THE SCHOOL DISTRICT OF PHILADELPHIA

Office of Capital Programs
440 North Broad Street, 3rd Floor
Philadelphia, PA 19130

Andrew Hamilton School

5640 Spruce Street, Philadelphia, PA 19139

Scope Determination Report: Major Renovation

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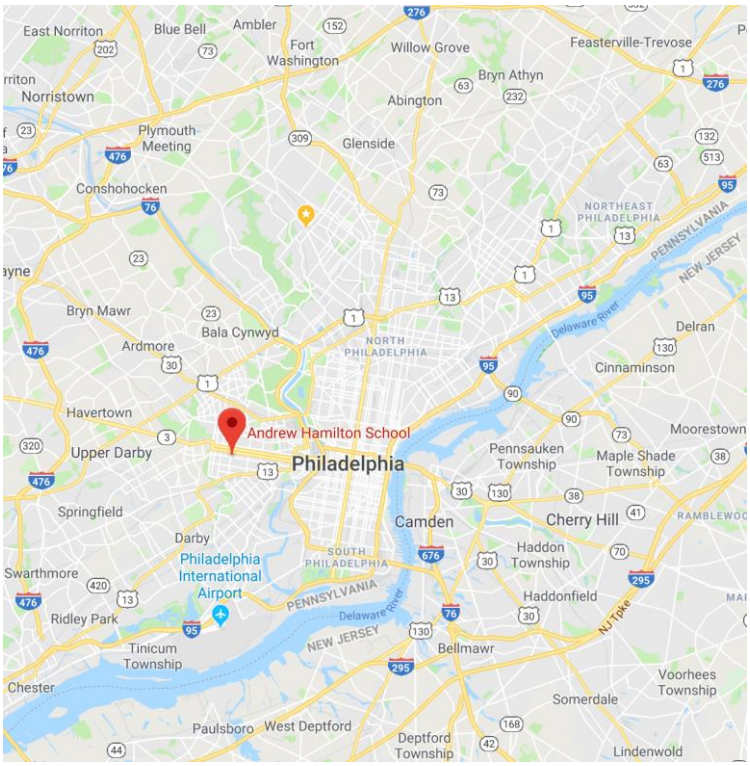
Introduction

This report outlines the scope of work for the Major Renovation at Andrew Hamilton School. Hamilton's vision is to "develop highly-educated, well-rounded students who are excited about learning." The school serves Kindergarten through 8th grade students. The current enrollment is 530 students; the capacity is 696 students.

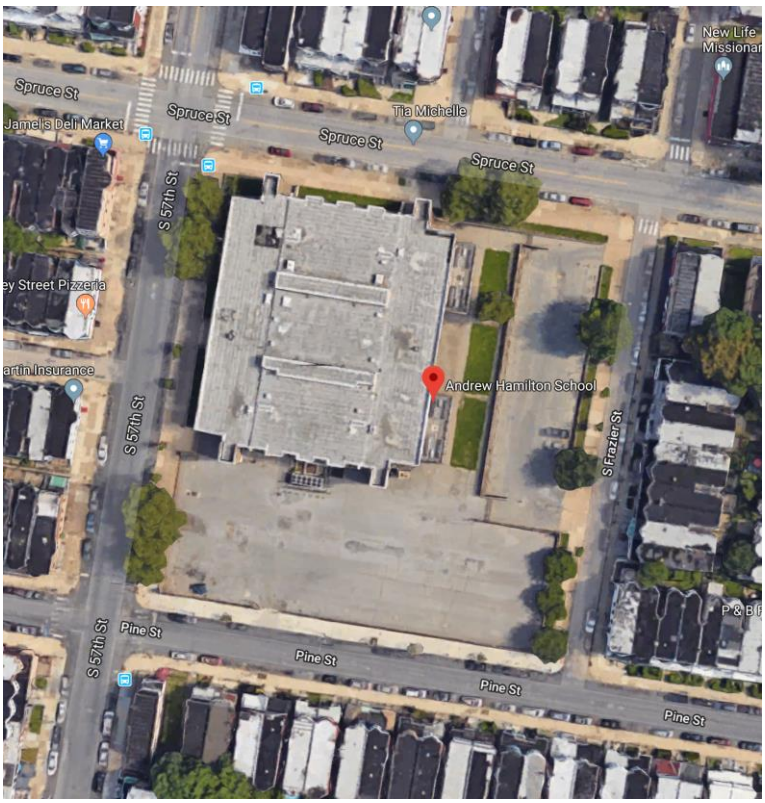
Hamilton is located at 5640 Spruce Street in West Philadelphia. The school is surrounded by residential and mixed use properties. The main entrance faces 57th Street to the West. The site is otherwise bound by Spruce Street to the North, South Frazier Street to the East and Pine Street to the South.

Hamilton was constructed in 1968. There have been no additions. The building consists of three stories and is approximately 89,500 sf. A partial basement houses a boiler room and other mechanical spaces. The main structure is cast-in-place concrete. Exterior walls are typically brick on CMU and cast-in-place concrete. The roof structure is concrete; the roof is currently being replaced under a separate contract.

Context Maps



Overall Map



Aerial View of Site

Scope of Work

Proposed scope is outlined below. Scope is to be finalized by SDP and Design Consultant during the Schematic Design Phase. See Appendix A for existing floor plan and Appendix B for for Ideal Technology Requirements.

The design consultant is responsible for verifying and documenting all existing conditions and confirming all scope. *The design consultant shall take extra care to survey and accurately document all existing conditions and provide appropriate, cost-effective design solutions that support the goals of the project. The design consultant shall conduct a code analysis at the outset of the design process.*

The main goals of the project include:

1. Provide physical and technological upgrades to classrooms to support strategies for 21st Century Learning;
2. Address deferred maintenance of building systems.

Architectural Scope

Classroom Modernization

Twenty-six (26) classrooms will receive upgrades to finishes, electrical infrastructure and technology to support literacy and center-based learning. The names of the selected classrooms are tentatively shown in blue text on the plans in Appendix A and shall be confirmed during the Schematic Design phase. The following recommendations reflect standard classroom modernization scope and apply to all selected classrooms unless noted otherwise.

Recommendations:

1. Flooring. Remove obsolete floor-mounted equipment. Remove existing vinyl floor tile. Refer to AHERA report for information on asbestos-containing floor tile. Repair and level existing subfloor and install new vinyl composite tile (VCT) floor. Provide (1) field color and (1) accent color, colors and pattern to be approved by SDP. Provide new vinyl wall base. See Structural Scope for repair required in floor in Room 130.
2. Ceilings. Scrape, patch and paint hard ceilings. Paint exposed piping and conduit to match adjacent ceiling surface.
3. Walls. Remove all miscellaneous fasteners and obsolete equipment from walls (including but not limited to projection screens, projection screen supports, obsolete speakers and obsolete phones). Scrape, patch and paint all concrete, CMU and gypsum board walls and columns. Do not paint exposed brick. Remove operable partitions including all associated fasteners and supports and replace with gypsum board on metal stud walls with acoustic batt insulation. Provide blank metal cover plates where large penetrations prohibit patching. Paint metal plates to match wall surfaces. Paint all (existing and new) exposed conduit, pipes, speaker and phone boxes to match adjacent wall surface. Provide one accent wall.
4. Window shades. Provide new window shades throughout. Coordinate openness factor to allow daylight into classroom and views out while permitting Interactive Panel Board to be legible by students when in use.
5. Doors. Demolish existing wood doors and provide new solid core wood doors with secure, accessible hardware and narrow glass lites. Paint existing metal door frames.
6. Display boards. Demolish existing display boards (whiteboard, blackboard, tackboard, tack strips). Refer to AHERA report for information on asbestos-containing mastic. Provide a total of (8) linear feet of whiteboard and (16) linear feet of tackboard in each classroom. The following is the ideal configuration of display boards for classrooms which may be modified according to room layout: at teaching wall, provide (1) 4’x4’ whiteboard and (1) 4’x4’ tackboard, one on either side of new Interactive Panel Board; at back wall (opposite teaching wall), provide (1) 4’x4’ whiteboard, (1) 8’x4’ tackboard and (1) 4’x4’ tackboard.
7. Interactive Panel Boards. Remove existing Smart Boards and return to SDP. Demolish dedicated AV receptacle and exposed conduit if such equipment exists. Demolish dedicated power/data receptacles and exposed conduit located high on wall if such equipment exists. For all rooms, SDP will provide and install a new fixed or height-adjustable (depending on grade) Interactive Panel Board (IPB) centered on the teaching wall. Provide (1) quad power receptacle and (1) duplex data receptacle at the location of the new IPB. Provide blocking where required to support new IPBs.
8. Lighting. Replace all lighting. Refer to electrical scope.
9. Power/Data. Provide electrical and IT infrastructure upgrades. Refer to electrical scope.
10. PA Speakers. Existing to remain. Refer to electrical scope. Paint enclosure to match adjacent wall surface.
11. Clocks. Existing to remain. Refer to electrical scope.
12. Phones. Existing to remain. Refer to electrical scope.
13. WAPs. Existing to remain. Refer to electrical scope.
14. Mechanical equipment. Replace components as noted in mechanical scope.
15. Cubbies and coat hooks. At rooms 127, 128, 130 and 131, refinish existing wood cubbies. At all other classrooms, provide (30) coat hooks.

16. Hand sanitizers. Remove and reinstall.
17. TVs. Demolish wall-mounted televisions and mounting hardware. Demolish associated coaxial connections, dedicated power receptacles and exposed conduit.
18. Casework and sinks. In rooms 127, 128, 130 and 131, replace base cabinets at corridor wall with laminate countertop on laminate base cabinets. In all other rooms, refinish built-in wardrobes, repair hardware and shelves and provide matching base panel along bottom of units. In all classrooms, replace sink unit and associated base cabinet with stainless steel sink in solid surface countertop on laminate base cabinet. Provide shut off valves at each sink unit.
19. Miscellaneous. Remove and reinstall paper towel dispensers at each classroom sink.

Windows

Windows are single-pane acrylic in bronze anodized tubular frames. Pivoting operable units were installed in the classrooms. There are fixed units in the stairwells. There are sloped units at the cafeteria and gym. Fixed clerestory windows line the IMC on two sides and rooms 310, 318, 323 and 332 on one side. Windows are in poor condition with failed gaskets, discolored glazing and frames, and some separation in the frames. The building engineer reports leaks in the stairwells when there is driving wind. Security grilles are installed over first and second floor windows.

Recommendations:

1. Remove all existing window units, skylights and security screens. Provide new operable aluminum windows with 1” insulated glass and thermal break. Specify glazing to mitigate solar radiation and glare while maximizing usable daylight. Provide integral security screens for units at first and second floor. Coordinate work with current roof replacement project under a separate contract which includes removal of a portion of the security screens and replacement of skylights over rooms 127, 128, 130, 131.

Exterior Doors

Exterior doors are typically fully-glazed bronze anodized aluminum with sidelights. Glazing is single-pane acrylic. Doors and glazing are in poor condition.

Recommendations:

1. Replace exterior doors with new metal doors (six double panel and four single panel doors). Provide glass lights with integral security screen. Remove and dispose of security screens.

Accessible Route

In order to create a code-compliant accessible route through the building, do the following at minimum:

1. Replace wood handrails at main entry with code-compliant steel handrails. Replace hand and guardrails at one stairwell with code-compliant metal rails.
2. Provide mechanical lift at stairs in lobby.
3. Provide one assisted-use accessible restroom on each floor by either converting an existing single-user restroom or providing a new restroom. Ensure that school remains in compliance with plumbing code fixture quantity requirements.
4. Design consultant to provide comprehensive approach to compliance with accessibility code for project alteration level as part of 25% Schematic Design submission.

Interior Doors

Interior classroom and office doors are typically original painted solid core wood doors with narrow lites in hollow metal frames. Pairs of wood doors at the IMC, office, cafeteria and gym are glazed. Doors at stairwells are glazed hollow metal doors without panic hardware. Doors are typically in poor condition.

Not all doors in building are included. Doors at classroom modernizations + other classrooms, stairwells, auditorium, cafeteria, gym, IMC, toilet rooms, main office, nurse.

Recommendations:

1. Replace doors at following locations: classrooms not included in modernization, auditorium, cafeteria, gym, IMC, toilet rooms, main office, nurse and stairwells. Provide code-compliant hardware. Approximately 33 single panel and 25 double panel doors. Keep and paint existing hollow metal frames.
2. Provide code-compliant wall-mounted acrylic signage.

Corridors

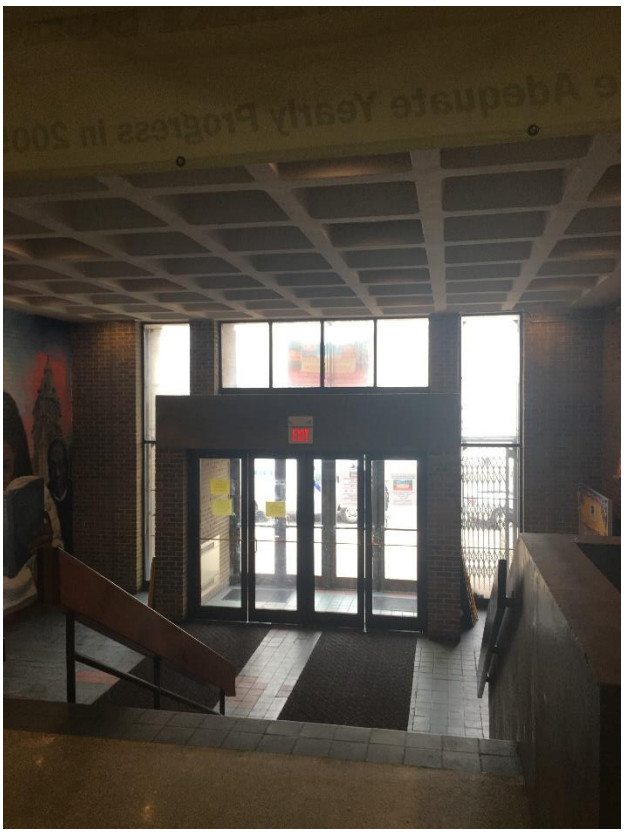
Recommendations:

1. Paint main corridors. Include main entry and stairwells.
2. Replace ceiling tile.

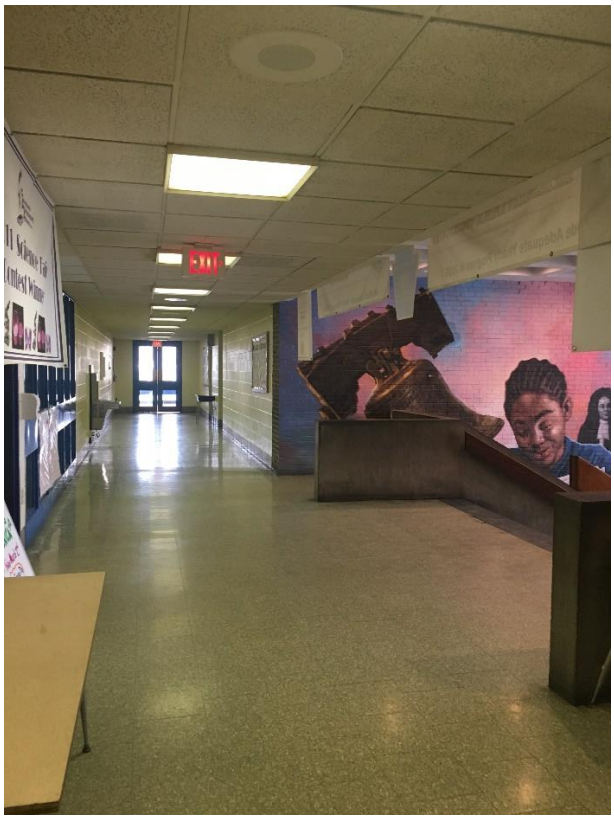
Carpet tile at IMC and Conference Room

Recommendations:

1. Replace carpet with VCT.

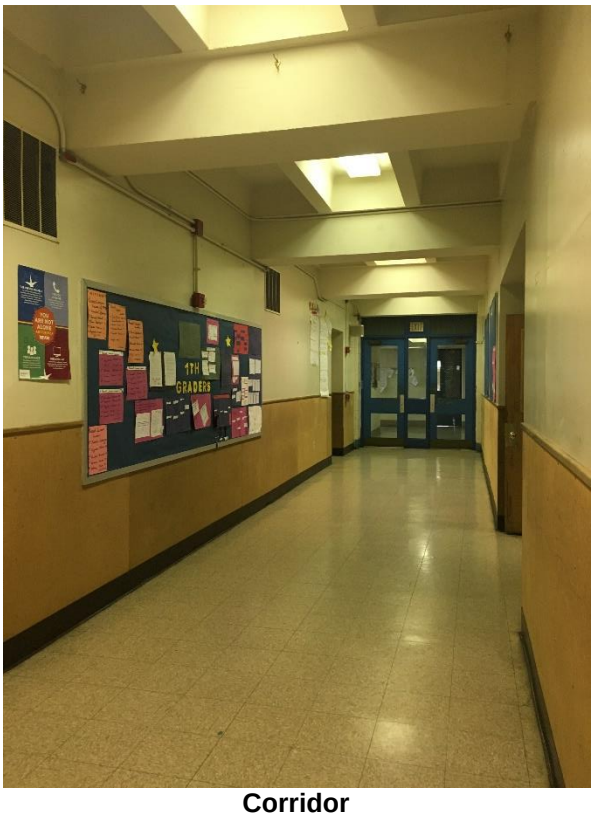


Lobby

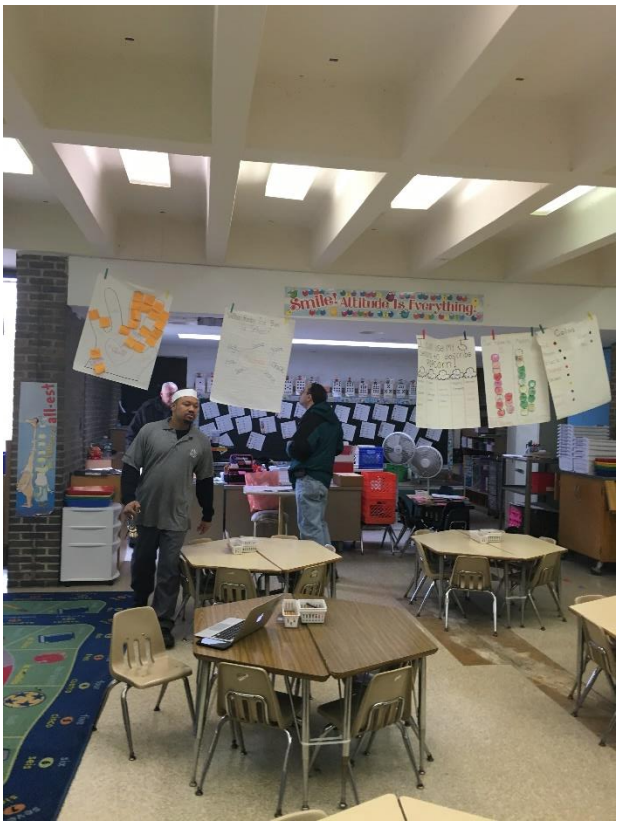


Lobby

Corridor

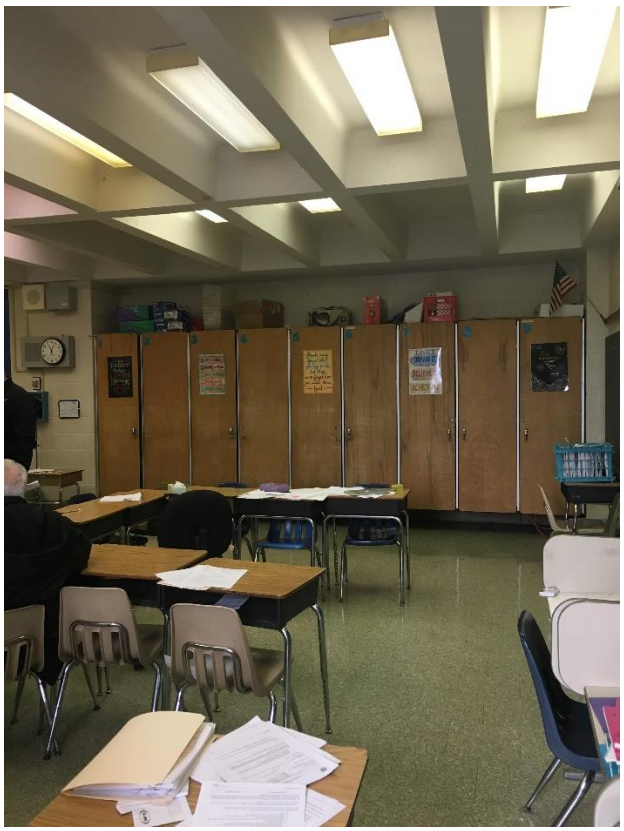


Corridor



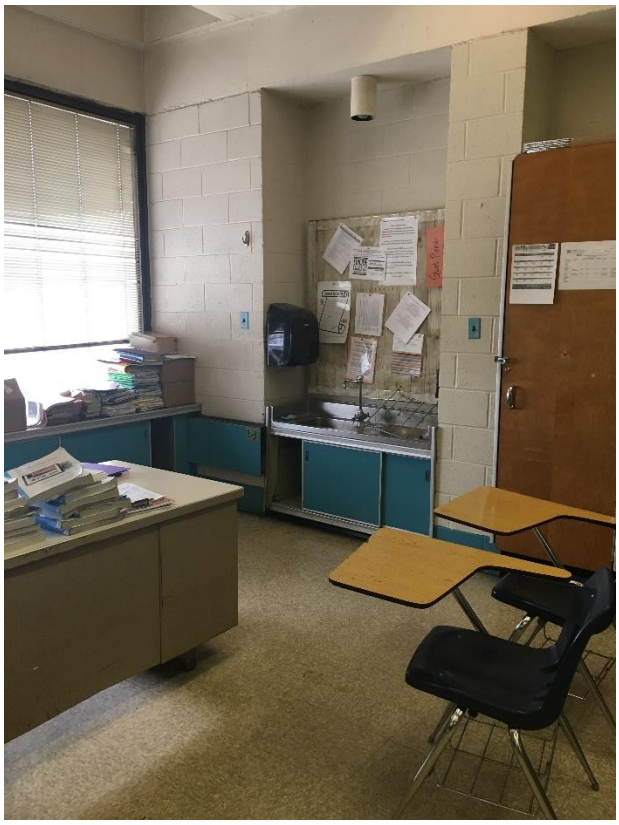
Classroom 130

Classroom 227



Classroom 227

Classroom 319



Classroom 319

Classroom 332

Structural Scope

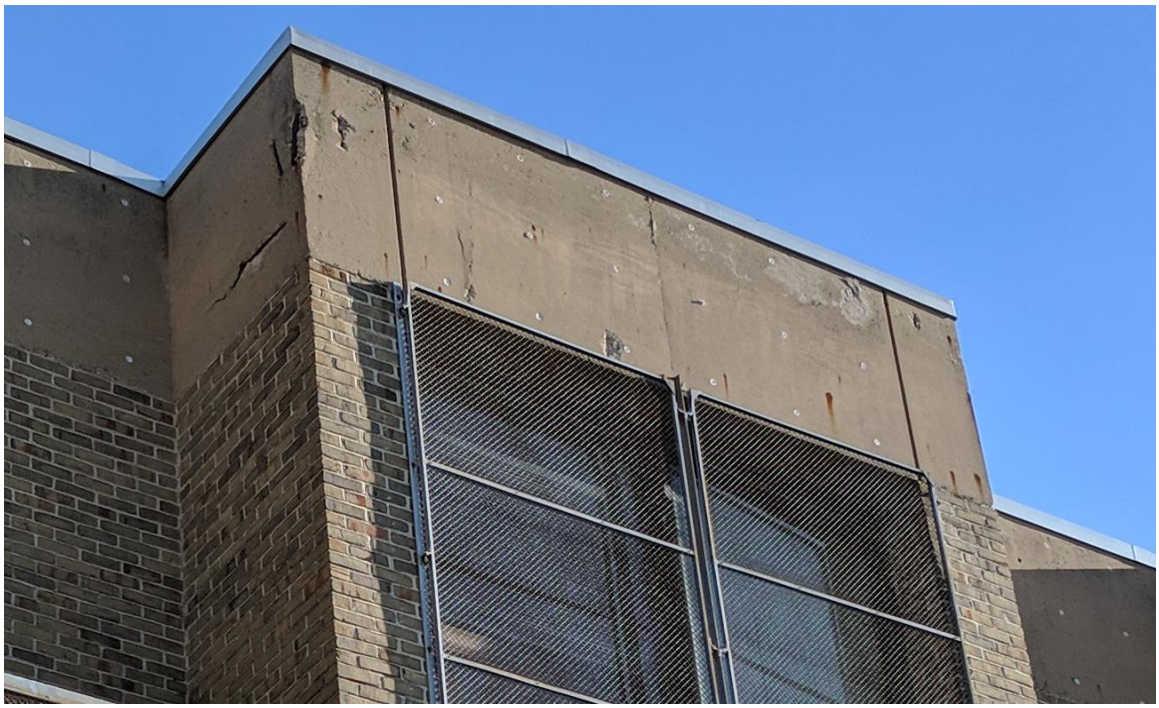
The school structure consists of reinforced concrete framing with exposed architectural concrete beams on all facades. Exterior walls consist of brick masonry infill panels bound by the architectural concrete members.

Exposed Architectural Concrete Framing

Minor deteriorations of exposed architectural concrete framing are observed around the building. Deteriorations include spalled concrete surfaces and exposed steel reinforcement.

Several factors may have contributed to the observed concrete deteriorations. One apparent factor is insufficient concrete cover over reinforcements. Locations of exposed reinforcements show that there is not enough concrete cover, especially for concrete permanently exposed to weather. Another factor may be the change in the pH level of concrete due to carbonation. As concrete loses its alkalinity due to carbonation, an environment more conducive to corrosion is created within reinforced concrete.

The following photograph exhibits the typical deterioration of exposed concrete framing.



Photograph 1: Exposed reinforcement

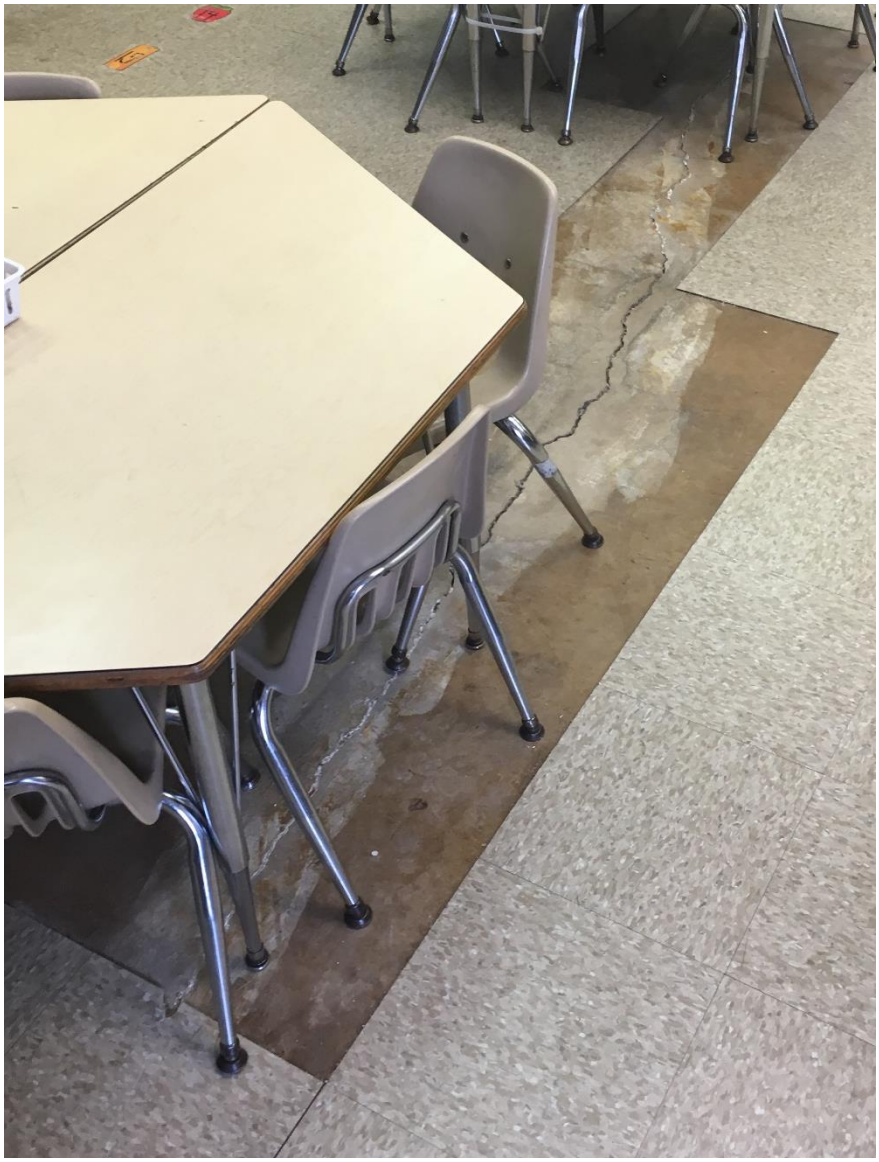
Recommendations:

1. Remove loose or cracked material from architectural exposed concrete framing surfaces.
2. Unspalled concrete surfaces showing leached rust shall be chipped to expose steel reinforcement to be repaired.
3. At locations of spalled concrete:
   a. Saw cut edges and remove concrete to a depth at least ¾” beyond existing reinforcement. Overall depth of removal may be 3” to 4”.
   b. Clean rust from exposed, corroded reinforcement. Weld additional reinforcement if existing reinforcement shows significant section loss.
   c. Apply a bonding agent to exposed reinforcement and concrete surfaces to be patched.

d. Patch the spalled areas with cementitious patching material. Patched surfaces shall match the adjacent existing surfaces.

Cracked slab in Rm. 130

A crack exists under existing flooring in Rm. 130. Original design drawings dated 1968 show that the floor slab is a 4" thick slab-on-grade reinforced with welded wire fabric.



Photograph 2: Cracked concrete slab

Recommendations:

1. Clean the cracked concrete surface and remove dirt, adhesive, etc.
2. Repair the cracks by injecting high strength epoxy adhesive such as Sikadur according to manufacturer's instructions.
3. Smooth the top surface of cracks to match existing slab.

Preventive Maintenance

Recommendations:

1. Apply a corrosion-inhibiting impregnation coating such as Sika FerroGard 903 to all exposed architectural concrete framing surfaces. Multiple coats may be required per manufacturer's recommendation.
2. Apply an anti-carbonation coating such as Sikagard 550W to all exposed architectural concrete framing surfaces to decrease the rate of concrete carbonation.

Mechanical/Plumbing Scope

Sanitary Waste Piping

The original sanitary is galvanized steel with threaded fittings. Roof drain leaders run through the building and connect to an underground storm sewer system on the site. The design consultant shall hire a qualified contractor to conduct an investigation into the sanitary waste piping using visual investigation and imaging technology to locate damaged piping and quantify the extent of potential failures. A report shall be furnished based on these findings which will inform a decision by SDP regarding extent of pipe repair and replacement to be included in the scope for this project.

Storm Drainage Piping

The original storm drain piping is galvanized steel with threaded fittings. Roof drain leaders run through the building and connect to an underground storm sewer system on the site. The design consultant shall hire a qualified contractor to conduct an investigation into the sanitary waste piping using visual investigation and imaging technology to locate damaged piping and quantify the extent of potential failures. A report shall be furnished based on these findings which will inform a decision by SDP regarding extent of pipe repair and replacement to be included in the scope for this project.

Steam Boilers

The two existing 50-year-old boilers that condition the 90,000 SF school need to be removed and replaced. Referencing the FCA Summary Report, the boilers with all appurtenances, breeching, traps, pumps and tanks need to be removed and replaced.

Recommendations:

1. Replace the two 50-year-old steam boilers with two new 2.5 MM BTUH skid-mounted condensing boilers with stainless steel heat exchangers, dual pump package with Variable Frequency Drive (VFD) controller for the pump package and front-mounted control panel(s) for each boiler. The boiler(s) package units will come with water filtration and stand tanks and disconnect switches. Air intake and exhaust venting will replace the removed breeching.

Piping

The existing steel hydronic piping is 50 years old and sections of the pipe throughout the building are corroded and leaking. Currently, the building maintenance engineer is replacing the corroded sections of steel pipe as the leaks occur. However, the existing steel pipe has additional corroded sections that need to be removed and replaced.

Recommendations:

1. Remove all (approximately 6000 LF) of various lengths of 6”, 3”, 2” and 1 ½” diameter steel piping from the boilers, located in the basement, to all unit ventilators located throughout each classroom on all floors with new insulated piping. Specify steel (above 3” diameter) and Uponor Pex “A” piping (3” diameter and below). Provide access panels as necessary for ease of maintenance.

HVAC Equipment

The following existing equipment is beyond its 25-year service life. The building engineer repairs these existing units on a monthly basis.

- AHUs: Three (3) HVAC Air Handling Units (AHUs) serving the Music Room, Auditorium, and Administration Area;
- Unit Ventilators: Approximately fifty (50) unit ventilators including all classroom units, four units in the IMC and four units in the cafeteria (replace floor tile at locations of new UVs);
- Heating ventilators: Four (4) heating ventilators serving gym;
- Fan coil units: Six (6) fan coil units including four in classrooms and two in the cafeteria. Four (4) fan coil units including four in classrooms and two in the cafeteria serving the gymnasium;
- Unit heaters: Eleven (11) Unit Heaters serving the Stair(s) Vestibule, corridors and Lobby area(s).

Recommendations:

1. AHUs: Remove the existing three (3) HVAC Air Handling Units (AHUs). Furnish and install three (3) new units with wireless thermostats.
2. Unit ventilators: Remove the existing approximately fifty (50) classroom unit ventilators and four (4) IMC unit ventilators. Furnish and install new units and local wireless controls.
3. VAVs: At cafeteria, demolish the existing four (4) unit ventilators and provide new VAV AHU/UVs with local wireless controls. At gym, demolish the four (4) existing heating ventilators and provide new VAV AHU/UVs with local wireless controls.
4. Fan coil units: Remove existing six (6) fan coil units. Furnish and install new units and local wireless controls. Remove existing four (4) fan coil units. Furnish and install new units and local wireless controls.
5. Unit heaters: Remove eleven (11) Unit Heaters. Furnish and install new units, local control valves and wireless T-Stats.
6. Cleaning: Clean all duct systems. Clean all supply and return air grilles.

Power Roof Ventilators

The school has two existing self-acting PRV's that need to be replaced. PRV 1 has a 7250 CFM capacity and PRV 2 has a 5650 CFM capacity.

Recommendations:

1. Remove, furnish and install two new PRV's to match the existing ventilation capacity.

Elevator

The school has one hydraulic elevator rated 20HP (estimated) at 208V. The elevator controller is relay type approximately twenty years old. The elevator is not connected to the emergency generator. School staff report that the elevator does not function reliably. The Principal reports that the school has a large population of children with mobility challenges who require the use of the elevator.

Recommendations:

1. Demolition: Contractor shall remove existing 2500lbs. hydraulic passenger elevator including but not limited to: elevator car, hydraulic elevator cylinder, pit ladder, hoistway doors, elevator control panel, buffers, hall signal fixtures, pit receptacles, pit lights, oil in elevator machine room pit, drop ceiling in elevator machine room, elevator motor etc. Hoistway frames, sills and rails shall remain.
2. Construction: Contractor shall provide one new hydraulic passenger, 2500lbs. elevator with three stops (1st, 2nd, and 3rd). Elevator car shall be complete with car protection pads, hydraulic cylinder, all safeties, guide shoes, buffers, door operator, door detectors, hoist way doors, signal fixtures, telephone, alarm, pit ladder, pit lights, pit GFCI receptacle, machine room lights, new fire rated ceiling in elevator machine room, pictograph signs, fire recall system, telephone cables, elevator operation key switch, three year warranty with

three year maintenance service, thirty spare elevator keys, signage for elevator machine room, egress path for handicap access, fire alarm tie-ins, electrical power and disconnect, lighting, sump pump and split system for the elevator machine room.

3. The Design Consultant shall employ an Elevator Consultant to confirm elevator scope of work.

Electrical / IT Scope

Electrical Service and Distribution

The existing unit substation is 2500A and the indoor transformer size is 750kVA at 13.2kV – 208/120V. The electrical service equipment is operational. The lighting and receptacle panel circuit breakers are beyond their life cycle.

Recommendations:

1. Provide two hundred 20A 1P breakers to replace old breakers in lighting and receptacle panels.
2. Provide 400A 3P tap into the existing unit substation to feed six 100A 3P panels for new classroom receptacle loads.
3. Modernize classroom with sufficient power receptacles per school district classroom ideal receptacle layout (see Appendix C).
4. Provide electrical connections to architectural, mechanical and plumbing modifications in this report.
5. Design consultant shall retain a licensed electrician to survey existing panels, circuitry and breakers to confirm circuitry routing for terminal equipment and remaining capacity of panel boards to serve new and upgraded equipment.

Lighting

The existing building interior lighting system is mostly T12 fluorescent lights. The gym and cafeteria have high intensity discharge (HID) lights. The auditorium downlights were retrofitted with LEDs. The exterior lighting is HID type.

Recommendations:

1. Replace all exit signs with white thermoplastic LED exit signs and connect to generator source. Provide additional exit signs where required by code.
2. Replace interior light fixtures with new LED light fixtures throughout the existing building and provide occupancy sensors in classrooms and offices to comply with energy code. Provide generator power to sufficient number of lights in egress path to provide emergency illumination per code. Replace all circuiting; reuse existing conduit.
3. Provide two zones of lighting control in each classroom. The first zone will control fixtures adjacent to the Interactive Panel Board and the second zone will control the rest of the classroom.
4. Replace stair lights with LED equipped with integral occupancy sensor. The stair lights will dim down to 5% when there is no activity and output full illumination upon sensing movement.
5. Replace the estimated twelve exterior HIDs with LED fixtures equipped with integral photocells.

Fire Alarm System

The existing manual fire alarm system is operational.

Recommendations:

1. Construction documents shall illustrate where space is architecturally-modified and requires the fire alarm notification devices to be removed and reinstalled, or new provided, to allow for that modification.
2. The design consultant shall provide floor plans, riser and specifications.

Security System

The existing quantity of cameras is insufficient and estimated at about sixteen cameras in the entire school. The camera system is analog and antiquated.

Recommendations:

1. Remove the existing security system.
2. Provide a new IP camera system at the school.
3. Basis of design shall be PELCO.
4. Security system specification shall include at minimum 3 manufacturers.
5. The design consultant shall provide floor plans, riser and specifications.

Telecommunication System

The existing classrooms only have two CAT5E jacks in a single gang box and the classroom phones are operational. Wireless access points were installed in classrooms.

Recommendations:

1. Provide telecommunication upgrades including CAT 6 connections in existing classrooms based on school district classroom ideal layout (see Appendix C) excluding operational phones and wireless access points.
2. Construction documents and specifications shall adhere to school IT design guidelines and specifications.
3. The contractor shall be responsible for installation of conduits, cables, patch panels, racks, and cabinets including all terminations and labeling.
4. The design consultant shall provide floor plans, riser and specifications.

Synchronized Clock System

The existing synchronized Primex clock system is operational.

Recommendations:

1. Construction documents shall illustrate where space is architecturally-modified and requires the wireless clocks to be removed and reinstalled, or new provided, to allow for that modification.
2. The design consultant shall provide floor plans, riser and specifications.

Public Announcement and Bell System

The existing public announcement and bell system is operational.

Recommendations:

1. Construction documents shall illustrate where space is architecturally-modified and requires the PA speakers to be removed, protected and reinstalled, or new provided, to allow for that modification.
2. Remove all abandoned PA speakers and wires.
3. The design consultant shall provide floor plans, riser and specifications.

Existing Generator System

The existing natural gas generator is a 30KW Kohler and is operational. The 3-way switching 100A NE/EO panel is operational.

Recommendation:

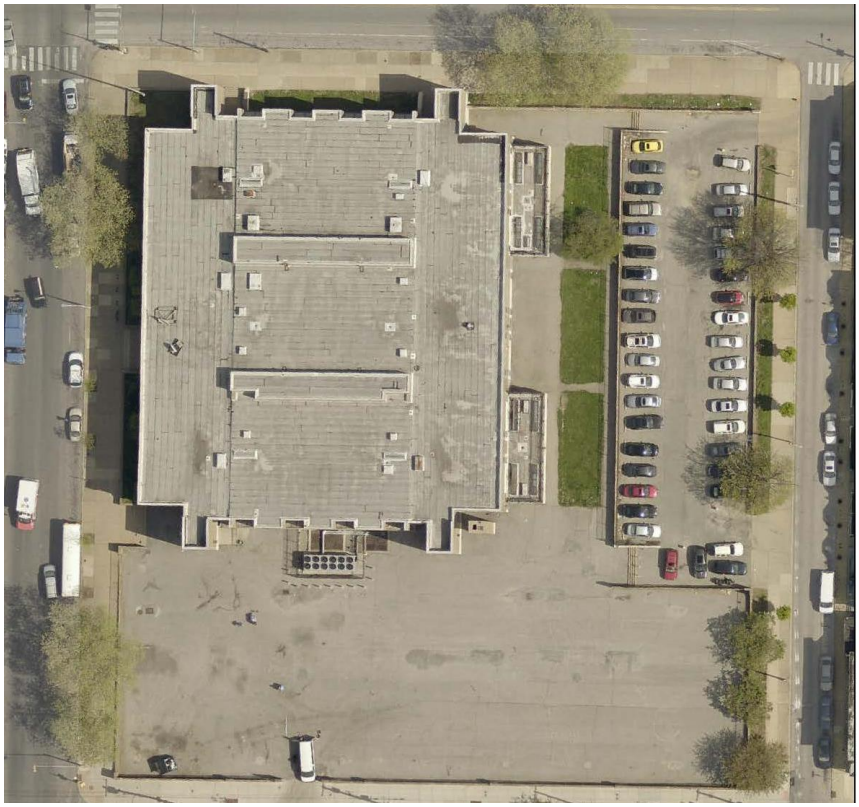
1. No scope.

Site Scope

Exterior Observations

The site consists primarily of paved surfaces surrounding the main school building footprint. Yellow brick perimeter walls border the site at varying heights. Adjacent and south to the front entrance of the building, the low retaining walls are covered with a mosaic mural that appears to be in good condition. The rear walls are freestanding with a yellow brick façade and iron picket fencing mounted on top. All brick site walls appear to be in good condition. The asphalt pavement is in moderate condition throughout with areas that have more significant degradation in the southwestern corner of the site. A parking area is located at the northeastern portion of the site. The parking area pavement has two pronounced patches of degraded asphalt within the drive lane. The school does not have an ADA accessible entrance currently. The mechanical equipment to the south of the building within the asphalt play yard produces a constant, high-pitched squeaking sound during warmer months.

The site is located in the Cobbs Creek Watershed. SDP wishes to avoid triggering stormwater management regulations with the construction of the site improvements by keeping the total site disturbance to less than 5,000 sf.



Recommendations:
Site improvements include, in order of importance:

1. New ADA ramp at the main entrance;
2. Select pavement patching and sealcoating throughout the site;
3. Play improvements.

ADA Ramp

1. Provide new ADA ramp at the main entrance. Projected scope includes:
    - Demolish a portion of the existing stair and retaining walls at north area of front entrance (+/- 200 sf).
    - Cut 5' width opening into existing brick retaining wall and restore end façade of existing wall.
    - Remove +/- 12 cy of soil.
    - Remove three large shrubs.
    - Relocate one bike rack.
    - Install new 3' height retaining wall with yellow brick masonry façade to match existing at north portion of entry stair (+/- 20 lf).
    - Prepare ramp subgrade and stone base.
    - Install new concrete ramp 15' x 20', extending concrete to building (+/-300 sf).
    - Install new stainless steel handrails with powdercoat finish (+/- 50 lf).

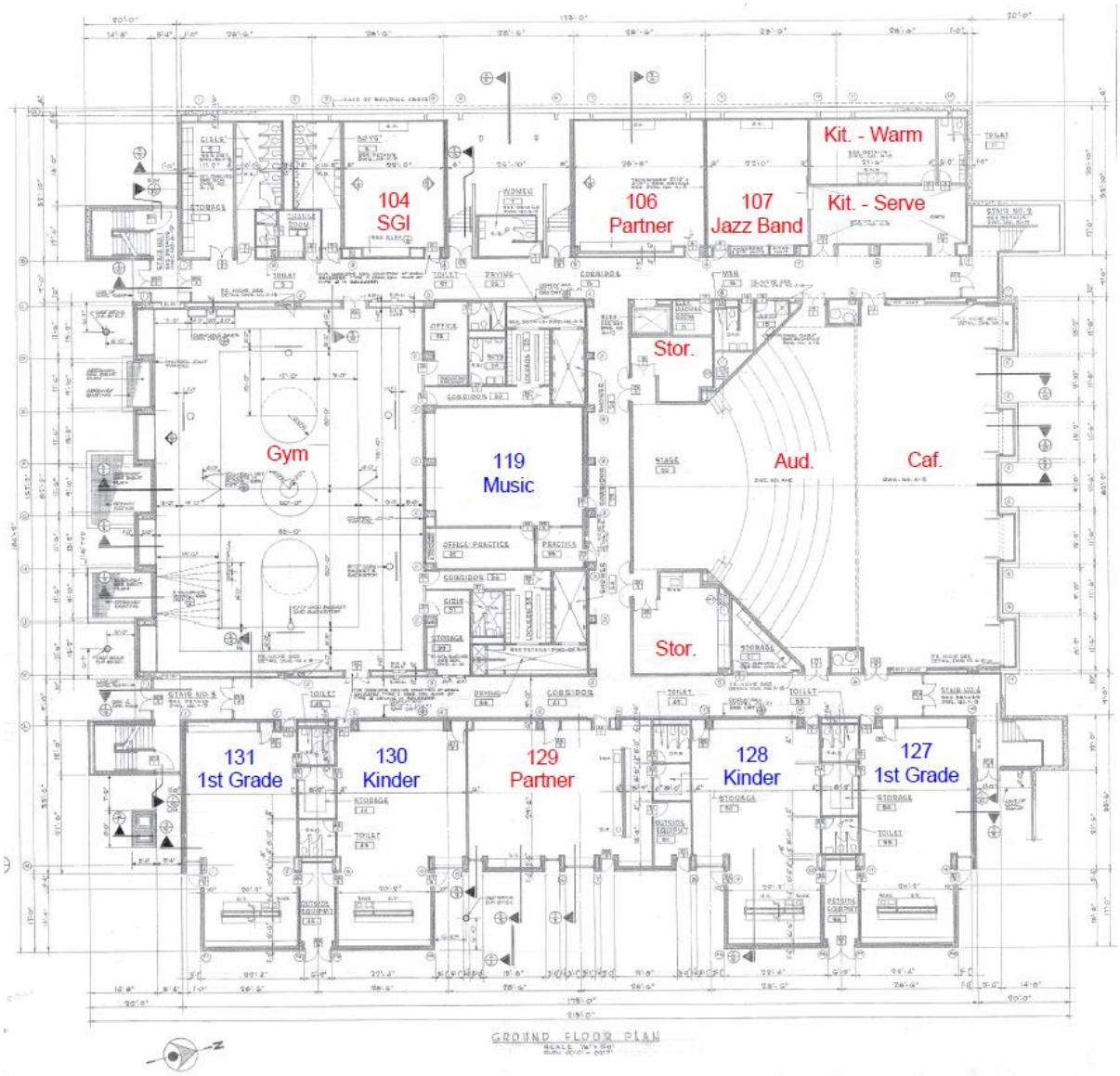
Pavement Improvements

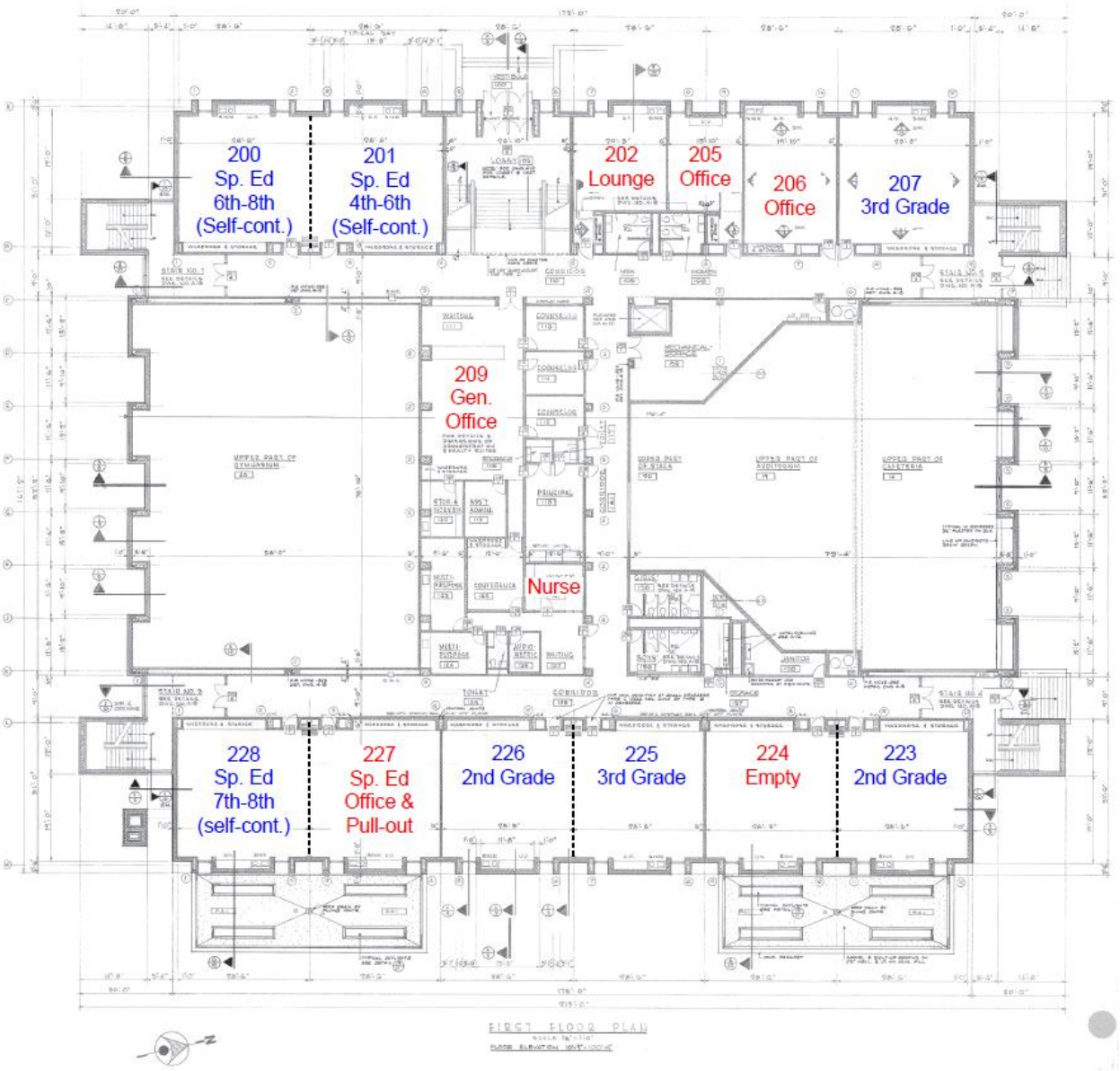
1. Full depth asphalt restoration. Demolish select areas of pavement throughout site (+/- 3,500 sf). Patch and restore these areas with full depth asphalt (6" 2a modified stone, 2 ½" binder course, 1 ½" wearing course).
2. Sealcoat asphalt pavement (+/- 47,350 sf).
3. Dumpster pads. Provide one new 8" thick reinforced concrete dumpster pad (600 sf).

Select Play & Grounds Improvements

1. Basketball / Track. Provide two basketball hoops (gooseneck 5/16 OD diameter steel, breakaway rims and backboards). Provide Plexipave acrylic surfacing or approved equal (assume 6000 sf). Provide asphalt paint for track / basketball.
2. Site seating. Provide six benches (use Victor Stanley CR-296, 6' length as basis for design).
3. Trash and Recycling Stations. Provide two stations (use Victor Stanley Ironsites Model SD-242 as basis for design).
4. Play equipment. Allowance for equipment: $40,000 TBD. Provide rubber safety surfacing beneath play equipment (4" thick layer of poured in place installed on top of asphalt - assume 1600 sf).
5. Planting. Provide new topsoil (2' depth, +/- 8 cy). Provide two new trees (3" – 3 ½" caliper, balled and burlapped). Provide perennial groundcovers (50 #1 containers).

APPENDIX A – EXISTING FLOOR PLANS

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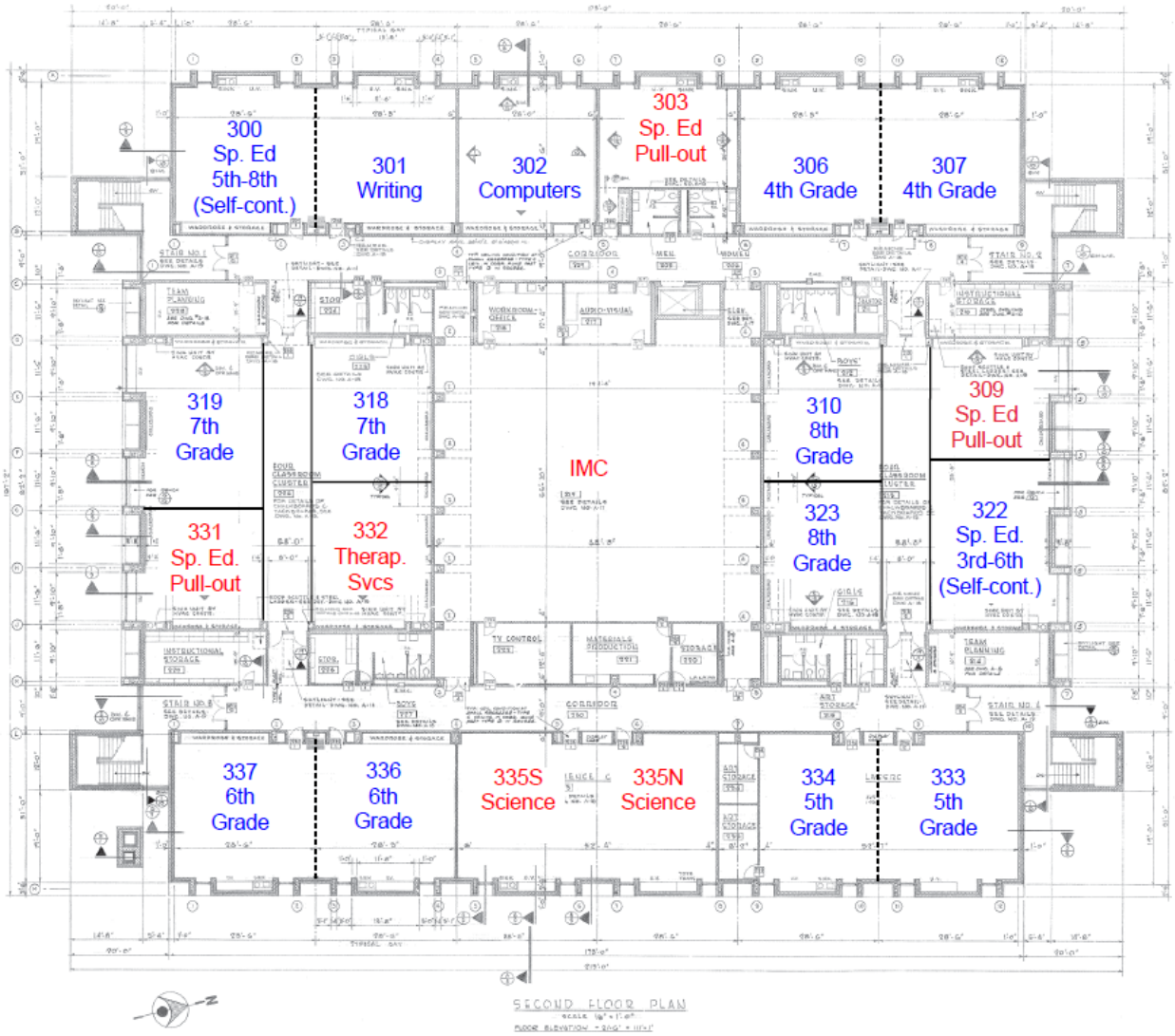
Sp. Ed
6th-8th
(Self-cont.)
201
Sp. Ed
4th-6th
(Self-cont.)
202
Lounge
205
Office
206
Office
207
3rd Grade
209
Gen.
Office
Nurse
228
Sp. Ed
7th-8th
(self-cont.)
227
Sp. Ed
Office &
Pull-out
226
2nd Grade
225
3rd Grade
224
Empty
223
2nd Grade
FIRST FLOOR PLAN

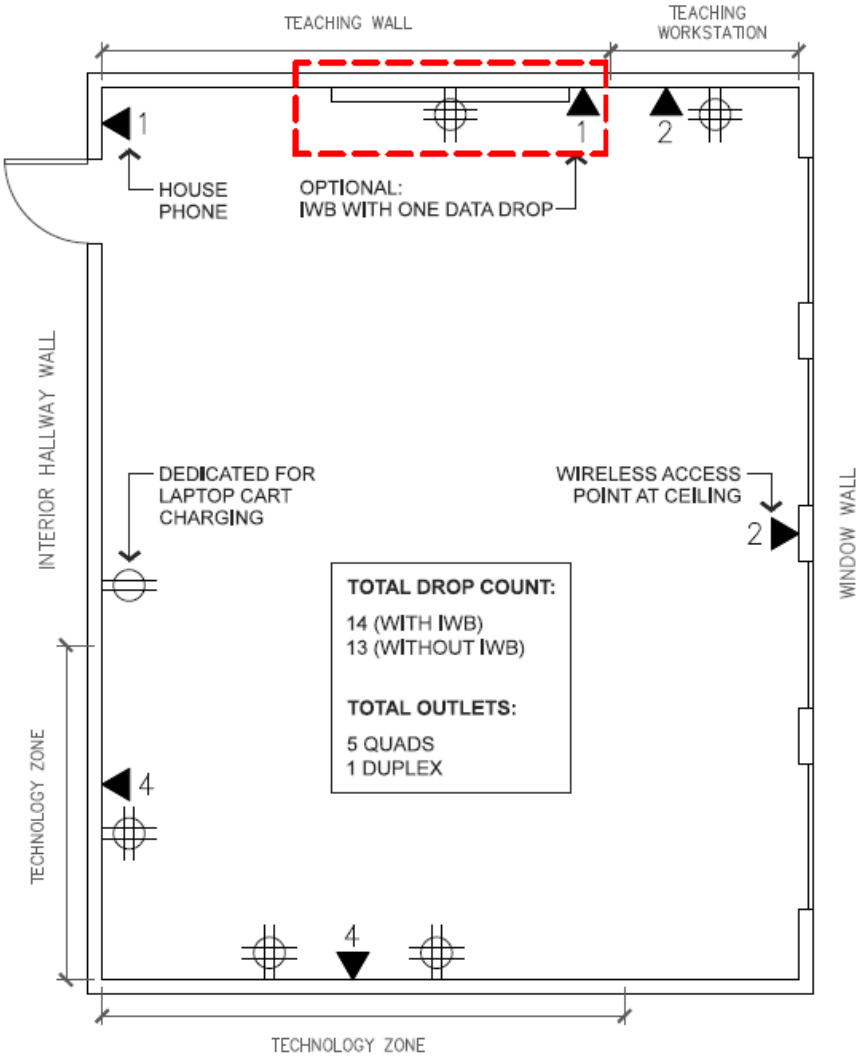

300
Sp. Ed
5th-8th
(Self-cont.)
301
Writing
302
Computers
303
Sp. Ed
Pull-out
306
4th Grade
307
4th Grade
319
7th
Grade
318
7th
Grade
IMC
310
8th
Grade
309
Sp. Ed
Pull-out
331
Sp. Ed.
Pull-out
332
Therap.
Svcs
323
8th
Grade
322
Sp. Ed.
3rd-6th
(Self-cont.)
337
6th
Grade
336
6th
Grade
335S
Science
335N
Science
334
5th
Grade
333
5th
Grade
SECOND FLOOR PLAN

Appendix C – Ideal Technology Requirements

IDEAL TECHNOLOGY SCENARIO

OCT 2015

STANDARD CLASSROOM INFRASTRUCTURE LAYOUT



KEY:	NOTES:
DUPLEX ELECTRICAL OUTLET	DRAWINGS NOT TO SCALE.
QUAD ELECTRICAL OUTLET	INDIVIDUAL CLASSROOMS WILL VARY BY SHAPE AND LOCATION OF WINDOWS & DOORS, BUT COUNTS AND TYPES OF INFRASTRUCTURE TO REMAIN THE SAME.
2 AMOUNT OF DATA DROPS	