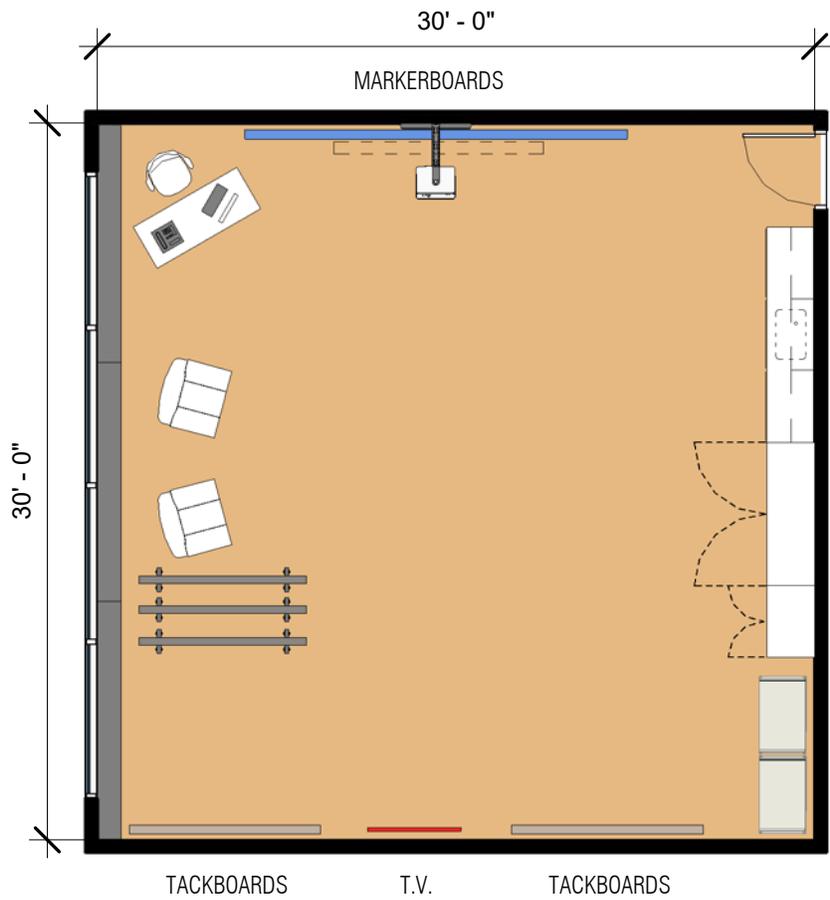
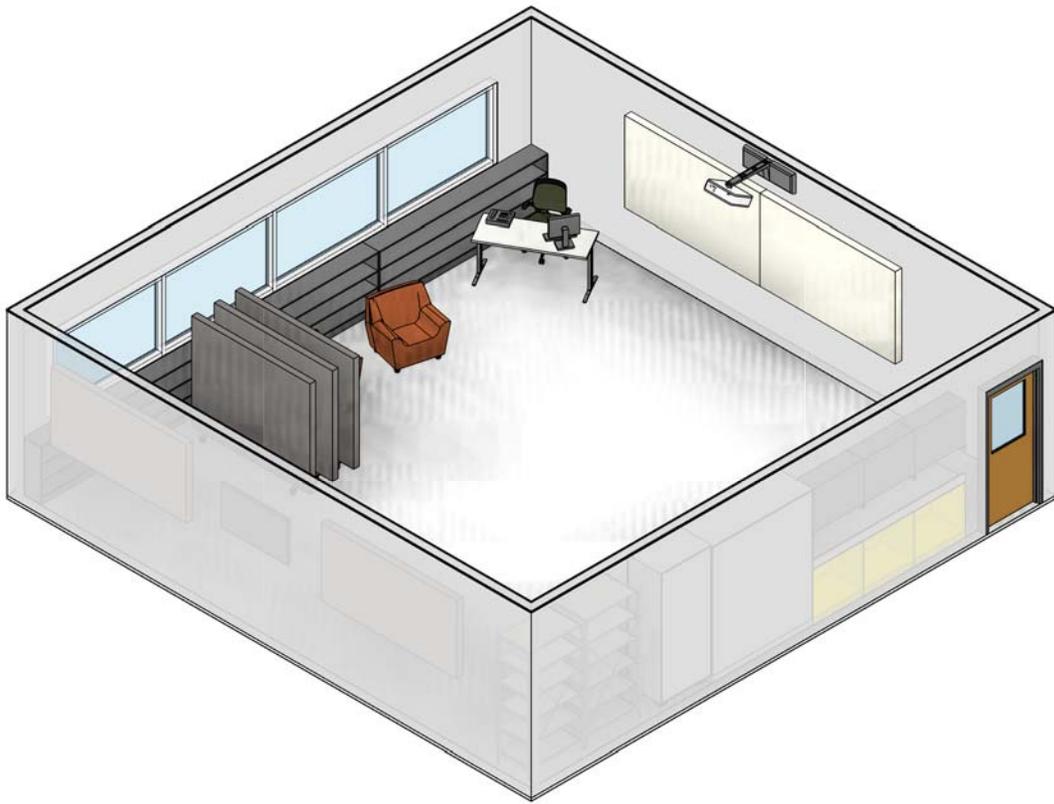
Wrap Around Service Providers

4/20/2018

ESL Classroom

PROGRAM	ESL Classroom	ROOM SIZE	
Room Name	Wrap-Around Service	Area	800 SF
Program Group	open up to Flexible Learning Areas, small group conference/meeting room, teacher planning/collaboration areas/ work rooms, restrooms, staff toilet	Dimensions	
Adjacency			
Description		OCCUPANCY	
EQUIPMENT	cabinets with doors and drawers of various sizes, teacher cabinet with locking doors, cabinets with open shelves	Hours	
Fixed	portable file cabinet	Occ. Load	15-20 students
Mobile		Security	
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing	natural light, consistent direct and indirect lighting throughout the room	Walls	minimum of one wall with windows; tackable wall surface covering or available on all walls (preferred minimum of (2) 4x8 boards
Electrical	acoustic treatment throughout room	Floor	hard surface flooring
Lighting		Doors	door with window
Audio/Visual		Windows	sunshades, high and low operable windows
Tele/Data		Comments	
Acoustics			

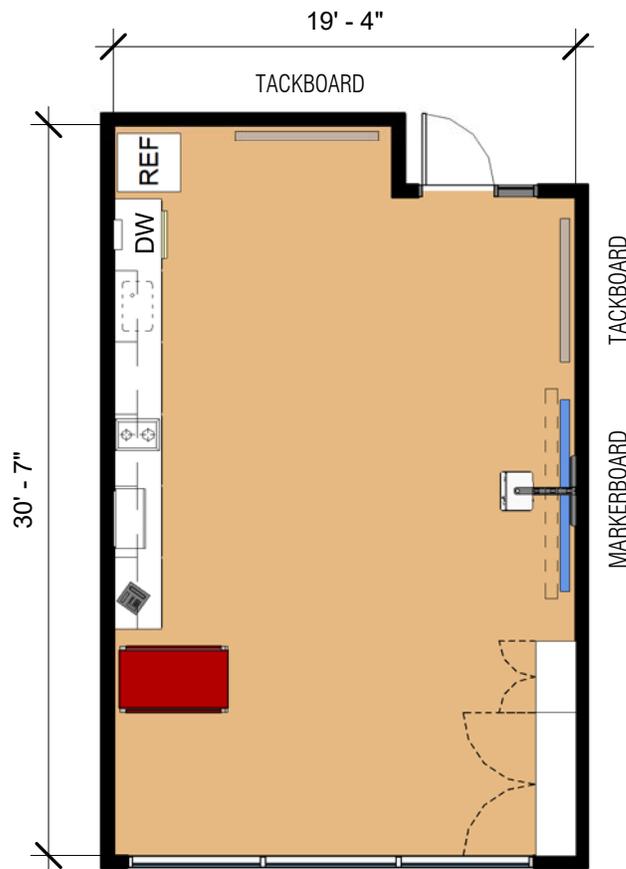
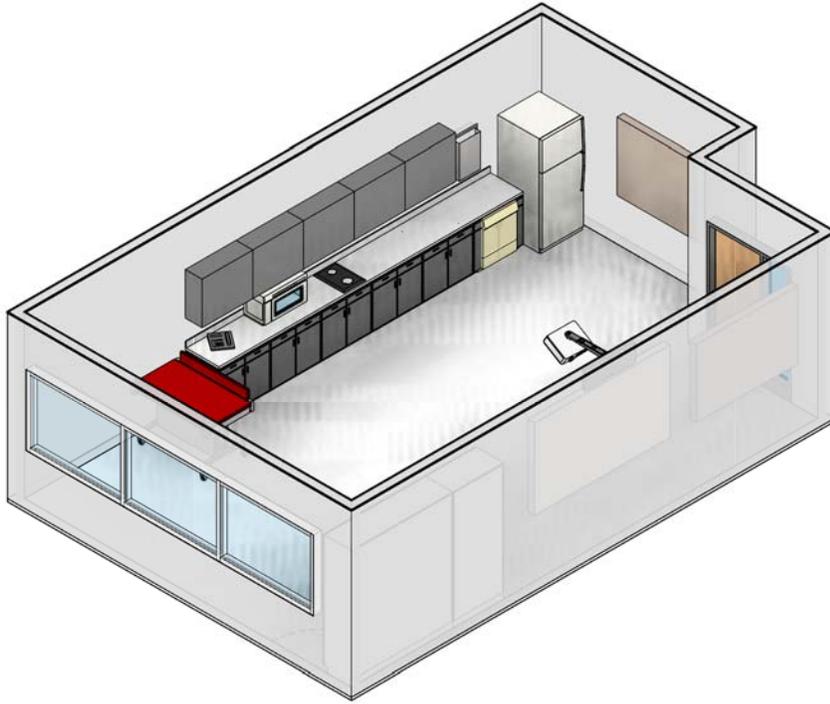
PROGRAM	Sensory Support Room	ROOM SIZE	900 SF
Room Name	Special Education (SPED)	Area	
Program Group	classrooms, other SPED spaces	Dimensions	
Adjacency		OCCUPANCY	
Description	cabinets, adjustable shelving, computer, marker board, tackable surfaces, large format storage (preferred)	Hours	
EQUIPMENT	swing, trampoline(s), soft balls, mobile cart/storage	Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	power/data outlets, wireless access point	Ceiling	
HVAC		Walls	
Plumbing	digital projector, audio playback system	Floor	hard surface flooring
Electrical	telephone, clock/intercom	Doors	door with window
Lighting	sound reinforcement	Windows	shade control
Audio/Visual		Comments	
Tele/Data			
Acoustics			



Special Education (SPED)

4/20/2018

PROGRAM		ROOM SIZE	
Room Name	Learning Resource Center	Area	(3) @ 900 SF
Program Group	Special Education (SPED)	Dimensions	
Adjacency	Life Skills, Speech Pathologist, Classrooms, Psychologist		
Description		OCCUPANCY	
	tall cabinets, upper and lower cabinetry, adjustable shelving, countertops, teacher's desk and chair, projection screen, wall mounted tv, storage racks, large format storage, tackable surfaces, marker board	Hours	
EQUIPMENT			
Fixed	mobile file cabinets, portable room partitions; soft, mobile and durable furniture; document camera, mobile cart/storage (preferred)	Occ. Load	
Mobile		Security	
SYSTEMS	sink	BUILDING	
HVAC	power/data outlets, wireless access point	Ceiling	
Plumbing		Walls	min (1) wall with windows, tackable wall surface, min (1) 4x8 magnetic white board
Electrical	audio playback system, digital projector	Floor	hard surface flooring
Lighting	clock/intercom, telephone sound reinforcement	Doors	door with window
Audio/Visual		Windows	located to provide views and natural light; operable, shade control
Tele/Data Acoustics		Comments	

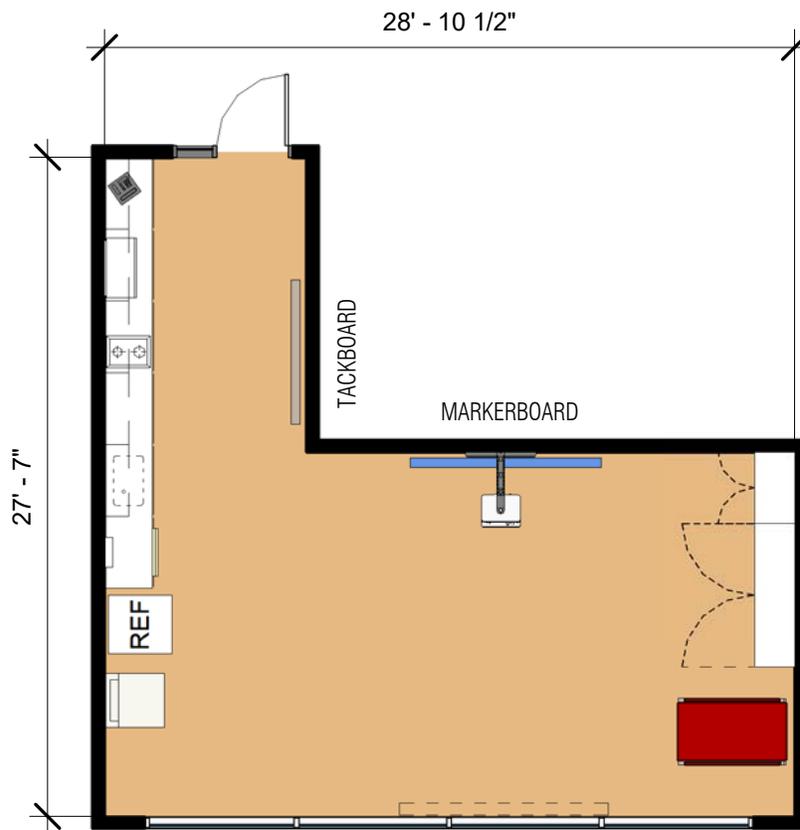
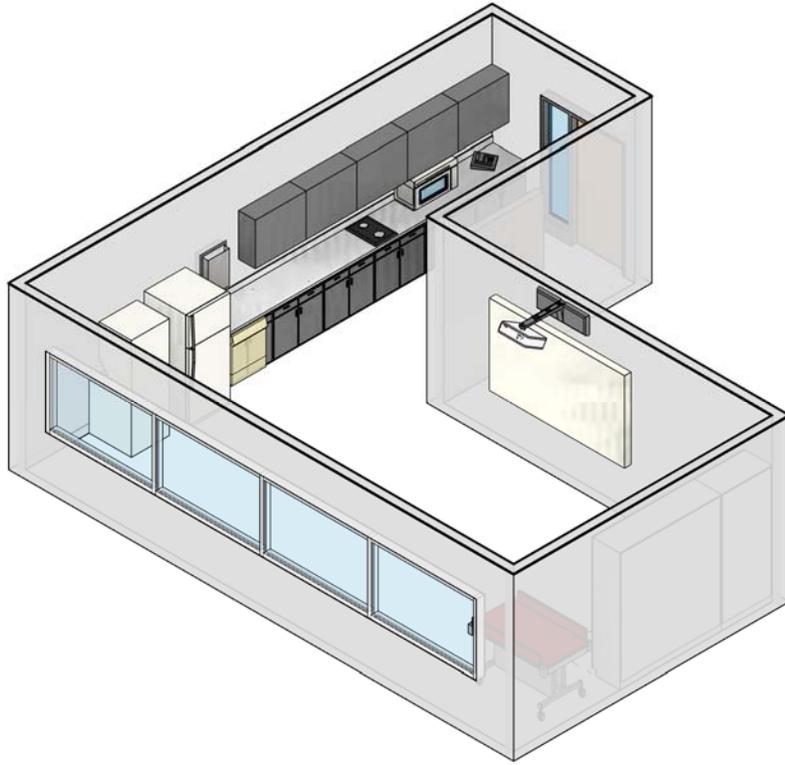


Special Education (SPED)

4/20/2018

Low Intensity Classroom

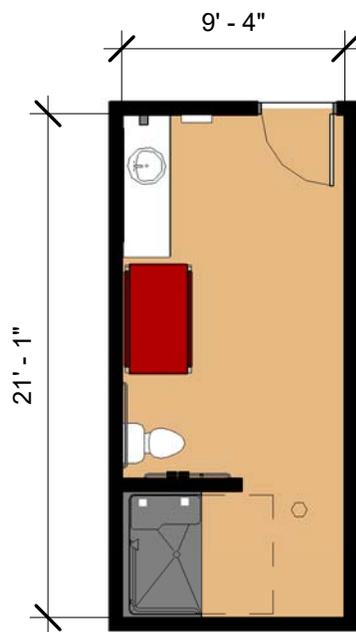
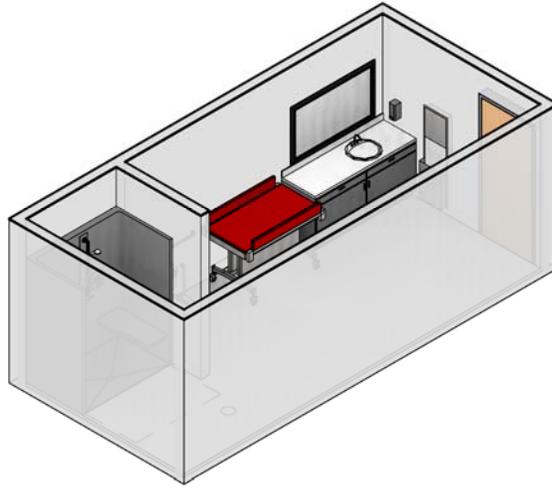
PROGRAM	Low Intensity Classroom (Includes Kitchen)	ROOM SIZE	(2) @ 600 SF
Room Name		Area	
Program Group	Special Education (SPED)	Dimensions	
Adjacency	exterior/parking access, Speech Pathologist, Psychologist, Offices		
Description	Life Skills - should be self contained	OCCUPANCY	
	tall lockable storage, cabinets, adjustable shelves, countertops, refrigerator, residential washer and dryer, stove/cooktop, projection screen, lift/changing table (motorized) in classroom, paper towel dispenser, soap dispenser, marker board, tackable surfaces, shelving	Hours	
EQUIPMENT			
Fixed	mobile cart/storage (preferred), document camera	Occ. Load	
Mobile		Security	
SYSTEMS	sink, dishwasher	BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	min (1) wall with windows, min (1) 4x8 interactive white board on teaching wall
Electrical	digital projector	Floor	hard surface flooring
Lighting	telephone, clock/intercom	Doors	door with window
Audio/Visual	sound reinforcement	Windows	located to provide views and natural light; operable, shade control
Tele/Data		Comments	
Acoustics			



Special Education (SPED)

4/20/2018

Low Intensity Classroom

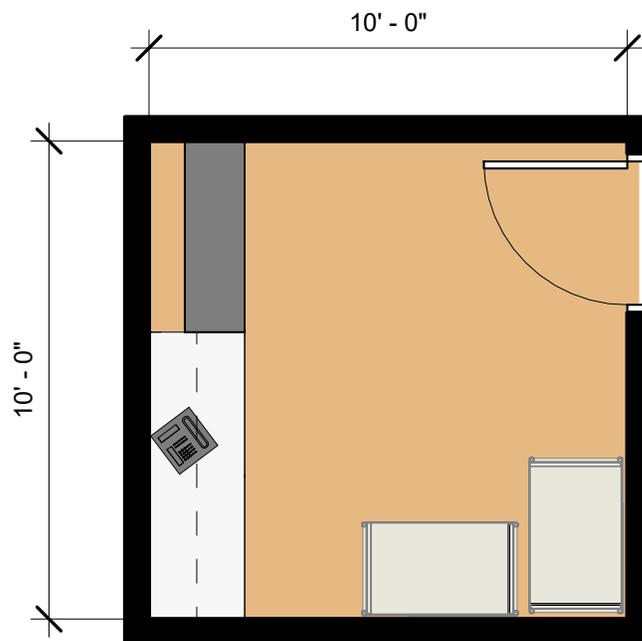
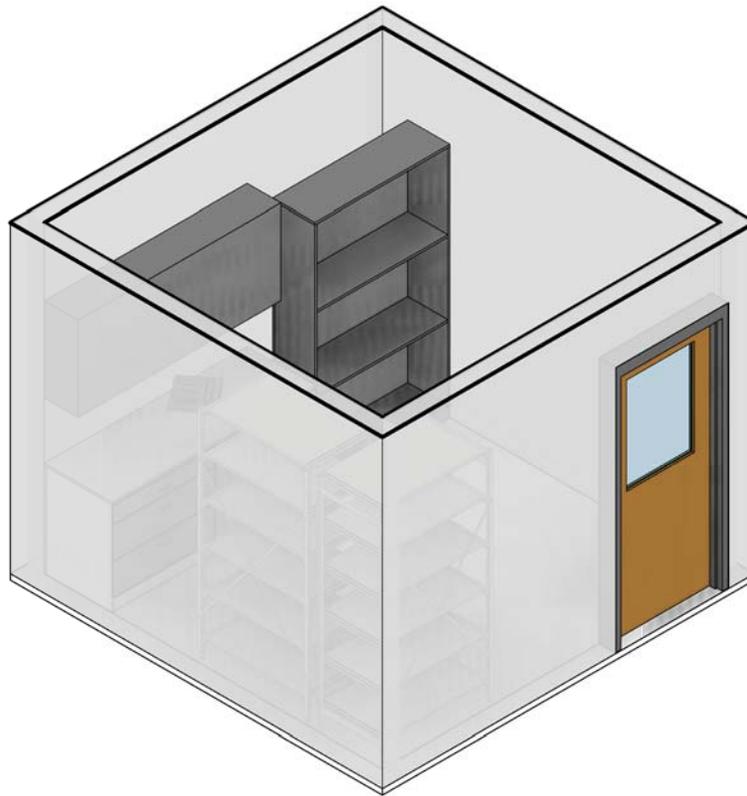


PROGRAM	Toilet	ROOM SIZE	
Room Name	Special Education (SPED)	Area	200 SF
Program Group		Dimensions	
Adjacency	Life Skills	OCCUPANCY	
Description	paper towel dispenser, soap dispenser, toilet accessories	Hours	
EQUIPMENT		Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	sink, toilet, roll-in shower, floor drain	Ceiling	
HVAC		Walls	
Plumbing		Floor	hard surface flooring, slip resistant
Electrical		Doors	
Lighting		Windows	
Audio/Visual		Comments	
Tele/Data			
Acoustics			

Special Education (SPED)

4/20/2018

Toilet



Special Education (SPED)

4/20/2018

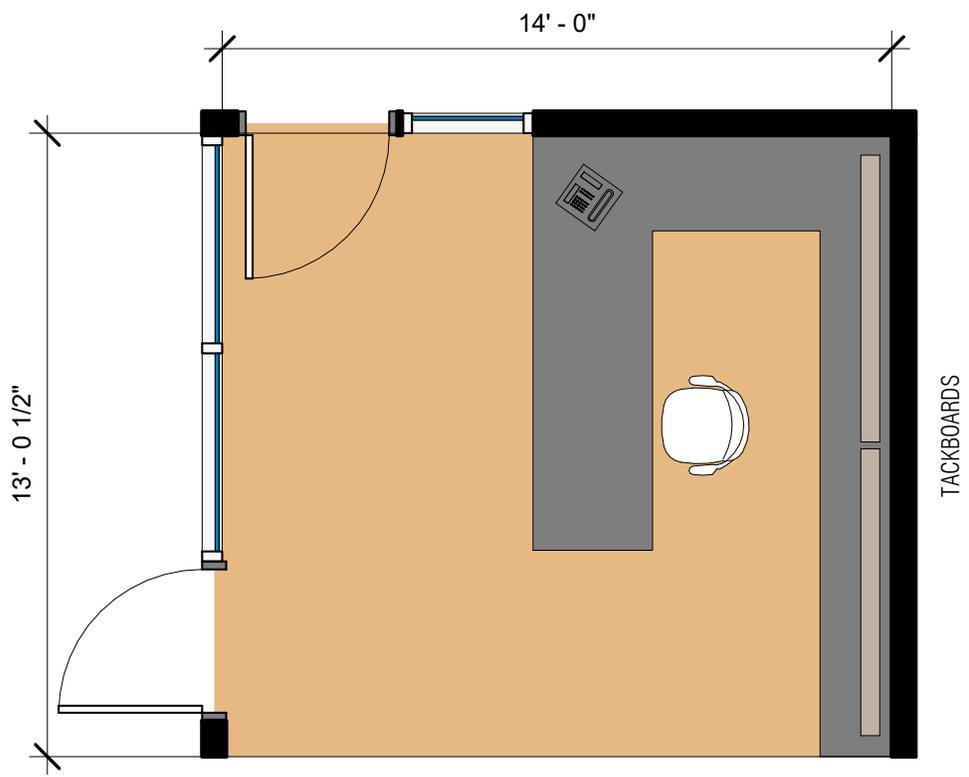
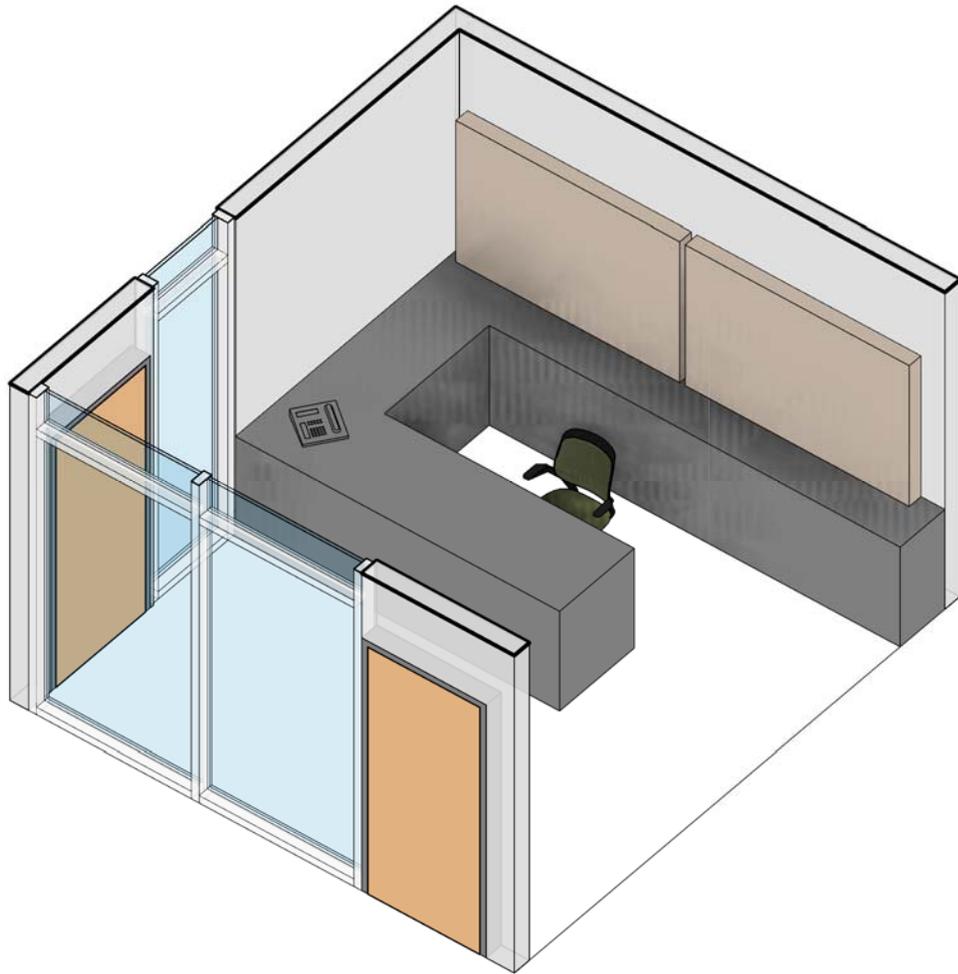
Storage

PROGRAM		ROOM SIZE	
Room Name	Storage	Area	100 SF
Program Group	Special Education (SPED)	Dimensions	
Adjacency		OCCUPANCY	
Description	Life Skills	Hours	
EQUIPMENT	shelving, large format storage, storage racks, cabinets	Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS		Ceiling	
HVAC	power/data outlets	Walls	
Plumbing		Floor	hard surface flooring
Electrical		Doors	door with window
Lighting	telephone	Windows	
Audio/Visual		Comments	
Tele/Data			
Acoustics			

Special Education (SPED)

4/20/2018

Storage



Special Education (SPED)

4/20/2018

Reception

PROGRAM

Room Name
Program Group
Adjacency
Description

Reception
Special Education (SPED)

Life Skills
tackable surfaces, shelving

EQUIPMENT

Fixed
Mobile

SYSTEMS

HVAC
Plumbing
Electrical
Lighting
Audio/Visual
Tele/Data
Acoustics

power/data outlets

telephone, clock/intercom

ROOM SIZE

Area
Dimensions

100 SF

OCCUPANCY

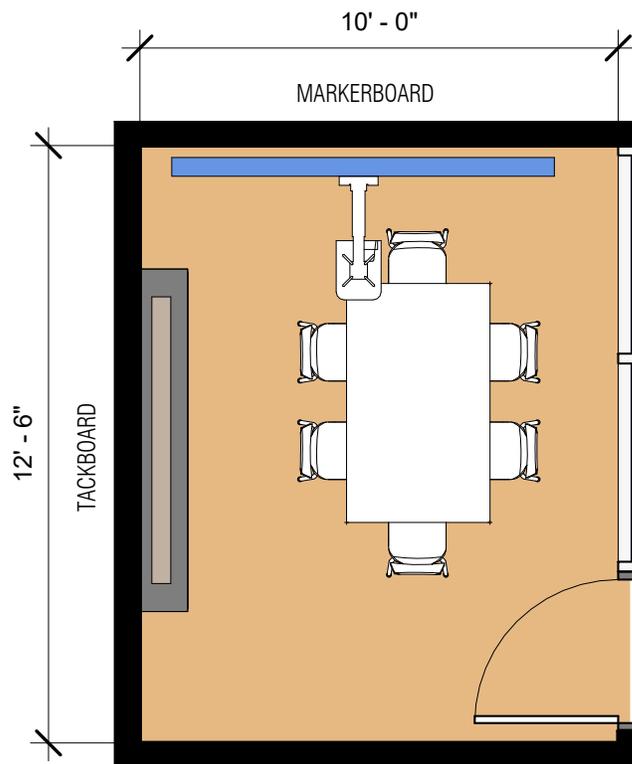
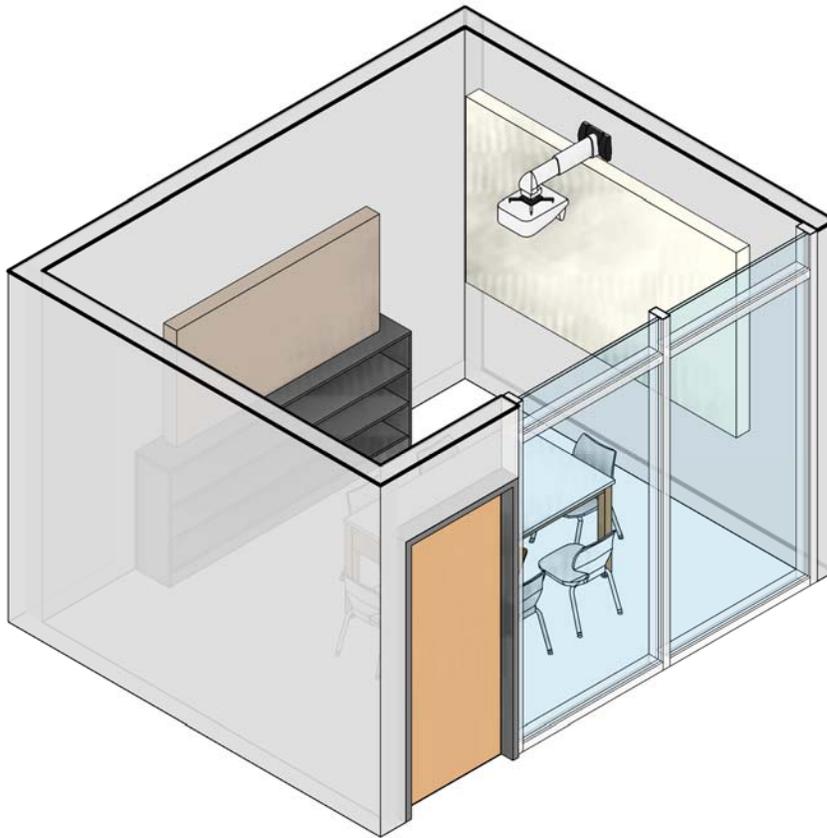
Hours
Occ. Load
Security

BUILDING

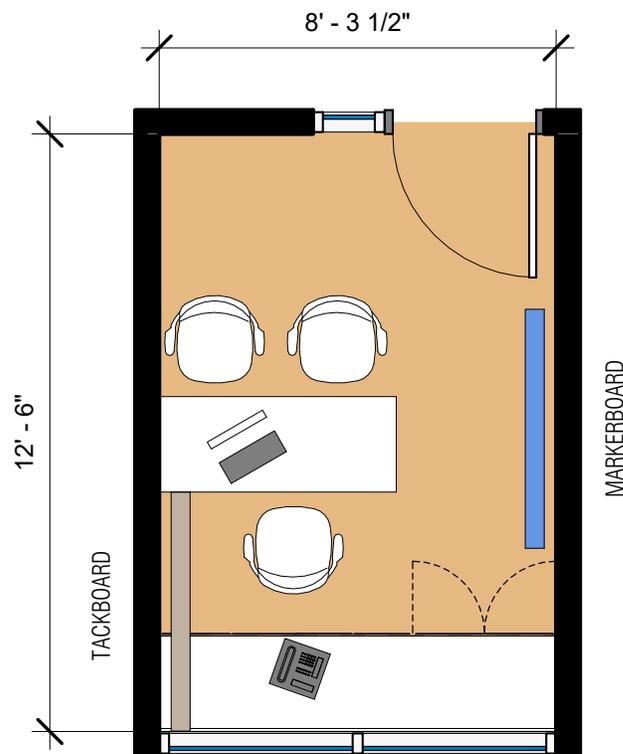
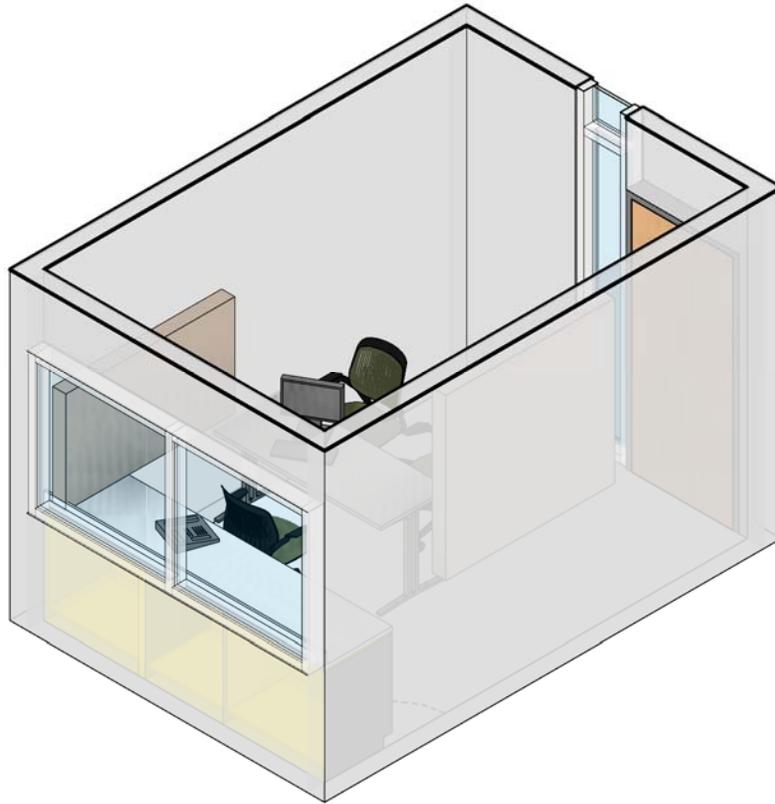
Ceiling
Walls
Floor
Doors
Windows
Comments

hard surface flooring

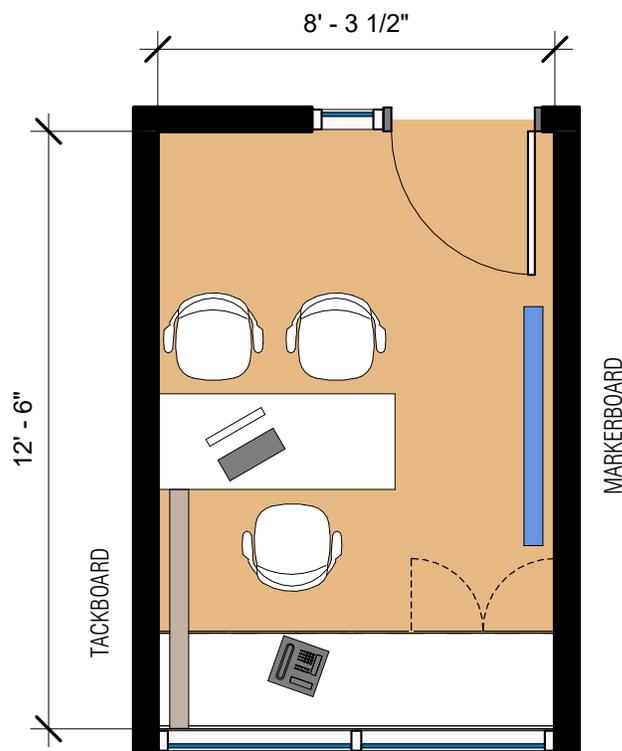
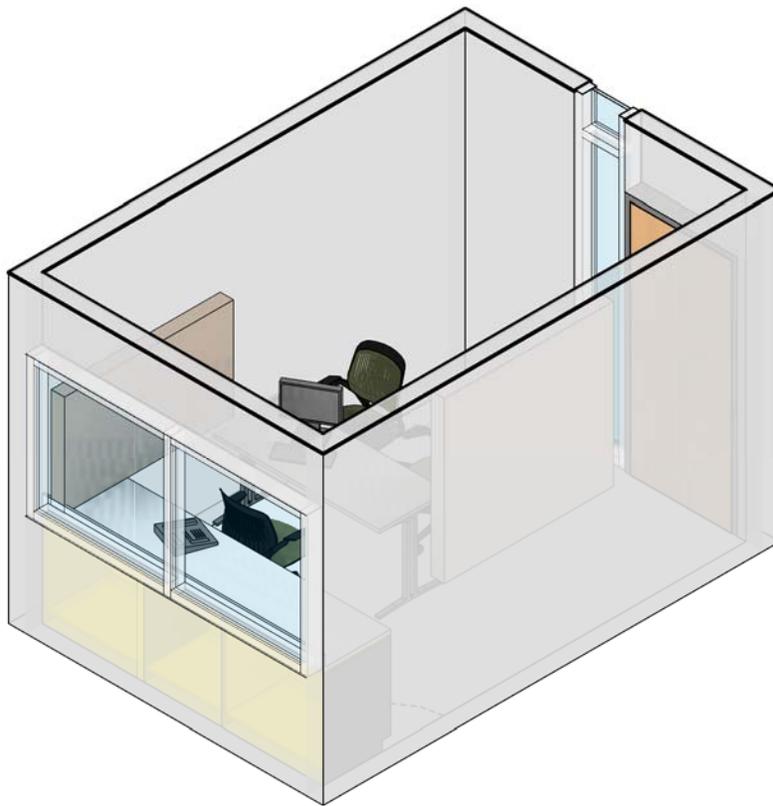
shade control



PROGRAM	Conference	ROOM SIZE	
Room Name	Special Education (SPED)	Area	120 SF
Program Group		Dimensions	
Adjacency	Life Skills	OCCUPANCY	
Description	marker board, tackable surfaces, shelving	Hours	
EQUIPMENT		Occ. Load	
Fixed		Security	
Mobile		BUILDING	
SYSTEMS	power/data outlets	Ceiling	
HVAC		Walls	
Plumbing	digital projector (preferred), projection screen	Floor	hard surface flooring
Electrical	telephone, clock/intercom	Doors	door with window
Lighting	sound reinforcement (preferred)	Windows	shade control
Audio/Visual		Comments	
Tele/Data			
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Speech Pathologist Offices	Area	(2) @ 120 SF
Program Group	Special Education (SPED)	Dimensions	
Adjacency	Life Skills, Psychologist, Learning Center, Administrative Offices		
Description		OCCUPANCY	
EQUIPMENT	lockable file cabinets, tall cabinet, desk, chairs, computer, marker board, tackable surfaces, shelving	Hours	
Fixed	mobile file cabinets	Occ. Load	
Mobile		Security	
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	tackable wall surface covering min (1) wall, min (1) 4x4 magnetic white board
Electrical	telephone, clock/intercom	Floor	carpet
Lighting		Doors	door with window
Audio/Visual	acoustic isolation for privacy, ability to hear well throughout the space	Windows	located to provide views and natural light; operable, shade control
Tele/Data		Comments	
Acoustics			

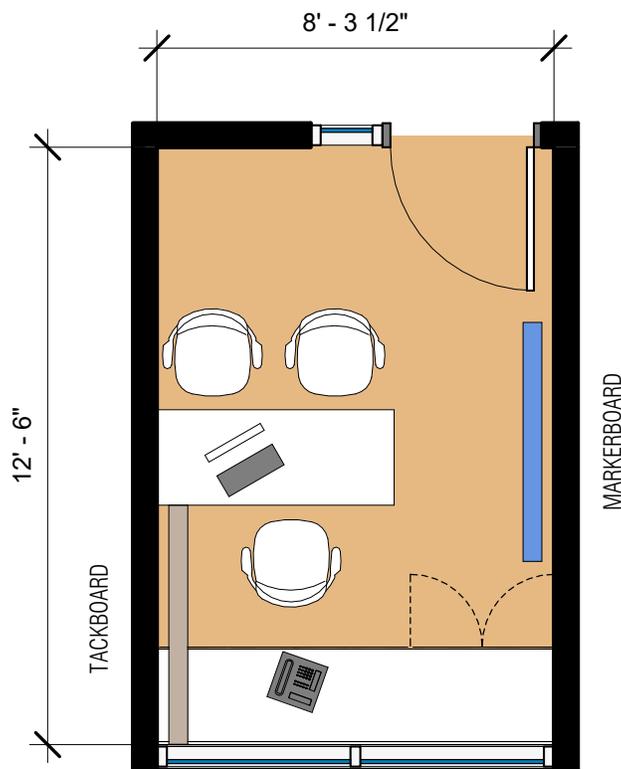
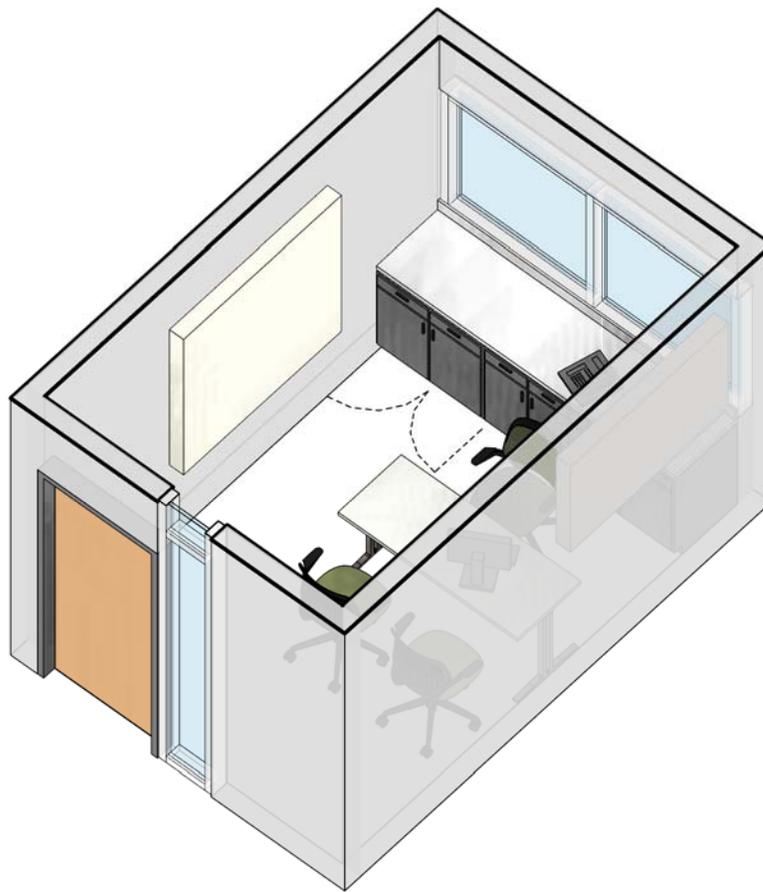


Special Education (SPED)

4/20/2018

Psychologist Offices

PROGRAM		ROOM SIZE	
Room Name	Psychologist Offices	Area	(2) @ 120 SF
Program Group	Special Education (SPED)	Dimensions	
Adjacency	Life Skills, Speech Pathologist, Administrative Offices, Learning Center		
Description		OCCUPANCY	
EQUIPMENT	lockable file cabinets, tall cabinet, min (1) 4x4 magnetic white board, desk, chairs, computer, tackable surfaces, shelving	Hours	
Fixed		Occ. Load	
Mobile		Security	
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	telephone, clock/intercom	Floor	carpet
Lighting		Doors	door with window
Audio/Visual	acoustic isolation for privacy, ability to hear well throughout the space	Windows	located to provide views and natural light; operable, shade control
Tele/Data		Comments	
Acoustics			



Special Education (SPED)

4/20/2018

Office(s)

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PROGRAM

Room Name
Program Group
Adjacency
Description

Office(s)
Special Education (SPED)

Life Skills
desk, chairs, marker board,
tackable surfaces, shelving
mobile file cabinets

EQUIPMENT

Fixed
Mobile

SYSTEMS

HVAC
Plumbing
Electrical
Lighting
Audio/Visual
Tele/Data
Acoustics

power/data outlets
telephone, clock/intercom

ROOM SIZE

Area
Dimensions

100 SF

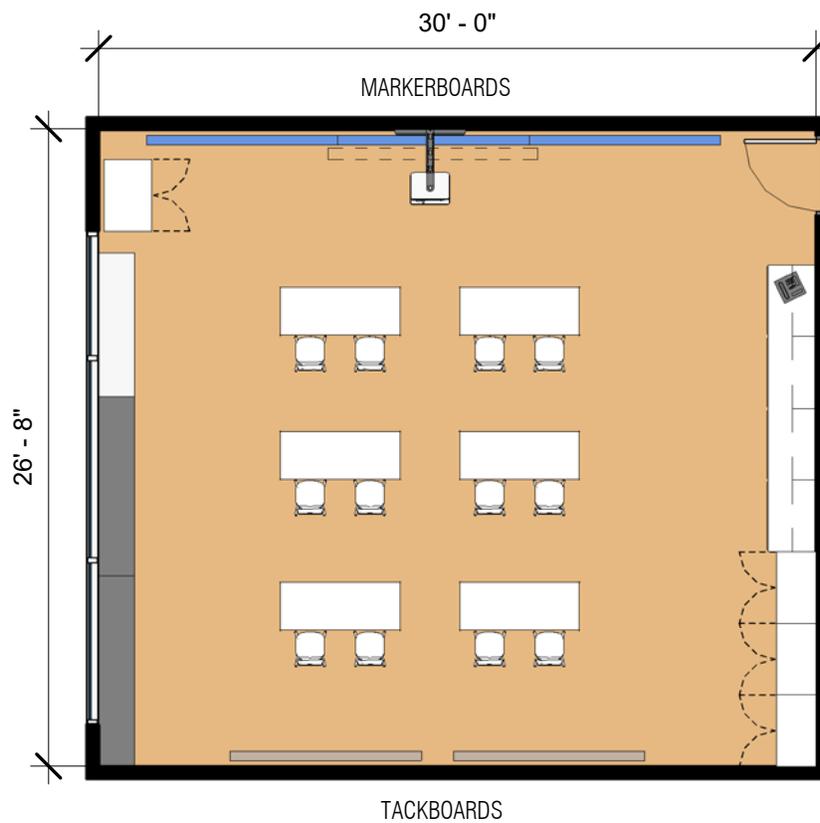
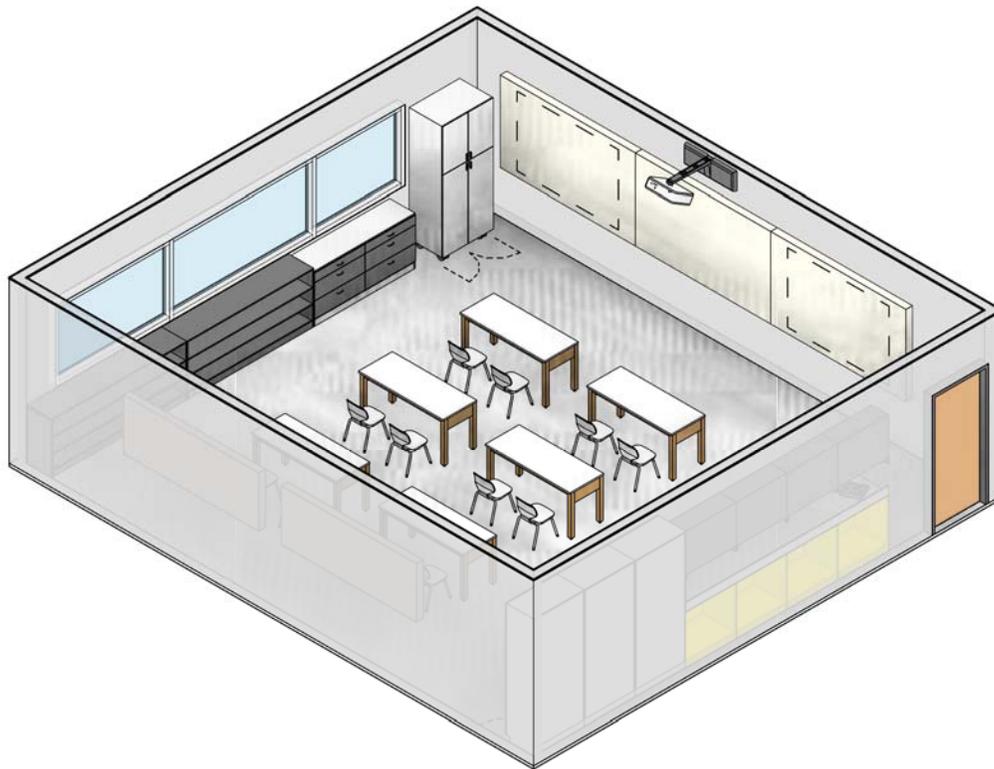
OCCUPANCY

Hours
Occ. Load
Security

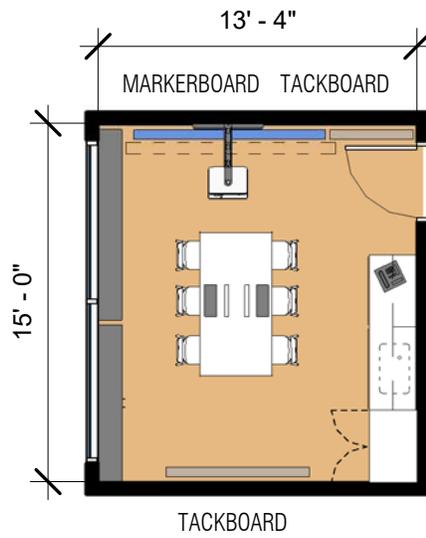
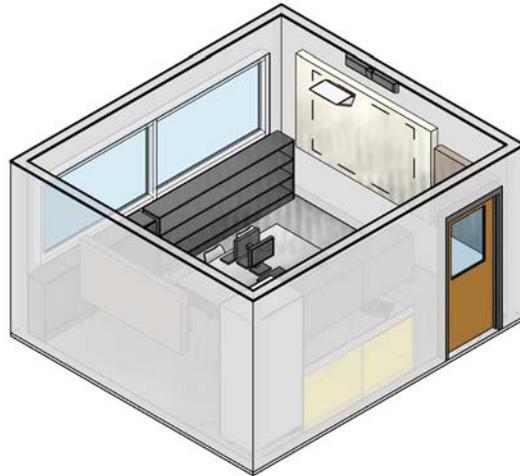
BUILDING

Ceiling
Walls
Floor
Doors
Windows
Comments

hard surface flooring
door with window
shade control



PROGRAM		ROOM SIZE	
Room Name	Emergent Bi-Lingual Classroom	Area	800 SF
Program Group	Education Support - Emerging Language Learning	Dimensions	
Adjacency Description		OCCUPANCY	
EQUIPMENT	marker board, tackable surfaces, shelving, large format storage, cabinets	Hours	
Fixed	mobile cart/storage (preferred), document camera	Occ. Load	
Mobile		Security	
SYSTEMS		BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	
Electrical	telephone, clock/intercom, digital projector	Floor	
Lighting		Doors	
Audio/Visual	sound reinforcement	Windows	shade control
Tele/Data		Comments	
Acoustics			



PROGRAM		ROOM SIZE	
Room Name	Student Government Office	Area	200 SF
Program Group	Education Support - Student Government	Dimensions	
Adjacency	Counseling/Career Center, Staff Toilets, Restrooms, Administration Offices, Small Group Conference/ Meeting Room		
Description	centrally located, display of instructional materials and student work	OCCUPANCY	
EQUIPMENT	cabinets with adjustable shelves, large format storage, locking cabinet, shelving (preferred), min (1) 4x5 magnetic whiteboard, computers	Hours	
Fixed	portable file cabinet	Occ. Load	
Mobile		Security	
SYSTEMS	sink (preferred)	BUILDING	
HVAC	power/data outlets	Ceiling	
Plumbing		Walls	min (1) wall with windows, tackable surface covering all walls
Electrical	telephone, clock/intercom, digital projector (preferred)	Floor	hard surface flooring
Lighting		Doors	door with window
Audio/Visual	acoustic isolation, sound reinforcement (preferred)	Windows	high and low operable windows, shade control
Tele/Data		Comments	seems undersized
Acoustics			