

LOWELL ELEMENTARY SCHOOL

BEX VI CAPITAL LEVY CONCEPT PLANNING

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SITE SPECIFIC EXECUTIVE SUMMARY

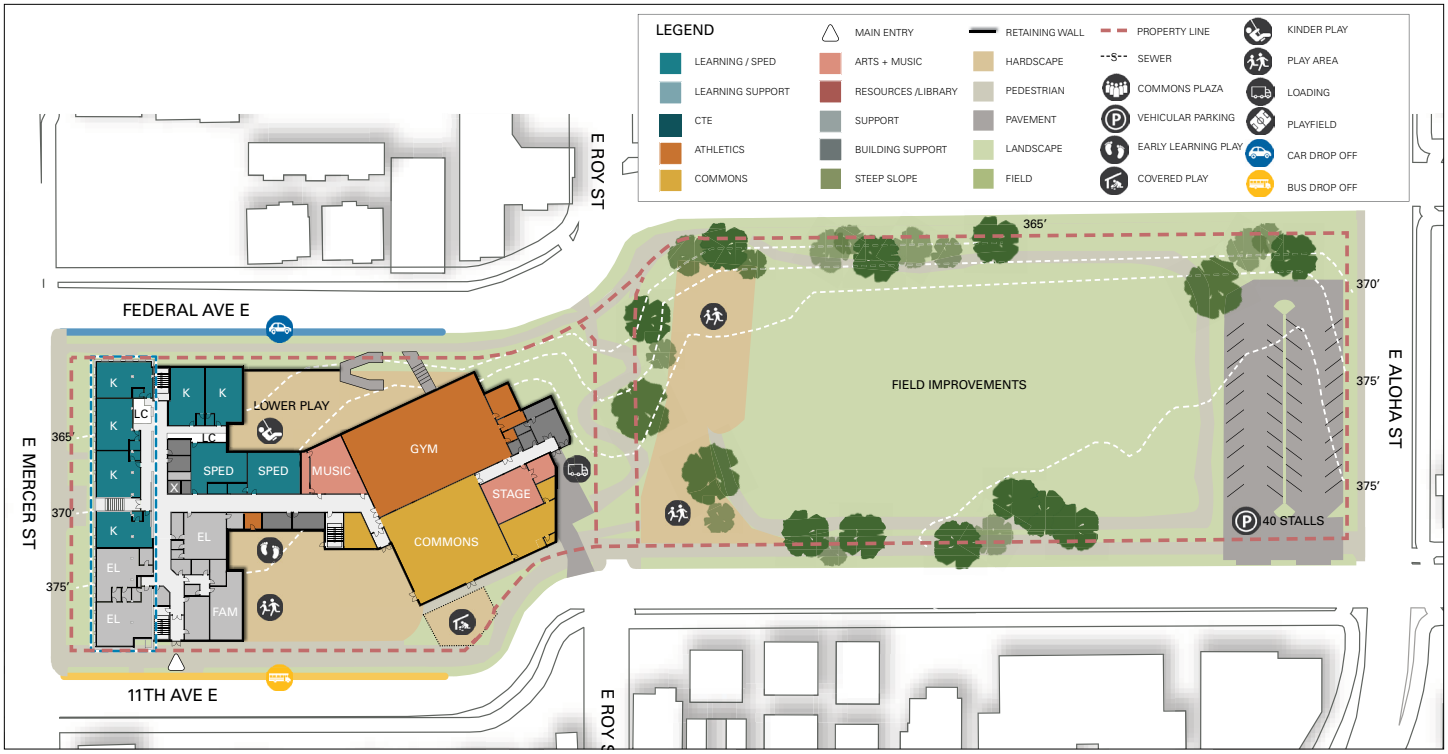
Lowell Elementary School is located on a 3.91-acre site in a residential area of the Capitol Hill neighborhood on E Mercer St between Federal Ave E to the west and 11th Ave E to the east.

The site is limited in size and has a variety of challenges with existing grades and a steep downward slope from the east to west. The site is split by E Roy St, a pedestrian right-of-way, which separates the building from the playfield and parking lot. The existing building is sited on the majority of the southern parcel, with the 1919 addition to the south along E Mercer St.

MODERNIZATION AND ADDITION

After reviewing the due diligence information and visiting the site, the District BEX VI Planning Team directed this project to be a modernization with a new addition to provide a facility that meets the current Educational Specifications for a 650-student capacity elementary school and addresses future landmark status. The existing playground located to the northeast of E Roy St was recently updated. The selected scheme retains and modernizes the 1919 three-story brick building and demolishes the 1960 building to allow for a new three-story addition. Primary attributes of the preferred concept plan include:

+ Basement Level is on grade with Federal Ave E and Level 1 is on grade with 11th Ave E.
+ Early Learning, Special Education, Kindergarten, and the Community Room are located on Level 1 while the Health Clinic remains within the basement.
+ Classrooms are arranged in small clusters of three classrooms around a Learning Commons.
+ Gym and Commons are located in the new addition to the north for better access to the playfield.
+ Playfields are replaced with grass and ADA walkways are improved.
+ Seismic improvements and improved thermal efficiency are implemented within the existing 1919 brick building.
+ Operable partition provided between the Gym and Commons opens for larger performances; arrangement is slightly different than shown in the District ed spec.
+ New construction of an upper story to the north of the 1919 building allows the historic structure to remain the prominent volume on the site.



Above: Preferred option.

SCOPE OF WORK SUMMARY SHEET

BUILDING WORK AT MODERNIZATION

+ Seismic Upgrades
+ Furring, Insulation, Vapor Barrier, with Finished GWB at Exterior Walls
+ Clean, Tuckpoint, and Seal Exterior Masonry
+ Restore and Repair Exterior Masonry
+ New Exterior Windows
+ New Exterior and Interior Doors, Frames, and Hardware
+ Reconfigure Existing Building Interior per Concept Plan
+ Restore and Repair Existing Plaster at Historically Significant Locations
+ New Interior Floor Finishes
+ New Interior Wall Finishes
+ New Markerboards and Tackboards
+ New Interior Ceiling Systems and Finishes
+ New Interior Casework
+ New Interior Glazing
+ Painting and Finishing
+ Floor Slope Leveling for ADA Accessibility
+ ADA Upgrades at Existing Toilet Rooms
+ Stair and Vertical Conveying Equipment Upgrades
+ New Window Coverings
+ HVAC System Upgrades
+ Plumbing System Upgrades
+ Fire Sprinkler System Upgrades
+ Electrical Service and Distribution Upgrades
+ Lighting and Sound System Upgrades
+ Communication, Security, Low Voltage, and Technology System Upgrades
+ Existing Building Demolition per Concept Plan
+ New Roofing and Upgraded Roof Assembly

BUILDING WORK AT ADDITION

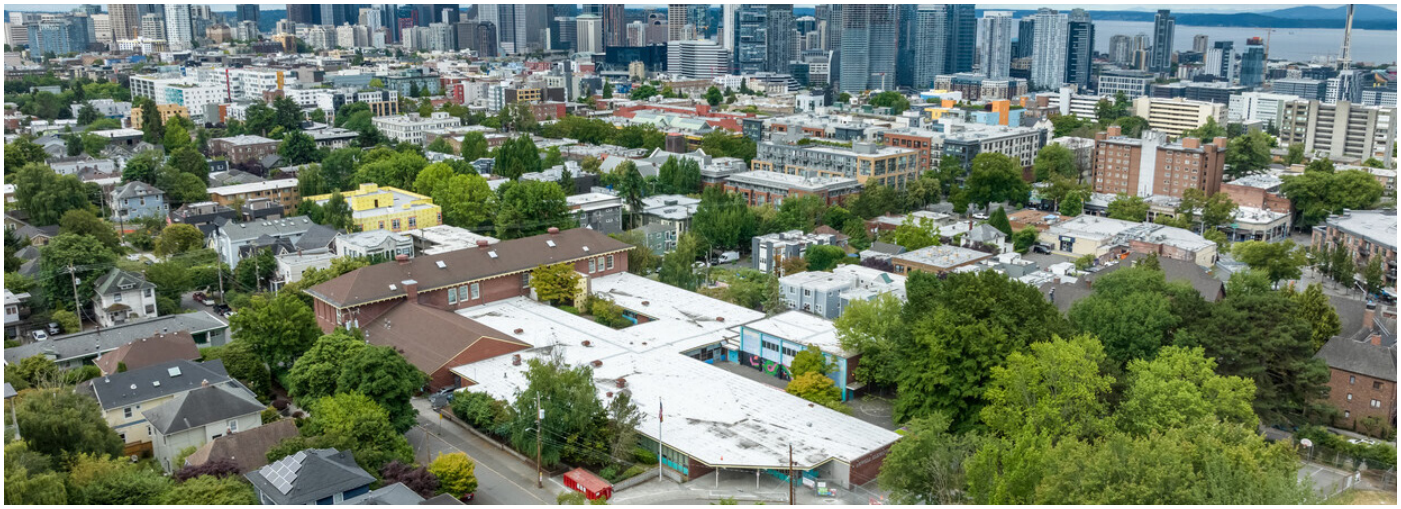
+ Building Foundation System with SOG, Waterproofing, Insulation, and Vapor Control
+ Structural Steel Framing, Braced Frames, Shear Walls, and Elevated Metal Deck
+ Roofing System
+ Exterior and Interior Wall Assemblies
+ Stormwater Management System
+ Interior and Exterior Glazing Systems
+ Vertical Conveying Equipment
+ Interior and Exterior Doors, Frames, and Hardware
+ District Standard Casework
+ Interior Wall Finishes
+ Interior Floor Finishes
+ Interior Ceiling Systems and Finishes
+ Interior Stairs, Ship Ladders, and Hatches
+ Painting and Finishing
+ Markerboards and Tackboards
+ Window Coverings
+ HVAC System
+ Plumbing System
+ Fire Sprinkler System
+ Electrical System
+ Photovoltaic System
+ Lighting and Sound Systems
+ Communication, Security, Low Voltage, and Technology Systems
+ Existing Building Demolition
+ Kitchen Equipment
+ Stage Lighting and Sound System

SITE DEVELOPMENT

+ Site Excavation and Grading
+ Retaining Walls
+ Site Stairs and Railings
+ Sewer Upgrades
+ Stormwater Facility Upgrades
+ Geothermal Ground Loop
+ Site Utility Upgrades
+ New Asphalt Paving
+ New Site Concrete Paving
+ New Site Striping
+ New Site Equipment
+ Right-of-Way Improvements
+ Covered Play Area
+ Tree Planting
+ New Site Security System
+ Existing Tree Pruning and Protection
+ Landscaping
+ Irrigation
+ Site Lighting
+ Demolition of the Existing Buildings and Removal of Regulated Materials (Asbestos, Lead Paint, Etc.)

SITE INFORMATION

ADDRESS	1058 E Mercer St Seattle, WA 98102
NEIGHBORHOOD	Capitol Hill (Broadway)
BUILDING CODE JURISDICTION	City of Seattle
ZONING	LR3 (M) Height = 50' max Lot Coverage = 35% max School Use Permitted - No CUP
CONSTRUCTION TYPE	V-A (2015 Permit), Partial sprinkler (Health Clinic)
ECA	Tree Canopy Coverage Parking Flexibility Area 40% Steep Slope on North Parcel (West Side)
CONSTRUCTION DATES	2022 - Basement Health Clinic Renovation 2019 - Seismic Upgrades 2015 - Seismic Upgrades 1960 - Gym, Auditorium, & Classroom Addition North 1919 - Oldest Existing Addition Remaining (Facing Mercer)
SITE AREA	170,392 Sq Ft : 3.91 Acres (Parcel Data)
FIELDS	Adjacent to city park, Hardscape Play Area, Small Softscape Playground, Grass Playfield with Baseball backstop
TOTAL EXISTING BUILDING AREA	74,136 Sq Ft
ARCHITECT AND LANDMARK STATUS	Architect (1919) Edgar Blair Architect (1960 Addition): John Graham & Co Not landmarked but 1919 and 1960 building likely to be designated



Above: Aerial of Lowell with views to Seattle, homes.com.

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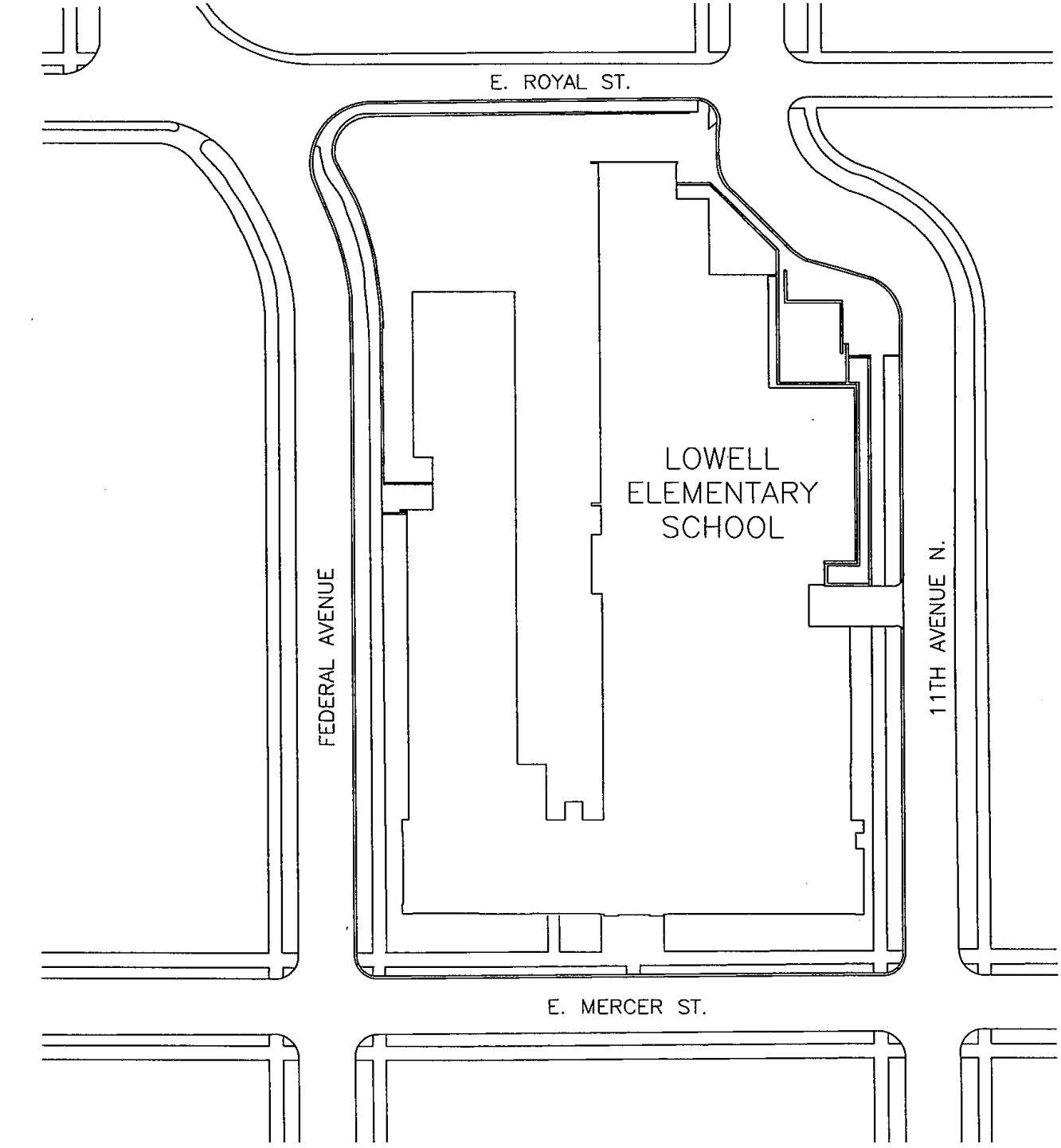
EXISTING CONDITIONS

LOWELL ELEMENTARY SCHOOL



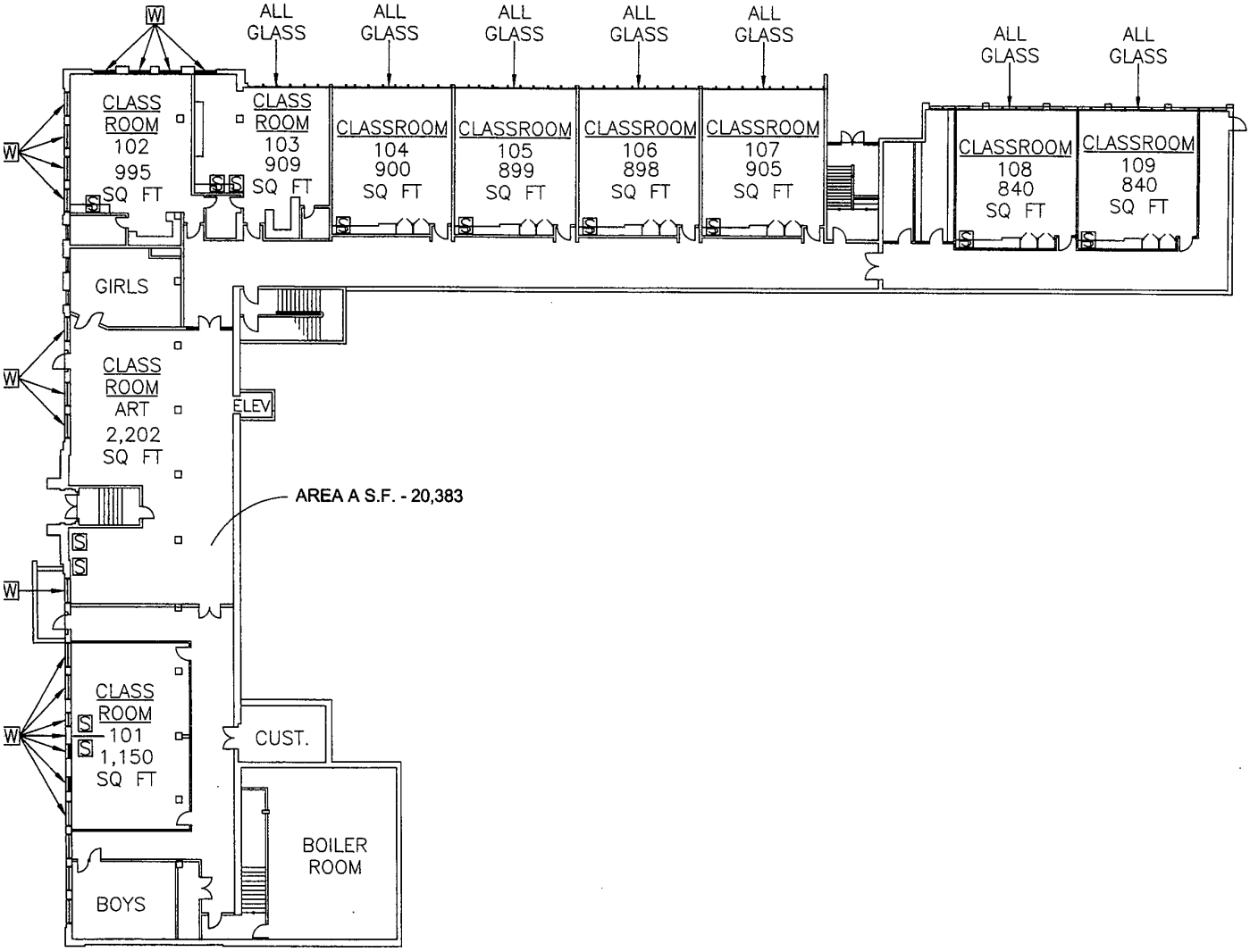
EXISTING SITE PLAN

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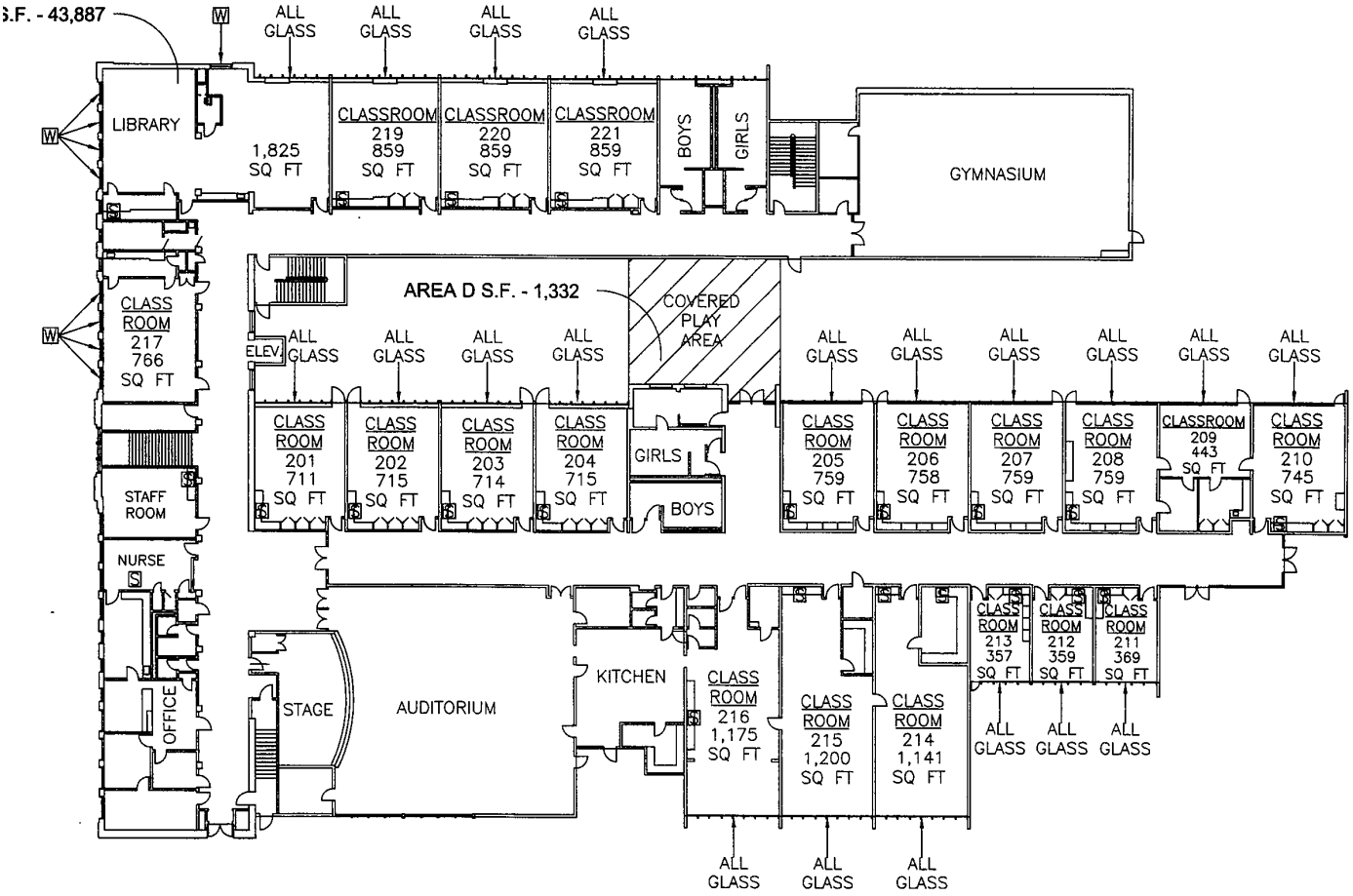
EXISTING LEVEL 1 FLOOR PLAN

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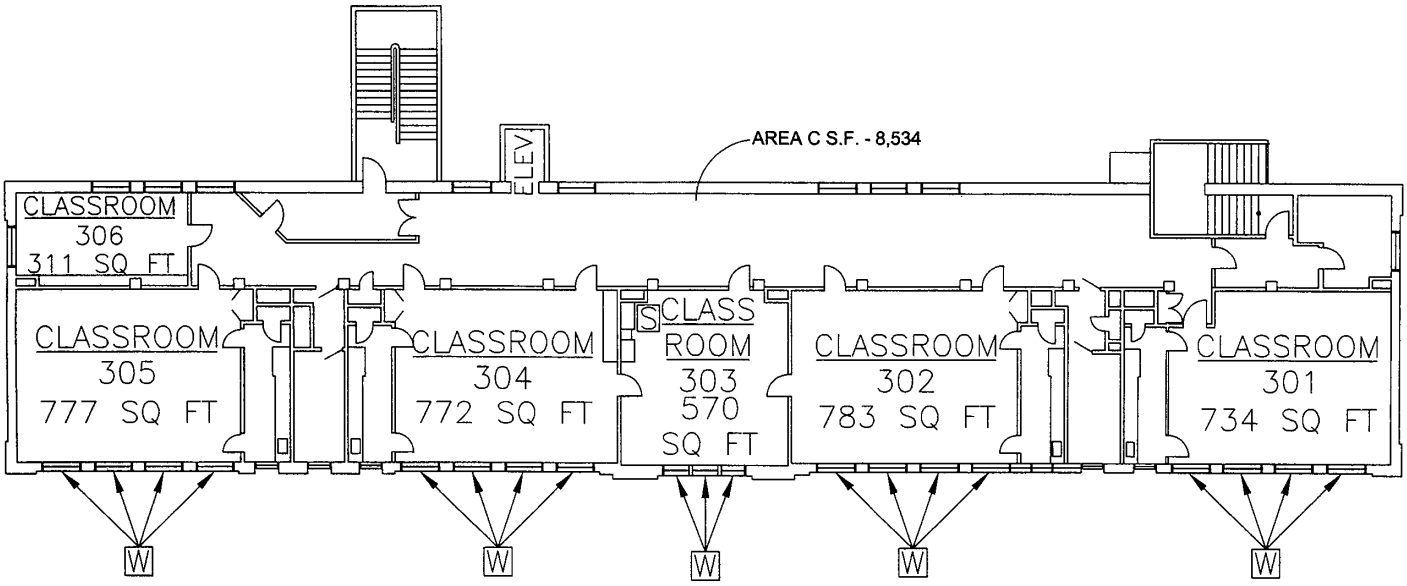
EXISTING LEVEL 2 FLOOR PLAN

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EXISTING LEVEL 3 FLOOR PLAN

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Clockwise from top left: View along Federal Ave; Facade on Federal Ave; Hardscape playground; Mercer St, 1919 building; Main entrance, 1919 building.













Clockwise from top left: Typical hallway, 1960s building; Library; Classroom, 1919 building; Classroom, 1919 building; Covered play; Health clinic.

SCHOOL INFORMATION

Source: Washington State Report Card, Washington Office of Superintendent of Public Instruction

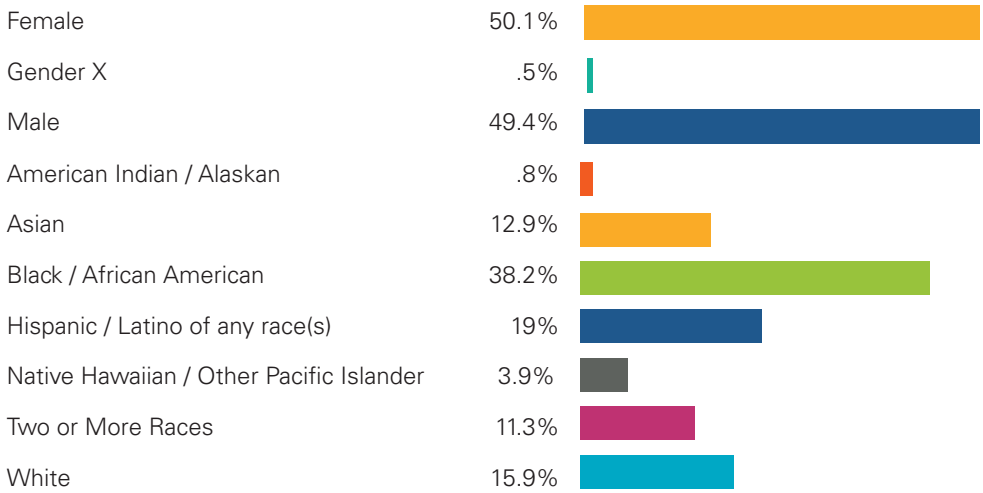
WEBSITE	https://lowelles.seattleschools.org
ACADEMIC GRADES	K-5
STUDENT ENROLLMENT (2023-2024)	331
FREE OR REDUCE PRICE MEALS	51%
MIDDLE SCHOOL SERVICE AREA	Meany Middle School
SCHOOL-BASED CHILDCARE PROVIDERS	NA
SCHOOL-BASED HEALTHCARE PROVIDERS	Odessa Brown Children's Clinic, Sound
SCHOOL BOARD DISTRICT	5
EDUCATIONAL SPECIFICATIONS/CAPACITY MODEL TO BE APPLIED	Elementary School 650 Model
CONCEPT PLANNING SITE TOUR CONDUCTED	September 25, 2023
INITIAL PLANNING OPTIONS REVIEWED	October 9, 2023
REFINED PLANNING OPTIONS REVIEWED	October 30, 2023



Above: The mural at Lowell Elementary School.

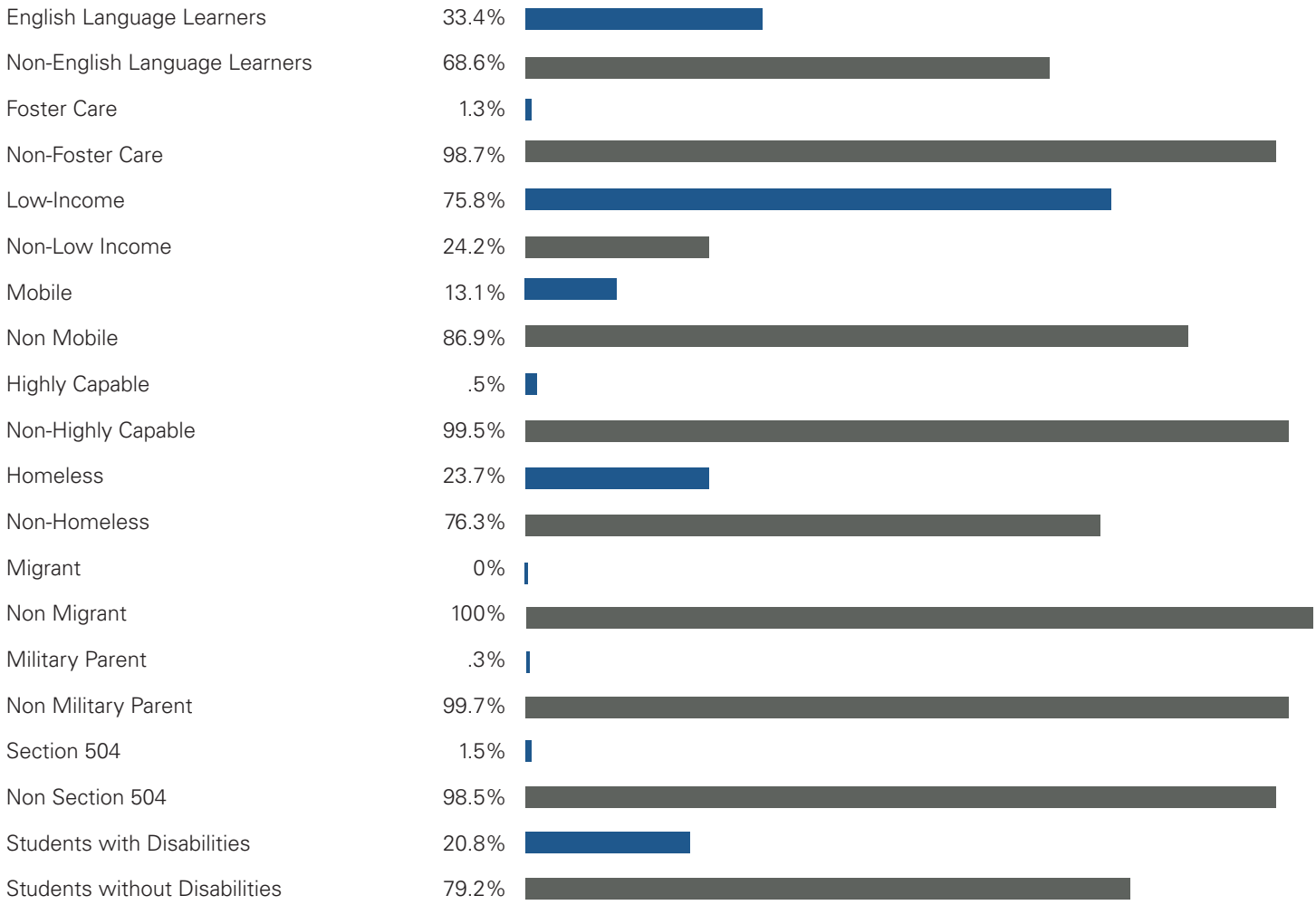
2023-2024 ENROLLMENT BY STUDENT DEMOGRAPHICS

Source:Washington State Report Card, Washington Office of Superintendent of Public Instruction



2023-2024 ENROLLMENT BY STUDENT PROGRAM AND CHARACTERISTICS

Source: Washington State Report Card, Washington Office of Superintendent of Public Instruction



PROGRAM NARRATIVE

Source: School website and sps.communitypartnerplatform.org

MISSION

At Lowell Elementary School, students' academic and emotional success and self-efficacy are guided by the creation of an inclusive and equitable community. Lowell collaborates to build trust through universal practices while holding high expectations for each learner.

SCHOOL VISION

Lowell's students are joyful and resilient critical thinkers who advocate for themselves and others and solve problems facing their communities.

The faculty, staff, and students teach and learn from each other in an environment that is consistently inclusive, safe, and anti-racist, centering black and brown voices and experiences.

Partnerships between school staff, families, and community are developed and nourished to ensure students' strengths and interests are encouraged and empowered so that they have full access to the highest levels of learning.

The voices and experiences of Black and Brown staff members are centered to build trust and repair harm through restorative justice.

SCHOOL PROGRAM

At Lowell, students from all over the world with diverse strengths and challenges come together with staff each day to learn and grow academically, socially, behaviorally, and emotionally. Lowell's attendance zone includes students who live on the west side of Capitol Hill and students who live in downtown Seattle (South Lake Union/Belltown, south to the International District).

The school population includes students on track to meet and/or exceed standard; students with mild to significant disabilities; students who together, speak over 30 different languages; students eligible for free/reduced lunch; students/families who are homeless and/or in traditional housing; and students who are advanced learners. Lowell is truly an urban school, with all that an urban school has to offer.

Inclusion is a core value for the school staff and community. Lowell is an SPS "Early Adopter" school, working with the Novak Group focused principles of Universal Design for Learning (UDL), including implementation of Restorative Practices. Common Core standards guide instructional practices, and Positive Behavioral Interventions and Supports (PBIS) guides the school in supporting student social, behavioral, and emotional learning. To be responsive to the needs of the whole child, the school's work is structured through an Integrated Multi-tiered System of Support (MTSS).

Lowell faculty and staff prioritize the following practices to support Universal Design and inclusion:

+ Intentional and detailed comprehensive scheduling that supports inclusion, including grade-level "WIN" (What I Need) time for differentiated learning opportunities
+ Students engaged in core content with clear learning objectives linked to grade level standards
+ Co-teaching and co-planning
+ Focus on student engagement and positive relationships
+ Flexible methods and differentiated instruction
+ Adult collaboration, including intentional grade-level release time for peer observation, data analysis, professional learning, and planning
+ GLAD (Guided Language Acquisition Design) strategies
+ Working through an equity lens, the school is dedicated to forming positive relationships with each student and family who walks through the doors to close the Opportunity Gap.

PRESCHOOL PROGRAMS

Head Start is a free, federally funded child development program for children and their families who are eligible. The Head Start programs in Seattle Public Schools serve three-year-old and four-year-old children, offering preschool curriculum, family services, and transportation.

Early Childhood Special Education is for children aged three to five years old determined eligible with a disability that impacts educational progress and who need specially designed instruction.

SCHOOL-BASED HEALTH CLINIC

Odessa Brown's School-Based Health Center provides preventative care from a licensed nurse practitioner. It can provide well-child checks, immunizations, and physicals, or students can be seen when they are simply not feeling well.

AFTER-SCHOOL PROGRAMS

Lowell offers on-site before and after school programs through Boys & Girls Clubs of America.

COMMUNITY PARTNERS

ACADEMIC LEARNING

+ Chihuly Garden and Glass
+ Seattle Art Museum
+ Tutors Impacting Public Schools (TIPS)
+ University of Washington – Center for Experiential Learning & Diversity

BASIC NEEDS

+ Communities in Schools
+ Community Roots Housing
+ Solid Ground

EXPANDED LEARNING

+ Girls on the Run (GOTR)
+ Michael J. Owen Education Fund
+ Boys & Girls Club

HEALTH AND WELLNESS

+ Solid Ground
+ Odessa Brown Children's Clinic
+ Sound (formerly Sound Mental Health)
+ Therapeutic Health Services (THS)



Above: Boy and Girls Club program at Lowell.

ARCHITECTURAL NARRATIVE

Source: historylink.org

HISTORY

The original school was an eight-room Tudor-style brick building built in 1890. Originally named the Pontius School after a School Board member, it was renamed Columbia in 1891. To accommodate increasing enrollment from the growing neighborhood an eight-room addition was built in 1904. With the annexation of South Seattle, which included Columbia City School, the school was renamed Lowell in honor of James Russell Lowell, a 19th century poet, scholar, and diplomat from Massachusetts. In 1919 a new addition by well-known architect Edgar Blair was constructed to accommodate a larger student body. In 1959 the original Tudor-style building was demolished and in 1960 an addition by John Graham & Company was completed. In 1973 new playground facilities were installed making Lowell the only school in the country with a play area that was able to be used by students of all abilities. In 1993, this playground was improved to provide equal access for physically and mentally challenged students.

EXISTING CONDITION:

SITE

The site is limited in size and has a variety of challenges with existing grades and steep slopes from the east to west. The site is split into two parcels separated by E Roy St, a right-of-way that is graded for pedestrian use. The school currently uses gates to control access to E Roy St during the school day, and opens up the route after school hours. The north parcel has a grass playfield and an ADA-compliant play area, and parking lot. A preliminary geological assessment noted the site at shallow depths has Vashon lodgment till sediment that has been compacted and is suitable for conventional foundations with proper preparation. There are steep, man-made slopes identified by SDCI along the west edge of the playfield on the north side of the pedestrian right-of-way.

This building is not a designated City of Seattle landmark, but the exterior 1919 portion of the campus will likely be nominated and designated due to its significant historic nature. The 1960's addition is not likely to be designated as part of the City of Seattle landmark review process.

BUILDING

The existing 1919 concrete-framed brick building houses eight classrooms, a library, and administration suite. It is defined by a steep hip roof with carved joist ends, and a rounded fan transom and arched corbeled central entry facing E Mercer St. The south façade is symmetrical around the entry. The 1919 interior has original trim and wood flooring, but many of the interior finishes are worn. Lighting and equipment throughout the 1919 building are out of date and in need of upgrades. The existing classrooms have tall ceilings and large windows which provide good daylighting and views. Existing single pane wood windows could be replaced to increase energy efficiency but would need to be confirmed by the landmarks board prior to replacement.

The existing conditions assessment report from BET&R noted that the exterior is still in good condition, with exception of the 1960's addition aluminum single-pane windows that are noted as needing replacement.





Above left: Historic photo of the 1911 Lowell School, MOHAI 83.10.6725; Right: Lowell ca. 1960.

PROGRAM DEFICIENCIES

The existing program was compared to the 650-student capacity educational specification (ed spec). The existing 1919 building has slightly undersized classrooms, while the 1960s building has mostly undersized classroom spaces.

Missing Program

+ 3 General Education Classrooms
+ 6 Learning Commons and Small Group Spaces
+ 3 Childcare / Early Learning Classrooms
+ Family / Community Room
+ Art Classroom
+ Music Classroom

Undersized Program

+ 22 Classrooms
+ Stage / Music Classroom
+ Library
+ Administration Suite
+ Commons
+ Gym

Surplus Existing Program

+ Community Partner Health Clinic



Above: The playground at Lowell.

PREFERRED OPTION: MODERNIZATION AND ADDITION

SITE

The site provides updated play spaces for Childcare and Kindergarten but retains the existing playground adjacent to the field. The existing playground is new and designed for students with disabilities. The grass field is the location of new geothermal wells and is resod with new grass after the wells are installed. Updated stairs and ramping is provided at the grade changes along Federal Ave E. The site development as proposed is over the District's requirement to remain below 65% impervious coverage and should be further developed with the goal of being under that threshold.

BUILDING

The proposed elementary school retains the 1919 Edgar Blair brick building and demolishes the 1960 John Graham portion. A new addition is attached to the north side of the 1919 school to provide the necessary programmatic areas. Key program attributes include:

+ The existing Health Clinic remains in the basement adjacent to an existing entry stair with an elevator nearby for access.
+ Two academic neighborhoods are located on the basement level with access to Federal Ave E.
+ The basement level has several Special Education spaces.
+ The primary Admin Suite, Early Learning, and the Family / Community Room are located on Level 1, which is on grade with 11th Ave E.
+ Kindergarten and Special Education spaces are located adjacent to the Admin Suite.
+ Gym, Stage, Commons, and Music rooms are grouped at the north end of the building.
+ Commons has direct access to outdoor play.
+ Level 2 has two academic neighborhoods and additional Special Education spaces.
+ Library is centrally located on Level 2 with views to the Capitol Hill neighborhood.
+ Level 3 includes one academic neighborhood, Special Education, and Flex spaces.



Above: Site analysis.

PROGRAM COMPARISONS

LOWELL ELEMENTARY SCHOOL



PREFERRED OPTION

The program comparison for Lowell Elementary School is based on the District standard Elementary School Specification for 650 students. It has been modified per the BEX VI Concept Planning process to update Special Education classrooms to 900 sf and a Family / Community Resource Room.

On the following page, the diagram indicates the District Standards, which inform the preferred option. The diagram on the right indicates the program at the existing Lowell School. Graphically, the solid boxes indicate program that is accommodated and the dashed boxes indicate program that is not accommodated at the existing site.

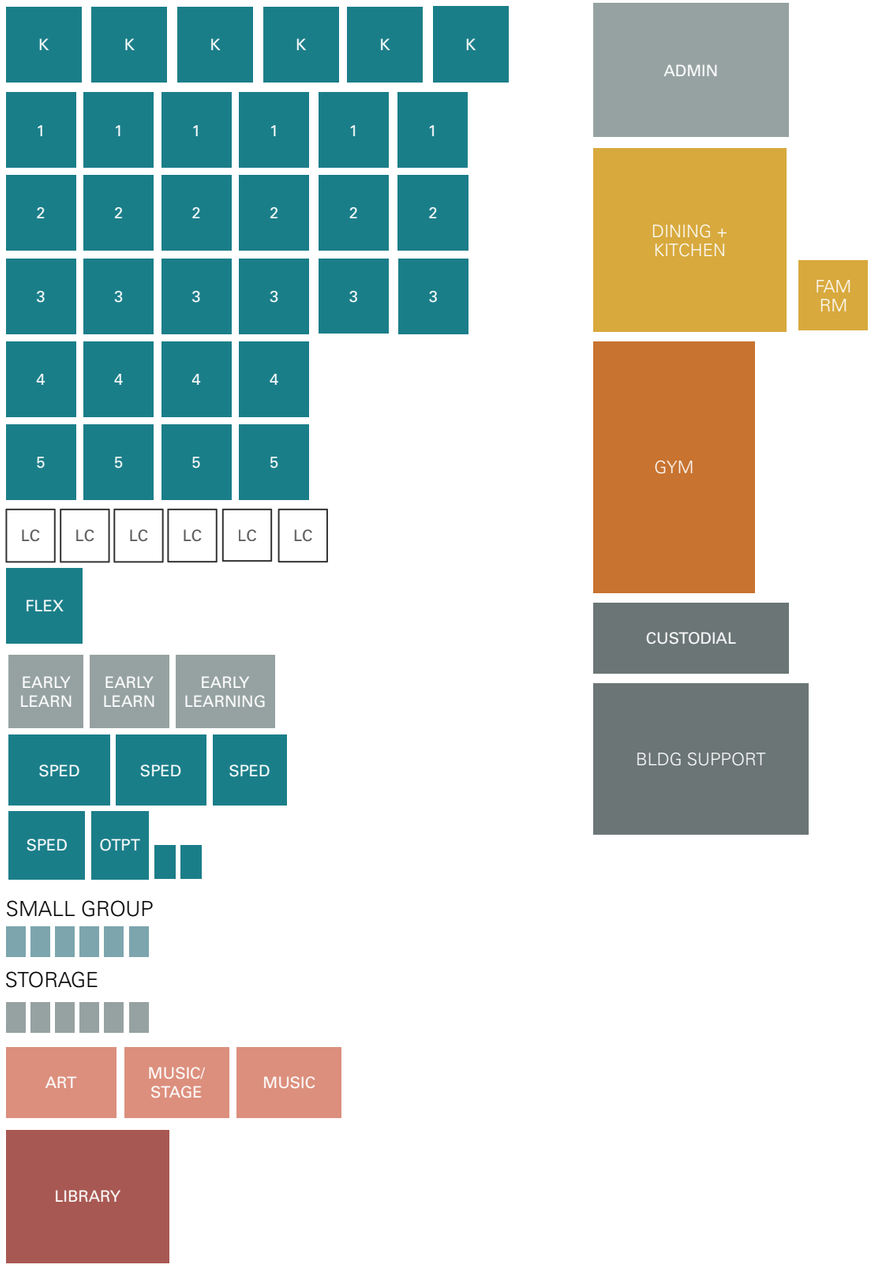
PROGRAM COLOR LEGEND

- LEARNING
- CTE
- LEARNING COMMONS
- LEARNING SUPPORT
- RESOURCE / LIBRARY
- ART / MUSIC
- ATHLETICS
- COMMONS
- ADMINISTRATION
- BUILDING SUPPORT

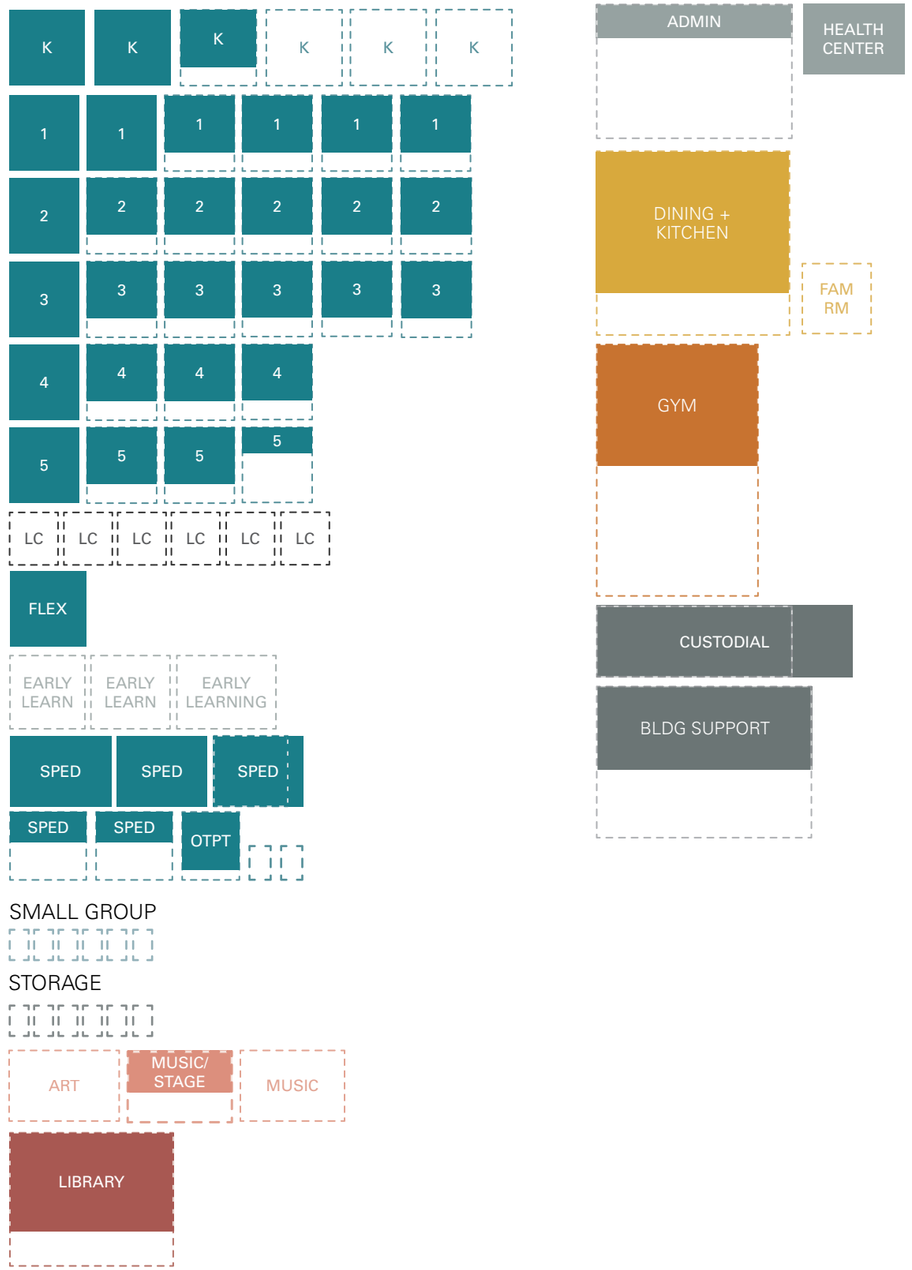


Above: Poetry and Song with Lowell students through the Jack Straw Cultural Center, jackstraw.org

BEX VI MODIFIED 650-STUDENT ELEMENTARY EDUCATIONAL SPECIFICATION



EXISTING LOWELL ELEMENTARY SCHOOL PROGRAM COMPARED TO BEX VI MODIFIED 650-STUDENT ELEMENTARY EDUCATIONAL SPECIFICATION



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PREFERRED OPTION

LOWELL ELEMENTARY SCHOOL



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LOWELL / PREFERRED OPTION, SITE PLAN

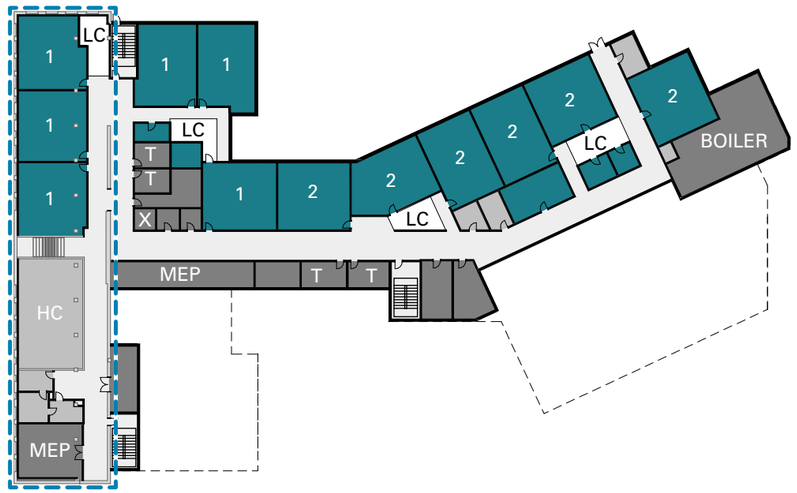
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LOWELL / PREFERRED OPTION, FLOOR PLANS

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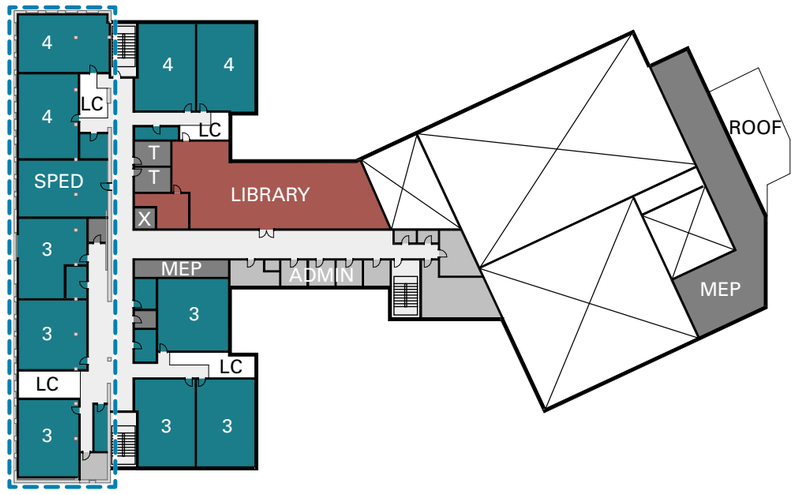
BASEMENT



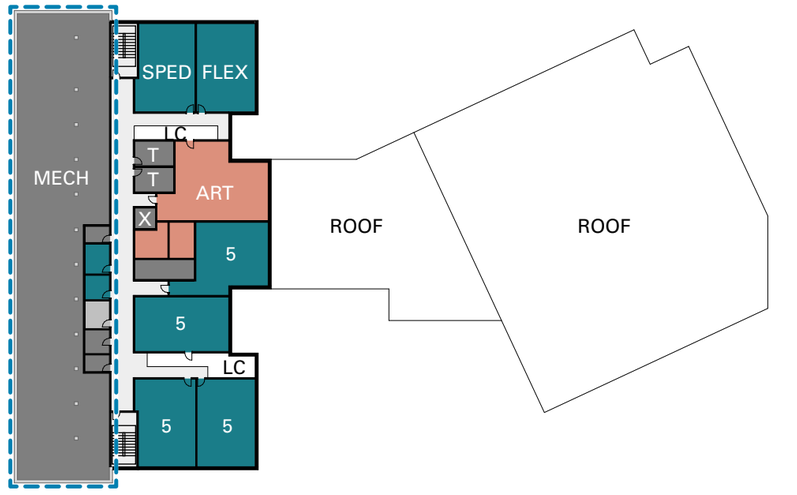
LEVEL 1

LEGEND

LC	LEARNING COMMONS		ARTS + MUSIC
	LEARNING / SPED		RESOURCES / LIBRARY
	LEARNING SUPPORT		SUPPORT
	CTE		BUILDING SUPPORT
	ATHLETICS		MODERNIZATION
	COMMONS		NEW FINISHES



LEVEL 2



LEVEL 3

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CONSULTANT NARRATIVES AND COST ESTIMATE

LOWELL ELEMENTARY SCHOOL

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associated earth sciences incorporated

September 28, 2023
Project No. 20230230E001

Bassetti Architects
71 Columbia Street, Suite 500
Seattle, Washington 98104

Attention: Ms. Amanda Hoehn

Subject: Building Excellence VI Site Evaluations Project
Limited Geotechnical Engineering Feasibility Analysis
Lowell Elementary School
1058 East Mercer Street
Seattle, Washington

Dear Ms. Hoehn:

This report presents a limited geotechnical engineering feasibility analysis prepared by Associated Earth Sciences, Inc. (AESI) for the above-referenced project. The purpose of this study is to provide a geotechnical engineering feasibility analysis of the proposed project based on review of selected published information and a visual site reconnaissance. This study is not intended to support the project design, but is intended to assist in preliminary site development and cost analysis. We recommend that a comprehensive geotechnical analysis be completed to support the final design of the project.

Our work was performed in general accordance with our scope of work and cost proposal for the project dated August 4, 2023. Our services have been performed in accordance with current local standards of practice in the field of geotechnical engineering for the exclusive use of Bassetti Architects, Seattle Public Schools, and their agents for specific application to this project. No other warranty, express or implied, is made.

SITE AND PROJECT DESCRIPTION

The project site is that of the existing Lowell Elementary School at 1058 East Mercer Street in Seattle, Washington. The site location is depicted on the "Vicinity Map," Figure 1. The project site is approximately rectangular in plan view, with a total area of approximately 3.9 acres. The site is bordered by East Mercer Street on the south, 11th Avenue East on the east, Federal Avenue East on the West, and East Aloha Street on the north. The site slopes down generally from east to

west, with overall vertical relief of approximately 20 feet. Current site development includes permanent school buildings on the south part of the site and a soccer field on the north. A paved parking lot is located on the north part of the site and is currently operated as a pay for use public parking lot. A City right-of-way for East Roy Street crosses the school property from east to west north of the existing buildings and south of the soccer field, and buried utilities are present in the right-of-way. A synthetic turf playground area is located at the northeast corner of the existing buildings.

At the time this report was written project plans have not been finalized, however the focus is on retention and renovation of the older historic portion of the building on the south part of the site, and demolition and replacement of the newer building areas north of the historic building. Future building locations have not been selected.

SITE RECONNAISSANCE

The oldest remaining building onsite is on the south side of the campus and was constructed in 1919 as an addition to an earlier building which was later removed. The existing northern building was added in 1960. The buildings include single-story, high-bay single-story (gym), two-story, and three-story areas. The 1919 building has a sloped roof, while the 1960 addition has a flat roof. The 1919 building is constructed of brick, while the 1960 addition consists of precast concrete with partial brick-faced walls. We were provided with construction drawings that included the original 1919 building, the 1960 addition, and the playfield along with various renovation projects. In general, the buildings were designed with conventional shallow foundations and slab-on-grade floors. Archived topographic survey data and historical grading plans demonstrate that the existing soccer field was graded to its current configuration, and that the existing west slopes flagged as potential critical areas were created when the soccer field was built.

We performed a visual reconnaissance of the interior and exterior of the buildings and observed no visual indications of unusual foundation settlement. We observed some minor foundation wall and floor slab cracks, which are typical of older buildings.

We performed a visual reconnaissance of the site. The north part of the site includes a nearly level sand-surfaced soccer field and asphalt-paved parking area bordered by a moderately steep constructed slope descending to the west to Federal Avenue East. The soccer field and parking area were constructed by grading consisting of excavation on the east and soil fill placement on the west portion of the site. Along the west side of the existing buildings a cast-in-place site retaining wall approximately 4 feet tall descends from the building area to the sidewalk and visually appears to be in good condition. A cast-in-place retaining wall at the southeast site corner creates a “window well” at the first level of the building up to about 8 feet lower than sidewalk grade. The southeast cast-in-place wall visually appears to have performed adequately. A short rockery was constructed as part of the landscaping in the zone between the buildings to the south and soccer field to the north, and the rockery visually appears to be in adequate condition.

Perimeter frontage sidewalks have been extensively damaged by tree roots. In general we did not observe any visual indications of slope instability, unusual erosion, or other adverse geotechnical performance of the existing site and exterior improvements.

Existing vehicle accessible paving consists of the parking lot on the north end of the soccer field. The north parking lot paving is in very poor condition with defects related to age, tree root damage, potholes, poorly constructed patches, and poor drainage.

GEOLOGIC MAPPING

Published geologic mapping for the site and immediate vicinity were reviewed on *The Geologic Map of Seattle – A Progress Report*, by Kathy Goetz Troost, Derek B. Booth, Aaron P. Wisher, and Scott A. Shimel, United States Geological Survey (USGS) Open File Report 2005-1252, 2005. This map indicates that the site is expected to be underlain at shallow depths by Vashon lodgement till sediments. The lodgement till was placed and compacted at the base of a continental glacier, and is suitable for support of conventional foundations and paving with proper preparation.

SUBSURFACE DATA

We reviewed subsurface data available on the Washington State Department of Natural Resources Geologic Information Portal[1]. We retrieved a log of one boring completed by the City of Seattle in 1970 at approximately the southeast site corner, which was advanced to a depth of 20 feet and encountered very dense silty sand consistent with previously referenced published mapping that predicts lodgement till at shallow depths. Other nearby explorations cataloged in this database were typically two blocks or more away and completed at substantially different elevations and therefore are not valuable as predictors of shallow on-site subsurface conditions.

GEOTECHNICAL CRITICAL AREAS

We reviewed geotechnical critical areas mapping using the City of Seattle Department of Construction and Inspections (SDCI) interactive map[2]. The map flags potential geotechnical areas of interest and critical areas including Known Landslides, Steep Slopes, Liquefaction Prone Areas and Peat/Settlement Prone Areas. The maps are not a comprehensive collection of geotechnical critical areas, but offer a useful tool to quickly search for known Geologically Hazardous Areas at or near a project site.

[1] https://www.dnr.wa.gov/geologyportal

[2] https://www.seattle.gov/sdci/resources

Geotechnical critical areas flagged by SDCI include slopes west of the soccer field that meet geometric criteria for treatment as steep slope critical areas. Construction drawings for the soccer field that now exists show that the slopes flagged as potential critical areas were created when the soccer fields were constructed. *Seattle Municipal Code* (SMC) allows steep slopes created during permitted grading activities to be exempted under SMC section 25.09.090.B.2.b. It is likely that the design phase geotechnical study for the project will advocate for such an exemption if needed to facilitate the future site development proposal.

CONCLUSIONS AND RECOMMENDATIONS

The existing building foundation support soils appear to have performed adequately, and should be expected to continue to perform adequately if foundation loads do not change as a result of building renovations. If foundation bearing pressures will be increased, some additional foundation settlement can be expected. If foundation bearing pressures will increase, the geotechnical analysis should include evaluation of existing foundations, support soils, and loads, as well as proposed new foundation loads.

Conventional shallow foundations and slab-on-grade floors should be feasible for new structures supported on lodgement till or on structural fill placed above these sediments. Existing fill is expected around and potentially beneath the lower, western portions of the existing buildings. Fill is also expected within the slope along the northwest margin of the site, and within western portions of the soccer field and parking areas. The existing fill is not considered suitable for conventional shallow foundation support. In any areas where existing fill is present and new structures are planned, it is likely that existing fill will need to be removed. For planning purposes, we recommend that new shallow foundations supported on structural fill or native soils be planned with an allowable foundation soil bearing pressure of 3,000 pounds per square foot. We anticipate that conventional, flexible pavement is feasible when supported on suitable native sediments, new structural fill, or existing fill that has undergone some form of remedial preparation.

CLOSURE

The proposed project is feasible from a geotechnical engineering standpoint. Important geotechnical engineering tasks will include delineation and assessment of existing fill within the building areas, and formulating recommendations for remedial preparation of existing fill where necessary. If new buildings or additions will be planned for the north portion of the site, assessment of the existing fill soils should be completed and a slope stability analysis may be needed if steep slopes will remain in the completed project. We recommend that a detailed subsurface exploration and geotechnical engineering assessment be completed to support the project design when a site development plan has been formulated. Such explorations and

assessment were beyond the scope of this study. AESI can prepare a scope of work and cost assessment for such services if we are requested to do so.

We have enjoyed working with you on this study and are confident that these recommendations will aid in the successful completion of your project. If you should have any questions or require further assistance, please do not hesitate to call.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Kirkland, Washington

Kurt D. Merriman, P.E.
Digitally signed by Kurt D. Merriman, P.E.
Date: 2023.09.28 11:51:21 -07'00'

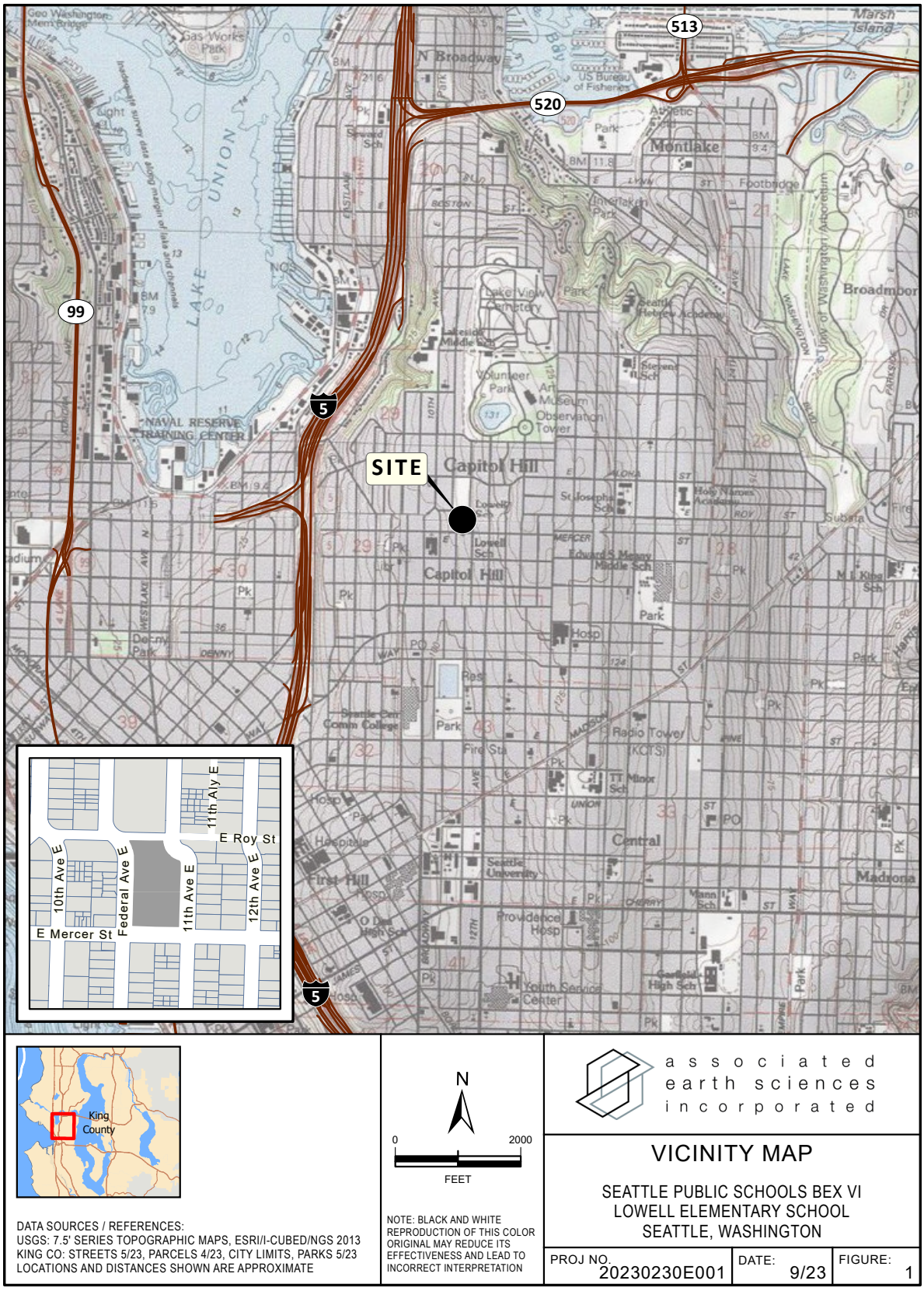


Bruce Guenzler

Bruce W. Guenzler, L.E.G.
Principal Engineering Geologist

Kurt D. Merriman, P.E.
Senior Principal Engineer

Attachment: Figure 1 - Vicinity Map



DATA SOURCES / REFERENCES:
USGS: 7.5' SERIES TOPOGRAPHIC MAPS, ESRI/I-CUBED/NGS 2013
KING CO: STREETS 5/23, PARCELS 4/23, CITY LIMITS, PARKS 5/23
LOCATIONS AND DISTANCES SHOWN ARE APPROXIMATE

NOTE: BLACK AND WHITE REPRODUCTION OF THIS COLOR ORIGINAL MAY REDUCE ITS EFFECTIVENESS AND LEAD TO INCORRECT INTERPRETATION

associated earth sciences incorporated

VICINITY MAP

SEATTLE PUBLIC SCHOOLS BEX VI
LOWELL ELEMENTARY SCHOOL
SEATTLE, WASHINGTON

PROJ NO.	DATE:	FIGURE:
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CIVIL DESCRIPTION
Lowell Elementary
Seattle, WA

SPS BEX VI Concept Planning
Planning Civil Site Improvements
Narrative November 20, 2023

Project Overview

Project Summary

Lowell Elementary School is located at 1058 E Mercer S in Seattle, WA and sits on a 4 acre site. The project proposes to demolish most of the existing building, while protecting and maintaining the southern portion. The majority of the site paving and landscaping onsite will be rebuilt, with the exception of the playground paving on the north half of the site that will remain. The field and parking lot to the north will also be reconstructed in their existing locations.

Utilities

Storm Drainage
The Lowell Elementary School site is divided into two parcels and two stormwater basins; the northern section with the field and parking lot discharges to a combined storm and sewer main. The southern section, where the new building will be located, discharges to the storm main in E Mercer St. The stormwater requirements below assume the two parcels remain separate and are not combined for permitting. Should the parcels be combined, the southern parcel will dictate the stormwater requirements (water quality required, but no detention).

Runoff Control (Detention):
The northern half of the site discharges to a combined storm and sanitary main, so flow control will be required before discharging from the site for any new impervious or pervious areas. This portion of the site is mapped as “Infiltration Feasibility Not Required”, so infiltration investigation is not required. Approximately 12,000 cubic foot of detention will be required on the northern parcel. The new parking lot in the northeast corner of the site is a possible location for this facility.

The southern half of the site discharges to the storm main in E Mercer St and will not require detention. Infiltration testing may be required as the area is only partially mapped as “Infiltration Feasibility Not Required.” The existing building area is not mapped, so any undeveloped parts of the southern parcel will be required to be investigated. If infiltration is desired, infiltration testing by the Geotech engineer will be required to understand infiltration rates.

Water Quality Treatment:
Since the northern half of the site discharges to a combined sewer and stormwater main, the added Pollution Generating Impervious Surface (PGIS) from the new parking lot in the northeast corner will not require stormwater treatment. The southern half of the site discharges to a stormwater main, which will require stormwater treatment if more than 5,000 square feet of PGIS is added.

If the parcels are combined, the site as a whole with the parking lot in the north is over 5,000 square feet, and water quality will be required for the PGIS areas.

Onsite Stormwater Management (OSM):
Onsite stormwater management for the new building will consist of approximately 800 square feet of 42” deep bioretention planters. The ground areas will likely be considered infeasible to mitigate, and thus are excluded from these estimates.

Foundation Drainage:
Most likely a 4" perforated pipe surrounded by 6" of drainage rock on all sides will be required around the perimeter of the building, as well as 6" of drain rock under the entire slab on grade.

Water
There is an existing 4" combined fire/domestic water connection and 6" domestic connection along the east side of the site in 11th Ave E. These connections may be able to be reused for the new building, though confirmation from SPU will be required. If these connections are not reused, both will need to be cut and capped at the water main and new services installed. Since the existing water mains adjacent to the site are 6", and Seattle does not allow new size-on-size connections, the new water connections will need to be a 4" combined domestic/fire meter and a 4" fire meter.

There are also two domestic water connections for the field to the north, a 2" and 1" connection. One of these may be able to be reused as irrigation for the field to the north. Any connections not used will need to be cut and capped at the main.

Sanitary Sewer
Sewer connections will be made to the 8" sewer main in E Mercer St. Three (3) 6" sewer connections are assumed to be required to serve the building. The project may be able to reuse one or more of the three (3) existing side sewers on E Mercer St to the south of the new building. If reuse is possible, video scoping and relining of the pipe will be required. However, if the existing side sewers are not in satisfactory condition for reuse, new connections to the main will be required. For cost estimating purposes, new side sewer connections should be assumed.

Gas:
No new gas connections are expected as part of this project as Seattle Public Schools is moving away from using gas in new construction.

Roadway Improvements

Frontage Improvements
Based on the standard roadway sections provided in Seattle's Streets Illustrated, we expect the following frontage improvement requirements on each of the streets surrounding the project site. This will require further coordination with Seattle Department of Transportation (SDOT) to confirm these dimensions and expectations:

- **Federal Ave E**
  - **Northern Section:** This northern section of Federal Ave E does not have existing street trees. The concrete curb, 5.5' landscape zone and 6' sidewalk need to be replaced, with street trees added. Six curb ramps will need to be built at the T-shaped intersection of E Roy St and Federal Ave E to adhere to SDOT requirements.
  - **Southern Section:** This southern section of Federal Ave E is adjacent to the proposed building. The existing curb appears to be damaged and will need to be replaced. The proper widths are provided and the existing street trees appear to be mature and in good condition. The landscape zone and sidewalk appear to be in good shape. Minor repairs are likely all that will be required along this frontage. The curb ramps at the intersection of Federal Ave E and Mercer appear to be ADA complaint, no curb ramp replacement is anticipated.

- **E Aloha St**
  The roadway appears to be wider than required by Street Illustrated, so the curb may need to bump out into the right-of-way by 3', then build the 5.5' landscape zone and 6' sidewalk behind

the new curb alignment. However, if SDOT does not allow the curb to be bumped out, there are existing poles directly behind the existing sidewalk that would need to be relocated to allow the landscape zone and sidewalk to be constructed. There are also steep slopes a few feet from the back of the sidewalk that will need to be regraded or a retaining wall constructed inside of the property line. Eight new curb ramps will need to be built at the intersection of E Aloha St and Federal Ave E.

- **11th Ave E**
  - **Northern Section:** New curb, landscape zone, and 6' sidewalk will need to be rebuilt and properly graded to drain as this planter currently floods. The roadway should be repaved as there are numerous potholes in 11th Ave E. Eight new curb ramps will need to be built at the intersection of E Aloha St and 11th Ave E to meet SDOT's curb ramp requirements.
  - **Southern Section:** This section of Federal Ave E is adjacent to the proposed building. There appears to be proper right-of-way widths, but there is no landscape zone along this street and the sidewalk is damaged. Frontage improvements will include a new 6' sidewalk and 5.5' landscape zone in areas that do not impact bus loading as shown in the proposed site plan. Six curb ramps will need to be built at the T intersection of E Roy St and 11th Ave E.

- **E Mercer St**
  The existing curb, landscape zone, and sidewalk appear to be the proper widths, but are not in good shape across the frontage, new curb and 6' sidewalk is anticipated. Mature trees are in the planting area, which are assumed to remain. There are 8 recently replaced curb ramps at the intersection of Mercer and 11th Ave E that are assumed to be ADA compliant, so no replacement is necessary.

Paving

New onsite improvements include approximately 26,000 square feet of new paving for walkways and play equipment, including the pedestrian pathway through the middle of the site that connects Federal Ave E to 11th Ave E along the vacated E Roy St to ensure ADA compliance. Additionally, 17,000 square feet of asphalt paving is proposed for the loading dock area and the parking lot on the north side of the site. The paving for the existing playground on the north side of the site will be maintained as it was recently rebuilt.

Demolition/Excavation

The southern portion of the existing building will be protected and maintained, with the rest of the building demolished. The new building will have one story partially below ground as the grade slopes from east to west. Two retaining walls will be necessary on the western side of the site to counter the steep slopes up against the lower play area and behind the loading dock along the pedestrian path through the vacated part of E Roy St. The existing playground on the north side of the site will be maintained as it was recently rebuilt. The rest of the site will be demolished and rebuilt, including the northern field and parking lot.

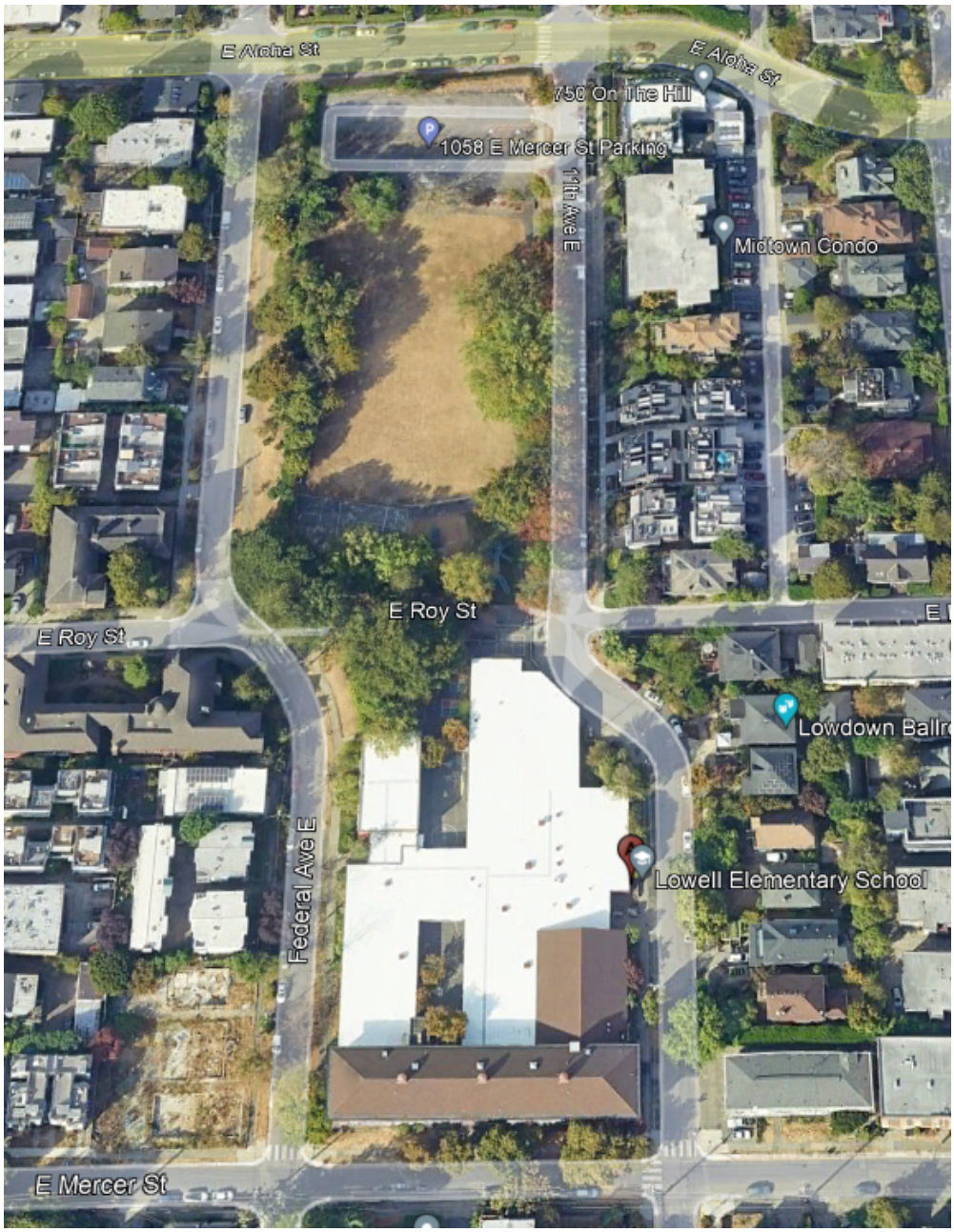
All existing water connections on site must be cut and capped at the water main in the street, which will require street restoration. Side sewers can be cut and capped at the property line, as can any gas connections.

For the below grade portion of the new building, approximately 5,500 cubic yards of excavation is expected, and approximately 550 cubic yards will be required for the detention system on the north side of the site. There was some existing fill found on site by the preliminary geotechnical evaluation – if this fill is under any structural footings and cannot support a soil bearing pressure as determined by geotechnical evaluation, over excavation may be required.

Temporary Erosion and Sediment Control (TESC)

Best Management Practice's (BMP's) are defined as physical, structural, and/or managerial practices that, when used singularly or in combination, prevent or reduce pollution of water caused by construction activities. Although specific BMP's will be determined through the design process, the project should anticipate providing: a rocked construction entrance, perimeter silt fence, settlement tanks, a truck wash, tree protection fencing for any existing trees to remain, a construction fence and gate, swales with rock check dams that route to a sump pump.

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Existing Site

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Project: Lowell Elementary

Project No: C23134 Date: 11/20/2023

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Google Earth

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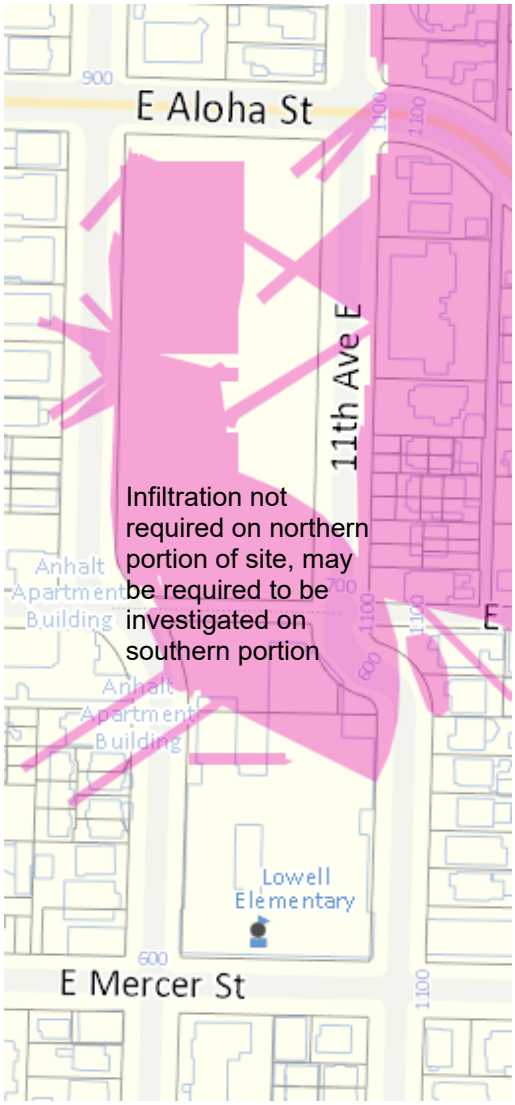
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Steep Slope (40% average) - ECA1



Infiltration Evaluation Not Required for On-site Stormwater Management (OSM)



ECA Areas

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Project: Lowell Elementary

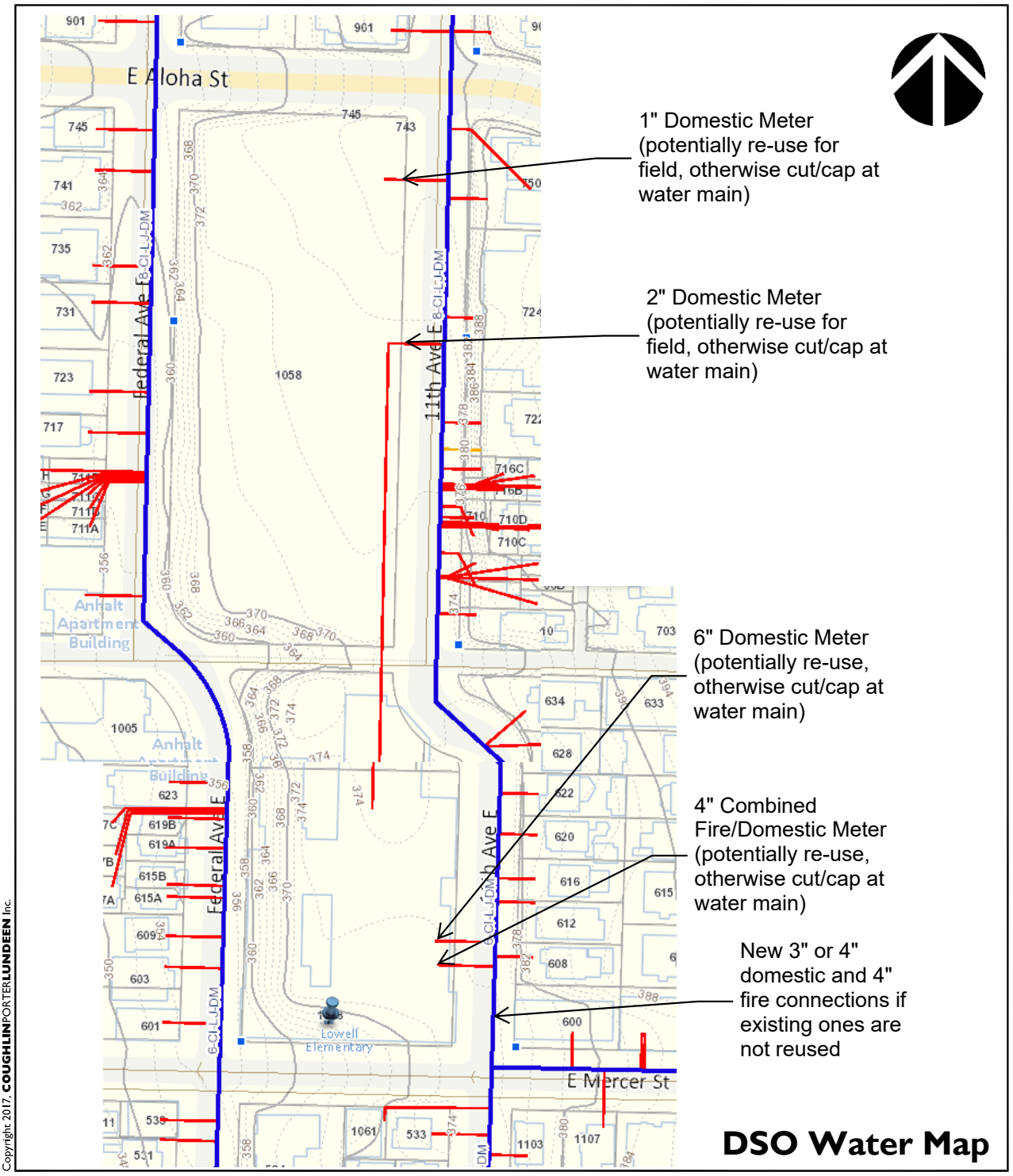
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DSO Water Map

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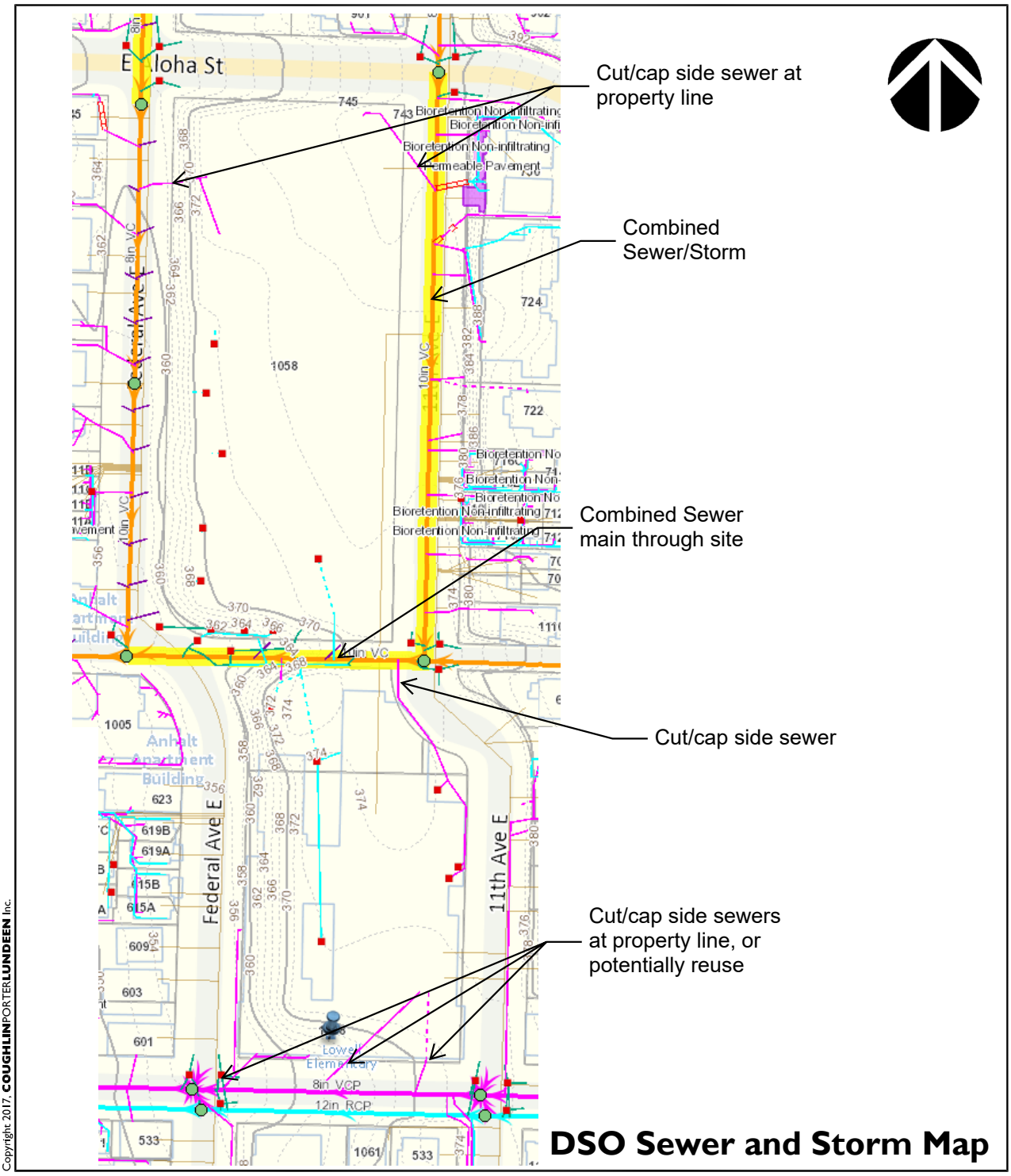
Project: Lowell Elementary

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1" = 60'

Legend

Description	Quantity	Unit
Building	30,329	sf
Existing Building	7,638	sf
Existing Impervious	11,690	sf
Impervious	23,489	sf
Pervious	79,221	sf
PGIS	16,797	sf



Site Improvements:

Water - (1) 4" combined fire/domestic
(1) 4" fire meter
Sewer - (3) 6" Sewer connections
Stormwater - 12,000 CF detention
800 SF bioretention
Gas - No gas
Paving - New sidewalks, playground paving, loading dock, and parking lot

Site Impervious Percentage: 53%

Proposed Site

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Project: Lowell Elementary
Designed By: MMH
Project No: C23134
Date: 11/20/2023
Checked By: JSS

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PCS Structural Solutions

November 20, 2023

STRUCTURAL NARRATIVE
LOWELL ELEMENTARY SCHOOL
SEATTLE PUBLIC SCHOOLS

TYPE OF CONSTRUCTION/STRUCTURAL SYSTEMS

The existing school was constructed in 1919 and consists of a three-story facility with an attic. Construction includes concrete floors, a timber gable roof, and concrete and unreinforced masonry walls. Other portions of the site were constructed at various times to the north. The proposed modernization includes demolition of all existing buildings north of the gable roof. The scope of work will require upgrading the existing 1919 building to meet current seismic forces. This would also satisfy the requirements for a substantial alteration and the current URM Ordinance for the Seattle Department of Construction and Inspections.

A new school will be built to the north and connected to the existing 1919 building in approximately the same location as the existing school.

FOUNDATIONS/SOILS

The site has an upper terrace along the east with a drop of 20 feet to the southwest across the 1919 building. The new building will also be constructed into the slope.

Based on the geotechnical report, the site soils are generally dense glacial lodgment till with good bearing capacities, therefore conventional concrete spread and continuous footings will be utilized to support the superstructure.

A concrete basement/retaining wall will be located where the building steps up the site.

Micropiles will be installed to resist overturning at the foundations for new concrete shearwalls in the 1919 building modernization.

VERTICAL LOAD RESISTING SYSTEM

Typical new construction. See Basis of Design Narrative.

Existing concrete floor framing will remain in place. At level 2 and 3, a redundant load path will be provided at each concrete beam where the beam is supported by exterior unreinforced masonry walls. The redundant load path will consist of added structural steel columns to the foundation with a new footing. The existing timber attic will be reinforced for increased snow loads and PV panels. Reinforcement includes supplementing existing trusses, girders, and joists with lvl beams and screws. Existing trusses are spaced at 14’-8” on center, two girders span east west along the ridge, and joists are spaced roughly 8’-0” on center and parallel with the trusses.

LATERAL LOAD RESISTING SYSTEM:

EXISTING LATERAL SYSTEMS

The existing 1919 building has a seismic force resisting system consisting of a wood diaphragm roof, concrete diaphragm floors, and concrete and URM shear walls.

Voluntary seismic mitigations have been incorporated in the 1919 portion of the building as recently as 2014. Some deficiencies remain and critically, some mitigations performed would not meet the requirements of current code required by the modernization. Concerns that remain include concrete and URM wall shear capacities, adding backing to the URM bearing walls and providing a URM redundant load path.

MODERNIZATION LATERAL SYSTEMS

Existing concrete shear walls will be used to resist lateral forces. New concrete shear walls will be installed where forces in the existing walls exceed allowable stress levels. New foundations will be required at the new shear wall locations with micropiles to resist overturning. New wood shear walls spaced at 40 feet on center will be added to the attic to brace the gable timber roof.

Additional seismic deficiencies will be addressed. URM bearing walls will be backed up using 18 gage metal stud backing walls with anchor bolts and epoxy connections. For redundant load path improvement, see the vertical system portion of this narrative.

NEW CONSTRUCTION LATERAL SYSTEMS

Concrete shear walls will resist lateral earthquake/wind forces in the classrooms, administration areas, library, and other teaching spaces. The concrete masonry unit walls will provide lateral force resistance at the gymnasium and commons.

METRIX ENGINEERS

METRIXENG.COM

SPS BEX VI
MECHANICAL CONCEPTUAL PROJECT DESCRIPTION
MODERNIZATION AND ADDITION – GROUP 1

Applicable Sites
Applicable to Lowell Elementary School.

Design Intent:
The mechanical system design shall be a balanced concept that meets energy efficiency design targets while also adequately addressing other equally important operational features and project goals including but not limited to maintenance, budget, life cycle, occupant comfort, indoor air quality, reduction to District operational funds, improved acoustics, a system that is in-line with 50-year building life goals, and SPS Standard Standards.

Sustainability
The project shall have an EUI target of at least 17 prior to contribution of renewables, established inline with ASHRAE High Performance Net Zero Design Guidelines for K-12 facilities and early shoebox hourly energy modeling. The building is intended to be designed to be net zero, or net zero ready, so that the roof can be populated with PV panels to meet an EUI of 0. The project shall also be in compliance with the Washington State Sustainable Schools Protocol.

Modernization Scope
Modernization scope assumes all new fire sprinkler, plumbing and HVAC systems. No existing systems are assumed for reused.

Applicable Codes and Standards:
The mechanical design shall meet, but not be limited to, the following codes:

- Seattle Public Schools Published Design Standard
- Seattle Building Code
- Seattle Mechanical Code
- International Fuel Gas Code
- International Fire Code
- Seattle Plumbing Code
- City of Seattle Energy Code
- National Fire Protection Association

The mechanical design shall meet, but not be limited to, the following standards:

- Washington Sustainable Schools Protocol (WSSP)
- ASHRAE Standard 52.1 – Gravimetric and Dust Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter
- ASHRAE Standard 55 – Thermal Comfort
- ASHRAE Standard 62.1 – Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standard 90.1 – Energy Standard for Buildings Except Low Rise Residential
- SMACNA – Sheet Metal & Air Conditioning Contractors

227 Williams Ave S Renton, WA 98057 Office: 425 336 2822 Fax: 425 336 2802

Design Criteria

Table 1- Outdoor Design Temperatures

Design Season	Temperature
Outdoor Winter DB	24.0°F*
Outdoor Summer DB	83.0°F*

*values taken from 2018 SEC Design Condition requirements.

Table 2- Building Envelope

With the exception of existing landmarked windows that are assumed to be refurbished not replaced, building envelope for new and existing portions of the facility shall be assumed to meet or exceed with those minimum prescriptive values as defined by the Seattle Energy Code. Improved infiltration performance in compliance with C406 is also assumed.

Plumbing Systems:

1. Utilities: The mechanical systems shall be connected to site water, fire and sewer designed by the civil engineer. Connection shall be at 5'-0" outside of the building.

2. Water Service: The main building water service shall be provided at the mechanical room plant space in the existing basement boiler plant room. The service riser and backflow preventers shall be located in this space and shall separately serve the domestic cold water systems, domestic hot water systems, hydronic heating/cooling system and ground loop fill. Water piping services throughout building shall be type L copper with press fittings, except where below grade at service entrance location piping shall be brazed type K copper. Piping services shall be adequately isolated to provide ease of maintenance. A domestic water meter shall be supplied on the CW header in the building with capability to interface to the BAS system to monitor water consumption. No booster pumps are assumed.

3. Irrigation: The water service for landscape irrigation shall not enter the building and is covered under the Landscape consultant's scope of work. The water service shall be separately metered and the system abandoned after the site is established. Pulse meter for monitoring water usage at BAS head-end shall be provided as part of DDC system and all control of irrigation zone valves shall be accomplished directly through the BAS; not interface to third party irrigation controllers. No booster pumps are assumed.

4. Domestic Hot Water System: System connections to the main building heating system and ground loop shall be provided to meet building domestic hot water heating needs with dedicated water-to-water heat pumps and a double wall stainless steel heat exchanger and storage tank. Proposed basis of design of the heat pumps shall be Climatemaster. These units shall supply domestic hot water to the entire facility. All domestic water heaters shall be designed with hot water recirculation piping and pumps to keep hot water available at fixtures.

5. Plumbing Fixtures: All plumbing fixtures shall be selected for use in high impact resistant applications in conformance with SPS Standards.

6. Sanitary Waste and Vent System: A sanitary waste and vent system shall be installed to serve all fixtures within the building. Piping shall be cast-iron with no hub fittings. Specialty sanitary waste and vent system components shall include an exterior concrete vault grease interceptor



for select kitchen fixtures. A solids interceptor shall be provided in Art room spaces prior to connection to the main building sanitary sewer system.

7. Roof Drains and Rain Leader piping: Roof drains, Overflow drains and internal rain leaders shall be provided and discharge to coordinated points of connection on-site. Piping shall be cast-iron with no-hub fittings.

8. Natural Gas System: None.

Fire Sprinkling System:
The building shall be completely sprinkled with wet system coverage in conformance with NFPA 13 and local AHJ requirements. The design shall include a wet pipe system to serve all interior occupied areas and combustible void spaces. Wet system piping shall be black steel with threaded or mechanical grooved joints. Where design coordination allows, building overhangs shall be protected with dry sidewall heads off of the wet system. A dry system is not desired and shall be used only under specific circumstances if reviewed and approved by the District

The fire sprinkler service entrance to the building shall be located within the building at a riser room. Fire system backflow prevention shall consist of a double detector check valve (DDCV) assembly located at a sprinkler riser room, with exterior door access, inside the building in conformance with local AHJ requirements. A fire department connection and post indicator valve shall be located on site downstream of the DDCV with a separate service line and point of connection outside of the building to serve these devices by Civil.

Heating, Ventilating and Air Conditioning System:

1. Ventilation: Ventilation systems serving each area of facility are as follows.
   a. Classrooms, Library & Offices- Dedicated outdoor air systems shall serve zones in a displacement ventilation configuration. Central variable volume air handling units (Daikin semi-custom proposed basis of design) shall be supplied with air-to-air enthalpy type heat recovery wheels to temper ventilation air with building exhaust air. VAV terminal units shall be provided at each zone to modulate airflow demand and close ventilation air dampers when spaces are unoccupied. CO2 sensors shall be provided for demand control ventilation at the library and the ventilation system shall interface to occupancy sensors to disable ventilation when the spaces are unoccupied. CO2 sensors shall also be provided at the classrooms for monitoring purposes only.
   b. Gym, Commons, Stage & Kitchen- Dedicated outdoor air systems shall serve zones with overhead or sidewall supply air diffusers. Air handling units (Daikin semi-custom proposed basis of design) shall be supplied with air-to-air enthalpy type heat recovery wheels with conventional overhead ductwork distribution system. CO2 sensors shall be provided for demand control ventilation and these units shall be supplied with airside economizer control capability to provide free air cooling to these spaces. This same system approach shall be applicable to the potential modernization of the existing theater at Whitman MS and Locker Rooms, Fitness, CTE, etc that may be constructed as defined by each building program.
   c. Filters- MERV 13 final filters with MERV 8 pre-filters on both outside air and MERV 8 on return.
   d. Duct routing- Return air shall be fully ducted and ensure no mixing of air between spaces, not plenum type.



e. Ventilation system fans for the classroom wing shall generally be located in the existing level 4 attic space and units for the Activities Wing (Gym, commons, Etc) located in a new level 2 attic space.

2. Heating: The main source for heating serving dedicated zones are as follows are via a two-pipe hydronic changeover loop as indicated below:
   a. Classrooms, Library & Offices- Heating water finned tube radiators (Rittling proposed basis of design) located at the exterior wall of each space. A dual temp changeover coil provided at main air handling unit tempers ventilation air serving these displacement zones. The same dual temp coil provided in central air handling units is capable of providing partial cooling capability for these spaces.
   b. Corridors- Combination of heating water finned tube radiators and hydronic cabinet heaters.
   c. Gym, Commons, Stage & Kitchen- Conventional overhead single zone air handling unit with dual temp coil provided with overhead supply air ductwork and distribution.

3. Cooling: The main source for cooling serving dedicated zones are as follows are via a two-pipe hydronic changeover loop as indicated below:
   a. Classrooms, Library & Offices- A dual temp changeover coil provided at main DOAS air handling unit is capable of providing partial cooling capability for these spaces. Ceiling Fans shall be also be provided at classrooms (furnished and installed by electrical subcontractor, Big Ass Fan proposed basis of design) to increase comfort during the cooling season.
   b. Corridors- No cooling is provided.
   c. Gym, Commons, Stage & Kitchen- Conventional overhead single zone air handling unit with dual temp coil and economizer provided with overhead supply air ductwork and distribution.

4. Ground Loop Heat Exchanger: A vertically bored geo-exchange loop shall be provided on site, sized to serve the entire buildings' heating needs. There shall be no glycol provided in the system. The ground loop heat exchanger is planned to be provided with ground loop headers located in the central heat pump room located in the existing basement boiler plant room. Piping for the underground loop heat exchanger on site shall be high density polyethylene and shall connect to a black steel piping in the building. Site condenser water loop shall be served by a redundant base mounted variable speed split-coupled pump. An air separator, expansion tank and chemical filter feeder is provided on the system. If site constraints are found to be limited, ground loop shall be coordinated to be installed under the building footprint, with each bores branch piping coordinated to provide isolation of any single vertically bored circuit in the event of failure.

5. Water-Water Heat Pump: Water-water heat pumps (Climatemaster proposed basis of design), located in the main mechanical room plant space, shall be provided off the ground loop heat exchanger condenser piping system installed on site to supply low temperature heating water and chilled water to facility. Heat pumps shall be de-coupled from main building hydronic loop and provided with their own in-line circulation pumps to ensure adequate flow and no nuisance tripping of equipment due to controlled valves.

6. Boilers: There shall be no gas fired boilers on this project as they are no longer allowed under the 2021 SEC. An electric pony boiler (Precision proposed basis of design) shall be provided to supplement the ground loop when temperatures are at or below outdoor ambient temperature of 32F.



7. Bldg Hydronic System: Interior building hydronic system shall be a two-pipe change over system providing heating or chilled water for facility as space occupancy demands. Building hydronic system piping shall be served by redundant vertical in-line variable speed split-coupled pumps. An air separator, expansion tank and chemical filter feeder is provided on the system.

8. Building Piping and Valves: Heating and cooling system piping shall be welded black steel for all mains above 2-1/2" in size and type L soldered copper for all sizes 2-1/2" and below. Dielectric nipples shall be used at all connection points between dissimilar metals. All control valves located at equipment shall be 3-way or 2-way modulating type. All isolation valves shall be ball or butterfly valve type (no gate valves).

9. Exhaust Systems: Dedicated outdoor air system HVAC unit relief/exhaust fans shall handle exhaust air for custodial rooms and toilet rooms adjacent to classroom and office wings where displacement is provided with inline booster exhaust fans. Where this is provided, morning and overnight exhaust shall be capable of running without turning on building supply fans or adjacent zones. Dedicated exhaust fans shall serve the custodial and toilet rooms in remote areas and shall also serve the specialty exhaust needs such as at the kitchen hood, dishwasher, fume hoods and maker spaces. Exhaust fans shall also be provided to handle heat gain from electrical closets and heat pump room spaces as required. Fans shall be direct drive type with speed controller.

10. Specialty Exhaust Systems: Point of use exhaust such kiln exhaust at art and other specialty exhaust systems (such as fume hoods) shall be provided as the school program requires.

11. Ductwork: Ductwork system shall be galvanized sheet metal throughout and installed per SMACNA standards based on specified pressure classification. Soundlining shall only be provided where required by acoustical consultant; and in all other instances wrapped with insulation where required by energy code.

12. MDF, IDF, and Elevator Machine Rooms: Cooling shall be provided by water to air heat pumps. IDF shall be cooled via exhaust and transfer air where total space heat gain loads shall allow; cooling should be tentatively assumed for one IDF space with all others being exhausted. Ductless split system AC units may be considered where space constraints disallow the use of water source units or proposed as part of project VE; obtain approval with SPS.

Building Automation System (BAS):
The mechanical systems in the building shall be controlled and monitored by a direct digital energy management control system with BACnet interface and web-based capability, as installed by ATS Automation or Johnson Controls. In addition to controlling the mechanical systems, the controls shall be capable of monitoring and controlling other systems in the building such as irrigation, energy metering and lighting controls. BAS shall include energy monitoring software (Skyspark) to identify and trend energy usage and support system fine tuning and identification of potential operating issues.

Additional Considerations



At the time of preparation of this CPD, the final 2021 Seattle Energy Code Draft has not been published and the potential language that may be contained in the 2024 codes is unknown. Remaining code council meetings (to occur next month) may result in further legislative mandates and revisions to the code that are yet to be determined.

We do not believe that any proposed actions would substantially change the HVAC or Plumbing system design approach as is noted above. A draft of the proposed revisions to the Seattle Energy Code has been provided as a supplement to this document. The majority of currently proposed changes impacting SPS are in the form of additional reporting and plan review documentation as well as revised equipment performance requirements, field testing, improved duct and piping insulative values, controlled sequences and operational setpoints/setbacks and additional commissioning.



NARRATIVE – DIVISIONS 26,27,28
LOWELL ELEMENTARY SCHOOL

DIVISION 26 - ELECTRICAL

PART 1 - POWER

1.1 Power Service

A. Power service for Lowell is an overhead feed to a Switchboard in the basement. The Switchboard is in acceptable condition, Square D fused switch type and is 1200 Amp, 208Y/120 Volt, 3 phase 4 wire. This switchboard is located in the historic building. The switchboard will not be adequate to serve the new facility and is in an area be demolished for new program space.

B. Assuming a new addition and renovation of existing historic building of approximately 60,000 SF a new 2000 Amp, 408Y/277 Volt, 3 phase, 4 wire service is proposed for the new project. This switchboard will contain WSEC metering and feed distribution in the building,

C. Due to size the new service will be fed from either padmount transformer, interior vault transformer, or underground transformer as coordinated with Seattle City Light

1.2 Power Distribution

A. In the historic building Square D panels are located generally in the corridors. SPS new standard would have electric panels in electric rooms or closets. The existing panels will be removed or used as pull boxes to feed new distribution in the existing building and the large addition.

B. Distribution will serve lighting panels, HVAC panels, kitchen panel, elevator, and plug load/miscellaneous panels

C. Surge Protection will be provided on all panels

1.3 Metering

A. A meter system will be provided at the switchboard to comply with WSEC requirements and report to the DDC system or a stand alone energy dashboard system by Square D, Eaton, Siemens or ABB as coordinated with SPS. System will monitor total building load, lighting, HVAC, process, elevator, water heating, and general miscellaneous/plug loads.

1.4 Emergency Power

A. Elementary schools will be provided with individual self diagnostic battery units or centralized inverters. No generator is provided. Communication Rooms will be provided with UPS for backup.

TFWB ENGINEERS INC

1.5 Lighting Fixtures

A. Exiting fixtures are fluorescent wraparound type and will not meet the WSEC requirements for installed wattage or controls.

B. Building will be provided with a completely new lighting system with LED fixtures.

1.6 Lighting Controls

A. New Seattle/Washington Energy Code will dictate a fixture-based lighting control system. This is a slight deviation from the SPS standard. System will consist of a hybrid wireless fixture-based controls system. System will be fully networked and accommodate plug load control.

B. Plug load controllers will be provided in all classrooms, offices, workrooms, etc.

1.7 EV Charging

A. Project will provide for EV parking per WAC 51-50-429. Currently this requires a minimum of 10% of parking stalls to have Level 2 EV chargers installed, 10% of stalls EV ready with conduit, breakers and wire and to have capacity for an additional 10% of stalls that will have raceway stubouts to EV locations. This allows for 30% of parking to be EV without added infrastructure. Project will allow for a dedicated EV Distribution Board with metering.

1.8 Photovoltaic System

A. Seattle School District will provide a new PV system for the building. The building will be sized at a minimum of 1.1 W/SF and generally be located on the roof, connected to an inverter and through a dedicated PV panel with metering and disconnect. An additional 40% of roof area will be reserved for future PV systems.

DIVISION 27 - COMMUNICATIONS

1.1 Data Cabling System

A. Existing fiber routes into the building via the historic building but will be rerouted through underground conduit to a new MDF.

B. Building will be provided with new MDF and IDFs with fiber and UTP connections and Category 6 and 6A(WAPs) cabling per SPS standards.

C. UPS will be provided in all MDF and IDFs per the SPS standard

D. WAPS installed or provided per SPS standard. Cabling will be Category 6A

1.2 Intercom/Clock System

A. Existing building has a Bogen paging only intercom system and will be demolished. This will be replaced with a Telecor E Series with new POE speaker clocks per SPS standards.

B. Clock will be POE message boards for messaging that will also show time.

C. Existing clock system in the administration will be removed.

1.3 Audio Visual systems

A. The building will be provided with new AV systems per the SPS standards. District standards currently include interactive short throw projector, new 5 x 8 markerboard, Front Row Unity or equal sound system and HDMI, USBA, USB C, and Audio Cabling.

B. Large spaces will be provided with an AV control system with integrated DSP and touch-panels for control. System will include large scale LED boards, projectors, or large monitors based on the program and will include audio system with wireless microphones

1.4 Emergency Responder System

A. An allowance will be included to provide an Emergency Responder System for the facility.

1.5 Two Way Communication System

A. Each elevator lobby without exterior access will be provided with a two way communication phone that connects to a master in the admin or front entry.

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

1.1 Fire Alarm

A. The existing Notifier NFW2-100 fire alarm system will be replaced with a a new fire alarm system with integral voice alarm.

B. Code minimum fire alarm devices per SPS standards with speakers throughout.

C. Additional smoke detection allowed for in main offices, electric and communication rooms and Library per the SPS standard.

1.2 Security

A. A new Bosch 9512 security system will be provided.

B. Motion sensors provided for perimeter and main corridor coverage per SPS standards.

1.3 Access Control

A. The existing Key scan system will be demolished.

B. A new access control system will be provided based on the new SPS standard. All exterior common entrance points will receive new card readers.

C. Existing Aiphone Video intercom will be relocated to the new main entry.

1.4 Video Surveillance

A. New camera system will be provided with cameras per the new SPS standard under development.

B. Allow for 60 cameras, (45) multisensor cameras and (15) fixed cameras.

CONFIDENTIAL

Lowell Elementary School Modernization & Addition

1058 E Mercer St
Seattle, Washington 98102

Building Envelope Considerations for Conceptual Planning



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BUILDING ENVELOPE TECHNOLOGY & RESEARCH
PROFESSIONAL ROOFING, WATERPROOFING, CLADDING, AND FENESTRATION CONSULTANTS

Building Envelope Considerations for Conceptual Planning

Lowell Elementary School Modernization and Addition

GENERAL OVERVIEW

Building Envelope Technology & Research, Inc. (BET&R) understands, via Bassetti Architects, that Seattle Public Schools (SPS) is considering a project at the Lowell Elementary School site, in which the 1919 landmarked portion of the existing School Building at the southern-end of the site will be preserved, retrofit, and expanded as part of a potential upcoming Project. The potential Lowell Elementary School Project will reportedly include the demolition of the newer, 1960, portion of the School complex to facilitate the construction of an addition to the Lowell School that would be built where the 1960 era portion of the Building currently stands at the central and northern portions of the school grounds. BET&R initially walked the grounds with the Bassetti Architect's assembled survey team of architects, engineers, and specialists during a conceptual planning site visit on September 25, 2023. BET&R then returned to the site on October 11, 2023 to more closely survey the condition of the existing exterior of the school, including the steep-slope and related low-slope roofing and flashings systems, masonry and related exterior visible cladding components, spot-check fenestration systems (i.e., windows and doors), and below-grade interior portions of the Building to check for potential signs of moisture intrusion, which included an exterior, shallow, small test dig at the foundation near the southeast exterior of the 1919 Building in effort to determine if a below-grade dampproofing or waterproofing system may be present. For additional information related to the "Design Review #2 Concepts" considerations, please find them near the latter portion of this Draft Exterior Condition Evaluation Report.

The 1960's era portion of the Building was surveyed in a cursory manner as we understand that portion of the school will likely be demolished as indicated above. BET&R anticipates recommendations for the potential new additional portion(s) of the Lowell School would generally follow Seattle Public Schools standardized building envelope systems per the SPS CPD Document. Should additional recommendations for the 1960's era portion of the complex be needed at a later date, if that portion of the Building is to be preserved or retrofit, then BET&R would conduct an additional site visit for a more entailed exterior survey of the 1960's portion only. Generally, the 1960's era portion of the school complex appears to require replacement of the low-slope roofing systems on the roof areas, replacement of the fenestration, and brick masonry retrofit work -- if it is decided that portion of the existing school will be reused or preserved.

Overview Photos:





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MODERNIZATION

STEEP-SLOPE ROOFING SYSTEM(S)

Overview:

Although the existing steep-slope asphalt shingle roof system has been replaced relatively recently, reportedly five-to-ten years ago, and the primary roof covering appears to be a Malarkey "Northwest" asphalt shingle roof, but it appears to have a single-layer synthetic-fabric roofing underlayment. Signs of shingle weathering and wear were observed in the field of the steep-slope roof areas at numerous shingles, and include pre-mature crazing and cracking of the surfacing asphalt, and some obvious granule loss; also there are visibly degraded and damaged hip and ridge shingles, all of which indicate that this commodity-grade asphalt shingle roof will be a candidate for full roofing replacement within the next 5-8 years, or potentially earlier (i.e., depending upon severity of weather events and extent of sun loading), potentially as part of the more major Lowell Elementary School Project. BET&R is unaware if there is an existing warranty for the roof system as no warranty information has been provided from Bassetti Architects or was available from Seattle Public School (SPS) Facilities & Operations Department. No reports of active leakage were indicated by on-site SPS personnel at the 1919 Building although it appears from areas of water-stained, previous roof-leak degraded and damaged wood roof deck substrates visible at the soffits, and prior water staining observed on the underside of the wood roof decking and sawn-wood members visible in the attic cavity, numerous roof leaks appear to have occurred in the past prior to the installation of this current asphalt shingle roof system.

Based upon visual review of the asphalt shingles, and conditions in the roof attic space, there also does not appear to be any active or passive roof ventilation provided with the most recently installed shingle roof system, which can potentially impair roof performance and shorten the longevity of most any commodity-grade asphalt shingle roof systems due to solar loading, heat aging, and embrittlement and cracking of the asphalt shingles, which is evident in locations.

Some of the existing copper downspouts appear to be leaking, due to holes, and other damage, all of which suggest that these downspouts would be good candidates for repair and/or retrofit in order to properly function and carry roof-water runoff away from the building. When the existing asphalt shingle roof system is replaced in future, it would be prudent to replace the existing skylight units, roof-access hatches, soil pipe flashings, and other roof appurtenances and related flashings, etc., as these also appear to be near the end of their useful

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service life, and some should be better integrated into a watershedding steep-slope roof system. Existing wood components of the steep-slope roof assembly, including portions of the soffits, rafter tails and corbels are weathered, checked, with some indications of water-damage and decay, of which shows their age and prior roof leakage, and indicates they are in need of repair and restoration, which should include tactile-probing to check for the extent of decay, so as to determine means of long-term securement, the extent of wood repairs via cold-cure epoxy compound(s), which portions may need to be replaced, and then preparation of the surface, priming and coating of the wood exterior elements with a high-performance coating system, and installation of prudently designed new sheet metal flashings to better protect the weather-exposed wood elements.

Existing Roof System	Overall Condition	Approximate Years of Service Life Remaining	Warranty Status & Leak History
Steep-Slope Asphalt Shingles (Malarkey Northwest asphalt shingles with a synthetic underlayment)	Fair-to-serviceable condition. Locations of pre-mature weathering observed on the asphalt shingles including crazing, cracking, and granule loss. Cracked and damaged ridge and hip shingles as well as biological growth at ridge locations.	5-8 years, perhaps more, depending upon severity of future weather, and quality of the spot repairs, and maintenance, and retrofit of flashing details. See below table for potential spot repair information.	No known Manufacturer's Warranty reported by SPS, although a roof of its type typically has a 10-year warranty. No leaks reported although some prior water damage and staining was observed at select wood decking and framing in the roof's attic cavity.
Large Vent Hoods	Fair-to-serviceable condition. In need of new coating system to protect the underlying sheet metal.	4-8 years without a new coating system, however many more years can be achieved with spot repair and a new high-performance coating system to protect the underlying original sheet steel.	No known Warranty reported by SPS. Due to age no warranty anticipated.
Roof Hatches and Skylights	Fair-to-serviceable condition. Roof hatch at west does not appear to open properly, and is recommended to be repaired.	5-8 years remaining for skylights and roof access hatches, although westernmost hatch does not appear to open properly. Repair the western hatch, and budget to replace all during next reroofing.	No known Warranty reported by SPS. No leaks reported although some water staining and damage was observed at adjacent wood substrates in the roof's attic cavity that suggest prior leakage.
Copper Downspouts	Select downspouts appear to be leaking and are in need of spot solder work and repairs to fix leaks, others in need of retrofit, or replacement. Most all appear to be in serviceable condition.	Active leaks suggest they need repair soon, prudent prior to winter weather, particularly those near walk paths and locations where icing may present a slippery walking condition. 25-30+ more years of potential service with proper copper repairs, soldering, and maintenance.	No known Warranty reported by SPS. Leaking downspouts were observed in the field during the recent survey of the exterior envelope.

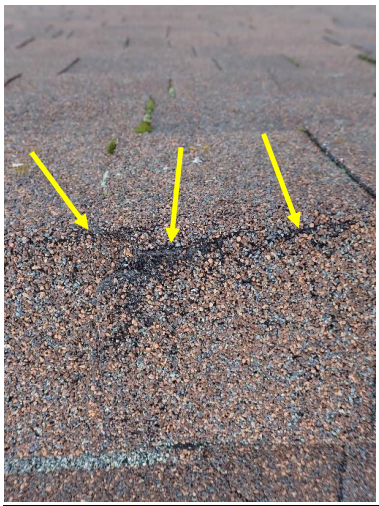
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Wood Soffits and Rafter/Corbel Components	Areas of wood repair and/or retrofit are required where age, weathering, checking/separation and damage have occurred. Tactile probing and a close review are recommended to check attachment/ securement as with prior leakage from above fasteners are likely in a state of corrosion.	Damage suggests immediate close-tactile review and attention is needed. Service life could be 10-30 years or longer with proper repairs. Check attachment and secure properly and for the long term. With proper wood repairs and select retrofit, and appropriate coating application, the service life of most of the exposed wood components may be extended many more years, as long as the membrane-lined built-in roof gutters are spot repaired and then replaced at time of reroofing.	No known Warranty reported by SPS. Prior leaks and weathering have occurred at exposed wood components.

Photos:









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Recommendation, Options:

Repair or Retrofit	Scope and Materials or System Recommended	Years of Expected Service Life if Repaired	Warranty Potential
Steep-Slope Asphalt Shingles (Malarkey Northwest asphalt shingles with a single, synthetic sheet underlayment)	Spot repairs to some asphalt shingle abraded and damaged locations should include asphalt roof cement and granules over the exposed fiberglass reinforcement and select shingle tab replacement.	5-8 years, perhaps more with repairs to the existing commodity-grade type of shingle, depending upon severity of future weather, and quality of the spot repairs, as well as future maintenance, and if retrofit of flashing details. The expected service life of a new Malarkey laminated-asphalt shingle of a higher quality, such as the Malarkey Legacy or better yet the Malarkey Windsor, the anticipated service life would be approximately 23 to 35 years depending upon the shingle selected, the thoroughness of the design, and the quality of the roofing system application and flashing detailing.	No manufacturer's warranty with spot repairs, but with the recommended asphalt shingle replacement the manufacturer's warranty specified should be 20- or 30-years depending upon the shingle thickness and quality of manufacturing.
Large Vent Hoods	Check welds and fastenings, repair as needed, clean and prepare existing exposed surfaces, seal joints and allow to cure, prime, and recoat with High-performance Coating System.	25-35 years or more with proper repairs and proper recoating.	10-15 years possible for new coating system.

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Copper Downspouts	Assuming copper downspouts are landmarked, check fastenings and anchorage substrates in masonry substrates, repair downspouts that are leaking via preparing surfaces, re- solder joints, copper patch locations where needed, and resecure as necessary. Where select sections are thinning, budget for replacement of copper sections in future.	30-45 years or more, with proper seals, soldering, and refurbishment	N/A
Wood Soffits and Rafter/Corbel Components	Confirm secure fastening of components. Wood repair and replacement with installation of high-performance coating system. Installation of coated sheet metal flashings to protect rafter tails is also recommended.	20-30 years and perhaps longer with proper re-securement, maintenance and recoating with appropriate primer and high-performance coating system, as well as the quality of the membrane-lined built-in gutter installed with the roofing system above.	10-years possible for high performance coating system.

Replacement	System Recommendations	Years of Expected Service Life if Replaced	Warranty Options
Asphalt Roof Shingles & Related Flashings	CPD System B3010.101	18-27 years, or more, depending upon quality of new shingles specified, ventilation induced, and quality of roofing and flashing design and detailing.	10-30 years, depending upon quality of shingle and roofing underlayment specified for next reroofing project.
Roof-top Skylights	CPD System B3060.10	20-40 years, depending upon quality of new skylights specified, and quality of flashing design and detailing.	5-15 years.
Roof Access Hatches	CPD System B3060.50	30-45 years, depending upon quality of new hatches specified, and quality of flashing detailing.	10-20 years possible

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Future Reroofing and Other Exterior Roof-related Recommendations:

Due to weathering, heat-aging induced crazing and cracking, and granule loss of the roof's asphalt shingles that has exposed the underlying asphalt and internal glass-fiber reinforcement to weather in locations, it appears the existing roof shingles, single-layer of synthetic roofing underlayment, and related flashings, the roof of 1919 Building should be replaced with a new asphalt shingle roof system with a polymer-modified asphalt-based roofing underlayment per SPS CPD steep-slope roofing system in the next 5-8 years, or earlier if more severe hot summers occur and if budget allows, but at least plan on reroofing as part of the anticipated Lowell Elementary Project. A roof ventilation study, with calculations, should also be performed so that the future reroofing is most cost effective for long-term roof performance, so that the shingles are not pre-maturely heat-aged, embrittled, and cracked, as has occurred with the existing roofing, which can be avoided with a carefully designed passive roof ventilation system that should be implemented at the time of the next roof replacement project.

Wood-related components including sections of the wood roof decking, including at the roof soffits, and at rafter tails and corbels are weathered, checked, and appear decayed in locations. The rafter tails and corbels existing paint finish is cracking and peeling, all of which indicates that the exterior wood components should be tactically examined, and marked for repairs, reattachment, and restoration with a combination of select wood section replacement. The repairs may include careful removal of the water damaged and decayed portions, and where feasible at minor decayed locations repairs may be accomplished in some of the rafter tails and corbels with an appropriately selected epoxy wood-infill repair. Then, once the selective spot repairs and selective replacement of the exposed wood components (e.g., the rafter tails, corbels, soffits, gable trim and fascia boards) has occurred, the exposed wood components should be prepared, thoroughly primed, and fully coated with a new high performance coating system. Related sheet metal flashings should also be replaced at the time of roof replacement.

Select copper downspouts also appear to be leaking and are in need of spot repair and retrofit, or select sections of downspout replaced to restore the roof runoff conveyance system to proper watertight function. While the roof system is being replaced in future, it would be prudent to replace the skylight systems, access hatches, roof anchors, and roof appurtenances and related flashings with new SPS CPD components and systems.

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LOW-SLOPE ROOFING AND MEMBRANE-LINED BUILT-IN GUTTER SYSTEM(S)

Overview:

The Carlisle single-ply ethylene propylene diene terpolymer (EPDM) roof membrane that lines the historic school building's built-in gutters, and is installed over the small East Awning Roof Area, appears to be beginning to develop issues at lap seams and also is in need of near-term repairs to protect the underlying wood components. We also suggest budgeting for future replacement as part of the upcoming steep-slope reroofing project.

Existing Roof System	Overall Condition	Approximate Years of Service Life Remaining	Warranty Status & Leak History
Single-ply Membrane Gutter Liner and East Elevation Awning, Membrane Roofs -- Carlisle single-ply EPDM.	Fair condition with weathering observed on the membrane. Membrane lap seams appear to be beginning to opening up and seams will likely need stripping-in at select EPDM seams prior to full replacement, particularly at the EPDM membrane-lined built-in gutters to avoid leaks into the open soffits and on to roof rafter tails and corbels.	3-8 years possible, perhaps more, depending upon severity of future weather, and the quality of the future spot repair and maintenance.	EPDM Manufacturer's Warranties are not typically offered with membrane-lined built-in gutters, but a Manufacturer's Warranty may potentially have been provided for the small low-slope entry roof, but small roofs are rarely warranted for longer than 10 or 15 years unless they are part of a much larger membrane reroofing project. No leaks reported by SPS personnel.

Photos:





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Recommendation Options:

Replacement	System Recommendations	Years of Expected Service Life if Correctly Replaced	Warranty Options
Low-slope Single-ply EPDM Roof at Built-in Gutters and Entry Awning Roof, and Elevator Penthouse	CPD System B3010.50 or B3010.90 for a multi-ply polymer-modified roofing system on the Entry and Penthouse Roof Areas, but a polyester-fabric reinforced PMMA membrane at the steep-slope roofs built-in gutters.	25-35 years or more, depending upon severity of future weather, quality of the membrane systems selected, and with proper spot repair and a future maintenance coating system.	Typically 20-year Manufacturer's Full Systems Warranties are possible, depending upon quality of manufacturer, contractor, and designer.

General Recommendation:

At time of steep slope re-roofing, it is recommended that the existing single-ply Carlisle EPDM membrane that lines the gutters, and is the exposed roof system over the small East Awning Roof Area, be replaced with a more redundant multi-ply SBS or APP roof system, per the SPS CPD Document. If future reroofing budget allows, a polyester-fleece reinforced PMMA membrane system would be prudent to line the steep-slope roofs' built-in gutters. Additionally, at the East Awning Roof Area, the design and installation of a cricket and tapered slope would be prudent to eliminate ponding water observed on the existing EPDM roof membrane roofed area.

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EXISTING EXTERIOR WALL CLADDING SYSTEM(S)

Overview:

The brick masonry, which is a multi-wythe system (i.e., not a veneer) that comprises the existing wall cladding at the 1919 School Building generally appears to be in serviceable condition, but needs spot repairs. Numerous brick units are spalled, others are cracked, or have significant chipping damaged at locations, which indicates selective brick replacement of these damaged units would be prudent, and with spot routing/"cutting" and pointing of select mortar joints. The related masonry mortar joints appear to be of various vintages and conditions, with some locations appearing recently repointed and in sound condition, while other locations are weathered and degraded and in need of routing and repointing. It would be prudent at the time of the anticipated upcoming Lowell Elementary School Project that the entirety of the existing mortar joints be correctly routed and repointed in a three-lift manner, so that the mortar joints are brought to an overall uniform and long-term performing condition.

Additionally, there are courses of brick that project beyond the main vertical plane of the walls, as an architectural detail, generally at the lower levels of the Building. It would be prudent to protect the top of these exposed brick units with properly sloped mortar washes. Cementitious "belly" bands, sill washes, and parge coats at the base of the Building are also cracked and degraded and in need of a properly designed retrofit. Water staining and evidence of moisture intrusion was observed at the cementitious belly bands, which appear to be allowing water into the system. The masonry should be warm-water washed and cleaned, then thoroughly rinsed, all at low-pressure, and then an appropriate water-repellent and anti-graffiti system installed after proper mortar cure time for the selectively replaced brick locations, and the repointed mortar joints. No cladding related leaks or previous contractor guarantees were reported by SPS.

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Existing System	Overall Condition	Approximate Years of Service Life Remaining	Warranty Status & Leak History
Brick Masonry and Related Mortar Joints and Through-wall Penetrations	Numerous cracked, spalled, significantly chipped, or otherwise damaged brick units. Mortar joints range from some in need of immediate routing and pointing during to cracking, spalling, and eroding, to others that are in fair and serviceable condition, and some in nicely intact and sound condition. As such a selective routing and pointing is recommended, and then in future a full routing and repointing project is recommended to improve, unify, and standardize the condition of the historic building's brick and mortar joints. Select locations would benefit from replacement of mortar washes, and specific joints replaced with backer rod and sanded-sealant joints. Also repair and retrofit of sheet metal flashings will be needed with the full rout and pointing project.	Numerous years left with proper repair and retrofit work to include widespread routing and repoint and replacement of damaged masonry units as may be required.	No Warranty Information or Leak history provided by SPS. No warranty anticipated for existing brick masonry.
Cementitious Belly Bands, Window Exterior-sill Washes, and Base of Wall Parge Coats	Widespread cracking of belly bands and parge coats is obvious, with evidence of moisture damage. Also, spalling damage and indications of weathering and moisture migration at Window exterior-sill mortar washes.	The cementitious exterior elements of the wall cladding system are in need of repair and/or replacement in the near future, and if repaired should include an appropriate coating system and/or texture- and color-matched PMMA membrane cap flashing installed to protect the repaired underlying materials.	No current leaks reported by SPS personnel as emanating to the interior of the building from the cracking exterior cementitious elements, however it appears the cracking belly bands are taking water and damage is eviden, which will likely lead to moisture intrusion to the interior with time if repairs are not implemented.

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Photos:



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Recommendation, Options:

Repair or Retrofit	Scope and Materials Recommended	Years of Expected Service Life if Repaired	Warranty Potential
Brick Masonry and Related Mortar Joints	Select brick replacement in combination with spot rout and point of the existing mortar is in order at select locations, followed in future with a full route and repointing of the mortar, followed by warm-water washing and cleaning, thorough fresh-water rinse, then when dry apply the appropriate water repellent and an anti-graffiti system. B2010.001 MASONRY VENEER WALL B2010.90 EXTERIOR WALL SUPPLEMENTARY COMPONENTS Historic match of mortar and brick units will likely be required. Testing of existing brick and mortar is recommended to determine the least permeable and appropriate compressive strength mortar design. Install cementitious grout washes at exterior window sills, and stepped-brick course near the base of the Building.	With appropriate repairs in next 1-3 years, then followed in future as the budget allows with a project involving a full rout and point of the historic building's mortar joints, along with the correct water repellent and an anti-graffiti system, it is possible to achieve another 40-65 years or more useful service life with majority of existing brick. To achieve longevity with existing brick, it would need to include proper review and maintenance of mortar joints and reapplication of water-repellant and anti-graffiti treatments.	20 years for water-repellant and anti-graffiti systems are feasible.

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Replacement	System Recommendations	Years of Expected Service Life if Replaced	Warranty Options
Cementitious Belly Bands and Window Sill Washes	Numerous cracks, damaged and weathered cementitious elements. Replace with new polymer-modified cementitious materials to match existing texture and color. If full replacement is not budget feasible, then repair of cracks, prime, and coat existing parged elements with polyester-fleece reinforced PMMA flashing membrane or if budget will not permit color- and texture-matching PMMA, then an appropriate high-performance polyurethane coating system reinforced with a light-weight polyester fabric system with an intermediate and top coat for color- and texture-matching polyurethane coating.	Immediate clean and tracing of cracks followed by sealant repair of cracks is needed to avoid full replacement, and to be able to extend service life another 20-25 years with proper and regular maintenance of cementitious materials and coating system. If full replacement option is selected, then it is possible to achieve 30 to 45 years of service, and with PMMA flashing system, followed by regular review and maintenance of PMMA flashing's top coating.	10-15 years Manufacturer Warranty is possible for select high-performance polyurethane coating system, reinforced with a light-weight polyester fabric. Or, 20+ year Manufacturer Warranty is possible with select high-quality PMMA membrane systems with med-to-heavy weight polyester-fleece reinforced PMMA flashing system.

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EXISTING FENESTRATION

Overview:

Metal-Clad Wood Windows Appear To Have Been Installed to Replace The Original Wood-Framed Windows: It appears the metal-clad wood windows, that were reportedly installed around circa 2000, appear to be in serviceable condition; however, numerous glazing gaskets and sealant seals related to the existing windows are in need of retrofit and/or replacement as soon as possible to limit moisture entry into the window frames where freeze-thaw and wood decay may occur. Additionally, during BET&R's examination, no head flashings or sill flashings were observed during the survey. Without invasive investigation and removeable of at least one of the ~2000 era replacement metal-clad wood window frames, it is not feasible to determine the condition of window-related rough-opening flashings, if any were installed into the rough openings prior to setting the "new" windows. However, careful and limited Monarch nozzle AAMA 501.2 window water spray diagnostic testing was conducted, which did not reveal any active leakage to the interior of the building at the one subject window tested at the first level at the South Elevation of the 1919 Building.

Wood-framed Steel Doors Appear To Have Been Installed to Replace The Original Wood Doors: The wood-framed, replacement steel door leaves also appear to be in fair-to-good condition. The presence and condition, as well as the potential composition of rough-opening membrane flashings is unknown currently as they are concealed from observation. Without invasive investigation and removeable of at least one of the replacement metal doors, it is not feasible to determine the condition and potential composition of door-related rough-opening flashings, if any were installed into the rough openings prior to installing the "new" door leaves. No active manufacturer warranties for the existing replacement window and door fenestration systems were reported by SPS.

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Existing System	Overall Condition	Approximate Years of Service Life Remaining	Warranty Status
Metal-Clad Wood Windows	Windows appear to be generally in fair, but serviceable condition, however, weatherstrippings and glazing gaskets appear to be failing at numerous window units that were reportedly installed during the early 2000 era. Perimeter sealant joints have also failed in numerous locations, and need replacement soon. Status of window rough opening flashing is unknown. It is believed the windows were replaced ~20-23 years ago, but the exact date is unclear.	Several years of service life could be achieved with select replacement of glazing gaskets and weatherstripping, which is required to keep water from the internal wood so as to avoid further degradation and decay of the wood inside of the metal-clad wood window systems. Associated sealant seals at the windows' perimeter are in need of full replacement as soon as possible. Due to the quality and age of the windows, the windows require repairs and maintenance this year, or replacement will be necessary in future. Also, in-situ conditions and the condition of adjacent building envelope systems will affect the service life of the fenestration units.	No Window Manufacturer Warranty was reportedly available for review by SPS.
Steel Doors with Wood Frames and Transoms	Wood frames and transom windows, as well as the coated-steel doors appear to be serviceable. It would be prudent to spot repair the door coating next summer (2024), and then survey the doors and frames again before the anticipated Lowell Project, so that full door leaf recoating and frame repairs can take place at the time of the Lowell Modernization Project. Depending upon the presence or lack thereof rough-opening membrane flashings, it would be prudent to perform a bit of invasive investigation in order to deter if and composition of rough-opening may have been installed.	With proper maintenance of coatings, lubrication of hardware, and associated sealant joints -- the doors should continue to function adequately. However, specific in-situ conditions and the condition of adjacent building envelope systems will affect the service life of the door units. The steel door units are sustainable for many years with proper maintenance, cleaning, priming, and coating reapplications.	No Door Manufacturer Warranty information was reportedly unavailable for review, and based upon door age, a Manufacturer's Warranty may no longer exist.

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Photos:









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Recommendation, Options:

Repair or Retrofit	Scope and Materials Recommended	Years of Expected Service Life if Repaired	Warranty Potential
Metal-Clad Wood Windows	Repair weather seals, gaskets, and replace perimeter sealant joints as soon as possible. Due to the age of the windows as well as the unknown status of the window rough opening flashings, if the existing windows are not repaired soon, then window system replacement may need to be considered by SPS during the anticipated upcoming larger Lowell School Modernization and Addition Project. It is recommended that robust rough-opening membrane flashings, and sheet metal flashings, be installed to aid in upgrading energy performance and long-term weatherproofing.	12-20 years, if proper repairs to weather stripping, gaskets, and perimeter seals at the windows are executed soon, then the windows should remain serviceable for the mid-term. It's critical that perimeter sealant joints and weatherstripping gaskets that are failing now are addressed in the very near future.	10-20 years are possible for new perimeter window sealant joint seals, upon their replacement with either color-matching silicone sealant joints or primed and painted STPE (silyl-terminated polyether) sealant joints.

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Steel Door Leaves with Frames and Transom Windows	The current systems are likely sustainable, however, SPS should undertake spot coating repair soon, and full recoating along with potential replacement of the frames and single pane transom windows with new higher efficiency materials. Rough opening flashings can be installed at time of frame replacement. CPD System B2050.10	With spot coating maintenance, and then later full recoating, the existing systems are sustainable for numerous years. However, 20-40 years are possible for replacement systems depending upon systems and materials selected as well as quality of rough opening flashings.	10-20 year warranty possible with new sealants and High-performance coating systems. 20 year manufactuer warranty possible with new units in the future as budgets may allow.

Recommendation, Discussion:

The metal-clad wood windows, that replaced the original wood windows reportedly circa 2000, appear to be in serviceable condition; however, numerous gaskets and sealant seals related to the windows are in need of retrofit and/or replacement. BET&R suggests high-quality formulated silicone sealant at the sealant joints needing replacement. Back joints appropriately, and prime substrates for optimum sealant adhesion to the intended bond faces. It should be considered that the metal-clad wood windows, where weatherstripping and gaskets are displaced may have allowed some moisture to contact the internal wood components, and thus an invasive investigation would be prudent in the next year or two to determine if the internal wood in a number of the window frames may be degrading/decaying. The recommended future invasive investigation is also intended to determine the extend to which the window rough-openings are membrane flashed, which is currently unknown. Additionally, no head flashings or sill pan flashings were observed during our visual and tactile survey. The wood-framed doors, with replacement steel door leaves, also appear to be in fair condition. Again, the condition and composition of rough opening flashings is unknown at the door openings at this time, as if they exist they are entirely concealed from visual observation and evaluation of potential condition and composition. It may be prudent to replace the door systems if this work fits within budget during the upcoming Lowell Modernization Project to improve energy efficiency of replace the single pane transom windows, and to install prudent and robust long-term rough opening membrane and sheet metal flashings at the time of replacement, however the existing systems could be sustained with proper care, recoating, and sealant replacement.

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BELOW-GRADE DAMPPROOFING OR WATERPROOFING

Overview:

Based upon the one shallow test dig conducted by BET&R, done carefully by hand with a fiberglass-handled shovel, it appears that aged and worn below-grade dampproofing exists, but the material appears to be thinning and eroding judging from the film thickness observed compared to the film thickness that such systems were typically installing on concrete foundation walls of institutional and commercial buildings years ago. On the interior below-grade spaces there is evidence of some moisture migration in locations, but the spaces appeared dry on the day of our on-site visual and tactile survey. During the anticipated upcoming Modernization Project, if the soils around the 1919 Building are displaced during the work, it is recommended that the existing concrete foundation carefully exposed, a portion of the elevation(s) at a time, so that the existing concrete exterior can be swept with a stiff-bristle push broom to remove bulk soils from the surface of the concrete, then after setting pump(s) in the base of excavated soil, the swept foundation should be low-pressure washed and rinsed, then the concrete be spot patched with a polymer-modified grout mix, then when concrete is generally dry, prime the exterior with a solvent-based asphalt primer, and then the dampproofing should be renewed with a 3-course of fiberated asphalt emulsion, such as is manufactured by Karnak, Henry, or W.R. Meadows to provide more thorough moisture protection for the school's below-grade spaces.









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Existing System	Overall Condition	Approximate Years of Service Life Remaining	Warranty Status
Below Grade Foundation Walls and Basement Areas	The asphaltic emulsion is no longer a barrier to water, as what appeared at the one test excavation to be an aged asphalt-based dampproofing has largely eroded away.	None, with any reliability, as the existing aged dampproofing is no longer providing a full film thickness and barrier to moisture migration. If the damproofing were to be cleaned and renewed with a 3-course of fibrated asphalt emulsion, and if thorough specified and properly applied, it may be possible to -- achieve 30 to 40+ years of service life with new below-grade, positive-side, damproofing. Or, if Seattle Public Schools Facilities & Operations Department would rather upgrade the suggested dampproofing to a cold-applied positive-side waterproofing system, then even longer service life is feasible with a Laurenco waterproofing membrane, which is compatible with the remenants of the existing asphalt-based dampproofing that appears to exist on the below-grade concrete foundation walls.	None with the existing aged and eroded dampproofing. However, a 5-, 10-, or potentially 15-year manufacturer's warranty may be available with a new 3-course dampproofing system. If prior to the anticipated upcoming Lowell Modernization Project, it is decided to replace the suggested dampproofing with a relatively minimal below-grade waterproofing system, then a 15- to 20 -year manufacturer's warranty may be available.

Please Note:

BET&R did not focus on the portions of the existing school that Bassetti Architects indicated would be demolished, removed, and replaced as part of the Lowell School Modernization and Addition Project. If any portion of the existing CMU exterior of the elevator room are left intact, BET&R recommends repair of any damage, then cleaning and installation of a new high-performance coating system. Additionally, retrofit of select sheet metal flashing details, and replacement of sealant joints will necessary. An additional 10 – 20 of service life years could be attained with proper repairs and installation of a high-performance coating system.

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NEW ADDITION

Considerations regarding Design #2 Concepts:

As requested by Bassetti Architects and SPS, BET&R offer the following consideration regarding the Design Scheme #2 Concepts and Sketches for the Lowell Elementary School Addition Project.

- The proposed design, appears to show the a new three-story addition attached to the 1919 Building at the North Elevation, up to within the steep-slope roof level. Such connection of an addition is a relatively unique and series of difficult conditions to detail properly so weatherproof and watertight cost effectively. Consequently, the expansion joint configuration may include several complex intersections and angle changes, as such a fully factory-vulcanized expansion joint membrane and careful watershedding flashing configurations should be provided. Please see CPD System B2010.90 EXTERIOR WALL SUPPLEMENTARY COMPONENTS for more information regarding the recommended expansion joint system.
- The proposed architectural preliminary design appears to include significant occupied below-grade space, including classroom space. If such excavation of the 1919 Building becomes appropriate, then per Seattle Public Schools performance requirements, prudent and robust below-grade waterproofing is recommended for these below-grade footing and foundation wall areas so that the waterproofing will protect the below-grade spaces of the existing 1919 School Building and Addition. This includes both pre-applied (i.e., blind-side), and post-applied (i.e., positive-side) below-grade waterproofing systems. Please see CPD System A2010.90 BELOW GRADE WATERPROOFING for more information regarding the recommended waterproofing systems.
- The Code requirements for air-barrier testing and minimally allowed air-leakage indicated as desired by Seattle Public Schools for recent Projects are quite stringent and a bit more conservative than the existing current local code requirements, which are set to go into effect in Spring of 2024. As the Project Team is likely aware, a passing air leakage test for all new and building additions is now required and is not optional. In BET&R's recent experience, additions to existing older buildings, especially older institutional, school, and commercial buildings, has presented challenges for testing and passing air leakage criteria, if the intersection of the new addition to the existing building(s) is not carefully thought out, well designed, thoroughly specified and detailed, and then properly constructed. BET&R recommends careful consideration of the exterior and interior details at the buildings' intersections, and consultation with an experienced and knowledable building envelope consultant in combination with a qualified air-leakage testing agency -- prior to finalization of the schematic design phase the Project to avoid potential issues and costly repair or retrofit(s).
- For upcoming Projects where roof-mounted photovoltaic (PV) arrays, or PV panel systems, for a PV-ready system will be provided in SPS Projects, BET&R recommends that through-roof penetration supports be incorporated into the structural systems design. Through-roof supports allow for long-term conventional flashing details that can be very reliable systems – particularly if they are well designed and properly installed in a weatherproof and watertight manner with the roofing system(s). Through roof supports also allow the photovoltaic panel array to be properly elevated above the roofing system(s) that reduces the heat load on the roofing system, as well as allows for easier cleaning and potential repair of the

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roofing system beneath the array, all of which are intended to prolong the cost-effective service life of the PV array and the roofing system.

- In general, the building envelope systems recommended by BET&R in the CPD document are our current recommendations for cost-effective, long-term systems intended to meet the Seattle Public Schools performance requirements and service lives. Please see the CPD documents for more information regarding the specific types of exterior components and exterior envelope systems. Please also note that the expected performance of these systems is reliant on well thought out, sound, and conservative design principals, thoroughly written sets of technical specifications, clear and thorough detail drawings that depict and label all components, and proper installation by experienced, knowledgeable, and well-qualified Contractors and specialty sub-contractors, which are anticipated to be experienced with the local climatic conditions and challenging weather conditions of the Seattle area's moderate-rainforest marine climate.

IN CLOSING

Building Envelope Technology & Research (BET&R) trusts that the above information and accompanying photos will be helpful for Seattle Public Schools (SPS) Capital Projects & Planning, as well as for SPS's Facilities & Operations Department. If there are any questions, follow-up comments, or concerns please contact us, at BET&R, at your earliest convenience.

REGARDING THIS REPORT

On-Site Survey, Report, Conclusions and Recommendations:
This report, including our assessments, initial conclusions and recommendations, is based upon observations of the visible and apparent conditions of the building, and the primary exterior components viewed on the date of the initial roof survey. Although care has been taken in the performance of the survey, Building Envelope Technology & Research, Inc. (BET&R) makes no representations regarding other latent or concealed defects that may exist, and no warranty or guarantee is expressed or implied.

This report is made in the careful exercise of our technical ability, experience, industry exposure, education, and observations of aspects of the building envelope construction that was previously designed and built by others. Please understand that future temperature and weather conditions, additional condensation, moisture migration, and potential leakage into building envelope systems, and compounding conditions (e.g., wetting and drying, freeze-thaw cycling, etc.) can alter the useful life of any item or exterior building component. The weather exposure, faulty and or previous generations of manufacturing technology and/or defective design, deficient construction, unfavorable conditions and poor installation, natural disasters (e.g., high-wind events, earthquakes, etc.), use and misuse, irregularity of servicing, and unforeseen circumstances make it impossible to state precisely when each window or building envelope component will require replacement.

Moisture Intrusion, Mold Growth, and Human Exposure to Mold:
Persistent moisture intrusion, repetitive wetting, and/or condensation, along with the resulting elevated moisture content and relative humidity in some situations can lead to the proliferation of biological and/or fungal growth (e.g., mold) and other potentially hazardous contaminants, release of spores, and/or can spread fungus into interior spaces, which can lead to allergic reactions in susceptible individuals, as well as other potential problems (hypersensitivity, breathing issues, etc.).

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Limitations:
The initial site visit and limited preliminary survey and this draft summary report is prepared for the exclusive use of the named Client. In preparing this Summary Report for the named Client, the author assumes no duty to lenders or other parties, none of whom are authorized to rely on its contents.

Photographs were shot with the intent to document observed conditions and to help the Client understand the actual conditions observed on-site. These photographs were also shot to show example areas, specific locations, related conditions and situations; they are not inclusive of every condition or situation, but of general/typical conditions, and certain specific conditions.

Right to Add to, Amend, or Revise Report:
Building Envelope Technology & Research (BET&R) reserves the right to add to, amend, or revise this report and our opinions and recommendations should new information be obtained or new facts come to light.

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COST GROUP

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE

ESTIMATE ISSUE DATE: **August 28, 2024**
ESTIMATE REVISION: **FINAL SUBMISSION DRAFT REV 4**

Submitted To:

CAROLINE LEMAY
BASSETTI ARCHITECTS
71 COLUMBIA STREET, SUITE 500
SEATTLE, WA 98104

BAINBRIDGE ISLAND, WA | TACOMA, WA | **PORTLAND, OR** | **www.rccostgroup.com**

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE

CLARIFICATIONS AND ASSUMPTIONS

RC Cost Group Estimating Team:

- Lead Estimator: Tim Casad
- Architectural: Tim Casad
- Structural: Tim Casad
- Mechanical: Mechanical Engineer - METRIX
- Electrical: Electrical Engineer - TFWB
- Civil: Civil Engineer - CPL
- Structural: Structural Engineer - PCS
- Geotechnical: Geotechnical Engineer - AESI
- Landscape: Landscape Architect - TBD
- QA/QC: Andy Cluness

Exclusions from Construction Cost:

- Design fees
- Owners administration costs
- Building and land acquisition fees
- Legal and accounting fees
- Removal of unforeseen underground obstructions
- Owner's furniture, furnishings and equipment
- Owners supplied materials
- Moving owners equipment and furniture
- Compression of schedule, premium or shift work
- Assessments, finance, legal and development charges
- Builder's risk, project wrap-up and other owner provided insurance program
- Washington State Sales Tax
- AV Equipment

Assumption used in establishing the estimate:

- The project will be procured utilizing the GCCM Project Delivery Method
- Construction Start Date: TBD by SPS
- Escalation has been included to February 1, 2025 - 7 months
- Estimating / Design Contingency is included at 17% aggregate - 15% base (historic renovation) and 2% Landmarks
- Open and competitive bidding among all portions of the work

Items that may affect the cost estimate:

- Modifications to the scope of work included in this estimate.
- Special phasing requirements other than mentioned above.
- Restrictive technical specifications or excessive contract conditions.
- Any non-competitive bid situations.
- Bids delayed beyond the projected schedule.

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE

Date: **August 28, 2024**

COST GROUP

OVERALL SUMMARY CONSTRUCTION COST

		GFA	$/SF	$
Building		110,235 SF	625.64	68,967,841
Additional Building Area Per Design Team Direction		3,000 SF	625.64	1,876,931
Covered Play		3,000 SF	166.60	499,800
Sitework		174,343 SF	39.57	6,899,135
Frontage Improvements				612,314
Building Demolition and Abatement		42,532 SF	34.62	1,472,604
DIRECT COST OF WORK		**113,235 SF**	**709.40**	**80,328,626**
Insurance and Bonds	1.25%			1,004,108
SUBTOTAL		**113,235 SF**	**718.26**	**81,332,733**
Design/Estimating Contingency - Historic Renovation	15.00%			12,199,910
Landmarks Designation Contingency	2.00%			1,626,655
SUBTOTAL		**113,235 SF**	**840.37**	**95,159,298**
GCCM Contingency	3.00%			2,854,779
GCCM Overhead and Profit	4.00%			3,806,372
Specified General Conditions	3.25%			3,092,677
Negotiated Support Services	4.50%			4,410,633
Negotiated Support Services - tenting for weather protection during installation of weather sensitive materials	1.25%			1,189,491
SUBTOTAL		**113,235 SF**	**1,002.52**	**110,513,251**
Escalation: February 2025 @ 5.00% per Annum	2.46%			2,713,787
TOTAL CONSTRUCTION COST		**113,235 SF**	**999.93**	**113,227,038**

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE **DATE:** **August 28, 2024**

RC COST GROUP

BUILDING DATA

Building Area:	**NEW**	
Basement (called Level 1)		
Level 1	27,048 SF	
Covered Play	3,000 SF	NOT INCLUDED IN GSF
Level 2	39,555 SF	
Level 3	24,801 SF	
Level 4	18,565 SF	
BASSETTI SF ADJUSTMENT	266 SF	
Total Gross Floor Area	**110,235 SF**	
Level 2 Mechanical Area "Enclosed"	2,357 SF	
Level 3 Mechanical Area "Enclosed"	6,911 SF	
Total Unoccupied Space (Excluded from GFA)	**9,268 SF**	

		Quantity	**Unit**	**Ratio to Gross Area**
Number of stories (x1,000)		4	EA	0.036
Gross Area		110,235	SF	1.000
Enclosed Area		107,235	SF	0.973
Footprint Area		40,671	SF	0.369
Suspended Slab		78,832	SF	0.715
Gross Wall Area		72,665	SF	0.659
Retaining Wall Area (Excludes Stem Walls)		5,710	SF	0.052
Opaque Finished Wall Area		49,706	SF	0.451
Windows or Glazing Area	23.74%	17,249	SF	0.156
Roof Area		42,743	SF	0.388
Roof Glazing Area		900	SF	0.008
Interior Partition Length		8,305	LF	0.075
Interior Doors Per Leaf		158	EA	0.001
Interior Glazing		3,500	SF	0.032
Finished Area		107,235	SF	0.973
Elevators (x10,000)		4	FLR	0.036

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
BUILDING SUMMARY

GROSS FLOOR AREA: 110,235 SF
DATE: August 28, 2024

RC COST GROUP

No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL	COST PER SF
A10	FOUNDATIONS		$ 2,235,310	$ 20.28
A1010	Standard Foundation	$ 1,983,310	$ 17.99	
A1020	Special Foundation	$ 252,000	$ 2.29	
A20	BASEMENT WALL CONSTRUCTION		$ 3,984,585	$ 36.15
A2010	Walls For Subgrade Enclosures	$ 3,984,585	$ 36.15	
A40	SLAB ON GRADE		$ 770,094	$ 6.99
A4010	Slab on grade	$ 770,094	$ 6.99	
A60	WATER AND GAS MITIGATION		$ 116,666	$ 1.06
A6010	Building Subdrainage	$ 116,666	$ 1.06	
A90	SUBSTRUCTURE RELATED ACTIVITIES		$ -	$ -
A9010	Substructure Excavation	$ -	$ -	
B10	SUPERSTRUCTURE		$ 9,889,167	$ 89.71
B1010	Floor Construction	$ 6,205,963	$ 56.30	
B1020	Roof Construction	$ 3,067,129	$ 27.82	
B1080	Stairs	$ 616,075	$ 5.59	
B20	EXTERIOR ENCLOSURE		$ 9,642,941	$ 87.48
B2010	Exterior Walls	$ 6,679,332	$ 60.59	
B2020	Exterior Windows	$ 2,549,559	$ 23.13	
B2050	Exterior Doors and Grilles	$ 258,700	$ 2.35	
B2070	Exterior Louvers and Vents	$ 13,600	$ 0.12	
B2080	Exterior Wall Appurtenances	$ 141,750	$ 1.29	
B30	ROOFING		$ 2,639,921	$ 23.95
B3010	Roofing	$ 2,305,028	$ 20.91	
B3020	Roof Appurtenances	$ 179,169	$ 1.63	
B3040	Traffic Bearing Horizontal Enclosures	$ 32,973	$ 0.30	
B3060	Horizontal Opening	$ 93,000	$ 0.84	
B3080	Overhead Exterior Enclosures	$ 29,750	$ 0.27	
C10	INTERIOR CONSTRUCTION		$ 6,248,221	$ 56.68
C1010	Partitions	$ 2,622,082	$ 23.79	
C1020	Interior Windows	$ 663,000	$ 6.01	
C1030	Interior Doors	$ 960,394	$ 8.71	
C1070	Interior Ceiling Construction	$ 216,825	$ 1.97	
C1090	Interior Specialties	$ 1,785,919	$ 16.20	
C20	INTERIOR FINISHES		$ 5,395,677	$ 48.95
C2010	Wall Finishes	$ 3,043,256	$ 27.61	

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
BUILDING SUMMARY

GROSS FLOOR AREA: 110,235 SF
DATE: August 28, 2024

RC COST GROUP

No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL	COST PER SF
C2030	Flooring	$ 1,512,379	$ 13.72	
C2040	Stair Finishes	$ 51,840	$ 0.47	
C2050	Ceiling Finishes	$ 788,203	$ 7.15	
D10	CONVEYING		$ 340,000	$ 3.08
D1010	Vertical Conveying Systems	$ 340,000	$ 3.08	
D20	PLUMBING		$ 2,767,975	$ 25.11
D2010	Plumbing	$ 2,767,975	$ 25.11	
D30	HVAC		$ 11,121,487	$ 100.89
D3010	HVAC (including geothermal loop system)	$ 11,121,487	$ 100.89	
D40	FIRE PROTECTION		$ 637,284	$ 5.78
D4010	Sprinkler System	$ 637,284	$ 5.78	
D50/60/70	ELECTRICAL		$ 9,271,926	$ 84.11
D5010	Electrical	$ 8,587,785	$ 77.90	
D6010	Communications	In Below	$ -	
D7010	Electronic Safety and Security	$ 684,141	$ 6.21	
E10	EQUIPMENT		$ 1,179,200	$ 10.70
E1010	Vehicle and Pedestrian Equipment	$ 1,400	$ 0.01	
E1030	Commercial Equipment	$ 700,000	$ 6.35	
E1040	Institutional Equipment	$ 24,000	$ 0.22	
E1060	Residential Equipment	$ 32,300	$ 0.29	
E1070	Entertainment and Recreational Equipment	$ 421,500	$ 3.82	
E20	FIXED FURNISHINGS		$ 2,727,389	$ 24.74
E2010	Fixed Furnishings	$ 2,727,389	$ 24.74	
	Sub-Total Direct Cost		**$ 68,967,841**	**$ 625.64**

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE *Gross Floor Area:* **110,235 SF**
NEW AND MODERNIZATION DETAIL *Date:* **August 28, 2024**

RC COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS

ELEMENT A - SUBSTRUCTURE

A10	**FOUNDATIONS**				
A1010	**Standard Foundation**				
	A1010.101 Building Foundations				
	Reinforced concrete continuous wall footings -24" strip at exterior walls				
	Excavate for continuous footings	277	CY	45.00	12,480
	Backfill, assume imported fill	55	CY	65.00	3,605
	Disposal of excavated material off-site, assumed a 25% swell factor	347	CY	55.00	19,067
	Fine grade bottom of footing	3,744	SF	1.02	3,819
	Formwork to foundations - sides	3,744	SF	11.88	44,479
	Reinforcing steel in foundations	27,733	LB	1.85	51,307
	Concrete, 3,000 psi	139	CY	335.00	46,453
	Finish to top of footing	1,872	SF	1.05	1,966
	Reinforced concrete continuous wall footings - retaining walls				
	Excavate for continuous footings	182	CY	45.00	8,200
	Backfill, assume imported fill	36	CY	65.00	2,369
	Disposal of excavated material off-site, assumed a 25% swell factor	228	CY	55.00	12,528
	Fine grade bottom of footing	1,968	SF	1.02	2,007
	Formwork to foundations - sides	1,968	SF	11.88	23,380
	Reinforcing steel in foundations	21,867	LB	1.85	40,453
	Concrete, 3,000 psi	109	CY	335.00	36,627
	Finish to top of footing	984	SF	1.05	1,033
	Reinforced concrete continuous wall footings - retaining wall at existing building - (**per PCS**)				
	Excavate for continuous footings	1,207	CY	45.00	54,320
	Backfill, assume imported fill	241	CY	65.00	15,692
	Disposal of excavated material off-site, assumed a 25% swell factor	1,509	CY	55.00	82,989
	Fine grade bottom of footing	4,074	SF	1.02	4,155
	Formwork to foundations - sides	873	SF	11.88	10,371
	Reinforcing steel in foundations	32,333	LB	1.85	59,817
	Concrete, 3,000 psi	162	CY	335.00	54,158
	Finish to top of footing	2,910	SF	1.05	3,056
	Reinforced concrete BRB footings, 30'0"x8'-0" Wide x 5'-0" Deep (**per PCS**)				
	Excavate for BRB footings (assume 18 each)	800	CY	45.00	36,000
	Backfill, assume imported fill	160	CY	65.00	10,400
	Disposal of excavated material off-site, assumed a 25% swell factor	1,000	CY	55.00	55,000
	Fine grade bottom of footing	7,344	SF	1.02	7,491
	Formwork to foundations - sides w/waste	6,840	SF	11.88	81,259
	Reinforcing steel in foundations (300#/CY)	160,000	LB	1.85	296,000
	Concrete, 3,000 psi	800	CY	335.00	268,000
	Finish to top of footing	3,420	SF	1.05	3,591
	A1010.30 Column Foundations				
	Redundant load path at existing building - assume 20 columns				
	Demo floors for new foundations (including disposal)	20	EA	750.00	15,000
	Excavate for spread footings	37	CY	45.00	1,667
	Backfill, assume imported fill	7	CY	65.00	481
	Disposal of excavated material off-site, assumed a 25% swell factor	46	CY	55.00	2,546
	Fine grade bottom of footing	500	SF	1.02	510
	Formwork to foundations - sides	800	SF	12.00	9,600
	Reinforcing steel in foundations	8,200	LB	1.85	15,170
	Concrete, 3,000 psi	41	CY	335.00	13,648
	Finish to top of footing	500	SF	1.05	525
	Reinforced concrete spread footings - 5x5x18" (assume 100 each)				
	Excavate for spread footings	139	CY	45.00	6,250
	Backfill, assume imported fill	28	CY	65.00	1,806
	Disposal of excavated material off-site, assumed a 25% swell factor	174	CY	55.00	9,549
	Fine grade bottom of footing	3,600	SF	1.02	3,672
	Formwork to foundations - sides	3,000	SF	11.88	35,640
	Reinforcing steel in foundations	30,556	LB	1.85	56,528
	Concrete, 3,000 psi	153	CY	335.00	51,181
	Finish to top of footing	1,350	SF	1.05	1,418
	Reinforced concrete spread footings - 7x7x18" (assume 45 each)	-			
	Excavate for spread footings	123	CY	45.00	5,513
	Backfill, assume imported fill	25	CY	65.00	1,593

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RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Disposal of excavated material off-site, assumed a 25% swell factor	153	CY	55.00	8,422
	Fine grade bottom of footing	3,645	SF	1.02	3,718
	Formwork to foundations - sides	1,890	SF	11.88	22,453
	Reinforcing steel in foundations	26,950	LB	1.85	49,858
	Concrete, 3,000 psi	135	CY	335.00	45,141
	Finish to top of footing	2,205	SF	1.05	2,315
	A1013 Perimeter drainage and insulation				
	Perimeter drain pipe and rock	1,200	LF	29.45	35,340
	Perimeter insulation, rigid	2,400	SF	5.05	12,120
	Miscellaneous				
	Elevator pit	1	EA	17,970.00	17,970
	Add for step footings	16	EA	2,500.00	40,000
	Set anchor bolts and grout base plates	580	EA	175.00	101,500
	Structural Fill allowance - general @ 1'0"	1,002	CY	60.00	60,107
	Total For Standard Foundations				**1,983,310**
A1020	**Special Foundation**				
	A1020.10 Compact Aggregate Piers				
	Micro piles at Existing Building New Shear Walls	24	EA	8,500.00	204,000
	A1020.70 Pile Caps				
	Added concrete for micro piles at Existing Building - New Shear Walls	24	EA	2,000.00	48,000
	A1020.80 Grade Beams				
	No work anticipated - geotech references micropiles				N/A
	Total For Special Foundations				**252,000**
A20	**SUBGRADE ENCLOSURES**				
A2010	**Walls for Subgrade Enclosures**				
	A2010.10 Subgrade Wall Construction				
	Excavate for basement retaining walls	1,749	CY	45.00	78,720
	Disposal of excavated material off-site, assumed a 25% swell factor	2,187	CY	55.00	120,267
	Structure backfill and compaction				
	Backfill, assume imported fill	875	CY	65.00	56,853
	Shoring				
	At existing wall of 1919 building	2,400	SF	24.00	57,600
	Wall construction				
	Concrete retaining wall, 12" - basement walls	5,710	SF	90.00	513,900
	Concrete shear walls at existing building - 14" per PCS	5,850	SF	100.00	585,000
	Concrete stem walls at new building	1,872	SF	75.00	140,400
	Shear walls at new building - assumed in superstructure costs	-	SF	90.00	
	Reinforcing Steel basement walls	42,296	LB	1.85	78,248
	Reinforcing Steel - shear walls at existing building - 14" per PCS	54,167	LB	1.85	100,208
	Reinforcing Steel - stem walls	13,867	LB	1.85	25,653
	Below Grade Waterproofing				
	A2010.901 Positive Side Waterproofing - Elevator Pit				
	Two ply Preprufe 800PA	128	SF	30.00	3,840
	Molded Drainage Panel	128	SF	6.50	832
	Protection Board	128	SF	3.00	384
	Free Draining Backfill	5	CY	65.00	308
	A2010.901 Positive Side Waterproofing - Spread Footings/Slab				
	Single ply Preprufe 300	27,899	SF	40.00	1,115,960
	A2010.901 Positive Side Waterproofing - Foundations				
	Two ply Preprufe 800PA	9,121	SF	30.00	273,630
	Molded Drainage Panel	9,121	SF	6.50	59,287
	Protection Board	9,121	SF	3.00	27,363
	Free Draining Backfill	338	CY	65.00	21,958
	A2010.902 Blind Side Waterproofing - Vertical Walls				
	Two ply Preprufe 800PA	7,582	SF	30.00	227,460
	Molded Drainage Panel	7,582	SF	6.50	49,283

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	Protection Board	7,582	SF	3.00	22,746
	Free Draining Backfill	281	CY	65.00	18,253
	A2010.902 Blind Side Waterproofing - All Foundations				
	Sheet Preprufe 300R Plus	9,121	SF	30.00	273,630
	Molded Drainage Panel	9,121	SF	6.50	59,287
	Free Draining Backfill	338	CY	65.00	21,958
	A2010.905 Perimeter Insulation				
	Rigid Insulation - Perimate XPS @	7,582	SF	6.80	51,558
	Total For Subgrade Enclosures				**3,984,585**
A40	**SLAB ON GRADE**				
A4010	**Standard Slab on Grade**				
	Slab on Grade				
	A4010 Standard slab on grade				
	Reinforced concrete slab on grade, 4" WWM	33,478	SF	12.00	401,736
	Finish grade	33,478	SF	1.00	33,478
	Slab base/capillary break @ 8"	914	CY	100.00	91,383
	Excess concrete for waterproofing	250	CY	293.65	73,413
	Excavation	1,240	CY	45.00	55,797
	Disposal of excavated material off-site, assumed a 25% swell factor	1,550	CY	55.00	85,245
	A1034 Trenches, pits and bases				
	Pads & Thickening allowance	33,478	SF	0.30	10,043
	Thickened slab at stairs	4	EA	1,200.00	4,800
	A4090.10 Perimeter Insulation				
	Rigid Insulation - Rigid XPS	2,840	SF	5.00	14,200
	Total For Slab on Grade				**770,094**
A60	**WATER AND GAS MITIGATION**				
A6010	**Building Subdrainage**				
	4" Perforated Pipe	6,087	LF	6.00	36,521
	Geotextile Fabric	33,478	SF	1.00	33,478
	Excavation	451	CY	45.00	20,290
	Backfill Crushed Rock	406	CY	65.00	26,377
	Total For Water and Gas Mitigation				**116,666**
A90	**SUBSTRUCTURE RELATED ACTIVITIES**				
A9010	**Substructure Excavation**				
	Total For Substructure Related Activities				
	ELEMENT B - SHELL				
B10	**SUPERSTRUCTURE**				
B1010	**Floor Construction**				
	B1010.10 Floor Structural Frame				
	Redundant load path - existing building				
	- HSS 10x10x1/2	59,184	LB	3.85	227,858
	Misc. structural steel/plates/connections @ 20%	11,837	LB	4.35	51,490
	URM reinforcement - existing building				
	- Miscellaneous (see exterior walls for 18 ga wall construction URM improvement)	24,000	SF	3.50	84,000
	B1010.10 Floor Structural Frame - 1st				
	Superstructure floor system complete	86,235	SF	55.00	4,742,925
	B1010.90 Floor Construction Supplementary Components				
	Fireproofing - new build	109,969	SF	10.00	1,099,690
	Total For Floor Construction				**6,205,963**
B1020	**Roof Construction**				

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	B1020.10 Roof Structural Frame				
	Reinforce timber attic				
	Wood shear walls to brace timber roof	1,000	SF	15.00	15,000
	Simpson connectors	1,000	SF	5.00	5,000
	Supplement existing trusses	8,000	SF	12.00	96,000
	Superstructure - roof system complete	86,235	SF	33.00	2,845,755
	Entry canopy - prescribed	450	SF	215.00	96,750
	B1020.90 Roof Construction Supplementary Components				
	Firestopping	86,235	SF	0.10	8,624
	Total For Roof Construction				**3,067,129**
B1020	**Stairs**				
	B1080.10 Stair Construction				
	Stair Construction - Stair Type 1 (Back of house/exit)				
	Stairs, 6'-0" wide including finish	80	RSR	810.00	64,800
	Landings	320	SF	150.00	48,000
	Stair Construction - Stair Type 3 - Feature Stair				
	Stairs, 6'-0" wide including finish	40	RSR	1,335.00	53,400
	Landings	160	SF	250.00	40,000
	Stair Construction - Stair - Amphitheater seating stairs (Learning Commons)				
	Stairs, 20'-0" wide including finish	20	RSR	5,340.00	106,800
	Stairs, 5'-0" wide including finish	20	RSR	1,335.00	26,700
	Landings	20	SF	250.00	5,000
	B1080.50 Stair Railings				
	Decorative Metal Railings - Feature Stair	72	LF	550.00	39,600
	Decorative Metal Railings (Primary Use and Learning Stairs)	216	LF	350.00	75,600
	Pipe and Tube Railings - Wall mount - Feature Stair	72	LF	325.00	23,400
	Pipe and Tube Railings - Wall mount	216	LF	225.00	48,600
	Decorative Metal Railings - Learning Stair	144	LF	550.00	79,200
	Stage step railings	3	LF	225.00	675
	B1080.80 Ladders				
	Ship's Ladders - Type 1	1	EA	1,800.00	1,800
	Roof access Ladders - Type 2	1	EA	2,500.00	2,500
	Total For Stairs				**616,075**
B20	**EXTERIOR VERTICAL ENCLOSURES**				
B2010	**Exterior Walls**				
	B2010.001 Exterior masonry wall construction				
	Reinforce URM with 18 ga steel stud framing w/anchor bolts and epoxy	14,400	SF	22.00	316,800
	Other wall components - vapor barrier, spray insulation, int. GWB	14,400	SF	24.00	345,600
	B2010.001 Exterior masonry wall construction				
	Brick veneer-running bond	23,215	SF	52.00	1,207,165
	Framing systems at masonry- adjustable thermal veneer anchor, mineral wool board, fluid applied air barrier, 1/2" ext. sheathing, metal stud framing, batt insulation, spray insulation, int. GWB	23,215	SF	45.00	1,044,662
	Stainless steel ties/flashings	23,215	SF	4.00	92,859
	Frame rough openings-louvers, glazed area, doors	23,215	SF	1.00	23,215
	Masonry sealing	23,215	SF	2.20	51,072
	Anti-graffiti coatings	23,215	SF	7.00	162,503
	B2010.002 Exterior metal panel wall construction				
	Vertical Metal panel sidings	3,627	SF	62.00	224,893
	Framing systems at metal panels- thermal spacer 3", mineral wool board, fluid applied air barrier, 1/2" ext. sheathing, metal stud framing, batt insulation, spray insulation, int. GWB	3,627	SF	45.00	163,229

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	Frame rough openings-louvers, glazed area, doors	3,627	SF	1.00	3,627
	B2010.003 Structural Exterior masonry wall construction (Gyms, Theater and other large volume areas)				
	Brick veneer-running bond	8,464	SF	52.00	440,128
	Structural wall components - 12x8x16 CMU	8,464	SF	35.00	296,240
	Stainless steel ties/flashings	8,464	SF	4.00	33,856
	Framing systems at masonry- adjustable thermal veneer anchor, mineral wool board, fluid applied air barrier, 1/2" ext. sheathing, metal stud framing, batt insulation, spray insulation, int. GWB	8,464	SF	45.00	380,880
	Frame rough openings-louvers, glazed area, doors	8,464	SF	1.00	8,464
	Masonry sealing	8,464	SF	2.20	18,621
	Anti-graffiti coatings	8,464	SF	7.00	59,248
	B2010.50 Parapets				
	Building-Furring strips, blocking , sheathing, vapor retarder, cover board and roofing membrane, brick veneer	9,100	SF	84.00	764,400
	Building-Metal coping	2,275	LF	60.00	136,500
	Allowance for more/larger vestibules per 11/7/23 meeting	1	LS	50,000.00	50,000
	B2010.90 Exterior Wall Supplementary Components				
	Expansion Joints	300	LF	300.00	90,000
	Firestopping	110,235	SF	0.25	27,559
	Expansion Control Covers	300	LF	25.00	7,500
	Silyl Sealant	18,921	SF	1.00	18,921
	Water Repellent	18,921	SF	2.00	37,842
	Anti graffiti coating	18,921	SF	7.00	132,447
	Masonry Restoration	18,921	SF	15.00	283,815
	Masonry Cleaning	18,921	SF	3.00	56,763
	Lintels (allowance for replacement)	18,921	SF	2.00	37,842
	Sheet Metal Flashing and Trims	18,921	SF	1.00	18,921
	Joint Sealants	18,921	SF	2.00	37,842
	Silyl Sealant - New building	35,306	SF	1.00	35,306
	Joint Sealants - new building	35,306	SF	2.00	70,612
	Total For Exterior Walls				**6,679,332**
B2020	**Exterior Windows**				
	B2020.10 Exterior Window Restoration				
	Historic Windows - Removal	2,908	SF	35.00	101,780
	Historic Windows - Restoration of existing main entrance door	1	EA	7,500.00	7,500
	B2020.20 Exterior Windows				
	Metal Clad Wood Windows (KOLBE)	2,908	SF	175.00	508,900
	Window Flashings	2,908	SF	12.00	34,896
	Shims	2,908	SF	1.00	2,908
	Water Intrusion Control (window wrap)	2,908	SF	3.00	8,724
	B2010.002 Fabricated Exterior Wall Assemblies				
	Aluminum Curtain Wall - 3 coat PVDF finish - Elementary (900 SF)	900	SF	150.00	135,000
	Storefront entrances and windows - 3 coat PVDF finish - double glazed	10,339	SF	125.00	1,292,357
	Storefront entrances and windows - 3 coat PVDF finish - triple glazed	2,585	SF	150.00	387,707
	Storefront entrances and windows - 3 coat PVDF finish - operable @ 5%	517	SF	135.00	69,787
	Total For Exterior Windows				**2,549,559**
B2050	**Exterior Doors and Grilles**				
	B2050.10 Exterior Doors				
	Aluminum glazed door, double, 6'-0" x 7'-0"	7	EA	11,000.00	77,000
	Aluminum glazed door, single, 3'-0' x 7'-0"	5	EA	7,500.00	37,500
	HM doors, double, 6'-0" x 7'-0"	6	EA	6,400.00	38,400
	HM doors, single, 3'-0" x 7'-0"	11	EA	4,400.00	48,400
	Double door at mechanical penthouse, allow	1	EA	6,400.00	6,400
	Specialty hardware, rating, ADA, electric	1	LS	30,000.00	30,000
	B2050.30 Exterior Oversize Doors				
	Sectional Overhead Doors - allowed at back of house	120	SF	175.00	21,000
	Total For Exterior Doors and Grilles				**258,700**

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B2070	**B2070.10 Exterior louvers and vents**				
	Louvers (with insect and bird screening) (assume 8 5x4 louvers)	160	SF	85.00	13,600
	Total For Exterior Louvers and Vents				**13,600**
B2080	**B2080.30 Exterior Sun Control Devices**				
	Sunscreens - South facades @ 21 lineal feet per classroom - added per BA	315	LF	450.00	141,750
	Total For Exterior Sun Control Devices				**141,750**
B30	**EXTERIOR HORIZONTAL ENCLOSURES**				
B3010	**B3010.101 Steep Slope Asphalt Shingle Roofing (Lowell 1919 Historic Roof)**				
	Asphalt shingle roofing	9,770	SF	14.00	136,786
	Roof underlayment	9,770	SF	2.00	19,541
	Ice and Water Shield	9,770	SF	3.00	29,311
	Cover Board	9,770	SF	1.50	14,656
	Roof Insulation R38	9,770	SF	5.00	48,852
	Roof Vapor Retarder	9,770	SF	2.00	19,541
	Roof Deck Sheathing (per Structural)	9,770	SF	15.00	146,556
	Ridge vents (including slopes)	300	LF	15.00	4,500
	Sheet Metal Flashing and Trim	9,770	SF	6.50	63,508
	B3010.502 Low Slope Roofing - APP Modified Bitumen				
	3 ply modified roof membrane system including vapor barrier, thermal barrier board 5/8", cover board 1/4" and R-38 polyiso insulation 12" with staggered layers, complete	32,973	SF	45.00	1,483,785
	B3010.90 Roofing Supplementary Components				
	Sheet Metal Flashing and Trim	32,973	SF	6.50	214,325
	Downspouts	18	EA	640.00	11,520
	Thru wall scuppers	18	EA	735.00	13,230
	PV System Requirements - boots/waterproofing/etc.	32,973	EA	3.00	98,919
	Caulking, sealants, and firestopping	32,973	GFA	1.00	32,973
	Rough Carpentry	32,973	GFA	1.00	32,973
	Total For Steep Slope Asphalt Shingles				**2,305,028**
B3020	**B3020.10 Roof Accessories**				
	Fall protection system	32,973	SF	3.00	98,919
	Fall protection anchors (at 1919 building)	9,770	SF	3.00	29,310
	Roof Ladders	1	EA	2,500.00	2,500
	Roof Curbs - allowed	4	EA	1,500.00	6,000
	PV Stanchions/System	121	KW	350.00	42,440
	B3020.70 Rainwater Management (see B3010.90)				
	Total For Roof Accessories				**179,169**
B3040	**B3040.50 Wear Surfaces**				
	Walk Pads	32,973	SF	1.00	32,973
	Total For Traffic Bearing Horizontal Enclosures				**32,973**
B3060	**B3060.10 Roof Windows and Skylights**				
	Skylights - standard premanufactured skylights	900	SF	85.00	76,500
	B3060.50 Vents and Hatches				
	Roof Smoke Vents (theater and Stage)	3	EA	2,000.00	6,000
	Roof Hatches	3	EA	3,500.00	10,500
	Total For Exterior Horizontal Openings				**93,000**
B3080	**B3080.20 Exterior Soffits**				
	Metal soffit panel on metal stud framing including insulation, type C5	350	SF	85.00	29,750
	Total For Overhead Exterior Enclosures				**29,750**

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	ELEMENT C - INTERIORS				
C10	INTERIOR CONSTRUCTION				
C1010	**Partitions**				
	C1010.001 - Interior Fixed partitions				
	Corridor partitions including stud framing, batt insulation and GWB x3	40,086	SF	22.00	881,892
	Standard partitions including stud framing, batt insulation and GWB x2	26,132	SF	18.00	470,376
	Partitions including stud framing, batt insulation and GWB x1	19,911	SF	16.00	318,576
	Partitions at gymnasium/commons interior walls (impact resistant GWB)	4,736	SF	36.00	170,496
	Partitions at gymnasium and commons above sliding wall and double height locations	1,040	SF	29.00	30,160
	Partitions at existing walls (furring and 1 layer GWB)	5,710	SF	16.00	91,360
	C1010.002 - Interior CMU Partitions with GWB Finish				
	GWB one side only @ existing exterior walls	7,674	SF	10.00	76,740
	C1010.105 - Interior Fixed Partitions				
	Shaft Wall Systems	2,004	SF	33.00	66,132
	Furred Chase partition at classrooms for displacement ventilation	2,835	SF	29.00	82,215
	C1010.501 - Interior Operable Partitions				
	Folding panel partitions				
	- Elementary - Stage Proscenium opening	480	SF	240.00	115,200
	- Elementary - gym	1,260	SF	240.00	302,400
	C1010.901 - Interior Partition Supplementary Components				
	Firestopping	110,235	SF	0.15	16,535
	Total For Partitions				**2,622,082**
C1020	**Interior Windows**				
	C1020.101 - Interior Sliding Windows				
	Passthrough Windows at Registrar and Bookkeeping	2	EA	2,250.00	4,500
	C1020.102 - Interior Sound Windows				
	Krieger Dual Glazed Sound Windows at Practice Rooms	60	SF	350.00	21,000
	C1020.201 - Interior Fixed Windows				
	Interior glazing - prescribed	2,500	SF	115.00	287,500
	Nana Wall allowance	1,000	SF	350.00	350,000
	Total For Interior Windows				**663,000**
C1030	**Interior Doors**				
	C1030.101 - Interior Steel Doors				
	HM doors, double, 6'-0" x 7'-0"	3	EA	6,300.00	18,900
	HM doors, single, 3'-0" x 7'-0"	12	EA	4,300.00	51,600
	Specialty hardware	1	LS	7,500.00	7,500
	C1030.101 - Interior Alum Doors				
	Aluminum Interior Doors 6'0x7'0	6	EA	7,000.00	42,000
	Specialty hardware	1	LS	3,000.00	3,000
	C1030.101 - Interior Flush Wood Doors				
	Solid core wood / HM doors, double, 6'-0" x 7'-0"	1	EA	6,200.00	6,200
	Solid core wood / HM doors, single, 3'-0" x 7'-0"	140	EA	4,200.00	588,000
	Specialty hardware	1	LS	70,500.00	70,500
	C1030.103 - Interior Sound Control Doors (Orchestra/Choir Entry, Practice Rooms, Ensemble Room, Drama Classroom)				
	Sound Control Doors	2	EA	15,000.00	30,000
	C1030.401 - Coiling Counter and Overhead Doors				
	Coiling counter door 30Wx10'H at Servery	300	SF	175.00	52,500
	Coiling counter door - Art	100	SF	175.00	17,500
	Coiling counter door 8'Wx4'H at tray return	32	SF	175.00	5,600
	C1030.801 - Interior Access Doors and Panels				
	Access Doors - 18x18 Non FR	20	EA	500.00	10,000
	Access Doors - 24x24 ceiling access	20	EA	650.00	13,000
	Miscellaneous				
	Blocking and backing	1	LS	44,094.00	44,094

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
NEW AND MODERNIZATION DETAIL

Gross Floor Area: **110,235 SF**
Date: **August 28, 2024**

RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Total For Interior Doors				**960,394**
C1070	**Interior Ceiling Construction**				
	C1070.201 - Suspended Plaster and GWB Ceilings (Locker Rooms and Restrooms)				
	GWB Ceiling - toilet rooms	4,103	SF	15.00	61,545
	GWB Ceiling - other hard lid areas - verify	1,765	SF	15.00	26,475
	Open to structure - storage/mechanical/gym	25,761	SF	5.00	128,805
	Total For Interior Ceiling Construction				**216,825**
C1090	**Interior Specialties**				
	C1090.201 - Markerboards				
	5x8 (1 each per teaching wall)	41	EA	2,300.00	94,300
	4x5 (2 each per teaching wall)	82	EA	1,500.00	123,000
	C1090.202 - Tackboards				
	4x8 Cork with aluminum frames - classrooms	41	EA	1,800.00	73,800
	4x8 Cork with aluminum frames - art rooms	1	EA	1,800.00	1,800
	4x8 Cork with aluminum frames - library (2 per)	2	EA	1,800.00	3,600
	4x8 Cork with aluminum frames - learning commons	12	EA	1,800.00	21,600
	C1090.203 - Interior Room ID				
	Room signs	175	EA	75.00	13,125
	C1090.204 - Exterior Room ID				
	Room signs	20	EA	75.00	1,500
	C1090.205 - Interior Directional Panel Signage				
	Allow 15 signs at 10 sf each	15	EA	500.00	7,500
	C1090.206 - Plaque Signage				
	Plaque	1	EA	2,500.00	2,500
	C1090.207 -Dimensional Letter Signage				
	Allow 50 characters at 6" tall	50	EA	150.00	7,500
	C1090.212 - Laminate Panel Wall Graphic				
	Allowance for 2,000 SF	2,000	SF	25.00	50,000
	C1090.25 - Compartments and Cubicles				
	ADA partitions	8	EA	7,500.00	60,000
	STD partitions	40	EA	7,000.00	280,000
	Cubicle curtain and track at Health Clinic Exam Rooms and cot room	2	EA	1,500.00	3,000
	PREMIUM FOR WALLED/TILED STALLS	48	EA	15,000.00	720,000
	C1090.35 - Wall and Door Protection				
	Exposed GWB in Corridors, Commons and Custodial Receiving	110,235	SF	0.50	55,118
	C1090.40 - Toilet, Bath and Laundry Accessories				
	Mirrors - single	22	EA	300.00	6,600
	Mirrors - gang	12	EA	1,500.00	18,000
	ADA Grab bars	34	EA	385.00	13,090
	PT Dispensers (FOIC)	46	EA	65.00	2,990
	Toilet Tissue Dispensers (FOIC)	46	EA	65.00	2,990
	Napkin/Tampon Dispensers	28	EA	1,200.00	33,600
	Napkin/Tampon Disposal	28	EA	125.00	3,500
	Soap Dispensers (FOIC)	34	EA	65.00	2,210
	Shower Rod	2	EA	125.00	250
	Towel Holders	46	EA	750.00	34,500
	Clothes Hooks	22	EA	75.00	1,650
	Mop and Broom Holders	4	EA	600.00	2,400
	Changing tables	6	EA	750.00	4,500
	C1090.60 - Safety Specialties				
	AED Unit (2 per floor)	8	EA	1,600.00	12,800
	AED Cabinet (2 per floor)	8	EA	400.00	3,200
	C1090.70 - Storage Specialties				
	Staff lockers, allow	1	LS	5,200.00	5,200
	Miscellaneous metals, allow 0.3#/SF	33,071	LB	3.50	115,747
	Ceiling hook for therapy swing	1	EA	850.00	850

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RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Projector ceiling mounts	1	LS	3,500.00	3,500
	Total For Interior Specialties				**1,785,919**
C20	**INTERIOR FINISHES**				
C2010	**Wall Finishes**				
	C2010.101Tile Wall Finishes				
	Ceramic Tile - only at single toilets and shower rooms	6,964	SF	24.00	167,136
	C2010.201 Plywood Wall Paneling (Chair storage, band instrument storage, gym storage)				
	Plywood paneling - gym storage only	781	SF	12.00	9,372
	C2010.202 MDF Wall Paneling (Corridors, Gymnasium, Fitness, stairs)				
	MDF Paneling - corridors	25,743	SF	35.00	901,005
	MDF Paneling - stairs	6,216	SF	35.00	217,560
	C2010.302 Tackable Wall Surface				
	Tackable Cork - Elementary				
	- 200 SF at (classrooms, Labs, Art and Music rooms) - 41 excludes early learning	8,200	SF	30.00	246,000
	- 128 SF at Learning Commons	1,280	SF	30.00	38,400
	- 7,500 SF at corridors	7,500	SF	30.00	225,000
	C2010.305 FRP Paneling (Janitor, 7' high at floor sinks and kitchen)				
	FRP Paneling	1,869	SF	19.00	35,511
	C2010.701 Interior Painting				
	Interior painting	110,719	GSF	5.50	608,955
	Interior painting - graphics allowance	1	LS	50,000.00	50,000
	C2010.801 Acoustical Diffuser Panels				
	Elementary school - prescribed	350	SF	25.00	8,750
	C2010.802 Acoustical Wall/Ceiling Treatment				
	Tectum - Elementary - 25% of wall area at music room, library	467	SF	52.00	24,297
	C2010.803 Acoustical Porous Fabric Facing				
	25% of wall area at Commons	1,871	SF	35.00	65,476
	C2010.804 Acoustical Wood Fiber Panels				
	Tectum - 25% of wall space in Gym, Aux Gym, Fitness, Weight Room, Scene Shop and Makerspace	2,213	SF	52.00	115,089
	Miscellaneous wall finishes and acoustical requirements - excess	110,235	GFA	3.00	330,705
	Total For Wall Finishes				**3,043,256**
C2030	**Floor Finishes**				
	C2030.101 Flooring Treatment				
	Densifier/Hardener at exposed concrete in labs, mechanical rooms, and utility rooms	13,784	SF	2.00	27,568
	C2030.102 Flooring Treatment				
	Penetrating Hardener/Densifier/Stain Repellent at exposed public concrete including Commons	24,226	SF	3.50	84,791
	C2030.102 Flooring Treatment				
	Penetrating Liquid and Moisture Mitigation at concrete prior to floor finishes	54,502	SF	3.00	163,506
	C2030.102 Flooring Treatment				
	Polished Concrete at Corridors and Commons	24,226	SF	12.00	290,712
	C2030.201 Tile Flooring				
	Ceramic Tile at restrooms	4,116	SF	24.00	98,784
	Ceramic Tile Base	1,535	LF	28.00	42,980
	C2030.202 Tile Flooring				
	Quarry Tile at kitchen and Servery	1,029	SF	26.00	26,754
	Quarry Tile at kitchen and Servery - Base	167	LF	32.00	5,344
	C2030.501 Resilient Flooring				
	Rubber Base	14,673	LF	4.00	58,692
	C2030.503 Resilient Flooring				

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LOWELL ELEMENTARY
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NEW AND MODERNIZATION DETAIL

Gross Floor Area: **110,235 SF**
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RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Marmoleum at Science labs and prep, CTE, Custodial, Storage, staff Lounge, Kitchenettes and Health Clinic	7,721	SF	14.00	108,094
	C2030.454 Wood Stage Flooring				
	New	1,043	SF	28.00	29,204
	C2030.750 Carpeting				
	Mannington Carthage Legacy at Classrooms, Special Ed., Admin, Library, Smal Group Rooms, Conference Rooms and Family/Community Room	45,738	SF	5.50	251,559
	C2030.801 Wood Athletic Flooring at MS and HS Gyms				
	Northern Maple floating system	6,443	SF	32.00	206,176
	Grace Florprufe	6,443	SF	5.00	32,215
	C2030.850 Entrance Flooring				
	Interior mats @ 200 SF at all entries	600	SF	50.00	30,000
	C2030.90 Floor Toppings				
	1/4" topping at all elevated wood floor at Lowell	16,000	SF	3.50	56,000
	Total For Floor Finishes				**1,512,379**
C2040	**C2040.50 Resilient stair Finish**				
	Treads and landings at all secondary egress stairs	1,620	SF	32.00	51,840
	Total For Stair Finishes				**51,840**
C2050	**C2050.201 Specialty Ceiling Paneling**				
	Woodworks at Commons typical @ 50%	2,307	SF	70.00	161,490
	C1070.101 - High Sound Absorbing Ceiling System (Classrooms, Labs, Corridors, Offices, Admin, Music and Small Group Rooms)				
	2x4 Optima lay in	68,995	SF	7.50	517,463
	C1070.103 - Scrubbable Acoustic Ceiling Panels (Kitchen/Servery)				
	2x4 Scrubbable	1,284	SF	10.00	12,840
	2x4 Scrubbable - Healthcare	1,991	SF	10.00	19,910
	C1070.104 - Fire Rated Acoustic Ceiling Panels (10' around Kitchen Exhaust)				
	Fire Rated panels	100	SF	15.00	1,500
	Misc. bulkheads, vertical soffits/ceiling transitions	1	LS	75,000	75,000
	Total For Ceiling Finishes				**788,203**
	ELEMENT D - SERVICES				
D1010	**D1010.101 Hydraulic Passenger Elevators**				
	Passenger elevator car including furnishing and installing car wall finishes, including trim, car floor finishes, car ceiling finishes, car door finishes, car door sills, car light fixtures, handrails, cutouts and other provisions for installing elevator signal equipment in car. Two stops.	4	FLR	85,000.00	340,000
	Total For Conveying Systems				**340,000**
D20	**PLUMBING**				
D2010	**Plumbing**				
	Plumbing estimate complete				
	Plumbing	110,719	GFA	25.00	2,767,975
	Total For Plumbing				**2,767,975**
D30	**HVAC**				
D3010	**HVAC**				
	HVAC complete (excluding geothermal loop system)				
	HVAC	110,235	GFA	87.00	9,590,445
	Geothermal wells	122	EA	12,500.00	1,531,042
	Total For HVAC				**11,121,487**
D40	**FIRE PROTECTION**				
D4010	**Fire Protection**				

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RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Permit, Mobilization, Submittals, Bond	110,235	GFA	0.20	22,047
	Wet Pipe Sprinkler System	110,235	GFA	5.50	606,293
	Fire department connections				
	Wall, 2-Way, 2-1/2" x 2-1/2" x 4", Cast brass	1	EA	685.00	685
	Backflow Preventers, Double Check, OS&Y, 6"	1	EA	8,259.00	8,259
	D4030.10 Fire Extinguishers				
	Cabinets	56	EA	650.00	36,400
	Extinguishers	56	EA	150.00	8,400
	Total For Fire Sprinkler System				**637,284**
D50	**ELECTRICAL**				
D5000	**Electrical**				
	Electrical estimate complete				
	New Construction	86,079	GFA	79.00	6,800,241
	Modernization	24,156	GFA	74.00	1,787,544
	Total For Electrical				**8,587,785**
	Security/Comms				
	Clock/Intercom - COMPLETE SYSTEM	1	LS	350,000.00	350,000
	New security system complete - control panel	1	EA	8,000.00	8,000
	New security system complete - devices	110,235	GFA	0.60	66,141
	New security system complete - access control (minimum x1.5)	12	DR	10,000.00	120,000
	New security system complete - cameras	40	EA	3,500.00	140,000
	Total For Security				**684,141**

ELEMENT E - EQUIPMENT AND SERVICES

E10	**EQUIPMENT**				
E1010	**Equipment**				
	E1010.501 Loading Dock Bumpers				
	Dock Bumpers	4	EA	350.00	1,400
	Total For Vehicle and Pedestrian Equipment				**1,400**
E1030	**E1010.80 Food Service Equipment**				
	Allowance for food service equipment - Elementary	1	EA	700,000.00	700,000
	Total For Commercial Equipment				**700,000**
E1040	**E1040.10 Educational and Scientific Equipment**				
	Projection Screen 16x12 - Draper - Elementary - Commons	1	EA	15,000.00	15,000
	Library Book Cart	2	EA	1,000.00	2,000
	Kiln with downdraft vent - 650 student ES and K-8 = 2 kilns	2	EA	3,500.00	7,000
	Total For Institutional Equipment				**24,000**
E1060	**E1060.10 Residential Appliances**				
	Staff lounge				
	- Refrigerators	2	EA	3,200.00	6,400
	- Range	1	EA	1,500.00	1,500
	- Range hood	1	EA	500.00	500
	- Microwaves	2	EA	300.00	600
	- dishwasher	1	EA	800.00	800
	Healthcare				
	- Under counter Refrigerator	1	EA	400.00	400
	- Ice Machine	1	EA	2,000.00	2,000
	Special Education				
	- Refrigerators	1	EA	3,200.00	3,200
	- Range	1	EA	1,500.00	1,500
	- Range hood	1	EA	500.00	500
	- Microwaves	1	EA	300.00	300
	- dishwasher	1	EA	800.00	800
	Childcare				

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RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	- dishwasher	1	EA	800.00	800
	- Refrigerators	1	EA	3,200.00	3,200
	- Microwaves	1	EA	300.00	300
	Family Room				
	- Refrigerators	1	EA	3,200.00	3,200
	- Range	1	EA	1,500.00	1,500
	- Range hood	1	EA	500.00	500
	- Microwaves	1	EA	300.00	300
	- dishwasher	1	EA	800.00	800
	- Washer/Dryer	1	EA	3,200.00	3,200
	Total For Residential Equipment				**32,300**
E1070	**E1070.10 Theater and Stage Equipment**				
	Elementary				
	- Stage Rigging and Drapery	1	EA	65,000.00	65,000
	- Cyclorama	1	EA	10,000.00	10,000
	- Stage lighting/AV	1	EA	75,000.00	75,000
	E1070.501 Ceiling suspended backstops				
	ES - provide 2 at main gym	2	EA	15,000.00	30,000
	E1070.502 Wall mounted backstops				
	ES - provide 4 at main gym	4	EA	7,500.00	30,000
	E1070.503 Gym Divider Curtains				
	Ceiling suspended power operated curtain at Main Gym	1	EA	55,000.00	55,000
	E1070.504 Vinyl Covered Wall Padding				
	Padding at gym - 2,700 SF	2,700	SF	45.00	121,500
	E1070.510 Climbing Wall				
	8x40 climbing wall - ES - 1 at gymnasium	1	EA	35,000.00	35,000
	Total For Entertainment and Recreational Equipment				**421,500**
E20	**FIXED FURNISHINGS**				
E2010	**FURNISHINGS**				
	E2010.20 Window Treatments				
	Manual Roller Shades Exterior windows except stairwells or corridors	12,924	SF	12.00	155,083
	Manual Blackout Roller Shades - Interior relites	1,000	SF	12.00	12,000
	Motorized Roller Shades - Exterior windows at Commons and Library - 175 lineal feet of wall @ 35% coverage	1,370	SF	25.00	34,256
	E2010.301 Reception Casework				
	Reception Casework - ES = 1 each	1	EA	35,000.00	35,000
	E2010.302 Library Shelving				
	Shelving - 650 student ES and K-8 = 800 LF open shelving	800	LF	55.00	44,000
	E2010.303 Music Education Storage (WENGER products)				
	Elementary				
	- Open shelving (32 LF)	32	LF	55.00	1,760
	- Percussion Cabinet	1	EA	3,500.00	3,500
	E2010.304 General Classroom Casework				
	Finish Carpentry - General Allowance	110,235	SF	6.00	661,410
	Teacher wardrobe at: General classrooms, science labs, CTE, Visual arts, Music and Special Education	52	EA	4,500.00	234,000
	Elementary				
	- General Classroom Base Cabinets (20 LF)	740	LF	450.00	333,000
	- General Classroom Upper Cabinets (20 LF)	740	LF	400.00	296,000
	- General Classroom Cubbies with hooks (30 LF)	1,110	LF	425.00	471,750
	- Childcare Base (12 LF)	36	LF	450.00	16,200
	- Childcare Uppers (12 LF)	36	LF	400.00	14,400
	- Childcare Cubbies with hook (30 LF)	90	LF	425.00	38,250
	- Childcare Office Base (10 LF)	30	LF	450.00	13,500
	- Special Ed Base (20 LF)	80	LF	450.00	36,000
	- Special Ed Uppers (20 LF)	80	LF	400.00	32,000
	- Countertop	886	LF	180.00	159,480
	- Family Room Base Cabinets	6	LF	450.00	2,700
	- Family Room Upper Cabinets	6	LF	400.00	2,400
	- Countertop	6	LF	180.00	1,080
	- Staff Room Base Cabinets	12	LF	450.00	5,400

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RC COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
- Staff Room Upper Cabinets	12	LF	400.00	4,800
- Countertop	12	LF	180.00	2,160
- Mail Room Base Cabinets	16	LF	450.00	7,200
- Mail Room Upper Cabinets	16	LF	400.00	6,400
- Countertop	34	LF	180.00	6,120
- Nurse/Healthcare Room Base Cabinets	6	LF	450.00	2,700
- Nurse/Healthcare Room Upper Cabinets	6	LF	400.00	2,400
- Countertop	6	LF	180.00	1,080
- Admin suite base	20	LF	450.00	9,000
- Admin suite uppers	16	LF	400.00	6,400
- Countertop	20	LF	180.00	3,600
- Lounge	12	LF	450.00	5,400
- Lounge	12	LF	400.00	4,800
- Countertop	12	LF	180.00	2,160
E2010.304 Glass Display Casework				
- Elementary - 4 each at 4'0"	4	EA	15,000.00	60,000
Total For Fixed Furnishings				**2,727,389**

SEATTLE PUBLIC SCHOOLS
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BEX VI CONCEPT ESTIMATE
COVERED PLAY

Date: **August 28, 2024**

RC COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Covered Play				
Foundation	3,000	SFA	25.00	75,000
Slab	3,000	SFA	12.00	36,000
Structural	3,000	SFA	65.00	195,000
Roofing/soffits	3,000	SFA	35.00	105,000
Painting structure	3,000	SFA	6.00	18,000
Bird netting at underside of structure	3,000	SFA	2.00	6,000
Electrical - lighting	3,000	SFA	12.00	36,000
Emergency storage and outdoor storage area	120	SFA	240.00	28,800
	Sub-Total			**499,800**

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
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BEX VI CONCEPT ESTIMATE
SITEWORK SUMMARY

DATE: August 28, 2024

RC COST GROUP

No.	ELEMENT DESCRIPTION	ELEMENT TOTAL	GROUP TOTAL
G10	SITE PREPARATION		$ 2,614,010
G1010	Site Clearing	$ 538,791	
G1020	Site Demolition and Relocation	$ 237,719	
G1070	Site Earthwork	$ 1,837,500	
G20	SITE IMPROVEMENTS		$ 1,982,427
G2010	Roadways	$ -	
G2020	Parking Lots	$ 106,272	
G2030	Pedestrian Plazas and Walkways	$ 472,484	
G2050	Athletic, Recreational and Playfields	$ 173,000	
G2060	Site Development	$ 702,709	
G2080	Landscaping	$ 527,962	
G30	LIQUID AND GAS SITE		$ 925,090
G3010	Water Supply	$ 167,240	
G3020	Sanitary Sewer	$ 75,950	
G3030	Storm Sewer	$ 681,900	
G3090	Other Site Mechanical Utilities	$ -	
G40	SITE ELECTRICAL UTILITIES		$ 1,377,609
G4010	Electrical Distribution	$ 1,102,021	
G4020	Site Lighting	$ 275,588	
G4030	Site Communications and Security	$ -	
G4090	Other Site Electrical Utilities	$ -	
	Sub-Total Direct Cost		**$ 6,899,135**

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SITEWORK DETAIL

Date: **August 28, 2024**

COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	ELEMENT G - SITEWORK				
G10	**SITE PREPARATION**				
G1010	**Site Clearing**				
	Stripping @ Fields	60,583	SF	2.00	121,166
	Stripping @ Building Site (non building demolition)	57,929	SF	2.00	115,858
	Disposal of excavated material off-site, assumed a 25% swell factor	5,487	CY	55.00	301,767
	Total For Site Clearing				**538,791**
G1020	**G1020.10 and G1020.50 Utility and Site Demolition**				
	Site Demolition				
	Site Mobilization	4.0	Acre	35,000.00	140,000
	Remove Curb, Off-site Disposal	-	LF	2.40	
	AC Removal & Disposal	15,857	SF	3.00	47,571
	Concrete Sidewalk Removal & Disposal	3,762	SF	4.00	15,048
	Bark Chip and Playground Removal	2,000	SF	1.00	2,000
	Remove Existing Fence	1,100	LF	5.00	5,500
	Remove Signage	1	LS	1,800.00	1,800
	Remove Existing Light Poles	8	EA	600.00	4,800
	Remove Existing Portables - by Owner	-	LS	18,000.00	
	Remove Existing Trees	20	EA	600.00	12,000
	Misc. Utility Removal	1	LS	9,000.00	9,000
	Total For Site Demolition and Relocations				**237,719**
G1070	**G1070.20 Excavation and Fill**				
	Site Grading & Earthwork				
	Site mobilization	4.0	Acre	35,000.00	140,000
	Crushed Surface Base Course - working surface	2,500.0	Ton	45.00	112,500
	Excavate	6,000	CY	45.00	270,000
	Disposal of excavated material off-site, assumed a 25% swell factor	7,500	CY	55.00	412,500
	Import Fill (Granular)	4,500	CY	65.00	292,500
	Rough Grading	155,000	SF	0.50	77,500
	Fine Grading (Building Pad and Site)	155,000	SF	1.50	232,500
	TESC				
	Erosion and Sedimentation Controls	4	ACRE	75,000.00	300,000
	Total For Site Earthwork				**1,837,500**
G1040	**Hazardous Waste Remediation**				
	See Building Demo Abatement Section				N/A
	Total For Hazardous Waste Remediation				
G20	**SITE IMPROVEMENTS**				
G2010	**Roadways**				
	Included in Frontage Improvements section				N/A
	Total For Roadways				
G2020	**Parking Lots**				

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
SITEWORK DETAIL

Date: **August 28, 2024**

RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Asphalt concrete				
	4" HMA over 6" CSBC	250	SY	65.00	16,272
	3" HMA over 4" CSBC	1,889	SY	45.00	85,000
	Pavement Markings (striping)	1	LS	5,000.00	5,000
	Total For Parking Lots				**106,272**
G2030	**Pedestrian Plazas and Walkways**				
	Portland cement concrete				
	Curb, Vertical	942	LF	32.00	30,144
	ADA Signage	5	EA	300.00	1,500
	Concrete Stairs	297	LF	75.00	22,275
	Concrete ramps	443	SF	55.00	24,365
	Pedestrian Concrete Paving (includes play areas)	26,000	SF	15.00	390,000
	8" Wide Concrete Curb at Ramps	140	LF	30.00	4,200
	Total For Pedestrian Paving				**472,484**
G2050	**Athletic, Recreational Playfield Areas**				
	G2050.20 Playfield Areas				
	Elementary School				
	Play Equipment Surfacing Replacement	2,000	SF	10.00	20,000
	Safety Signage	1	LS	2,500.00	2,500
	Play Equipment - allowance - supplement existing allowance only	1	LS	150,000.00	150,000
	Safety Signage	1	LS	500.00	500
	Total For Athletic, Recreational and Playfield Areas				**173,000**
G2060	**SITE DEVELOPMENT**				
	G2060.20 Fences and Gates				
	Chain Link Fence 8' Ht.	737	LF	100.00	73,700
	Chain Link Gate 8' Ht.	3	EA	5,500.00	16,500
	Ornamental 8'	363	LS	300.00	108,900
	Ornamental gate	1	EA	7,500.00	7,500
	G2060.25 Site Furnishings				
	Trash and Recycling receptacles	6	EA	1,500.00	9,000
	Bike Racks - Tofino "No Scratch" racks	6	EA	2,500.00	15,000
	Tree grates	10	EA	2,200.00	22,000
	Bollards - 6" diameter x 36" high, domed top	12	EA	1,500.00	18,000
	Skate deterrents	1	LS	1,500.00	1,500
	Benches - powder coated or precast	5	EA	2,500.00	12,500
	BB hoops	4	EA	2,500.00	10,000
	9 square	1	EA	2,500.00	2,500
	Outdoor classroom	1	EA	35,000.00	35,000
	Traffic Garden	1	EA	20,000.00	20,000
	Covered bicycle parking				
	- Canopy - complete (structure, roofing, painting)	1,200	SF	150.00	180,000
	- Fencing	140	LF	65.00	9,100
	- Fence gates	4	EA	3,500.00	14,000

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
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SITEWORK DETAIL

COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	- Bike racks	12	EA	2,500.00	30,000
	G2060.301 Exterior Monument Sign				
	30" water cut Aluminum with concrete base	-	LS	25,000.00	
	G2060.302 Electronic Message Board				
	3x5 LED Message Board	1	EA	12,500.00	12,500
	G2060.303 Exterior Site Signage				
	Directional Panel Signs (6 signs at 4 SF each)	24	SF	150.00	3,600
	G2060.305 Flagpoles				
	Flagpole with concrete foundation	1	EA	7,200.00	7,200
	G2060.36 Site Painted Graphics (Elementary and MS)				
	Site graphics per design - Allowance @ New play	1	EA	15,000.00	15,000
	G2060.60 Retaining Walls				
	Concrete Walls (12" wide to accept fence)	858	SF	68.00	58,344
	Concrete Wall Footings	107	LF	55.00	5,885
	Handrails/guardrails at retaining walls	107	LF	140.00	14,980
	Total For Site Development				**702,709**
G2080	**Landscaping**				
	G2080.10 Irrigation				
	Irrigation				
	Point of Connection (Allowance)	1	LS	5,000.00	5,000
	2" Mainline	200	LF	8.00	1,600
	Sleeving (Allowance)	1	LS	10,000.00	10,000
	Quick Couplers and Valves (Allowance)	1	LS	10,000.00	10,000
	Laterals Lines and Spray Heads	3,662	SF	1.75	6,409
	Controller (Allowance)	1	LS	3,000.00	3,000
	Irrigation Meter	1	LS	3,000.00	3,000
	G2080.20 Turf and Grasses				
	Finish Grading	52,812	SF	0.20	10,562
	Import/Place Field Topsoil (8"x1.2)	1,573	CY	60.00	94,357
	Drill Seeding at field	52,812	SF	0.75	39,609
	Drainage at grass field	52,812	SF	3.00	158,436
	G2080.30 Plants				
	Import/Place Shrub Topsoil (8" x1.2)	109	CY	50.00	5,452
	Import/Place Mulch (3" depth, x1.2)	41	CY	50.00	2,034
	Planting - Elementary @ $30,000 per acre - PER PLAN	-	AC	30,000.00	
	Planting - Per site plan rather than prescribed allowance	3,662	SF	10.00	36,620
	Extended Maintenance - 1 year Elementary - Year 1	1	LS	50,000.00	50,000
	Extended Maintenance - 1 year Elementary - Year 2	1	LS	40,000.00	40,000
	Extended Maintenance - 1 year Elementary - Year 3	1	LS	30,000.00	30,000
	Repair lawn/hardscape to remain	14,382	SF	1.00	14,382
	Tree Protection	1	LS	7,500.00	7,500
	Total For Landscaping				**527,962**
G30	**SITE MECHANICAL UTILITIES**				
G3010	**Water Supply**				

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
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BEX VI CONCEPT ESTIMATE
SITEWORK DETAIL

Date: **August 28, 2024**

RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	G3010 Water Utilities				
	Connect to existing line	1	EA	6,000.00	6,000
	4-inch DI pipe	820	LF	85.00	69,700
	4" Tees	2	EA	170.00	340
	4" Gate Valve	2	EA	1,100.00	2,200
	Thrust Blocks	3	EA	1,000.00	3,000
	Fire Hydrants	2	EA	7,500.00	15,000
	Fire Dept. Connection (FDC)	1	EA	3,000.00	3,000
	Post Indicator Valve (PIV)	1	EA	3,000.00	3,000
	Fire DDCV in Vault	1	EA	30,000.00	30,000
	4" Domestic Meter (vault and setter)	1	EA	35,000.00	35,000
	Total For Water Supply				**167,240**
G3020	**Sanitary Sewer**				
	Connect to Existing	3	EA	3,500.00	10,500
	Sanitary Sewer Cleanouts	3	EA	900.00	2,700
	Grease Interceptor	1	EA	20,000.00	20,000
	6-inch DIP pipe (3 side sewers)	450	LF	95.00	42,750
	Total For Sanitary Sewer				**75,950**
G3030	**Storm Sewer**				
	G3030 Storm Sewer				
	Connect to Existing System	6	EA	3,600.00	21,600
	Area Drains	10	EA	1,500.00	15,000
	CB Type I	8	EA	3,000.00	24,000
	CB Type II, 72" diameter	4	EA	12,500.00	50,000
	6-inch SD (Import Structural Backfill)	2,000	LF	85.00	170,000
	Wall Footing Drain	250	LF	45.00	11,250
	Storm Drain Cleanouts	12	EA	900.00	10,800
	Downspout Connections	12	EA	500.00	6,000
	Water Detention - North Site	12,000	CF	10.00	120,000
	Water Treatment Requirements - Southern site	21,325	SF	10.00	213,250
	Bioretention planters	800	SF	50.00	40,000
	Total For Storm Sewer				**681,900**
G3090	**Other Site Mechanical Utilities**				
	Geothermal wells - included in HVAC	-	EA	12,500.00	
	Total For Other Site Mechanical Utilities				
G40	**SITE ELECTRICAL UTILITIES**				
G4010	**Electrical Distribution**				
	Underground Power Distribution	110,235	GFA	2.00	220,470
	EV Charging Stations	4	EA	25,000.00	100,000
	EV Charging Stations - rough in	4	EA	10,000.00	40,000
	EV Charging Stations - raceway	4	EA	3,500.00	14,000
	Solar PV	121	KW	6,000.00	727,551
	Site Emergency Power Generation - NOT REQUIRED PER BA	1	LS		
	Total For Electrical Distribution				**1,102,021**
G4020	**Site Lighting**				

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SITEWORK DETAIL

Date: **August 28, 2024**

RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	Wiring Conduits & Duct banks	110,235	GFA	1.00	110,235
	Site Lighting	110,235	KW	1.50	165,353
	Total For Site Lighting				**275,588**
G4030	**Site Communications and Security**				
	No work anticipated				N/A
	Total For Site Communications and Security				
G4090	**Other Site Electrical Utilities**				
	No work anticipated				N/A
	Total For Other Site Electrical Utilities				

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
FRONTAGE

Date: **August 28, 2024**

COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
Pavement Markings (striping)	1	LS	10,000.00	10,000
Curb, Vertical (Federal North)	-	LF	22.00	
Curb & Gutter, Vertical (Federal North)	500	LF	32.00	16,000
ADA Access Ramp (Federal North)	6	EA	1,750.00	10,500
Concrete Sidewalk (Federal North)	3,000	SF	15.00	45,000
Landscape Strip (Federal North)	2,750	SF	10.00	27,500
Street Trees (Federal North)	10	EA	750.00	7,500
Curb & Gutter, Vertical (Federal South)	425	LF	28.00	11,900
Curb & Gutter, Vertical (Aloha)	250	LF	32.00	8,000
ADA Access Ramp (Aloha)	8	EA	1,750.00	14,000
Concrete Sidewalk (Aloha)	1,500	SF	15.00	22,500
Landscape Strip (Aloha)	55	SF	10.00	550
Curb, Vertical (11th Avenue E - North)	-	LF	22.00	
Curb & Gutter, Vertical (11th Avenue E - North)	500	LF	32.00	16,000
ADA Access Ramp (11th Avenue E - North)	8	EA	1,750.00	14,000
Concrete Sidewalk (11th Avenue E - North)	3,000	SF	15.00	45,000
Landscape Strip (11th Avenue E - North)	2,750	SF	10.00	27,500
Street Trees (11th Avenue E - North)	10	EA	750.00	7,500
4" HMA over 6" CSTC (11th Avenue E - North)	1,444	SY	65.00	93,889
Grading/drainage work (11th Avenue E - North)	1	LS	25,000.00	25,000
Curb, Vertical (11th Avenue E - South)	-	LF	22.00	
Curb & Gutter, Vertical (11th Avenue E - South)	425	LF	32.00	13,600
ADA Access Ramp (11th Avenue E - South)	6	EA	1,750.00	10,500
Concrete Sidewalk (11th Avenue E - South)	2,550	SF	15.00	38,250
Landscape Strip (11th Avenue E - South)	2,338	SF	10.00	23,375
Street Trees (11th Avenue E - South)	-	EA	750.00	
Curb & Gutter, Vertical (E Mercer)	250	LF	28.00	7,000
Concrete Sidewalk (E Mercer)	1,500	SF	11.50	17,250
General Frontage Improvements yet to be defined	1	LS	100,000.00	100,000
Sub-Total Direct Cost				**612,314**

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
BUILDING DEMOLITION AND ABATEMENT

Date: **August 28, 2024**

RC COST GROUP

	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
	ELEMENT F - SPECIAL CONSTRUCTION AND DEMOLITION				
F2010	**F2010.20 Asbestos Remediation**				
	Hazardous Materials Remediation	49,021	GSF	8.00	392,168
	Hazardous Materials Remediation - existing wood window	1	LS	25,000.00	25,000
	F2010.30 Lead Remediation				
	Lead Remediation - Allowance beyond base remediation	49,021	GSF	2.00	98,042
	Total For Hazardous Material Remediation				**515,210**
F3010	**F3010.10 Building Demolition**				
	Demolish and remove				
	Existing building	49,021	SF	12.00	588,252
	Existing building - covered play	1,332	SF	6.50	8,658
	Total For Structure Demolition				**596,910**
F3030	**F3030.10 Selective Structure Demolition**				
	Demolish and remove				
	Existing building, Exterior Walls - North Elevation	2,617	SF	20.00	52,340
	Shoring	2,617	SF	8.00	20,936
	F3030.30 Selective Interior Demolition				
	Demolish and remove				
	Existing building	23,934	SF	12.00	287,208
	Total For Selective Demolition				**360,484**
	Total For Selective Demolition				**1,472,604**

SEATTLE PUBLIC SCHOOLS
LOWELL ELEMENTARY
SEATTLE, WA
BEX VI CONCEPT ESTIMATE
ALTERNATES

Gross Floor Area: **110,235 SF**
Date: **August 28, 2024**

RC COST GROUP

ITEM DESCRIPTION	QUANTITY	UNIT	UNIT COST	TOTALS
ALTERNATE #1 - SWITCH TO 4 COAT PVDF FROM 3 COAT				
4 coat versus 3 coat PVDF - storefront	13,441	SF	3.00	40,322
4 coat versus 3 coat PVDF - curtain wall	900	LS	3.00	2,700
Sub-Total				**43,022**
General Conditions, Fee, Escalation, Contingency	38.00%			16,348
Total				**59,370**
ALTERNATE #2 - SWITCH TO ALL MOTORIZED SHADES AT EXTERIOR GLAZING				
Electric roller shades at windows not already covered by motorized shades	12,924	SF	25.00	323,089
Sub-Total				**323,089**
General Conditions, Fee, Escalation, Contingency	38.00%			122,774
Total Construction Cost				**445,863**
ALTERNATE#3 - SWITCH TO ALL TRIPLE GLAZED AT EXTERIOR GLAZING				
Alternate Item #3 - 100% Triple glazed exterior windows - 100% Triple glazed exterior windows	10,856	SF	25.00	271,395
Sub-Total				**271,395**
General Conditions, Fee, Escalation, Contingency	38.00%			103,130
Total Construction Cost				**374,525**

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