The restoration of Roosevelt High School (RHS) had an ambitious agenda. The project needed to infuse the historic school and community with a vital new mission focused on success for all three primary goals – academic rigor, environmental relevance, and social relationships. The school was in tough shape, suffering from chronic absenteeism, poor graduation rates (less than half), and the lowest high school test scores in the state. It was also in the top five percent of high-poverty schools in Oregon and housed in a loose assemblage of buildings with inadequate mechanical, electrical, and seismic systems.

Can a new building design help spur school spirit? Can a modernized Colonial Revival building accommodate the vast criteria necessary to promote the kind of learning that RHS needed to get back on track? Based on increasing enrollment and graduation rates, improved math and reading scores, enhanced community services on the campus, and an upsurge in neighborhood property values it appears that the revitalization of RHS extends above and beyond the campus itself to meet all of the above, and then some.
We were super excited when we were chosen to be one of the first schools to be rebuilt with the bond. I think that was such a wonderful acknowledgement from the city to St. John’s in North Portland. Because Roosevelt is really kind of the center and heart of this community and so, as an alumni and a community member, that was amazing.

KELSEY PORTER
School Counselor, Head Softball Coach, RHS Alumni
Significant community engagement helped shape the rehabilitation of RHS. Pre-bond outreach included visits to restored historic high schools in Seattle and Tacoma to explore best practices and lessons learned. Further outreach to the Portland historic community included a symposium titled, “Preserve and Reuse” that examined preservation strategies, as well as community advocacy. Additionally, the district held a Learning Environments Symposium to develop ideas around 21st century learning trends and sustainability. The symposium organizers invited nationally recognized educators and school designers to share insights.

Following bond approval, the district convened a Design Advisory Group (DAG) that involved volunteers from the school and community in regular meetings to develop project goals and give input relevant to the developing design. DAG participants included students, teachers, administrators, parents, and community members in addition to the managers and architects. Key issues explored through the DAG two-year process included: project milestones, goals and guiding principles, site history, site analysis, community partnerships, traffic and parking, and sustainability. Broader community involvement included two community workshops and one open house during design development. Keen public insights gave focus to design challenges that included a large homeless student population, the critical need for wrap-around services (food pantry, clothes closet, health clinic, and daycare for teen and community parents), the importance of improving the 53% graduation rate, and the desire for more enhanced STEM education to engage hands-on learners.

Paralleling the broad school and community engagement, the design team convened a series of workshops with the students of Roosevelt to listen, ideate, and inform. The workshops engaged 200 students in a Freshman Academy followed two years later with a Junior Academy. One key area of focus involved personalization of space in response to critical issues surrounding ethnicity at the school.
Freshman Academy was created to inform the entire class of 200 students of the various career opportunities available to them in the design and construction fields. Additionally, we wanted to learn more about how the students envisioned a modernized campus. The program was planned and conducted by the design team, whose professions spanned from architecture and engineering to construction and photography. The kids supplied data outlining their favorite and least favorite spaces in the school – both where and why. Through these exercises we were able to glean many useful common denominators. Light and comfort were almost universally important to students, as was celebrating their various cultures. Also universal was the students’ least favorite space – the cafeteria – which was dark, dreary, disconnected from the rest of the school – and ultimately razed.

By the third session, students were contributing their own designs and some of the groups even designed furniture for the spaces. The College and Career Counselor commented, “The program was proof that if you set the bar high, students will rise to the occasion. Several parents were not only excited for their children to have the opportunity, but mentioned that the kids talked enthusiastically about the project with them.”

Two years later, a Junior Academy was convened to get additional student input. Because ethnicity was a powerful theme for the Freshman Academy, the Junior Academy focused on Personalization of Space as a topic so that students could help incorporate their rich cultural diversity into the design. The students focused on key areas of the school and produced many wonderful ideas that were ultimately incorporated into experiential graphics for RHS. The student work provided the design team with significant information on student priorities including the following themes:

**COMMON STUDENT THEMES**

- **Comfort** – furniture, temperature, lighting control
- **Daylight** – big windows, skylights
- **Identity/personal** – reflect diversity, reflect students
- **Flexibility** – movable furniture, walls, stage
- **Technology** – smart boards, LCD screens, power everywhere
- **Variety** – private/quiet, lounge areas, group study areas
- **Amphitheatre** – presentations, performance
- **Multiple pathways to move through the school**
- **Built-in seating**
- **Student art display**

Clockwise from top: Freshman Academy students became familiar with architectural terms by participating in a photo scavenger hunt - this was a response to the word context, Junior Academy students begin to personalize RHS spaces, a final design by Junior Academy students included placing the logo from the old gym in the new gym lobby floor - an idea that was ultimately included in the design.
The new gym lobby incorporates ideas from Junior Academy designs above.
Situated amid a residential neighborhood, RHS is one of the most ethnically diverse schools in Oregon. The modernization of the school began in 2015 as part of a $482 million bond measure aimed at improving Portland schools. Prior to the passage of the bond in 2012, the school was suffering from chronic absenteeism, poor graduation rates (less than half), and the lowest high school test scores in the state. It was also in the top five percent of high-poverty schools in Oregon.

The previously disjointed campus consisted of a number of structures that were added over time, including a gymnasium (1950); library and classroom (1960); cafeteria, classroom, and observatory (1964); and auto shop (1970). To revitalize the campus and restore the original buildings to their splendor, the mid-century additions that obscured views of the Colonial Revival buildings were demolished. Historic spaces were adaptively reused to support the school’s 21st century educational program. The original auditorium was converted to a daylight-filled library/media center. A seldom-used central courtyard was enclosed to become a new, distributed commons - transforming the space into the heart of the campus. New additions, including a classroom wing, gymnasium, theatre, and CTE spaces were added to the north and west of the original structures, ensuring that the historic school maintained its prominent position within the community. The new campus provides the latest systems and technology, while honoring the historic architecture.

The project was originally established with a budget of $92.2 million and a construction budget of $50.1 million. However, additional capacity was added by the School Board, which also added to the budget.
Community courtyard, daycare playground, outdoor learning, and rain gardens front the historic structures.
EDUCATIONAL & PHYSICAL ENVIRONMENT

District goals and community aspirations were consolidated into six Guiding Principles that ultimately shaped the design of Roosevelt.

LEARNING FOCUSED
» Recognize and celebrate lifelong learning.
» Provide multiple pathways to learning recognizing many different learning and teaching styles.
» Provide equitable access to learning for all.

PERSONALIZED
» Educate the whole child – social, emotional, and physical.
» Each student is known well by caring adults.
» Collaborate.

FLEXIBLE AND ADAPTABLE
» Accommodate multiple curricular models.
» Tailor programs to individual student needs and skills, change as students change.

HONOR COMMUNITY
» Develop and enhance community partnerships.
» Provide specialized learning opportunities that can be shared with the community.

SAFE AND SECURE
» Students, faculty, and families are safe and cared for in all important aspects of their lives.
» Celebrate diversity and inclusion.

SUSTAINABLE
» Target LEED Silver
» Develop the building as a learning tool focused on environmental resilience.
» Respect history and context
» Preserve defining characteristics of the historic school.
» Embrace the rich multiculturalism of the St. Johns neighborhood.

Guiding Principles were posted at each DAG and community meeting and used as a lens through which the evolving design was reviewed and critiqued to ensure that the thematic goals were being implemented.
Transforming the traditionally organized school into an adaptable facility that supports a variety of modern learning requirements was one of the biggest challenges. Before the remodel, RHS was a poorly organized assemblage of disparate buildings that required numerous exterior entry points and convoluted universal access.

The new school is organized into clusters of integrated learning spaces arranged to allow flexibility within the historic shell. Seismic shear walls, mechanical shafts, and other infrastructure were located to keep the floor area open without impacting the key historic elements of the existing buildings.

Bringing natural light into the sunken lower levels of the buildings, with small light wells outside the windows, was another challenge. Exterior grades were lowered to allow the light to penetrate into the new classrooms. This solution also had the added benefit of resolving universal access throughout the original buildings, where uneven floors and a plethora of staircases needed to be traversed to get from one building to another. By lowering the grade, the ground floor was leveled out, allowing accessible transition between additions and existing buildings with gradual ramps in key locations.

I love all the windows. It’s so nice to get natural light. You don’t feel like you’re in a dark little room. Even the fact that the basement classrooms have windows is so nice. I really love everything about the building.

BREELY BUTTITTA
Student
The revitalized campus is organized around a central, distributed student commons located in the historic courtyard at the heart of the school. This double-height, skylit space securely unites the entire campus under one roof, graciously resolves universal access, and supports a rich social environment where students can thrive. The historic exterior walls that formerly shaped the courtyard were adaptively repurposed to form the interior walls of the commons. The vital space supports daily lunch activities, school gatherings, student and community presentations, and casual learning and socializing. The commons embraces a school on the rise with improving attendance, test scores, graduation rates, and most importantly, pride.

"The commons is the new main hallway - the place where students have the chance to check in with friends in between classes or have lunch, or hang out after school, or hang their banners and posters, or have impromptu performances. The commons is the place, so that central location is really the heart of the school now."

FILIP HRISTIC
RHS Principal
Recognizing that teaching and learning methodologies are continually evolving to incorporate effective practices and new research, the design team asked three interrelated questions in approaching the layout of learning spaces.

» How do we learn?
» How do we organize learning?
» How do we organize spaces to support teaching and learning?

Concepts on how we learn stem from brain research, educational research, and cognitive neuroscience. We know our brains need plenty of exercise to boost brain power. We are natural explorers who require sensory integration to stimulate our thinking. Plenty of sleep and reduced stress help us learn. We know every brain is wired differently, thereby requiring differentiated learning methods to reach all learners. Howard Gardener developed a Theory of Multiple Intelligences founded on these differentiated learning ideas that include numerous learning modalities.

LEARNING MODALITIES:
» Kinesthetic
» Musical
» Interpersonal
» Intrapersonal
» Visual / Spatial
» Logical
» Verbal
» Naturalist
Flex areas support breakout learning, collaboration, hands-on projects, and mentoring along with socialization.
The historic auditorium has been resurrected in the conversion of a dark, sloped, acoustically challenged theatre into Roosevelt’s new media center. The original balcony was repurposed as a distinctive mezzanine space. Light fixtures, stage moldings, and double-height windows have been preserved, giving the library/media center a grand setting with abundant daylight.
A key component of the interior design is the use of wood throughout the school to provide warmth and texture to the natural brick and concrete present in the existing historic structures. The design team’s creative use of salvaged wood materials such as the old gym bleachers, gym floor, and theatre seatbacks provide the warmth of wood and a harkening to the original spaces that are no longer there.

How do I show students that this is unique? Colleges don’t have this. There are professional theatres who don’t have some of this. That’s sometimes a difficult thing to convey, for them to realize how great the theatre space is.

JOE STROM LANE
Theatre Arts Teacher
Connections to the natural environment enhance Roosevelt’s resurgence in numerous interrelated ways.

» Sustainable site strategies include visible stormwater retention gardens and swales, preservation and augmentation of the tree canopy (including the grove of ancient firs), prioritization of pedestrian and bicycle routes, covered bicycle storage, drought-tolerant planting, and clean-up of site contamination.

» The building tells the story of sustainable design through renovation, adaptive reuse, optimized daylighting, mitigated heat gain, envelope and systems efficiency, and photovoltaic electricity generation.

» Outdoor learning settings augment interior spaces.

» Restoration of the great south lawn revitalized the iconic presence of the historic structures as a place of community pride.
Roosevelt’s sustainable features are designed to increase building performance and include, 100% onsite stormwater infiltration system, high outside air rate for cleaner indoor air quality, and creative reuse of salvaged materials. In addition, an ultra-efficient and robust heat pump, with built-in staging of up to 100% heat recovery, serves as both a chiller and a boiler.

The Photovoltaic (PV) Systems associated with this project are funded by the 1.5% for Solar budget implemented per the Oregon Department of Energy requirements for schools. To create a learning opportunity for students, the project team explored different PV technologies that yield varying production factors, with the goal of locating them throughout the building. This enables students to monitor the performance of each system by collecting data through an online portal and comparing the variances in their production. These systems include two rooftop PV arrays and a brise soleil.

Perhaps the most sustainable feature of this project is the amount of carbon emissions saved by preserving the existing building. A total of 3,623 metric tons were expended for the modernization versus the 6,956 metric tons that would have been used if a replacement building had been constructed. This amounts to the equivalent of saving CO2 emissions from 375,000 gallons of gas or greenhouse gas emissions from 8.2 million miles driven by an average passenger vehicle.

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**CARBON EMISSIONS**

| NEW BUILDING | 6,956 METRIC TONS |
| PRESERVED BUILDING | 3,623 METRIC TONS |

**CARBON SAVINGS EQUIVALENT**

| 375,000 GALLONS OF GAS |
| 8.2 MILLION MILES DRIVEN BY CAR |

Solar brise soleil at the new addition serves to mitigate glare and generate electricity.
The third component of ROOSEVELT RISING is the social relationships that are essential elements of a powerful school. The design explored both internal and external aspects of supporting a healthy community. Indoor community spaces included the commons, theatre, library, and gyms along with wrap-around services (Clinic, food pantry, clothes closet, teen parent center) to engage the broader community. Outdoor spaces include the lawn (featuring the elegant historic façades of Roosevelt), community garden, athletic plaza (gathering space for the big games), grove, and courtyard (a protected indoor/outdoor space). Among these important social spaces, the student commons serves as a nexus—a central junction that casually links the network of spaces that make up the school. The commons provides an essential role in Roosevelt’s resurgence by connecting the academic, environmental, and social continuum of the campus.

I remember walking behind a couple of kids when we were doing our phase two opening and they were coming into the commons for the first time. They thought it was so cool and couldn’t believe the space. It was wonderful that they really appreciated it. And these were freshmen so they hadn’t seen what the old school was like.

SUE BRENT
Office of School Modernization
Program Manager
With the school modernization, CTE programs have become so well attended that the District is considering adding another wing to accommodate growth and support students.

The learning spaces - looking at kids working in the wood shop, for example, or in the makerspace, or in the stem lab - doing their robotics in there...that to me is the kind of learning that kids thrive on. And so to have those spaces reinforces what I believe, which is that kids need hands-on learning opportunities, and seeing how full those spaces are at Roosevelt is exciting. I love the wood shop because, when you go in there you see the kids totally engaged and making.

SUE BRENT
Office of School Modernization
Program Manager
DISTRICT GOALS

» Enrollment has increased by more than 200 students over five years, with current enrollment at over 900 students.

» The graduation rate has increased and is now 73%, which is up 15 points in two years.

» Math and reading scores have improved by double digits.

» Reduction in suspensions and expulsions over the past five years.

LEARNER FOCUSED

We’ve seen an increase in enrollment in certain programs, like theatre. We’re able to offer new programs, like engineering and construction. Our library is absolutely beautiful. It’s probably one of my favorite spaces. So, we’re seeing a higher student enrollment as a whole. We’re up about 15 to 20 per cent from a year ago and we’ll be adding even more students next year. So, I do think that the new building has a lot to do with that.

FILIP HRISTIC
RHS Principal
DISTRICT GOALS

Through the revitalization of the Roosevelt High School campus, this pillar in the St. Johns community is not the only thing that is on the rise. The school, its students, and surrounding community have all been positively impacted.

PERSONALIZED

“...We’re beginning to personalize the new space a little bit more in the sense that we’re starting to put up some student artwork, and I’m working with a couple of muralists, who’ll be working with students to design some murals. So, more and more, I think we’re beginning to feel like this big, beautiful new building is starting to feel like ours.”

FILIP HRISTIC
RHS Principal
Clusters of integrated learning communities create flexibility within the historic building shell. Furnishings were chosen to allow multiple teaching options to take place, fostering student success.

DISTRICT GOALS
FLEXIBLE & ADAPTABLE

Maximizing daylight, providing adjustable height workstations, and upgrading technology create inspiring 21st century learning spaces.

"I think, especially in science, those rooms are just stellar. So I do think teachers and students can do more because they have a better space to do it in. I would put that at the top of the list. I think the ability to put groups together is always a good thing. And teachers really appreciate the technology.

DAN MALONE
Vice Principal
We’ve had some groups that were in our old space (theatre) that have come back, like the Aspire Dance project rents every year. Then we’ve had some new rentals, like TEDxMtHood is now a regular partner presenting here. I spent easily 200 hours just in emails, and phone calls, and tours for people coming into the space last year. We’ve had the Gubernatorial debate here, a mayoral event this spring... We’ve had some events around Black Lives Matter... just a whole range of events that we, in the past, have not hosted.

JO STROM LANE
Theatre Arts Teacher
A new, secure entry vestibule, transparency, and the ability to control after school access in community spaces increase safety and security throughout the school.

I think that students feel much more seen and valued and appreciated. I was at a high school not too long ago and I went to the student restroom and it was full of graffiti. We’ve had very few instances of vandalism. In the old building they would get trashed all the time - but they were also pretty trashy. And I’m not seeing the same kind of carelessness in our new restrooms. So I do think that our students are engaging with the (new) space in a new way.

FILIP HRISTIC
RHS Principal
DISTRICT GOALS

Outdoor learning settings, alternative energy sources, daylight, and building reuse are some of the ways RHS meets LEED Silver status (in progress).

SUSTAINABILITY

Everyone’s first impression is wow, what a beautiful campus. There’s a higher sense of pride for kids when they come to school and I think that one reason for our pretty dramatic increase in enrollment is the new building. And of course, you get more students, you get more programs, you get more staffing, you get more opportunities for students.

KELSEY PORTER
School Counselor, Head Softball Coach

The courtyard extends the commons as a place where students socialize, study, gather, and learn.