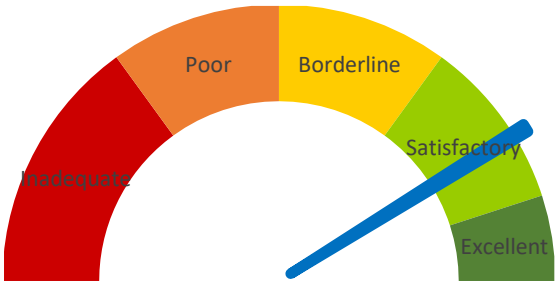
DMPS FACILITY ASSESSMENT | STOWE ELEMENTARY

10.25.2023

bbs
ARCHITECTS
ENGINEERS

219 Eighth Street
Suite 100
Des Moines, IA 50309
515.244.7167

www.bbsae.com



REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Stowe Elementary's on-site facility conditions assessment was conducted on October 25, 2023 and included visual conditions assessment from professionals covering interior architecture, exterior building envelope, the property's grounds (site), structural condition, mechanical (HVAC/Plumbing) systems, electrical systems (power, exterior lighting, interior lighting, fire alarm, and general IT), and the elevator conditions.

There were a few maintenance items noted for Stowe Elementary that are recommended to be addressed in the near future. These include fence reinstallation, counselor office intercom installation, exterior door and stoop repairs, roof hatch latch repairs, and addressing the guardrails at the interior stairs. During the assessment it was noted that particle board has been used to extend the stair guardrails at the interior stairs. This was unclear if this was a temporary or permanent solution, but the guardrail extensions should be addressed to ensure building code requirements are met. General maintenance appears to be adequate through the original and newer portions of the building. Consistent material and equipment choices throughout the building in the future will help the efficiency of building repairs and maintenance schedules and will help provide for the overall unity of the building character.

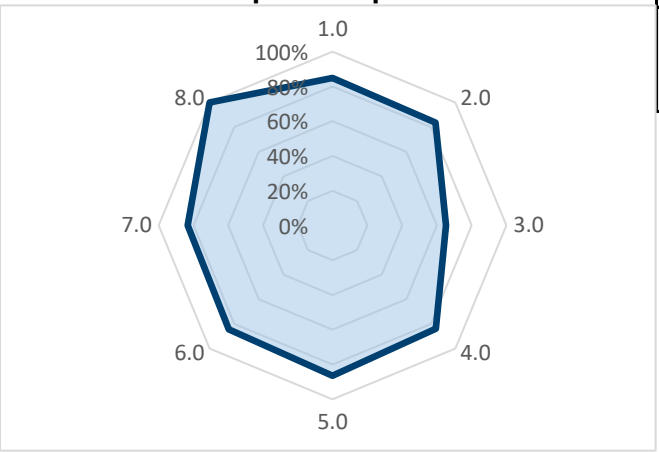
The recommended projects for Stowe Elementary to be completed in the next 1-2 years are as follows:

- Pavement Repairs
- Vestibule Flooring Replacement
- Retaining Wall Replacement
- MDP Breaker Replacement
- MDF Dedicated Panel Installation
- Exterior Receptacles Installation
- Emergency Eyewash Installation
- Hot Water Mixing Valve Replacement
- Ventilation Improvements

These projects along with all of the recommended potential projects at the 3-4 year and 5-10 year priority levels are further described within this report.

Discipline Comparison				Building Health				
Assessment Category Summary		Max Pnts	Earned Pnts	Bldg Weight Factor	Max Pnts	Earned Pnts	%	Rating
1.0	Educational Adequacy	165	140	2.00	330	280	85%	Satisfactory
2.0	Environment for Education	370	310	0.60	222	186	84%	Satisfactory
3.0	Exterior Envelope	95	62	3.00	285	186	65%	Borderline
4.0	School Site	100	84	1.50	150	126	84%	Satisfactory
5.0	Structural Conditions	140	121	1.30	182	157	86%	Satisfactory
6.0	Mechanical Systems	635	536	0.80	508	429	84%	Satisfactory
7.0	Electrical Systems	450	375	0.75	338	281	83%	Satisfactory
8.0	Elevator Conditions	65	65	1.00	65	65	100%	Excellent
Total					**2,080**	**1,710**	**82%**	**Satisfactory**

Stowe Elementary
Discipline Comparison



Rating Table				
1-29%	30-49%	50-69%	70-89%	90-100%
Inadequate	Poor	Borderline	Satisfactory	Excellent

After totaling the scores from the various discipline assessment reports Stowe Elementary scored a building health rating of 82%, or Satisfactory, per the scale described above. Per the graph shown on the cover page of this report, scores within the "green" range are considered positive scores. Stowe Elementary is within this positive range. Overall the building has been renovated and well cared for over the past 108 years. Exterior maintenance and repairs as described in this report will help the most to increase this rating to Excellent.

Building Data Record

Building Name: **Stowe Elementary**

Date: **10.25.2023**

Address: **1411 E 33rd St**
Des Moines, IA 50317

High School Feeder System: **East High**

Building SF: **56,957 SF**

Site Acreage: **10.65 Acres**

Date(s) of Construction: **1915, 1924, 1945, 1959, 2007 (renovation and addition)**

Date(s) of Roof Replacement: **1950, 2000, 2008**

Current/Scheduled Projects: **Flooring Renovation, Phase 1 - 2024**

Existing Building Data:

- [x] Egress Plans
- [x] Original Docs
- [x] Major Renovations and Additions
- [ ] Minor Projects
- [ ] Maint. Reports

Site Items:

- [ ] Student Garden
- [ ] Loading Dock
- [x] Stormwater Detention

Energy Source:

- [x] Electric
- [ ] Gas
- [x] Geothermal
- [ ] Solar

Cooling:

- [x] DX RTU or DOAS
- [ ] Chiller
- [ ] VRF
- [x] Water Source Heat Pump
- [ ] Fluid Cooler

Heating:

- [x] Gas/Electric RTU or DOAS
- [x] Boiler
- [ ] Water-to-Water Heat Pump
- [ ] VRF
- [x] Water Source Heat Pump

Structure Fireproofing:

- [ ] No
- [x] Yes

Construction:

- [x] Load Bearing Masonry
- [x] Steel Frame
- [x] Concrete
- [ ] Wood
- [ ] Other

Exterior Facade:

- [x] Brick
- [ ] Stucco
- [ ] Metal
- [ ] Wood
- [ ] Other

Floor/Roof Structure:

- [ ] Wood Joists
- [x] Steel Joists/Beams
- [x] Slab on Grade
- [x] Struct. Slab
- [ ] Other

A | Architectural, Programming

ASSESSOR: Kaela Shoemaker

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	2	5	10	
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	2	3	6	Needs acoustic treatment to minimize the excessive echoing. There is no projector, but a tv on a portable stand with sound is present. There is plenty of space and storage for physical education activities.
1.3	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	5	10	
1.4	**Music room** is adequate for providing introductory music instruction.	2	2	4	Main music room is adequate. Band and orchestra have lessons in the stairwell. Instruments are stored in the main music room or in classrooms. Stairwells do not provide the acoustics or privacy required for individual or small group lessons.
1.5	**Art room** has sufficient accommodations for program.	2	3	6	Finishes and arrangement of storage do not appear adequate for current art room work.
1.6	**Library/Resource/Media Center** provides appropriate and attractive space.	1	4	4	Space is arranged for classroom, reading, books, and breakout space. Furniture is over-sized, wooden tables and chairs.
Core Classroom					
1.7	Classroom space permits arrangements for **small group activity.**	3	5	15	
1.8	**Student storage space** is adequate.	2	5	10	
1.9	**Teacher storage space** is adequate.	3	4	12	Teacher storage is always in high demand. Most classrooms appear organized with an adequate amount of storage. What is lacking in many classrooms, according to staff, is closed storage. Built-ins are provided with built shelving that limits storage flexibility. Many teachers use curtains to cover open storage.
1.10	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	4	12	Flooring varies in classroom spaces, some wood, laminate, carpet. Carpet is in the best condition and does provide slightly better acoustic control than the laminate. Wood flooring needs some maintenance but is in good condition. Laminate is showing wear in higher traffic areas.

A | Architectural, Programming

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.11	**Classroom power and data receptacles** are located to support current classroom instruction.	4	4	16	Minor tripping hazard in one classroom. Upper grades have more power extension cords in space.
1.12	Educational **technology** supports instruction.	4	5	20	
Administration					
1.13	**Conference/Private meeting rooms** are adequate for large and small meetings.	1	5	5	Meeting spaces are in the administration office as well as on each level.
1.14	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			140	

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

2.0 Environment for Education

Design

		Weight Factor	Rating	Points	Comments
2.1	**Traffic flow** is aided by appropriate foyers and corridors.	1	5	5	
2.2	Communication among students is enhanced by **common areas.**	1	4	4	Table and chair or bench breakout spaces are scattered throughout. Furniture is limited in collaboration outside of core classroom.
2.3	Areas for students to **interact are suitable to the age group.**	1	4	4	Benches and chairs are wooden and more fitting for adult use. Classroom furniture is typically varied and provides for some varied postures.
2.4	Large group areas are designed for effective **management of students.**	2	5	10	
2.5	**Furniture Systems** are in good or like new condition.	1	4	4	Most all in good condition. About 40% of the furniture is showing signs of wear and cosmetic damage.
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	2	4	8	Different additions use different materials lending to a somewhat partitioned feel of the spaces. Way-finding and colors are constant throughout, however.
2.7	Windows and skylights provide access to **adequately controlled daylight** for regularly occupied spaces.	3	5	15	About 3 classrooms have damaged blinds.
2.8	Windows provide access to **quality views** (to exterior, courtyards, artwork etc.) for regularly occupied spaces.	3	5	15	
2.9	**Lighting has proper controls** to provide the required light levels for various teaching and learning needs.	2	3	6	Room 225 has occupancy sensor only and only at one entrance. Councilor, intervention, or special education spaces would benefit from added dimming controls. Teachers had lamps or covered lights.
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	4	4	No specifically dedicated staff restroom.

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.11	**Main office** is visually connected to the entry and is welcoming to students, staff, and guests.	2	2	4	Visually the main office can see the entry, however one has to enter into the main school corridor before entering the office.
2.12	**Break room** is adequately sized and furnished for proper use.	1	5	5	
2.13	**Mother's room** is a separate designated space properly furnished.	1	0	0	No designated Mother's Room.
Maintainability					
2.14	**Floor surfaces** are durable and in good condition.	1	3	3	Many classrooms with laminate flooring are showing wear. 2 classes have wood flooring showing wear. The art room flooring and terrazzo flooring at the stairs are showing damage.
2.15	**Ceilings** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	4	4	Service areas are in okay shape, areas of peeling paint or other minor staining.
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	3	3	Corridor walls, especially in level 2 are showing significant wear and damage. Corridor walls in general are
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	2	2	Wooden and plastic laminate casework are all showing cosmetic damage and age through color. Built in storage is seemingly inadequate or inefficient.
2.18	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	4	12	Minor cosmetic damage on older doors in the older portions of the building.
2.19	**Facility doors** are keyed to standardized master keying system.	3	4	12	Mechanical and electrical rooms are not keyed on the same facility master key.
2.20	**Restroom partitions** are securely mounted and of durable finish.	2	4	8	Partitions are in good condition. Hope showing some signs of cleaned graffiti. Phenolic panel partitions are on ground level and level 1, but they are in excellent condition.

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.21	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.22	Classroom doors are **recessed and open outward.**	4	5	20	
2.23	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	3	4	12	Classrooms have a keyed interior lockset, versus a thumb turn or other intruder style. Closures seem to be operable and no door stops were being used at the time of the assessment.
2.24	**Door panels** into classrooms and other occupied spaces contain **vision lite.**	3	5	15	
2.25	**Vision lite** in doors is clear and uncovered.	2	4	8	Only a few classrooms were covered. Several had a partial covering or a curtain that was open but could be closed. Note some wire glass is present.
2.26	**Glass** is properly located and protected to prevent accidental injury.	2	5	10	
2.27	**Flooring** is maintained in a **non-slip** condition	2	3	6	Vestibule carpet/flooring very worn. There was a musty smell at the time of the assessment. Potential replacement of walk-off mats may be necessary to prevent moisture concerns.
2.28	**Traffic areas terminate at exit or** stairway leading to egress	5	5	25	
2.29	Multi-story buildings have at least **two stairways** from all upper levels for student egress.	5	5	25	
2.30	**Stairs (interior and exterior)** are well maintained and in good condition meeting current safety requirements.	5	2	10	Wall base and treads showing some wear. Guardrail appears to have been too short and a partial-board wall has been screwed to the existing rail. Appears secure, but unfinished, and likely to not meet building code requirements.

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.31	At least **two independent exits** from any point in the building	5	5	25	
2.32	**Emergency lighting** is provided throughout the building.	5	5	25	
	TOTAL			314	

A | Architectural , Exterior

ASSESSOR: David Unick

3.0 Exterior Envelope

		Weight Factor	Rating	Points	Comments
Design					
3.1	Overall **design is aesthetically pleasing** and appropriate for the age of students.	2	2	4	Main building entry feels more like a secondary entry. Would benefit from canopy or other entry structure.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	3	9	PVC roofs are nearing end of service life and should be replaced in 5-10 years. Reseal top edge of termination bar along Roofs B and C.
3.3	**Roof access** is safe for all roofs.	3	3	9	Roof access acceptable. Roof hatch is difficult to latch; Safety gate at hatch needs repair. Second roof hatch (at original building) should be removed or provide safety rail. Provide safety rail at Roof E near mech unit. Access ladders in place between all roof levels except one.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	3	9	Window perimeter sealant generally in good condition, except cracking/gapping starting to occur on south 100-level window sills.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Windows appear to be tinted, and are insulated units.
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	4	8	No significant concerns.
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	3	6	All exterior doors are metal. One set requires replacement (West end of original building) and several sets should be re-painted.
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	4	4	Most of building is brick, and in is generally good condition. Some portions of upper level are EIFS, which is also in good condition. Reseal EIFS infill panel perimeter joints on north wall.
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	5	5	
3.10	**Exterior Doors are monitored** or controlled by an access control system.	1	4	4	(4) Entrances have card readers. (3) Entrances have keyed locksets. (2) Entrances have exit-only hardware. Zero doors have exterior identification numbers.
	TOTAL			62	

C | Civil

ASSESSOR: Jack Gorman

4.0 Stowe Elementary

		Weight Factor	Rating	Points	Comments
4.1	**Site topography** and grading drains water away from the building and retaining walls.	1	3	3	Drainage away from building is adequate. Eastern portion of site is rather steep with some erosion observed during visit, minor grading work may be necessary around retaining walls.
4.2	**Parking areas** are in good condition.	5	5	25	East lot looks to be in new condition with a few chips along the curb. The west parking lot in good condition with small portions of the curb needing replacement.
4.3	**Drive areas** are in good condition.	3	4	12	Drive through and drop off lanes were both in good condition. A couple of panels in the west lot drive area and bus lane will need replacement in 5+ years.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	4	4	About 10 spaces open in west lot, east lot was full with employee parking at the time of visit.
4.5	**Sidewalks** around the facility are in good **condition.**	1	4	4	A few panels in the bus lane need replacement. The sidewalk in the northwest corner of the site had a few tripping hazards, but overall good sidewalk conditions on site.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	4	4	No sidewalk access from playground to outdoor classroom but all important locations available by sidewalk.
4.7	**Hard surface** playground surfaces are in good condition.	3	3	9	Cracks were throughout asphalt pavement with sealer on most of them. Although the asphalt was cracking, it was still in decent shape and didn't appear to be at risk of failing. Asphalt on the lower lever to the south was in good condition.
4.8	**Fencing** around the site is in good condition.	1	4	4	Fence above north retaining walls in good condition. Fence along east and southeast sides of site overgrown with trees but still in good condition. There is a portion of the fence in the northeast corner completely missing.
4.9	**Trash enclosure** is in good condition.	1	4	4	The pavement inside the trash enclosure and bollards are holding up well. The gate was slightly damaged. The masonry brick around the enclosure appeared to be in adequate condition.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	5	5	Detention pond outlet and inlets in good condition and appropriately placed. The intakes in the parking lots were in good condition.

ASSESSOR: Jack Gorman

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	4	4	There is sufficient room for parking expansion to the east of the east parking lot, the building could be expanded to the east as well with some restrictions due to the steepness of the site.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	4	4	Dedicated bus lane on southwest corner of site. Drop off/pick up lane on site and separated from bus lane. Some stacking backed up into street at time of visit.
	TOTAL			82	

S | Structural

ASSESSOR: Erik Raker, P.E.

5.0 Structural Conditions

Foundations

		Weight Factor	Rating	Points	Comments
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	5	5	
5.2	There does not appear to be any **foundation settlement.**	2	5	10	
5.3	**Basement walls** do not appear to have any cracks.	1	4	4	Basement mechanical areas are very old and have clearly been modified multiple times under minimal engineering direction. That being said the basement walls appear to be in relatively good shape and there were no notable signs (or smells) of water issues at the time of the review
5.4	**Stoops** appear to be in good condition.	1	4	4	Generally stoops are in good condition with just a few minor cracks. Nothing of concern.

Slab on Grade

5.5	**Slabs on grade** do not appear to have any cracks	1	4	4	There appear to be some minor cracking in the terrazzo floor, but they appear rounded and worn which indicates they have been there for some time. This issue does not appear to be cause for concern.
5.6	Slabs on grade do not appear to have any **settlement.**	1	4	4	There appear to be some minor cracking in the terrazzo floor, but they appear rounded and worn which indicates they have been there for some time. This issue does not appear to be cause for concern.

Exterior Walls

5.7	**Brick masonry** appears to be in good condition.	2	5	10	
5.8	**Lintels** appear in good condition (no visible deflection or rust).	1	5	5	
5.9	**CMU** is in good condition.	1	4	4	Overall the exterior walls appear in good condition for the age and grade changes around this building. There are a few minor indications of movement but nothing of concern, or ongoing issues.
5.10	**Precast** is in good condition.	1	N/A	0	

S | Structural

ASSESSOR: Erik Raker, P.E.

		Weight Factor	Rating	Points	Comments
Interior Walls					
5.11	**Interior walls** appear to be in good condition.	1	5	5	No visible cracks in walls above grade.
Floor Framing (Elevated)					
5.12	**Floor framing** appears to be in good condition.	3	4	12	Floors appeared in very good shape for a structure of this age.
5.13	Floor framing appears to meet the **code requirements.**	3	5	15	
Roof Framing					
5.14	**Roof framing** appears to be in good condition.	3	5	15	Gym roof in very good condition. No visible signs of water damage on 3rd floor ceiling tiles.
Miscellaneous					
5.15	**Retaining walls** appear to be in good condition.	1	4	4	Retaining wall to the east in the playground is in excellent shape. No sign of movement of north garage wall retaining. South side of the site has a very old unengineered retaining wall that looks like it's on the property line and is in poor condition.
5.16	**Canopies** appear to be in good condition.	1	N/A	0	
5.17	**Loading dock concrete** appears to be in good condition.	2	N/A	0	
5.18	**Mechanical screening** appears to be in good condition.	2	5	10	
5.19	**Stairs** appear to be in good condition.	1	5	5	Stairs are in very good shape for a building of this age.
5.20	**Stair railings** appear to be in good condition.	1	2	2	Both stair railings have been extended by a wood particle board. Looks unengineered.

S | Structural

ASSESSOR: Erik Raker, P.E.

		Weight Factor	Rating	Points	Comments
5.21	**Tunnels** appear to be in good condition without cracks.	1	3	3	Basement mechanical space has clearly been modified over time. Mixture of materials. No signs of water or cracking.
5.22	There is a **designated hardened area** in the building.	1	0	0	Does not appear to exist.
5.23	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			116	

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

6.0 Mechanical Systems

HVAC Design

		Weight Factor	Rating	Points	Comments
6.1	**Zone Control.** Thermostats are provided in each space for individual zone control of space temperatures.	3	4	12	Few rooms are combined on a single thermostat.
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	
6.3	Appropriate **amount of ventilation** are provided to each space.	5	1	5	Classroom ventilation short. At 240 CFM per classroom this is not sufficient for occupancy. Cafeteria and gym are acceptable.
6.4	**Ventilation** is provided during occupied hours.	5	5	25	DOAS Units operational.
6.5	**Outdoor air intake locations** are appropriate.	4	3	12	DOAS equipment has limited separation.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	5	25	Exhaust through DOAS is sufficient for all area in the building.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	5	10	Outdoor air and exhaust air offsets are present at DOAS for building pressurization.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	5	25	All equipment appears to be in good condition overall and is approximately 15 years old. Some heat pumps replaced. ERVs, three total, appear to be newer equipment.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	No notable issues with cooling the building.
6.10	**Heating loads** are within equipment operations capacity.	5	5	25	No notable issues with heating the building.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.11	**Dehumidification** is provided and addressed humidity loads in incoming outside air.	3	5	15	DOAS equipment includes Hot Gas Reheat for dehumidification capacity.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	No notable pressure issues.
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	5	25	Dual RPZ setup and accessible
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	3	15	Domestic hot water mixing valves need rebuilt to maintain temperature consistently. Temperature at discharge exceeds setpoint temperature. Recommend use of electronic valve mixing valve.
6.15	Domestic **hot-water reicrulcating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	5	15	No known issues
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	No known issues
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	External underground grease interceptor installed per City of DSM.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	4	20	Roof scuppers or gutters used along perimeter areas with overflow drains in centrally located areas.
6.19	**Restroom fixtures** are in good condition and comply with current DMPS standards.	3	3	9	No automatic flush valves installed in restrooms. Wash stations are installed at restrooms exit and hallway.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	5	15	Heat pump locations are accessible . Mechanical room size sufficient.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	N/A	0	N/A
6.22	**Filter** sizes are standard and filter types are standard.	2	3	6	All classroom units have the same filter and accessible from floor. Console units have limited filter capacity for higher efficiency type. Other equipment have varing filter sizes.
6.23	**Equipment mounting heights** are reasonable.	3	5	15	
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	5	10	
6.25	**Isolation valves** are located in the plumbing and hydronic systems to allow for isolation of only portions of the system for servicing.	2	5	10	
6.26	Appropriate means are provided for **airflow and water balancing.**	3	5	15	
6.27	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	3	6	No roof hydrant for rooftop equipment.
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge as per OSHA standard 1910.28(b).	2	3	6	No fall protection for single power roof vent.
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	5	20	Recent DDC controls upgrade.
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.31	Building is fully **sprinklered.**	5	5	25	
6.32	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	0	0	Domestic hot water mixing valves need rebuilt to maintain temperature consistently. Temperature at discharge exceeds setpoint temperature. Recommend use of electronic valve mixing valve.
6.33	**Emergency eye-washes and tempering valves** are located where required.	5	3	15	Single eyewash located in kitchen. No eyewash in boiler room. No thermostatic mixing valve. Recommend evaluation with an occupational safety and health professional to determine if additional eye irrigation is needed.
6.34	**Emergency boiler stop switches** are located at exits from boiler rooms.	5	5	25	
6.35	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	N/A	0	
6.36	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	N/A	0	No gas fired equipment in building.
	TOTAL			536	

E | Electrical

ASSESSOR: David Carlson

7.0 Electrical Systems

Electrical Design

		Weight Factor	Rating	Points	Comments
7.1	**Transformer location** is easily accessible by utility line truck to allow for rapid transformer replacement in the event of an issue.	5	5	25	
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	5	25	
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	3	9	MDP is both serviceable and maintainable, but does not meet clearance requirements due to room being utilized for storage. Semi-permanent shelving has been erected in front of panel clear area.
7.4	The **MDP** appears serviceable.	4	2	8	Electrical renovation replaced MDP in 2008. Several breakers show signs damage from excessive heat or exposure to moisture.
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	4	16	Four empty spaces remaining of nineteen in main distribution panel.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	4	16	Clearances are adequate save for incidental light items stored in electrical room.
7.8	The Distribution Panel appears **serviceable.**	4	4	16	
7.9	The Distribution Panel is **maintainable.**	4	5	20	
7.10	The Distribution Panel will support **future expansion.**	4	5	20	

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** observed during assessment are safe, serviceable, and maintainable.	2	3	6	Panels observed are both serviceable and maintainable, but do not meet clearance requirements due to rooms being utilized for storage. In several instances, semi-permanent shelving has been erected in front of panel clear area.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	0	0	No exterior receptacles present save for integral within rooftop units.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	4	20	Light above door at NW corner inoperative. SW corner appears dark. Area by building at lower playground appears dark.
Electronic System Design					
7.14	MDF is **neatly organized** and has appropriate clearances and working spaces. Cables are neatly laced or trained. Entry to the room is restricted.	4	5	20	
7.15	MDF Equipment Racks have adequate space for **future growth.**	4	4	16	Rack is utilizing all but five usable spaces within the 45 unit rack. Removing un-utilized multi-mode fiber patch panel would improve available space for growth.
7.16	MDF is equipped with UPS to back up main switch(es), providing **backup power** to necessary equipment in the event of a power outage.	5	5	25	MDF Utilizes Minuteman Power Technologies 2kVA unit for single branch circuit battery backup.
7.17	MDF Power is supplied by **20A circuits and receptacles.**	1	5	5	
7.18	MDF Power is supplied from a branch panel located in the room with **adequate spare circuit capacity.**	1	0	0	No panel present within the MDF, receptacles fed from generic branch panelboard in adjacent room.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of cabling is category 5e.
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	N/A	0	Fiber optic cable present is 62.5 µm multi mode. However, no IDF is present.

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	5	10	
7.22	Building is equipped with an **addressable fire alarm system.**	5	4	20	Building utilizes Edwards EST3 fire alarm panel.
7.23	Building is equipped with an **access control system.**	5	2	10	4/9=44%
7.24	Building is equipped with a **CCTV system.**	5	5	25	
7.25	Building is equipped with an **intercom system.**	4	5	20	
7.26	Building is equipped with a **master clock system.**	4	5	20	
	TOTAL			375	

EV | Elevator

ASSESSOR: Mike Brown - ATIS

8.0 Elevator Conditions

		Weight Factor	Rating	Points	Comments
Design					
8.1	**Size** meets minimum as directed by ADA.	2	5	10	
8.2	**Control protections and signals** meet ADA standards.	2	5	10	
8.3	**Signage** meets code requirements.	1	5	5	
Operation and Safety					
8.4	Elevators have **proper level accuracy and door times.**	1	5	5	
8.5	**Safety devices** are in place and operable.	1	5	5	
Condition and Maintainability					
8.6	**Equipment is easily accessible** for periodic maintenance.	1	5	5	
8.7	**Equipment** is at an acceptable point in the life cycle, and does not contain obsolete parts.	2	5	10	
8.8	**Finishes** are adequate and maintainable.	1	5	5	
8.9	**Maintenance** is adequate.	1	5	5	
8.10	**Testing** is up to date, and all **record and logbooks** are present and filled out.	1	5	5	
	TOTAL			65	

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

One of the major impetuses for our facility condition assessment work is the need to support strategic fiscal and maintenance planning for their facilities. As such, DMPS requires that recommended projects be assigned a total project cost in order to support the strategic planning needs of the District. A total project cost is a cost that includes the estimated construction cost as well as the various other 'hard' and 'soft' costs of a construction project such as professional design fees, contractor overhead, required contingencies, inflation, direct costs (e.g. permitting costs), etc. The full list of these hard and soft costs are defined later in this section.

Project Descriptions

Every building assessment report includes a section titled Recommended Projects and Priorities. This section is divided into the following subcategories: "Short Term Maintenance", "1-2 Year Project Priorities", "3-4 Year Project Priorities", "5 - 10 Year Project Priorities", and "Projects Requiring a Study". Each of these subcategories includes a list of project recommendations. The projects listed in each subcategory are grouped by discipline and listed in the following order: interior architecture, exterior architecture, civil (site), structural, mechanical, electrical, and elevator projects. The discipline order as described mirrors the order of the discipline Scoring Reports section found earlier in the building assessment report. The projects listed within Short Term Maintenance section do not include a cost. It is assumed that DMPS will perform this work. Additionally, projects which recommend furniture repair or replacement do not include a cost since furniture systems are selected and procured via a separate process. All other projects associated with the remaining subcategories, other than "Projects Requiring a Study" are provided an estimated total project cost.

Projects Requiring a Study

The projects listed within Projects Requiring a Study are provided estimated professional design fees to produce the recommended design study. In the future, once commissioned and completed, these recommended studies will not produce a completed design. Rather, the completed study will provide recommended project descriptions and estimated total project costs similar to the projects listed in this assessment report. For studies that most likely will result in a substantial project with a substantial cost associated, an "anticipated capital investment" cost number has been provided to help assist the District's strategic planning. This anticipated capital investment cost is based on a 5-10 Year Priority completion date and very high level general 'rules of thumb' estimations since it is unknown exactly what conclusions or recommendations will be determined by the study before the study is commissioned and completed.

Cost Estimating

To achieve the total project cost reflected in this building report, the recommended projects incorporate construction costs with added percentages to account for professional design services, design phase contingency, construction contingency, general contractor overhead and profit, other direct costs incurred by the project, and year-over-year inflation dependent on how many years out the recommended project is recommended to be completed. Not included in the total project cost are costs associated with hazardous materials abatement, testing, surveys, or site exploration (geotechnical testing, etc.). Additionally, for projects that are expected to produce a minimal amount of waste that is normally acceptable to City of Des Moines collection, costs for dumpsters have been excluded. To arrive at the final estimated total project cost as described above, the following methodology was used by the assessment team for each recommended project:

Step 1: Determine estimated direct cost of construction in 2024 dollars.

The recommended projects are conceptual in nature; therefore, all cost multipliers are overall systems level and/or unit costs. (These costs are not based on itemized breakdowns.) The cost information used is based on current available information which is in 2024 dollars and is a mixture of recent bids, firm experience, manufacturer provided information, and RS Means costing data.

Step 2: For recommended projects that are smaller in scale, scope, and estimated cost, a "small project fee" additive cost is applied to the estimated direct cost of construction determined in Step 1. This additive cost works to cover outsized mobilization, staffing, and equipment costs that are incurred on a small scale project the same as for a large project with a large economy of scale. These costs are as follows:

For projects with a Step 1 cost of $4,999.99 or less, an additive cost of $5,000.00 has been added.

For projects with a Step 1 cost of $5,000.00 to $14,999.99, a graduated additive cost from $5,000.00 to $0 has been added.

For all other projects (Step 1 cost of $15,000.00 and above) this step is skipped.

Step 3: Add 10% of the estimated direct construction cost for construction contingency.

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

Step 4: Add a percentage of estimated direct construction cost plus construction contingency for inflation.
The projects are grouped based on how many years out it is recommended that the project is started. Projects closer to 2024 are more urgent projects. As project start times move further and further away from 2024, inflation must be added to best estimate how 2024 dollars will translate into the future. 5% year-over-year inflation was chosen as a reasonable assumption for this work.

- For projects assigned the 1-2 Year Priority add 10% of the estimated construction cost.
- For projects assigned the 3-4 Year Priority add 20% of the estimated construction cost.
- For projects assigned the 5-10 Year Priority add 50% of the estimated construction cost.

Step 5: Add 5% of the estimated direct construction cost, construction contingency, plus inflation for general conditions.
This cost covers the incidental costs incurred by the contractor to perform the work that are not directly tied to the specific materials and labor; examples include mobilizing to the site and final cleaning.

Step 6: Add 10% of the estimated direct construction cost, construction contingency, inflation, plus inflation for general contractor overhead and profit; combined, this is the total construction cost.

Step 7: Add 10% of the total construction cost for professional design services.
These services include, when appropriate: architectural design and project management, civil engineering, structural engineering, mechanical engineering, and electrical engineering. These services are for conceptual design through construction phase work.

Step 8: Add 5% of the total construction cost and professional design services for other direct costs.
These costs cover various other costs directly associated with the project such as printing, equipment, required permits, etc.

At the conclusion of Step 8, the total project cost for the recommended project is finalized.

PROJECT RECOMMENDATIONS

Below are recommended maintenance, projects, and studies based on the previous assessment scoring information. Short Term Maintenance items are items requiring DMPS attention in less than a year's time and is less than $5,000. Costs for these items are not estimated. 1-2 year priority projects are projects that require attention within the next 2 years. 3-4 year priority projects are projects that require attention within the next 4 years. 5-10 year priority projects are projects that require attention within the next 10 years. Project quantities are all estimated based on observations. These are not measured or verified quantities. Project costs are listed. Project requiring Study are items where project scope is not able to be defined at this time and further investigation is required. Costs for these items are design service fees, not project costs. See the Cost Methodology description for additional information.

Short Term Maintenance

Roof Hatch Latch repair	The roof hatch is difficult to operate. Repair the latch mechanism and replace broken hatch guard gate.
Fencing Replacement	Restore fence on NE corner of site. There is a missing portion that needs to be replaced.
Intercom Installation	The counselor's office, room 208A, is an added office that was previously part of the larger room 208. An intercom should be installed in this office to match the rest of the building.
Light Repair	Repair exterior light fixture above door at NW corner.
Storage at MDP Relocation	Remove and relocate storage from around the MDP. MDP is required to have a 3'-0" clear area in front for regular and emergency access and maintenance.
Exterior Wall Cleaning	Clean exterior walls, window sills, and roof parapets to remove any stains, mildew, or other biological growth.

1 - 2 Year Priority

		Project Costs
Flooring Replacement	Carpet at each vestibule, other than the main entry, is significantly worn and has a musty smell. This should be replaced with maintainable non-slip flooring such as walk-off carpet. Approximately 65 LF of wall base and 130 SF of carpet replacement, total.	$7,000.00

Exterior Door Replacement	Southwest exterior exiting door is rusting due to poor slopping at the stoop and ponding water. Replace the exterior door and frame, including sidelights. Approximately 6'-0" x 7'-0" double door with 1'-0" sidelights each side. Glazing is approximately 3-6" x 10" each side. Metal infill panel below. Complete this project with Stoop Replacement project below.	$12,000.00
Sealant Replacement	Replace joint sealant at sill of 1st floor windows, south wall (8 windows, 85 LF) and at perimeter of EIFS infill panels on north wall above Roof C (3 windows, 45 LF total)	$7,000.00
Paint Lintels and Canopy	Remove rust and repaint steel lintels on south wall of building (4 lintels, 20 LF total.) Repaint canopy at west entry (80 SF.)	$7,000.00
Pavement Repairs	Replace pavement panels and fix tripping hazards by entryways. For locations, refer to civil site plan exhibit found in the appendix of this report.	$13,000.00
Stoop Replacement	The stoop outside of the southwest exterior exiting door should be replaced and sloped away from the building. Approximately 20SF of stoop replacement. Complete this project with Exterior Door Replacement project above.	$9,000.00
Curb Repairs	Return damaged curbs to new condition. Approximately 17 LF of 6" curbs. For locations, refer to civil site plan exhibit found in the appendix of this report.	$6,000.00
Heat Pump Replacement	Replace remaining heat-pumps that are over 15 years in age. Corridors, conference and commons. Consider a two-speed style heat-pump to reduce demand on wellfield.	$1,800,000.00
MDP Breaker Replacement	Several breakers show signs of heat damage (yellowing, deformation of plastic) and should be replaced.	$20,000.00
MDF Dedicated Panel Installation	Isolate electrical service to MDF with new panelboard located within the room.	$15,000.00

Exterior Lighting Installation	Add exterior lighting at SW corner and near building at lower playground.	$9,000.00

Total 1-2 Year Project Costs **$1,905,000.00**

3 - 4 Year Priority

		Project Costs
Casework Replacement	Replace plastic laminate casework throughout the classrooms with priority at wet locations. Solid surface countertops are recommended. Approximately 120 LF and includes 25 sinks.	$310,000.00
Corridor Wall Refinish	Repair walls and wall base as necessary and paint all corridor walls. Approximately 40LF of terrazzo base repair. Approximately 10,000 SF of wall refinish. Approximately 500 SF of wall repair.	$60,000.00
Roof Repairs	Reflash connection of Roof A to B to eliminate joint against drainage. (120 SF membrane flashing.) Reseal top of roofing termination bar at sidewalls adjacent to Roofs B and C (180 LF.) See appendix for roof identification plan.	$11,000.00
Improve Roof Access/Installation	Install roof access ladder between roofs A and B (4 LF.) Provide guard at hatch on Roof D, or remove at time of reroofing. Ladder access at Roof E (from F) is obstructed by piping. Relocate ladder to perpendicular wall to access Roof G. Provide guard rail at roof edge north of AHU on Roof F (10 LF.) See appendix for roof identification plan.	$14,000.00
Drainage Repair	Repair the wash out by the middle retaining walls. For location, refer to civil site plan exhibit found in the appendix of this report.	$9,000.00
Pavement Replacement	Install reinforced PCC in front of trash enclosure. For location, refer to civil site plan exhibit found in the appendix of this report.	$12,000.00
Stair Guardrail Replacement	Remove particle board guardrail top-extensions. Replace guardrails with a code compliant fully engineered system - 80 LF. Recommendations based on expected life of particle board extension, unknown current structural performance to meet safety codes, and aesthetics	$50,000.00

Domestic Hot Water Thermostatic Mixing Valve	Replace domestic hot water thermostatic mixing valves with new digital mixing valve.	$13,000.00
Wash Station Faucet Replacement	Replace push button type wash station faucets with preferred hands free faucet. Recommended project based on meeting DMPS 2023/2024 standards and 2023/2024 condition.	$40,000.00
Flush Valve Replacement	Replace flush valves and include preferred autoflush type. Recommended project based on meeting DMPS 2023/2024 standards.	$55,000.00
	Total 3-4 Year Project Costs	**$574,000.00**

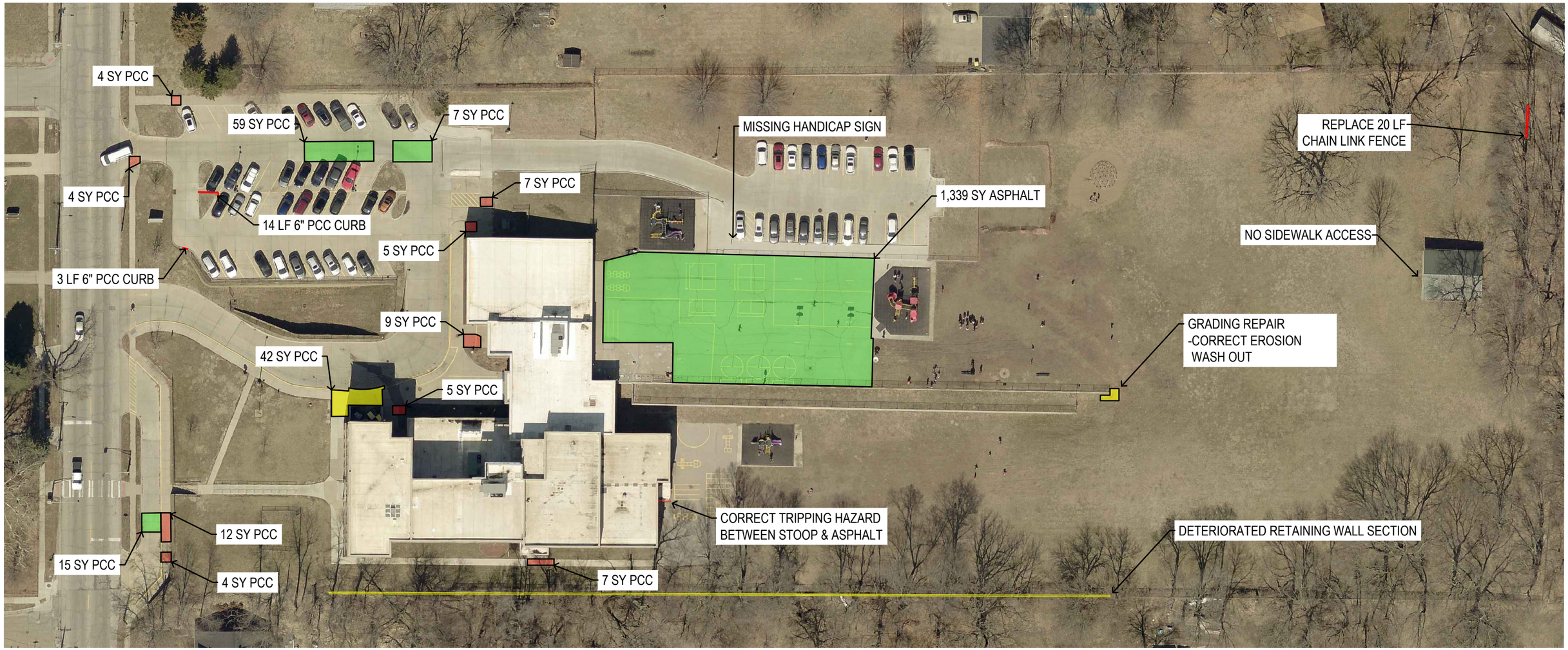
5 - 10 Year Priority

		Project Costs
Roof Replacement	Full roof replacement recommended, 23,200 SF. Replace PVC with TPO.	$740,000.00
Playground Pavement Replacement	Restore playground asphalt pavement. For location, refer to civil site plan exhibit found in the appendix of this report.	$240,000.00
Parking Pavement Replacement	Remove and replace degenerated sections of parking pavement. For location, refer to civil site plan exhibit found in the appendix of this report.	$15,000.00
Exterior Wall Repair	Remove and replace sealant in exterior masonry joints. Approximatley 450 LF. Clean exterior walls, window sills, and roof parapets to remove any stains, mildew, or other biological growth. Approximately 24,000SF of exterior wall cleaning.	$250,000.00
Hydronic Pumps	Install new geothermal loop pumps. Install new circulation pump on backup electric boiler.	$170,000.00
Water Heater Replacement	Replace two electric hot water heaters, EWH-1 - 50 gallon and EWH-2 30 gallon	$90,000.00
	Total 5-10 Year Project Costs	**$1,505,000.00**

Projects Requiring Study

		Design Services Fee
Mother's Room Space	Study to define a private, dedicated, space for a Mother's Room that includes at least a sink, side table, chair, and privacy door hardware.	$5,000.00
Band Room Improvements	A study should be conducted to determine where a dedicated band room for lessons and instrument storage could be located.	$5,000.00
Main Office and Entry Improvement	A study should be conducted to look at redesign or relocation of the front office and main entry sequence. This study should include main office relocation or addition as well as an addition or modification to the main entrance exterior to increase way finding. For safety and security this study should be prioritized. The Anticipated Capital Investment is based on a 2,000 SF renovation and a 2,000 SF addition. Anticipated Capital Investment: $1,600,000	$10,000.00
Designated Hardened Area	No designated hardened area was observed. Study to determine the feasibility of adding a designated hardened area, including location, within the existing building, schematic design concept if deemed feasible, and preliminary project costs.	$2,500.00
Retaining Wall Investigation	Retaining wall to the south of the site should be replaced. Civil and structural concerns with existing conditions. Approximately 500 LF for replacement. See civil exhibit for location.	$5,000.00
Ventilation and Exhaust System Improvements	The level of ventilation to classrooms is below what is required. Current system is only 50 to 60% of recommended airflow. The DOAS unit that provides this ventilation was recently replaced, but the amount of ventilation provided was not increased at that time. Investigate options to provide the required amount of ventilation to the Classrooms. Anticipated Capital Investment: $1,700,000	$7,500.00
	Anticipated Capital Investment Costs	**$3,300,000**
	Total Study Design Service Fees	**$35,000**

APPENDIX



5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

60 0 30 60 120

bbs ARCHITECTS ENGINEERS

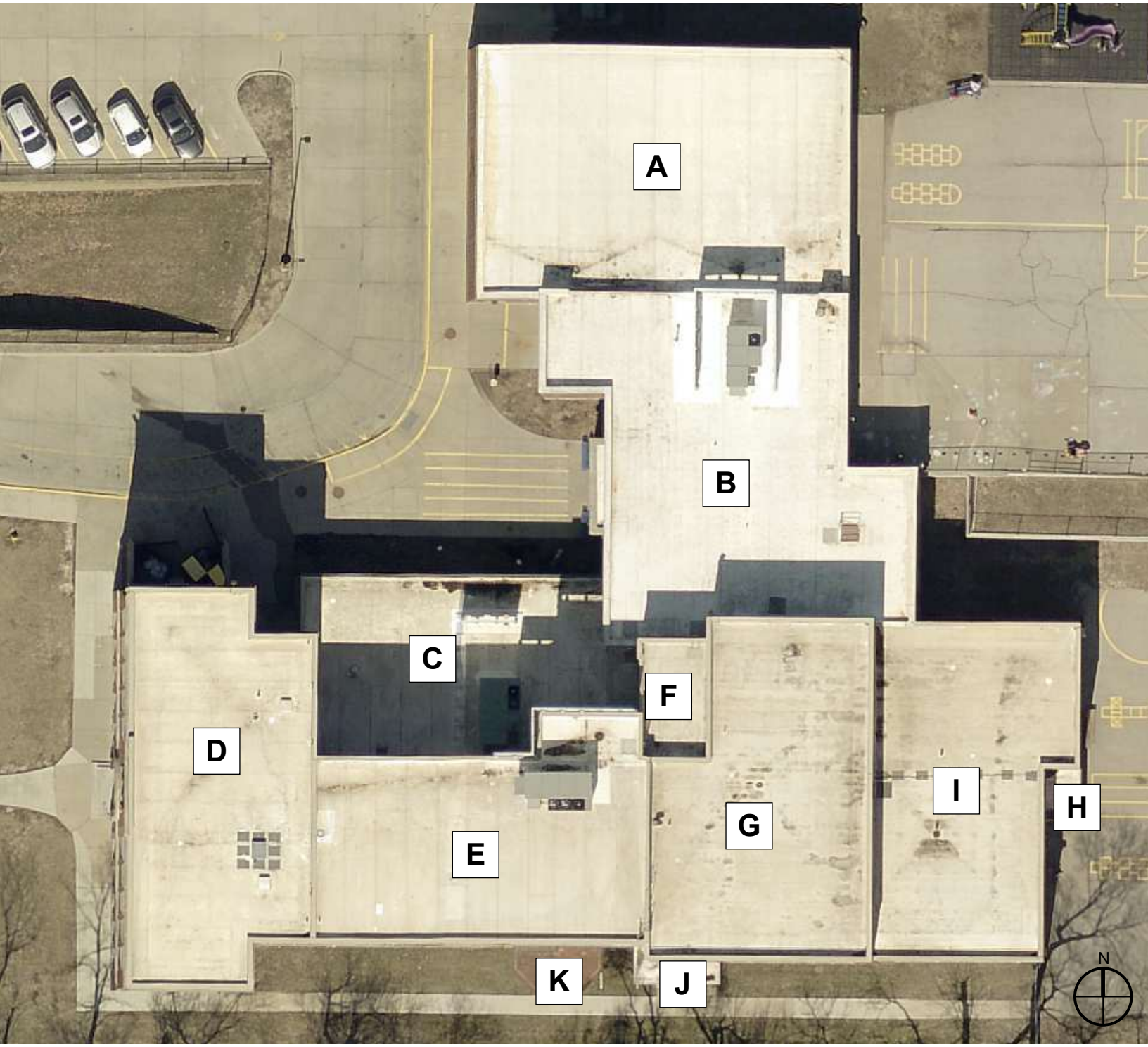
BISHOP ENGINEERING +

STOWE ELEMENTARY

EXHIBIT

PROJECT # 230286-33

DATE 10/6/2023



bbs ARCHITECTS ENGINEERS

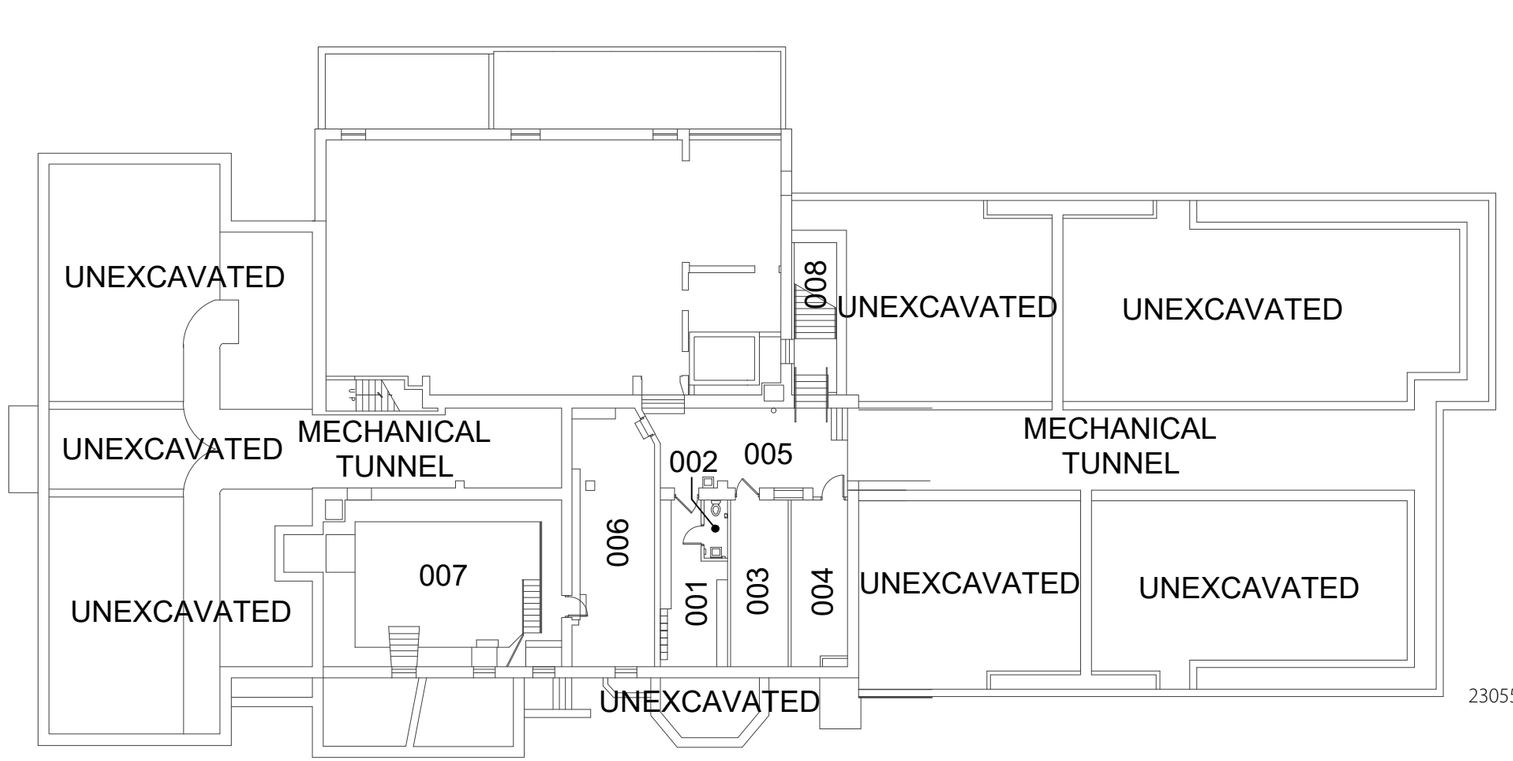
23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Stowe Elementary
10.25.2023

STOWE ELEMENTARY SCHOOL

1411 E 33RD STREET
DES MOINES, IOWA 50317

FOUNDATION

NORTH



- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment

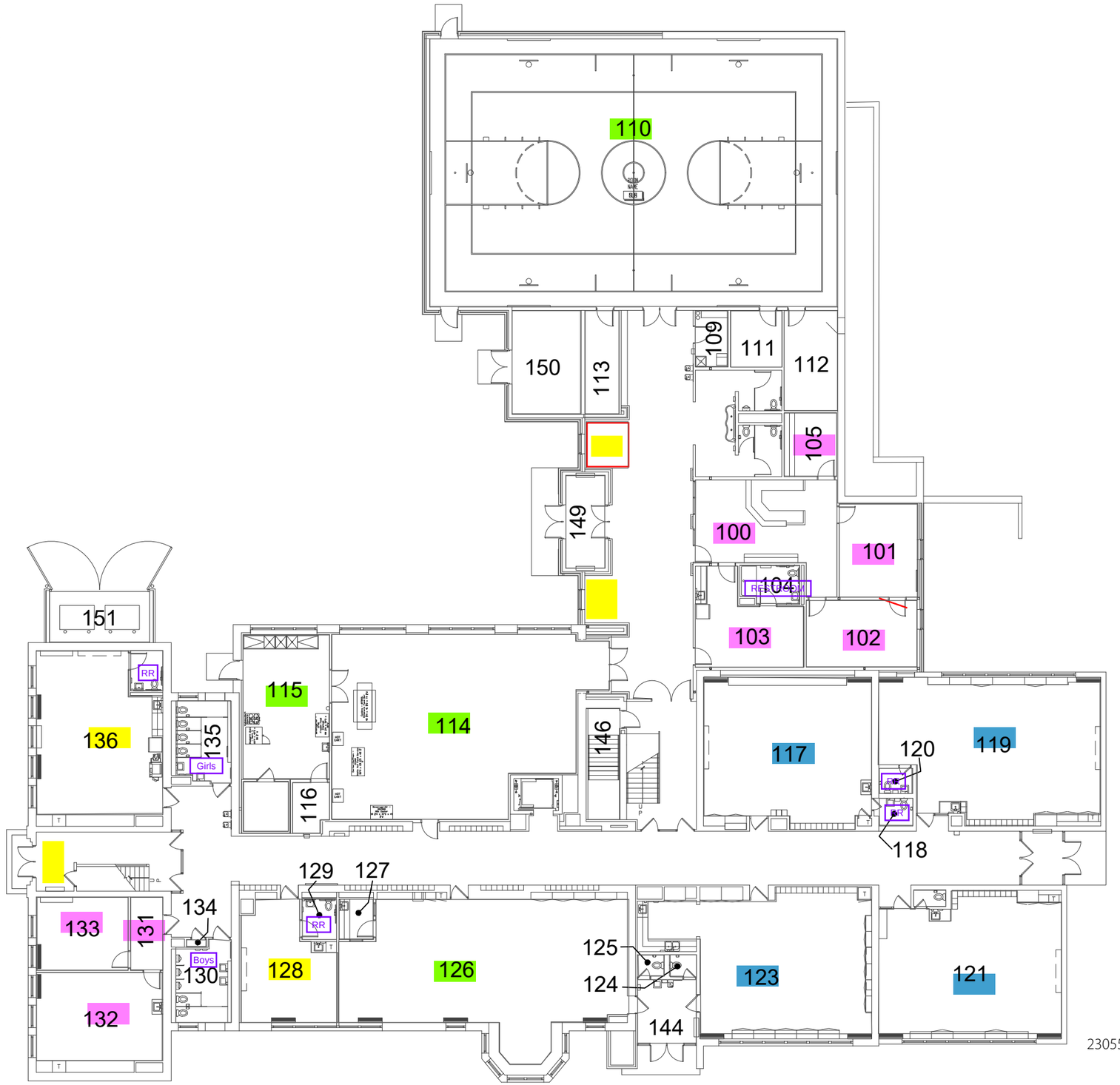
10.25.2023

STOWE ELEMENTARY SCHOOL

1411 E 33RD STREET
DES MOINES, IOWA 50317

FIRST FLOOR

NORTH



- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

bbs ARCHITECTS ENGINEERS

STOWE ELEMENTARY SCHOOL

1411 E 33RD STREET
DES MOINES, IOWA 50317

SECOND FLOOR

NORTH

- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

bbs ARCHITECTS ENGINEERS

STOWE ELEMENTARY SCHOOL

1411 E 33RD STREET
DES MOINES, IOWA 50317

THIRD FLOOR

NORTH

- Core Classroom
- Student Support
- Administration
- Large Shared Space
- Other

bbs
ARCHITECTS
ENGINEERS