

ROOSEVELT MIDDLE SCHOOL

Eugene School District
Eugene, Oregon

Addressing the
"Emotional Brain"
Through the Teenage
Learning Environment



Executive Summary

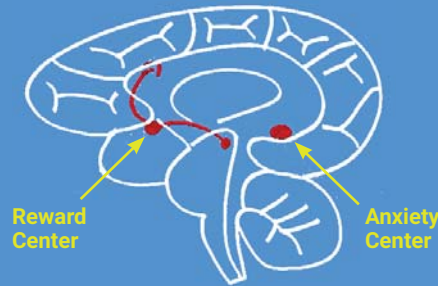
ROOSEVELT MIDDLE SCHOOL

The design of educational facilities plays a crucial role in allowing children to realize their full development potential.

Brains require different stimuli at different stages while growing and developing, so it comes as no surprise that young learners truly thrive when their educational environment activates their brains in age-appropriate ways. For example, neurological findings show that teenage behavior is governed by the “emotional brain”, and that the dominant behavior drivers of the emotional brain are the “reward center” and the “anxiety center”:

The “reward center” creates the brain’s craving for novelty – resulting in a short attention span in teens. Generally after 4 to 9 minutes of factual lecture, the teenage learner is ready for a new setting, such as small group work, individual research or hands-on experimentation.

The “anxiety center” results in heightened sensitivity to stress, which comes in many forms for a teenager. For example, narrow hallways become stress-inducing when the over-crowding leads to vandalism or bullying. Stress can also be experienced as a result of loneliness and isolation, which can then lead to depression.



All design decisions for the new Roosevelt Middle School cater to the teenage emotional brain. The design addresses the “reward center” of the teenage brain by providing diverse learning settings in two ways:

1. By understanding **the building structure as the “hardware”** which provides spaces of different size, layout and organization that give learners options. They can choose between individual quiet study, one-on-one learning, small group collaborative learning or medium to extra large group presentation style learning.
2. By considering **the furniture and technology to be the “software”** which is lightweight, mobile and flexible, and allows learners to manipulate each space type quickly and effortlessly. All classrooms offer multiple teaching walls and are void of any fixed casework except where utilities like water, gas or specific equipment is required. Power and data are available throughout.

To alleviate the “anxiety center” of the teenage brain, the following strategies were integrated:

Large amounts of transparency allows students to feel connected, regardless of whether they’re working individually, in a small group, or in class. And instead of feeling isolated, a student walking alone down a hallway still feels connected to the greater school community. In addition, vandalism and bullying are prevented, and any disturbances that do occur can be reacted to quickly.

Seating areas for studying or hanging out have been created throughout the school, providing opportunities to sit back and observe, to engage with others, or to present/exhibit to various group sizes.

Spaces were designed to support social skill building and academic advancement. At the physical level, all spaces have been sized to adequately accommodate the need of the growing teenage body for unrestricted movement and expression. Students are invited to take outdoor shortcuts when navigating between periods to take in some breaths of fresh, rejuvenating air and experience the elements.

SCOPE OF WORK AND BUDGET

OWNER
Eugene School District

SITE AREA
9.5 acres

BUILDING AREA
98,000 SF

GRADES HOUSED
6-8

STUDENT CAPACITY
650

SQUARE FEET PER PUPIL
151 SF

OCCUPANCY DATE
18 August 2016

FINAL CONSTRUCTION COST
\$28.5 Million

**BUILDING CONSTRUCTION
COST PER SQUARE FOOT**
\$291



Physical Environment

Located on the edge of a neighborhood that borders Amazon Creek Park and a natural habitat green belt, Roosevelt is surrounded by public amenities.

Located just outside the science wing resides the creek and wetlands. Citywide bike paths, running paths and public transportation lead to and from the school, and there is a small commercial hub and future YMCA located to the east.

The gymnasiums offer indoor play options, in addition to the high school tennis courts to the north, a vast array of city sport fields to the north and south, and a community pool to the south.

Several venues in the new school are used by the larger community, including the three small group spaces and the quiet reading area of the media center, which are used for district and parent meetings. After school clubs utilize the makers lab wing (along with the ample storage), and the courtyard, 70-seat forum, 90-seat theater, and 400-seat cafeteria are used for student productions and community events.

SUSTAINABILITY

Speaking to the strong environmental connections, sustainable features are visible, labeled and digitally quantifiable so they can be integrated into the curriculum:

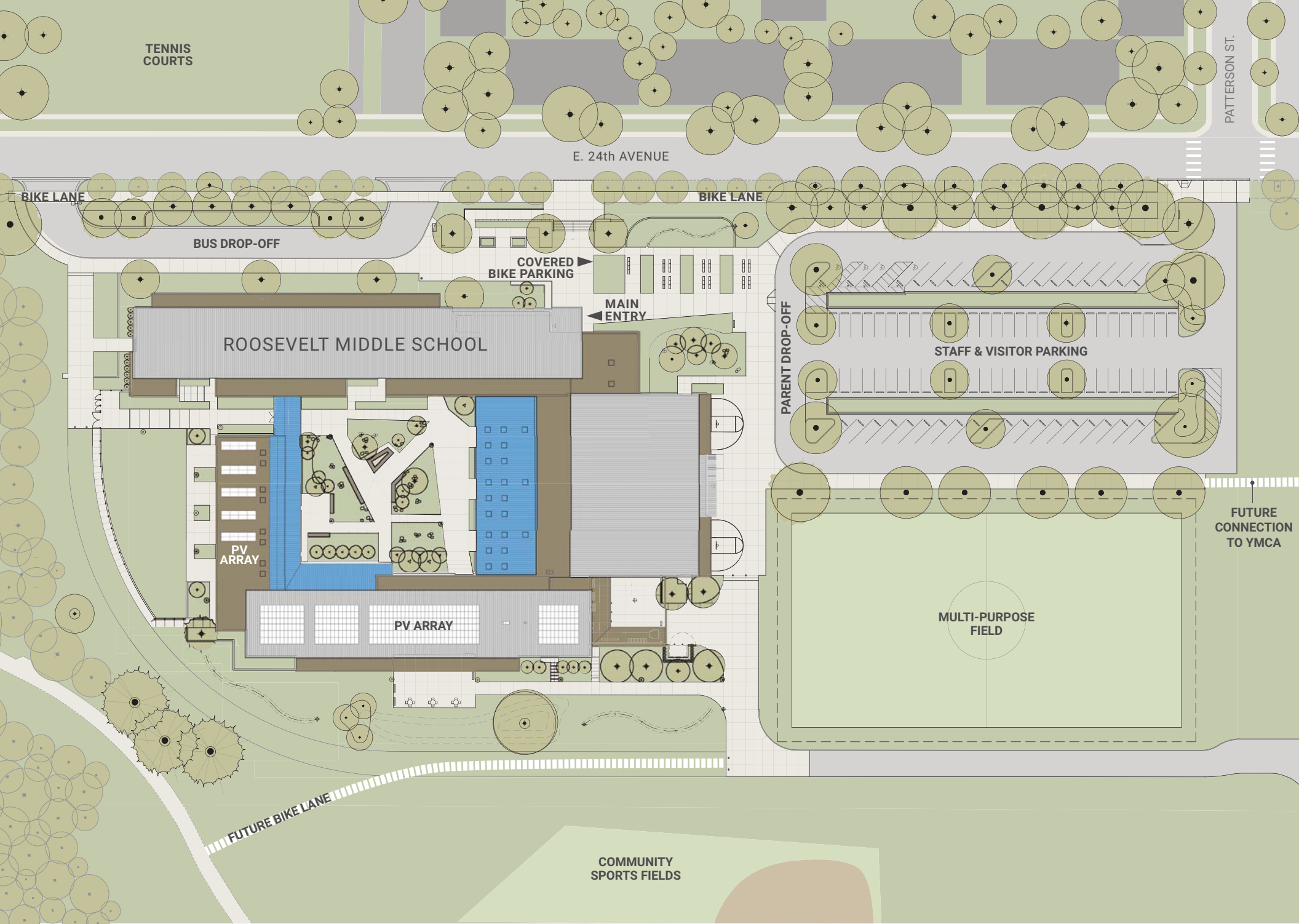
105 KW solar array (visible on the one-story science wing).

15,000 gallon underground rainwater cisterns supply greywater to all toilets during the school year, and eases peak water demand for landscape irrigation during the summer.

2030 CHALLENGE BENCHMARK

Roosevelt will generate 77% fewer CO₂ emissions than the average U.S. building of the same type and size.



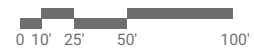


SITE PLAN

ROOSEVELT MIDDLE SCHOOL // EUGENE, OREGON



NORTH



0 10' 25' 50' 100'



Educational Environment

The tools of “visual recording” helped us capture stakeholder input and observations in graphic form which allowed instant reactions and created a visual archive to be translated into the design.

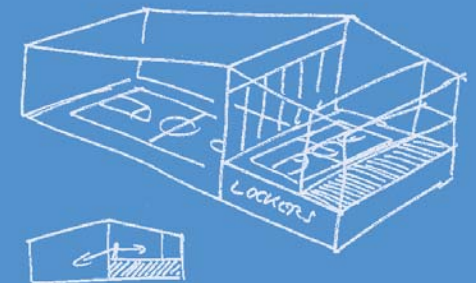
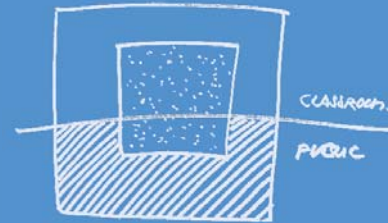
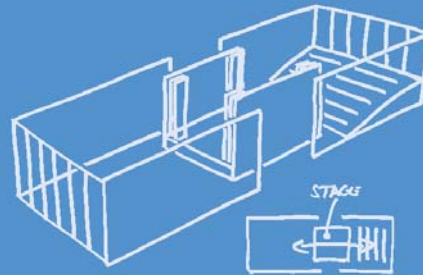
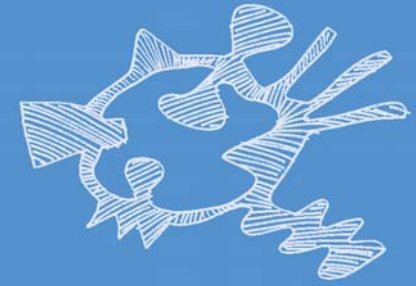
LOOPING

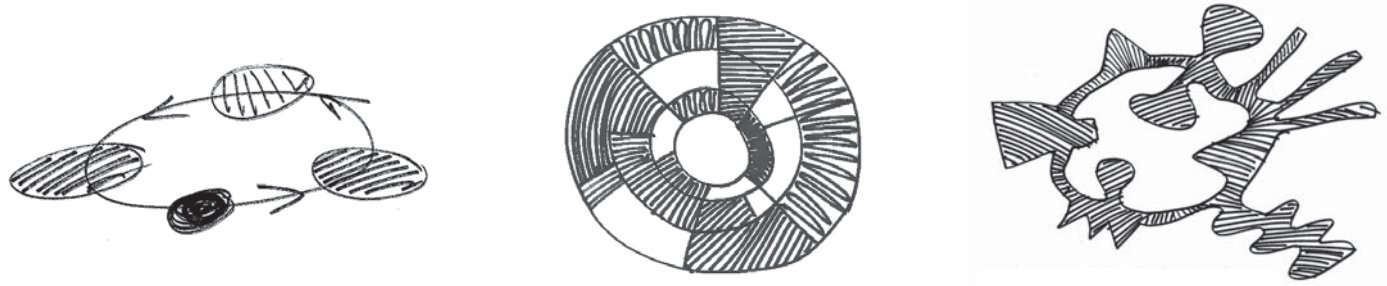
During the planning process we became aware that we could tailor the environment specifically to the needs of the teenage learner by observing a specific cultural aspect at Roosevelt called “looping.”

“Looping” is when students arrive before classes begin and walk clockwise or counter-clockwise through the halls and spontaneously gather in small groups. We realized we could use socializing as an organizing principle for the academic program areas and allow learners to be exposed to every activity and subject matter while navigating the building. The movement of learners became the DNA that brings this learning environment to life.

PROGRAM BUILDING BLOCKS

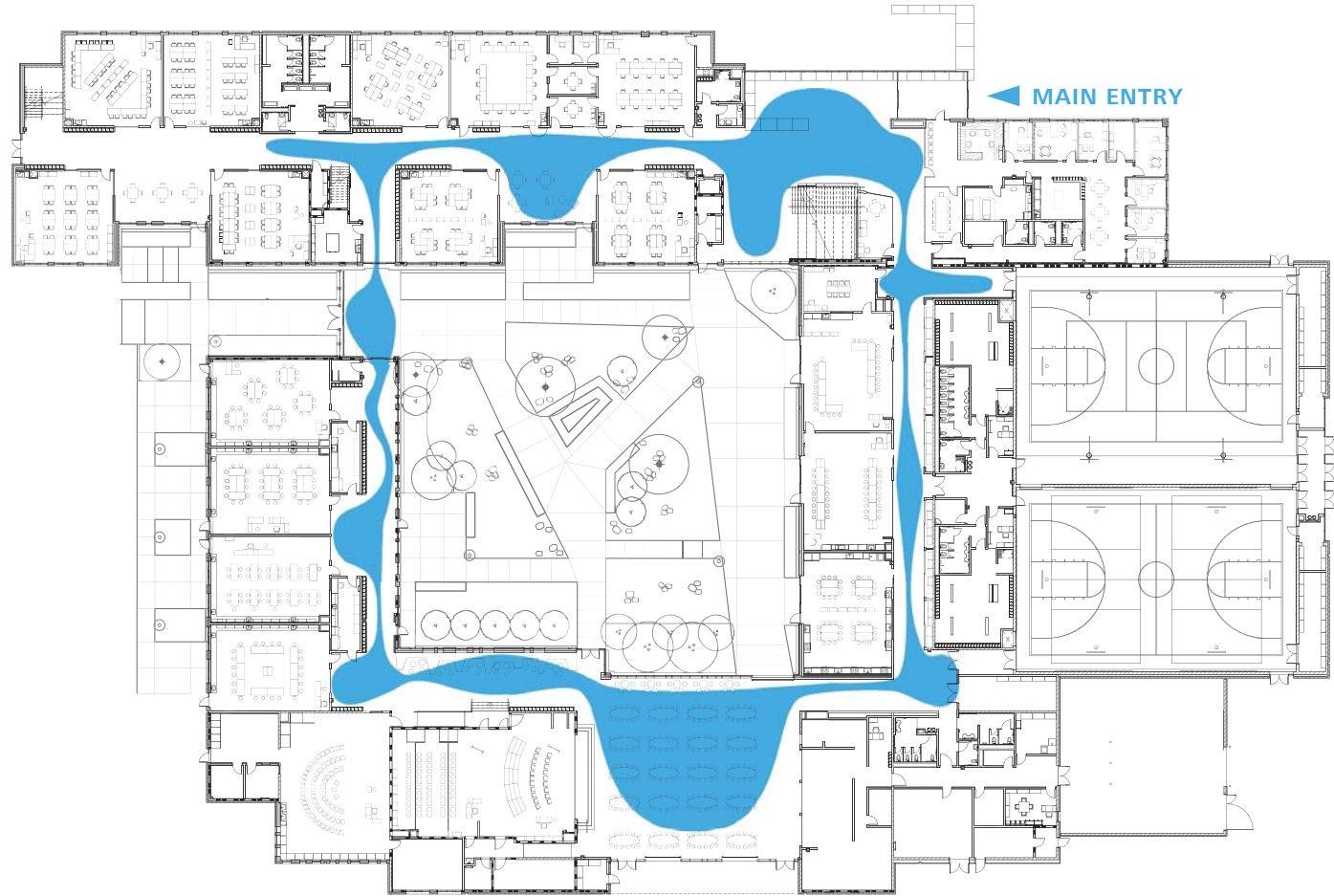
Educational programs with similar spatial needs are grouped together in academic building blocks and form a continuous loop around a central courtyard. The courtyard is not only a secure outdoor learning space and connecting element that is activated by the science wing and Makers Labs, but also becomes a reference point when circulating through the indoors.





Looping

Students arrive before classes begin and walk clockwise or counter clockwise through the halls and spontaneously gather in small groups. This important tool for social skill building is the reason for the circular layout of the new school.



EDUCATION CORE

The blue area represents where core education occurs. Teachers are able to create engaging learning environments for students by simply manipulating these spaces using technology and flexible furnishings.

IDEA EXCHANGE

The green area marks the intersection of school and community. This wing houses the main entry, administration, meeting rooms, a forum, the library/media center, a gaming area, open seating and access to the courtyard.

MAKERS' LAB

The pink area represents a multi-purpose high bay space which can be subdivided into several labs. This area is all about learning by "making" and features a transparent separation between the lab and the common space where students circulate.

KINETIC CENTER

The orange area is all about kinetic development in the form of team sports, movement, athletic achievement and all-school gatherings. It houses the two largest spaces and is a popular community amenity.

CULTURE HUB

The yellow bar to the south faces beautiful open play fields along Amazon Creek. At its heart is the "performance center," with band, choir and drama classrooms and the cafeteria which links the courtyard and lunch patio.

SCIENCE CLUSTER

The gray area is home to the science classrooms. Large glass walls into the rooms allow passing students to observe activities inside and spark curiosity. Covered porches allow scientific experimentation to spill to the outdoors.

Roosevelt's Building Blocks

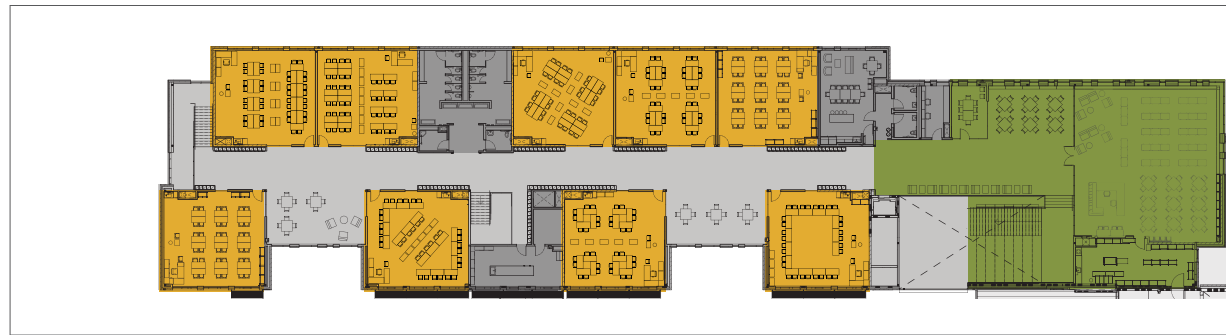
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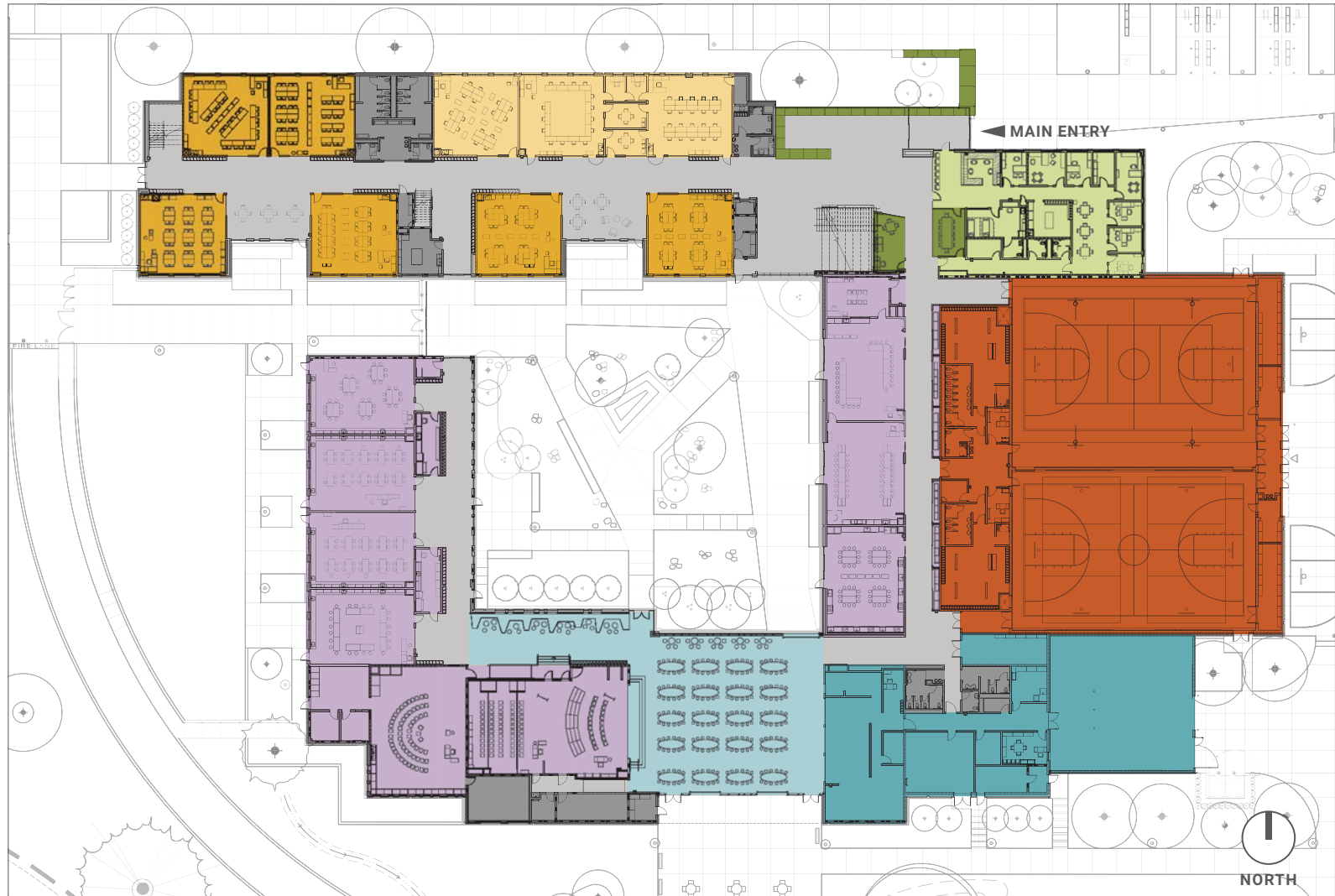
NORTH

Floor Plan Legend

- Administration
- Classroom
- Special Instruction
- Library/Media Center
- Circulation
- Science, Arts, Career/Technical (STEAM)
- Gymnasium
- Commons
- Kitchen
- Services



SECOND LEVEL FLOOR PLAN



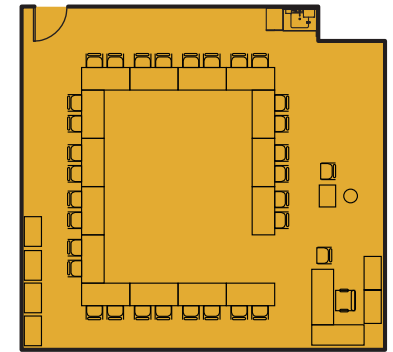
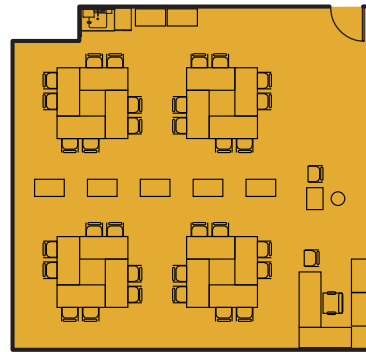
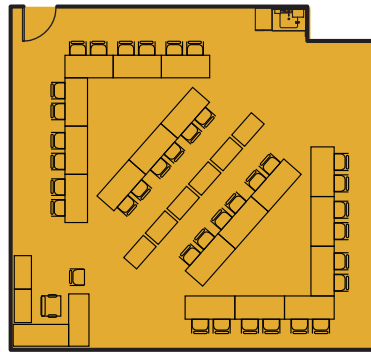
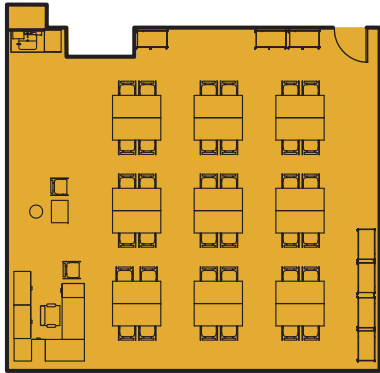
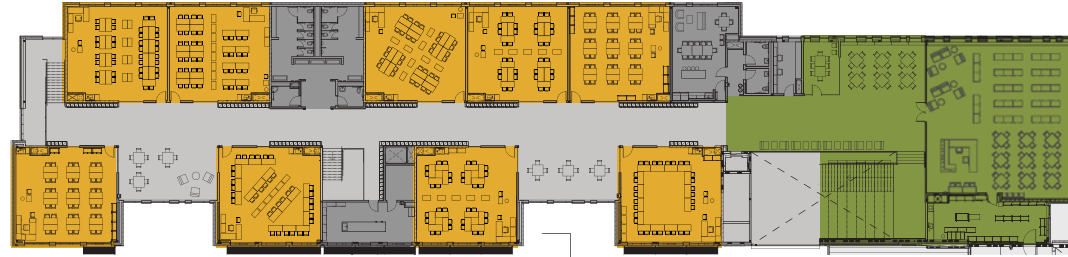
FIRST LEVEL FLOOR PLAN



Hardware/Software

The building is the “**hardware**,” providing spaces of different layouts and sizes, while the lightweight, mobile and flexible furniture is the “**software**,” allowing learners to manipulate each space quickly and effortlessly. The combinations are endless.

For ultimate flexibility, each classroom offers multiple teaching walls and are void of any fixed casework (except where utilities are required).



Large amounts of transparency allows students to feel connected, regardless of whether they're working individually, in a small group, or in class. And instead of feeling isolated, a student walking alone down a hallway still feels connected to the greater school community.



IDEA EXCHANGE

The Idea Exchange is truly an intersection of school and community. The area facilitates internal and external connections, and provides opportunities for social skill building and hanging-out with a high degree of transparency that creates a culture of openness, inclusiveness and safety.



IDEA EXCHANGE

The school's main entry is a welcoming open space where parents are invited to collaborate with teachers as they together map out each student's educational journey.



IDEA EXCHANGE

The traditional functions of a media center have been distributed to provide areas for forum, meeting, presentation, gaming, gathering, conferences, parent-teacher meetings, relaxing, discussion and quiet individual research.



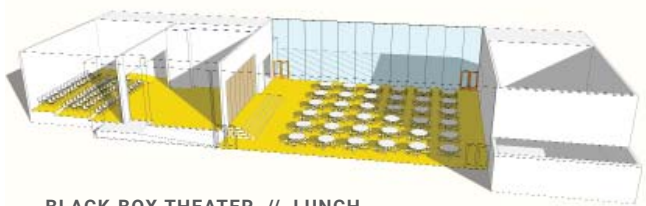
MAKERS' LAB

By keeping all of their materials stored in mobile bins across the hallway, students are exposed to all "maker" activities when they pass by these learning spaces. Interest and curiosity is sparked in students when we place learning on display.

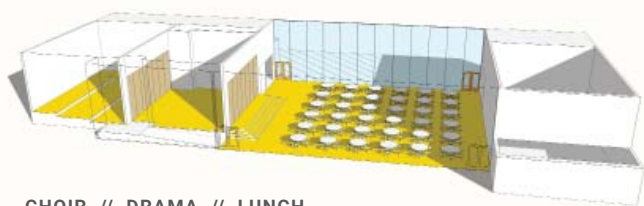


CULTURE HUB

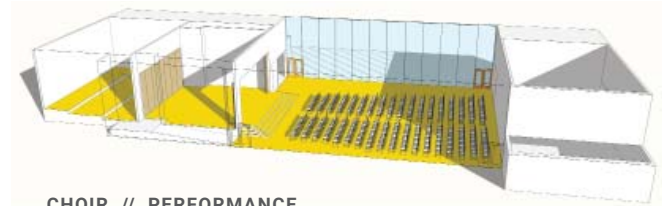
Performing arts is meaningful to Roosevelt's culture. The new construction budget did not include an allowance for this important community asset, so the design team created the "Culture Hub" – a flexible performance venue that accommodates a variety of events through a combination of spaces for choir, drama and the cafeteria.



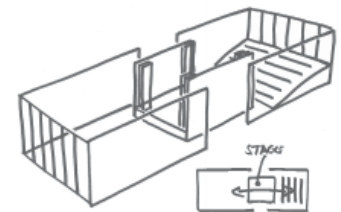
BLACK-BOX THEATER // LUNCH



CHOIR // DRAMA // LUNCH



CHOIR // PERFORMANCE



CULTURE HUB

At lunchtime, students can choose their destination – the bustling cafeteria, the adjacent quiet dining area, or the fresh air and openness of the courtyard or south lawn.





Results of the Process & Project

“In my long career, I’ve never seen a middle school environment that addresses the socializing and social-skill building aspect for middle school students in a better way. I’m calling every Superintendent in the state to come tour our new facility.”

**Dr. Gustavo Balderas, Superintendent
Eugene School District**

“We’re happy to see the students arriving at 7:45am each day and participating in ‘looping’ until first classes begin at 8:55am.”

**School Administrator,
Roosevelt Middle School**

“I love to open the glass wall and the flexibility of pulling the materials I need from across the hall – and the students love to be in the large flexible space.”

**Art Teacher,
Roosevelt Middle School**

“I never knew what my colleagues were doing in their classes, but now because of the high level of transparency, I feel connected. We collaborate now, and I don’t feel alone in my classroom anymore.”

**7th Grade Teacher,
Roosevelt Middle School**

“Students love when we open the garage doors on both sides of the cafeteria. They love to eat in the open air on a nice day. The courtyard, with the oversized fabric umbrellas, create shelter for the students to hang out, even on a rainy day. The students feel safe and protected because even though they’re outside, the courtyard is enclosed and secure.”

**Chris Mitchell, Principal
Roosevelt Middle School**

