DMPS FACILITY ASSESSMENT | HOWE ELEMENTARY

11.14.2023

ARCHITECTS
ENGINEERS

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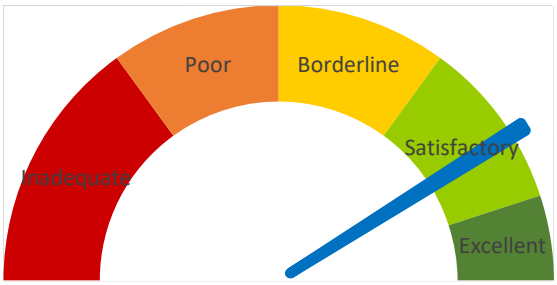


REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Howe Elementary's on-site facility conditions assessment was conducted on November 14, 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.

Maintenance items flagged at Howe include clearing of exit pathways, minor site grading, minor sealant replacement, exterior door adjustments, sidewalk hole repair, and missing wall anchors in the gymnasium. In general, the building is well maintained especially given the age of the original building.

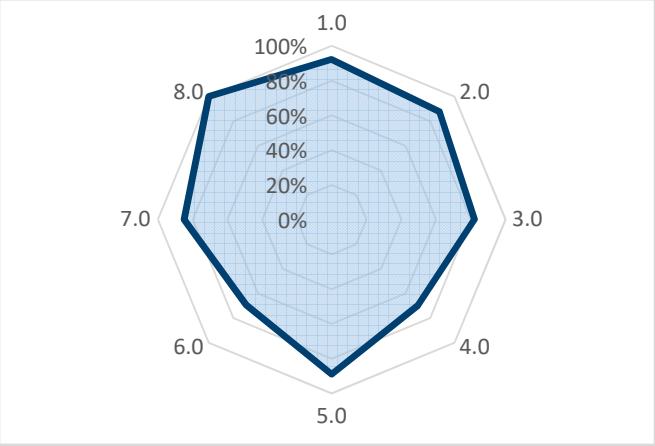
The recommended projects for Howe Elementary to be completed in the next 1-2 years are as follows:

- Roof access improvements
- Replacement of sealant at parapet caps
- Replacement of some asphalt and concrete paving
- Structural repairs to floor decking
- Mechanical HVAC equipment replacements
- Electrical power panel 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	152	2.00	330	304	92%	Excellent
2.0	Environment for Education	375	329	0.60	225	197	88%	Satisfactory
3.0	Exterior Envelope	95	78	3.00	285	234	82%	Excellent
4.0	School Site	100	70	1.50	150	105	70%	Borderline
5.0	Structural Conditions	145	129	1.30	189	168	89%	Satisfactory
6.0	Mechanical Systems	645	448	0.80	516	358	69%	Borderline
7.0	Electrical Systems	450	382	0.75	338	287	85%	Satisfactory
8.0	Elevator Conditions	65	65	1.00	65	65	100%	Excellent
Total					**2,032**	**1,653**	**81%**	**Satisfactory**

Howe 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 Howe Elementary scored a building health rating for 81% 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. School Site and Mechanical Systems for this building are both rated as "Borderline" and will require significant upgrades. The project proposed in this report will help increase the rating for each of these categories and the building as whole.

Building Data Record

Building Name: Howe Elementary

Date: November 14, 2023

Address: 2900 Indianola Avenue
Des Moines, IA 50315

High School Feeder System: Lincoln High School

Building SF: 42,891 square feet

Site Acreage: 4.83 acres

Date(s) of Construction: 1919, 1920s, 1957, 2010, 2017, 2018

Date(s) of Roof Replacement: 1995, 2013, 2017, 2019

Current/Scheduled Projects: Accessibility Improvements - 2024
HVAC Upgrades - 2025

Existing Building Data:

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

Site Items:

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

Energy Source:

- [x] Electric
- [x] 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
- [ ] Boiler
- [ ] Water-to-Water Heat Pump
- [ ] VRF
- [x] Water Source Heat Pump

Structure Fireproofing:

- [x] No
- [ ] Yes

Construction:

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

Exterior Facade:

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

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Tim Bungert

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	5	10	
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	5	10	
1.5	**Art room** has sufficient accommodations for program.	2	5	10	
1.6	**Library/Resource/Media Center** provides appropriate and attractive space.	1	5	5	
Core Classroom					
1.7	Classroom space permits arrangements for **small group activity.**	3	2	6	Classrooms, especially older grades, are very crowded and do not allow much space for small groups to work apart from student desks.
1.8	**Student storage space** is adequate.	2	5	10	
1.9	**Teacher storage space** is adequate.	3	5	15	
1.10	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	5	15	

A | Architectural, Programming

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
1.11	**Classroom power and data receptacles** are located to support current classroom instruction.	4	5	20	
1.12	Educational **technology** supports instruction.	4	5	20	
Administration					
1.13	**Conference/Private meeting rooms** are adequate for large and small meetings.	1	1	1	Other than classrooms or administrator offices there are very few conference or meeting spaces available.
1.14	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			152	

A | Architectural, Interior

ASSESSOR: Tim Bungert

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	3	3	Very few common areas provided. The cafeteria is not currently accessible for students or staff with mobility impairments. Room 100 adjacent to the upper level of the cafeteria is likewise inaccessible. The built-in stepped seating in this room is also a barrier to accessibility.
2.3	Areas for students to **interact are suitable to the age group.**	1	3	3	See comment on Item 2.2.
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	5	5	
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	2	3	6	Historic portions of the building are worn with age but still attractive. Later additions to the building lack any cohesive interior design elements that might reinforce the character of the school as a whole.
2.7	Windows and skylights provide access to **adequately controlled daylight** for regularly occupied spaces.	3	5	15	
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	5	10	Classrooms in the additions have both multi zone and dimming controls for lights.
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	3	3	Work space and staff restrooms provided, but no conference spaces provided. Some staff offices are located in spaces that are not accessible, lack adequate ventilation, or do not provide a comfortable work environment (rooms 114 and 204).

A | Architectural, Interior

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
2.11	**Main office** is visually connected to the entry and is welcoming to students, staff, and guests.	2	5	10	
2.12	**Break room** is adequately sized and furnished for proper use.	1	3	3	Staff work room / break room is small and very crowded.
2.13	**Mother's room** is a separate designated space properly furnished.	1	0	0	No mothers room observed.
Maintainability					
2.14	**Floor surfaces** are durable and in good condition.	1	5	5	
2.15	**Ceilings** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	4	4	Significant water damage was observed on ceiling tile in room 105. Recommend further investigation to determine and rectify the cause.
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	5	5	
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	4	4	Original wood casework in all older classrooms has damage to finish on many corners and edges. Wood veneer casework doors are damaged in rooms 107, 108, and 209.
2.18	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	4	12	Wood doors are in generally good condition, even the historic doors. Doors in rooms 105 (two toilet rooms), 140, and 204 have veneer damage needing repair.
2.19	**Facility doors** are keyed to standardized master keying system.	3	5	15	
2.20	**Restroom partitions** are securely mounted and of durable finish.	2	5	10	

A | Architectural, Interior

ASSESSOR: Tim Bungert

		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	4	16	Classroom doors open outward but many are not recessed from the corridor.
2.23	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	3	5	15	
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	5	10	
2.26	**Glass** is properly located and protected to prevent accidental injury.	2	5	10	Many doors contain wire glass.
2.27	**Flooring** is maintained in a **non-slip** condition	2	5	10	
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	3	15	Main stair to cafeteria/media center does not meet current building codes for guard rail height.

A | Architectural, Interior

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
2.31	At least **two independent exits** from any point in the building	5	3	15	Multiple exit pathways (rooms 128, 1122) and stairs (stair 003) are obstructed by stored items or furniture.
2.32	**Emergency lighting** is provided throughout the building.	5	5	25	
	TOTAL			329	

A | Architectural , Exterior

ASSESSOR: Matthew Gaul

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	5	10	
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	3	9	Upcoming roof replacements in 3-4 and 5+ years.
3.3	**Roof access** is safe for all roofs.	3	3	9	Roof hatch does not have guardrail. 4 roof transitions do not have adequate safe access.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	5	15	
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Glazing is tinted Low-e coating cannot be determined
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	5	10	
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	5	10	
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	5	5	
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	5	5	2 doors are blocked by storage; egress from rooms 105 - 106 and 1122.
3.10	**Exterior Doors are monitored** or controlled by an access control system.	1	1	1	02 - Doors do not latch 03 - Doors with card readers 10 - Doors with locks or no exterior lock 13 - Doors with no signage.
	TOTAL			78	

C | Civil

ASSESSOR: Jack Gorman

4.0 Howe Elementary

		Weight Factor	Rating	Points	Comments
4.1	**Site topography** and grading drains water away from the building and retaining walls.	1	4	4	Good drainage away from the building and the retaining walls to the north were in good condition. There was a hole the north of the north side walk that was quite deep and creates a tripping hazard.
4.2	**Parking areas** are in good condition.	5	4	20	There was some cracking in the north parking area asphalt but the pavement was not failing. The south lot was new concrete and in good condition.
4.3	**Drive areas** are in good condition.	3	3	9	The north asphalt section of the north lot was in poor condition in areas. The south lot drive areas were holding up well.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	2	2	Parking is limited on site, staff were observed parking along the curb of the north lot and in the No Parking area of the south lot.
4.5	**Sidewalks** around the facility are in good **condition.**	1	4	4	Some sections of the north side sidewalk need repair but all other sidewalk areas were in good condition.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	5	5	Site was easy to navigate by sidewalk and all doors had sidewalk access.
4.7	**Hard surface** playground surfaces are in good condition.	3	4	12	The south playground area was primarily new concrete and in good condition. The north asphalt pad was cracking and had some sagging locations.
4.8	**Fencing** around the site is in good condition.	1	3	3	The fence along the east side of the site is old and due for replacement. The fence on the south and southwest sides of the playground area was old and will need replacement down the road.
4.9	**Trash enclosure** is in good condition.	1	4	4	Some of the pavement around the bollards of the trash enclosure had minor cracks but the fence and gate were in good condition.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	3	3	The detention basin outlet was in good condition, the FES in the basin was covered with dirt and needs to be cleared out and rip-rap elevation adjusted lower. It appears that there in an intake in the NE corner of the north parking lot that is covered and filled with sediment.

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	3	3	A building addition to the south is possible, however there isn't much room for any parking expansion. Could add a few parking stalls in the SW lot (5-10?)
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	1	1	Bus and parent drop off are in the south parking lot. The shared area creates conflicts between the buses and parents. Back ups onto to 7th St. occurs on a daily basis.
	TOTAL		70		

S | Structural

ASSESSOR: Niles Quick

5.0 Structural Conditions

		Weight Factor	Rating	Points	Comments
Foundations					
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	4	4	Footing below fire escape stair landing outside of room 004 is degrading and appears to be sitting on old brick.
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	5	5	
5.4	**Stoops** appear to be in good condition.	1	5	5	
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	4	4	Minor spider cracking in slab throughout the main floor corridor. Nothing of concern.
5.6	Slabs on grade do not appear to have any **settlement.**	1	5	5	
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	4	4	Very minor rusting on the older window lintels
5.9	**CMU** is in good condition.	1	5	5	
5.10	**Precast** is in good condition.	1	N/A	0	

S | Structural

ASSESSOR: Niles Quick

		Weight Factor	Rating	Points	Comments
Interior Walls					
5.11	**Interior walls** appear to be in good condition.	1	5	5	
Floor Framing (Elevated)					
5.12	**Floor framing** appears to be in good condition.	3	4	12	Building floor framing looks to be in good condition overall. The wood floor storage area next to the stairs leading down to the MEP room next to room 134 does not appear to be engineered. Some areas in the tunnel off of room 010 have some sagging metal deck.
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	4	12	Some missing ledger anchors into CMU in gym. Looks to be approximately 3 - 4 anchors on the North and South side of the gym.
Miscellaneous					
5.15	**Retaining walls** appear to be in good condition.	1	5	5	
5.16	**Canopies** appear to be in good condition.	1	5	5	
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	4	4	Minor spalling and cracks in exterior concrete stairs next to room 116.
5.20	**Stair railings** appear to be in good condition.	1	4	4	Minor rusting and missing anchor on a railing post on exterior stair next to room 116 and outside of entrance 125.

S | Structural

ASSESSOR: Niles Quick

		Weight Factor	Rating	Points	Comments
5.21	**Tunnels** appear to be in good condition without cracks.	1	5	5	
5.22	There is a **designated hardened area** in the building.	1	0	0	No designated hardened area observed.
5.23	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			129	

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	3	9	Appears school has rooms used for offices with no HVAC provided.
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	3	9	Appear school has rooms used for offices with no HVAC provided.
6.3	Appropriate **amount of ventilation** are provided to each space.	5	5	25	
6.4	**Ventilation** is provided during occupied hours.	5	1	5	Single ERV not operational during assessment
6.5	**Outdoor air intake locations** are appropriate.	4	4	16	Intake and exhaust mounted on rooftop equipment.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	2	10	Appears to be using auxiliary exhaust fans and dampers at restrooms and no ERV opertional.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	1	2	ERV not operational and auxiliary exhaust fans used at restrooms
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	3	15	Original building equipment is approaching 13 years. Later additions have newer equipment in 2017 and 2018.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	Yes
6.10	**Heating loads** are within equipment operations capacity.	5	2	10	Appears no backup boiler or other source of heat in 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	2	6	Appears to be no dehumidification in classrooms. New additions for office and gym include DOAS with dehumidification capability.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	2	10	Poor flow at second level lavatory. No plumbing improvements appear to have been made except for new fixtures.
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	2	10	Unable to locate water service entrance.
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	5	25	Domestic hot water heater in new addition. Existing domestic hot water heater serves existing restrooms.
6.15	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	1	3	New addition includes hot water recirc. Older existing does not appear to have any recirc pumps or thermostatic mixing valve.
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	Yes
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	0	0	No interior or exterior tank type grease interceptor appears to have been installed. Addition of a DMMWRA approved device appears to be needed.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	5	25	Yes
6.19	**Restroom fixtures** comply with DMPS preferences.	3	3	9	New addition has wash stations and hands free faucets. New fixtures in existing restrooms have manual faucets at sinks. Auto flush throughout.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	4	12	Except for ceiling installed WSHP all equipment has good access.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	5	10	Indoor AHU (DOAS) in gym addition is at floor level has coil pull space
6.22	**Filter** sizes are standard and filter types are standard.	2	4	8	Filters vary with equipment type. Some use of filters at return grille.
6.23	**Equipment mounting heights** are reasonable.	3	4	12	WSHPs in corridor ceiling have significant height and require 10 ft ladder. All other equipment roof or floor mounted. AHU-1 (DOAS) in gym addition is located in room and surrounded by boxes and other equipment and difficult to get to.
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 hydrant on roof for rooftop equipment
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge.	2	3	6	Missing access ladder to roof levels and some equipment to require fall protection.
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	5	20	
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	2	10	No mixing valve present at domestic hot water
6.33	**Emergency eye-washes and tempering valves** are located where required.	5	5	25	Mechanical room includes EEW/ES with ANSI mixing valve. Appears that periodic testing may be needed.
6.34	**Emergency boiler stop switches** are located at exits from boiler rooms.	5	N/A	0	No boiler. Old boiler switch remains from pre-2010.
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	3	15	Unable to confirm CO detector in new addition.
	TOTAL			448	

E | Electrical

ASSESSOR: Bart Caldwell

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	3	15	The pad mount utility transformer is leaking oil. MidAmerican Energy was notified by BBS on 11/14/2023 at 4:37pm. The dispatcher said they would send someone out to investigate.
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	5	15	Eaton Cutler Hammer. 1200A, 277/480V, installed in 2010. Max demand 226A.
7.4	The **MDP** appears serviceable.	4	4	16	MDP was installed in 2010. Approx. 13 years old but still in good condition.
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	1	4	There are 0 of 9 feeder breaker spaces available for future expansion.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	5	20	
7.8	The Distribution Panel appears **serviceable.**	4	5	20	
7.9	The Distribution Panel is **maintainable.**	4	4	16	Eaton Cutler Hammer Panel DPL installed in 2010. 600A, 120/208V.
7.10	The Distribution Panel will support **future expansion.**	4	4	16	3 o f 10 breaker spaces available.

E | Electrical

ASSESSOR: Bart Caldwell

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** observed during assessment are safe, serviceable, and maintainable.	2	3	6	(2) 2010 Eaton panels in Mech Rm. at 50% spare capacity. (3) 2010 Eaton panels in Elec. 114 at 0% spare capacity. (1) antiquated Frank Adams panel in Mech Rm. at 0% spare capacity. (2) antiquated Frank Adams panels on Level 1 and (2) on Level 2 with 0% spare capacity.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	5	5	
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	5	25	
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	3	12	11 rack units available in 45 RU rack.
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	
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	4	4	100, 120/208V panel with 10 spare breaker spaces.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Horizontal cabling is Cat5e.
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	N/A	0	No IDF in building.

E | Electrical

ASSESSOR: Bart Caldwell

		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	5	25	Simplex 4100U and 4100ES panels located in MDF.
7.23	Building is equipped with an **access control system.**	5	2	10	6/13=46%
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			382	

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+ year priority projects are projects that require attention within the next 10 years. 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 in the appendix for additional information.

Short Term Maintenance

Clear Exit Pathways	Remove stored items obstructing egress from exit pathways and stairways including rooms 128, 1122, and stair 003.
Repair Window Stool at Gymnasium	Securely attach the solid surface window stool at the large window in the gymnasium.
Replace Ceilings Tiles in Room 105	Remove water damaged ceiling tiles in Room 105 and investigate to determine the cause of the damage. Install new ceiling tiles (12 SF).
Regrading	Regrade site away from building at northeast wall of gymnasium to expose base flashing. (1 inch of soil removal over 20 SF).
Replace Sealant at Exterior Walls	Replace sealant at masonry soft joint at southwest wall of the gymnasium (4 LF).
Exerior Door Adjustment	Adjust closers and latches at all gymnasium doors to ensure proper latching from any open position. Two doors at rm 1130 (gym).
Repair Hole in Sidewalk	There is a hole in the north side of the north sidewalk that needs to be filled. Investigate to determine the cause of the hole. Repair the hole with a concrete patch. See attached civil exhibit.
Investigate Storm Intake Clog	Use a vac truck to clean out the storm intake at the north parking lot and determine the cause of the clog. See attached civil exhibit.

Install Missing Wall Anchors at Gymnasium	Roughly 6-8 anchors missing in ledger angle (3-4 each side of gym where basketball hoops are located). Anchors to match existing anchor diameter already installed (5" embedment into CMU)	
Install Carbon Monoxide Detector	Assessment was unable to verify if carbon monoxide detectors are installed in Rm 1115 where a gas-fired AHU and water heater is installed. If detectors are not currently provided, install carbon monoxide detection.	
Install Padlocks on Electrical Panels	Install missing padlocks on panel in Level 1 corridor and panel in Level 2 corridor.	

1 - 2 Year Priority

		Project Costs
Roof Access Installation	Provide guardrail around roof hatch. Install roof access ladders at four locations: 6 VLF at roofs M to F, F to G, and C to E; 8 feet tall on one side, 3 feet tall on one side at J to E. Refer to attached roof identification image.	$15,000
Replace Sealant at Parapet Caps	Remove and replace sealant on parapet cap of roof areas A, B, and C. (120 linear feet)	$7,000
Repair Sidewalk Paving and Stairs	Repair tripping hazards on sidewalks northwest of the building and stairs on the south side of the site. Remove and replace 4 SY of concrete paving on the northeast side of the site. See attached civil exhibit.	$7,000
Clean FES	Uncover and clean out the FES. See attached civil exhibit.	$10,000
Mezzanine Removal	Remove the wood storage mezzanine next to stairs leading down to MEP basement in room 134. This storage room is roughly 50 sq. ft. For replacement, see studies below.	$6,000
Floor Decking Repair	Above tunnel below rooms 113 and 134, install (3) W8x15x8' steel beams under floor deck transition and where deck is visibly sagging.	$9,000

Footing Replacement	At fire escape, cut out concrete footing at first stair landing underneath the (3) steel posts and replace with new 8'-0" long x 16" thick x 42" wide x footing with (4) #5 cont. bars (2 T + 2B) and #3 ties at 24" o.c.	$50,000
Replace ERV with DOAS/ERV	Replace ERV with new DOAS units, gas-fired heat, DX cooling with hot-gas reheat for dehumidifciation and energy recovery wheel.	$450,000
Install Backup Boiler in Pump Room	Install backup boiler - 225 KW electric or 750 MBtuh high efficiency gas.	$390,000
Replace Domestic Water Piping	Replace existing domestic water piping to improve flow to 2nd floor.	$60,000
Replace Domestic Hot-Water Mixing Valve	Install new domestic water digital mixing valve and recirculation pump.	
Panel Replacement	Replace panel with missing deadfront with new 100A equivalent.	$13,000

Total 1-2 Year Project Costs: **$1,017,000.00**

3 - 4 Year Priority

		Project Costs
Casework, Wood Veneer, Refinish	Repair and refinish existing wood veneer base cabinets in rooms 107, 108, and 209 (total 70 LF). Cost based on full replacement of cabinets and counters; recommendation: bid for refinishing as alternate.	$110,000
Wood Doors Refinish	Repair and refinish existing wood door veneer doors in rooms 105, 140, and 204 (four total doors). Cost based on full replacement of doors and frames; recommendation: bid for refinishing as alternate.	$15,000

Casework, Solid Wood, Refinish	Refinish stain and protective finish on original solid wood casework in rooms 101, 102, 103, 116, 202, 204, 205, 206, 209, 210, and 212 (total 550 LF). Existing finish is completely worn through in some areas, leaving the bare wood vulnerable to greater damage. Cost based on full replacement of cabinets and counters; recommendation: bid for refinishing as alternate.	$790,000
Landscaping Wall Grout Repair	Replace grout under wall cap at landscaping wall extending northeast from the sbuilding. (90 LF)	$7,000
Roof Replacement	Remove approx 7,300 SF of modified bitumen roofing and insulation over roof areas D, E, F, and G. Install code compliant insulation and TPO roofing. Approx year 2027	$200,000
Fencing Replacement	Replace 360 LF of chain link fencing along the east side of the site. See attached civil exhibit.	$50,000
Playground Pavement Replacement	Remove and replace 328 SY of asphalt paving on the north side of the building and a damaged section of sidewalk. See attached civil exhibit.	$70,000
Parking Pavement Replacement	Remove and replace 431 SY of asphalt paving in the north parking lot. See attached civil exhibit.	$75,000
Landscaping Wall Replacement	If owned by the school, demolish the multi-wythe brick landscaping wall in its entirety due to degradation. (150 LF).	$140,000
Lintel Refinish	Clean and protect rusting lintels with high performance coating. Noticeable rusting in lintels in rooms 115, 116, 101, 102, 103, 104, 210, 220, 212, 202, 204, 205, and 206. Total Linear Feet = Approximately 300'. Assume 4" width = 100 sq. ft.	$10,000
Heat Pumps Replacement	Replace heat pumps in original building for all classrooms and include dehumidification capability. Consider 2 speed compressor to reduce load in well-field and match load.	$870,000
Grease Interceptor Installation	Install exterior grease interceptor to meet current City of DSM requirements.	$530,000

AHU-1/DOAS to Roof Relocation	Relocate or replace DOAS/ERV in addition and install on roof vs in building to free up floor space. Unit appears to be an exterior unit, but installed inside.	$320,000
Panelboards Replacement	Replace (5) antiquated Frank Adams panelboards with new panels.	$55,000
	Total 3-4 Year Project Costs:	**$3,242,000.00**

5+ Year Priority

		Project Costs
Interiors Refinish	New interior finishes in rooms 1100 and 1110 to help unify the character of the addition with the other area of the school. Wall paint and graphics (2,000 SF), acoustic ceilings (1,100 SF), and LVT resilient flooring (1,100 SF).	$50,000
Roof Replacement	Remove approx 10,6000 SF of modified bitumen roofing and insulation over roof areas A, B, and C. Install code compliant insulation and TPO roofing. Approx year 2031	$350,000
Playground Pavement Replacement	Remove and replace 24 SY of playground asphalt near basketball hoops in the south playground area. See attached civil exhibit.	$11,000
Fencing Replacement	Remove and replace 337 LF of chainlink fence. See attached civil exhibit.	$70,000
Restore Sidewalk	Restore 196 SY of sidewalk across site	$65,000
Drive Pavement Replacement	Remove and replace 101 SY of concrete pavement in the south drive lane. See attached civil exhibit.	$30,000
Geothermal Loop Water Pumps Replacement	Install new loop water pumps and VFDs.	$140,000

Domestic Water Heater Replacement	Replace hot water heater over 10 years in age with new electric water heater.	$13,000

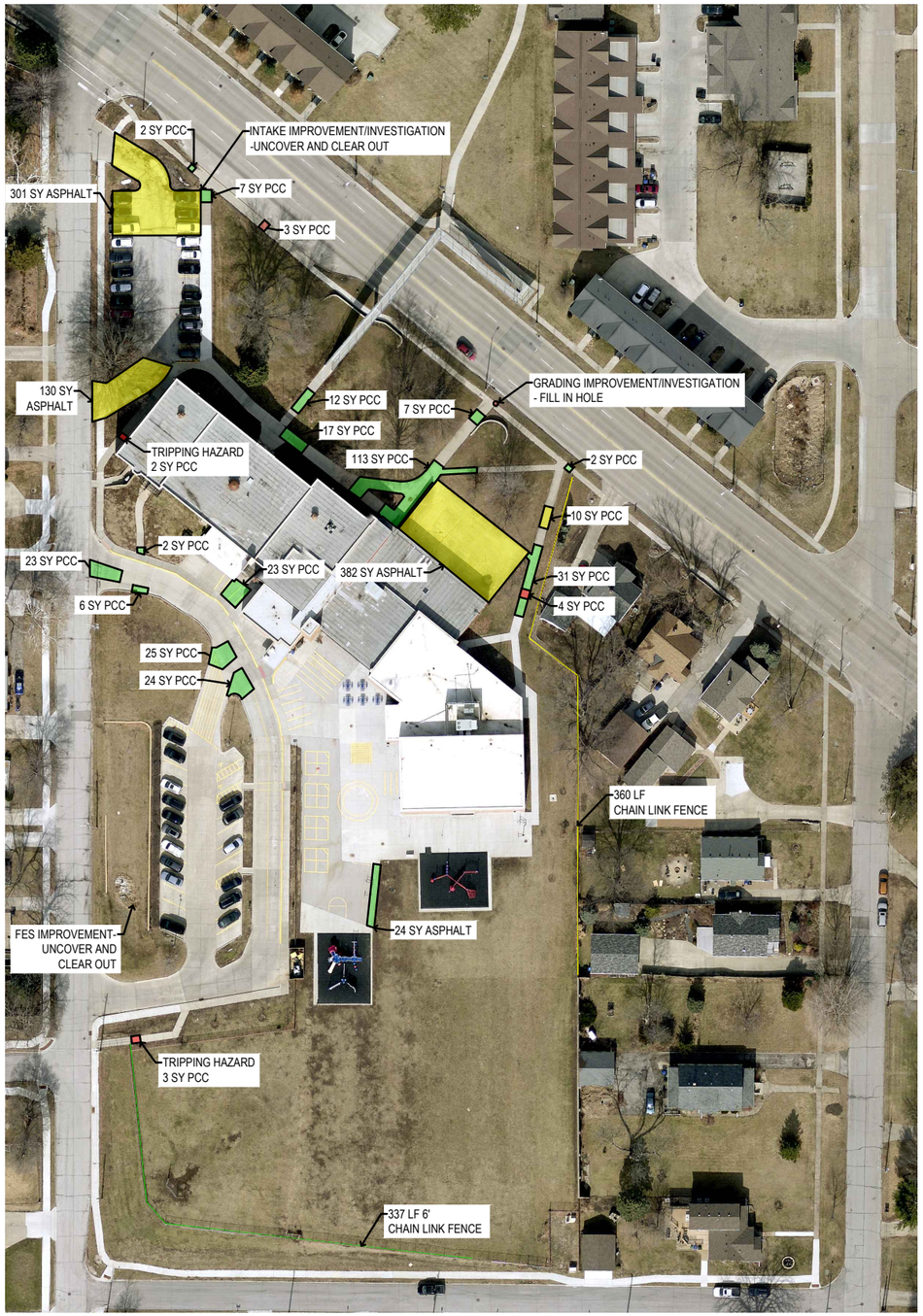
Total 5-10 Year Project Costs: **$729,000.00**

Projects Requiring Study

		Design Services Fee
Mother's Room Space Study	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
Staff Offices Space Allocation Study	Study to identify areas to relocate staff offices out of inaccessible/inappropriate locations (electrical closets, etc.)	$10,000
Designated Hardened Area	No designated hardened area was observed. Study to determine the feasibility of adding a designated hardened area to the building including location within the existing building, schematic design concept if deemed feasible, and preliminary project costs.	$2,500
Storage Mezzanine Replacement	Evaluate and design a replacement structure for the wood storage mezzanine that meets building code requirements.	$5,000
Concrete Pedestrian Bridge Assessment	Concrete pedestrian bridge is showing signs of significant corrosion of the rebar below the guardrail fence posts which is leading to cracking and spalling of the concrete as well as rust spots from the corroding rebar. Will need patching or replacement in the future. Cost only reflects the study to determine the severity of the deterioration. Additional cost for design work TBD.	$2,000

Total Study Design Service Fees: **$24,500**

APPENDIX



5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

100 0 50 100 200

bbs ARCHITECTS ENGINEERS

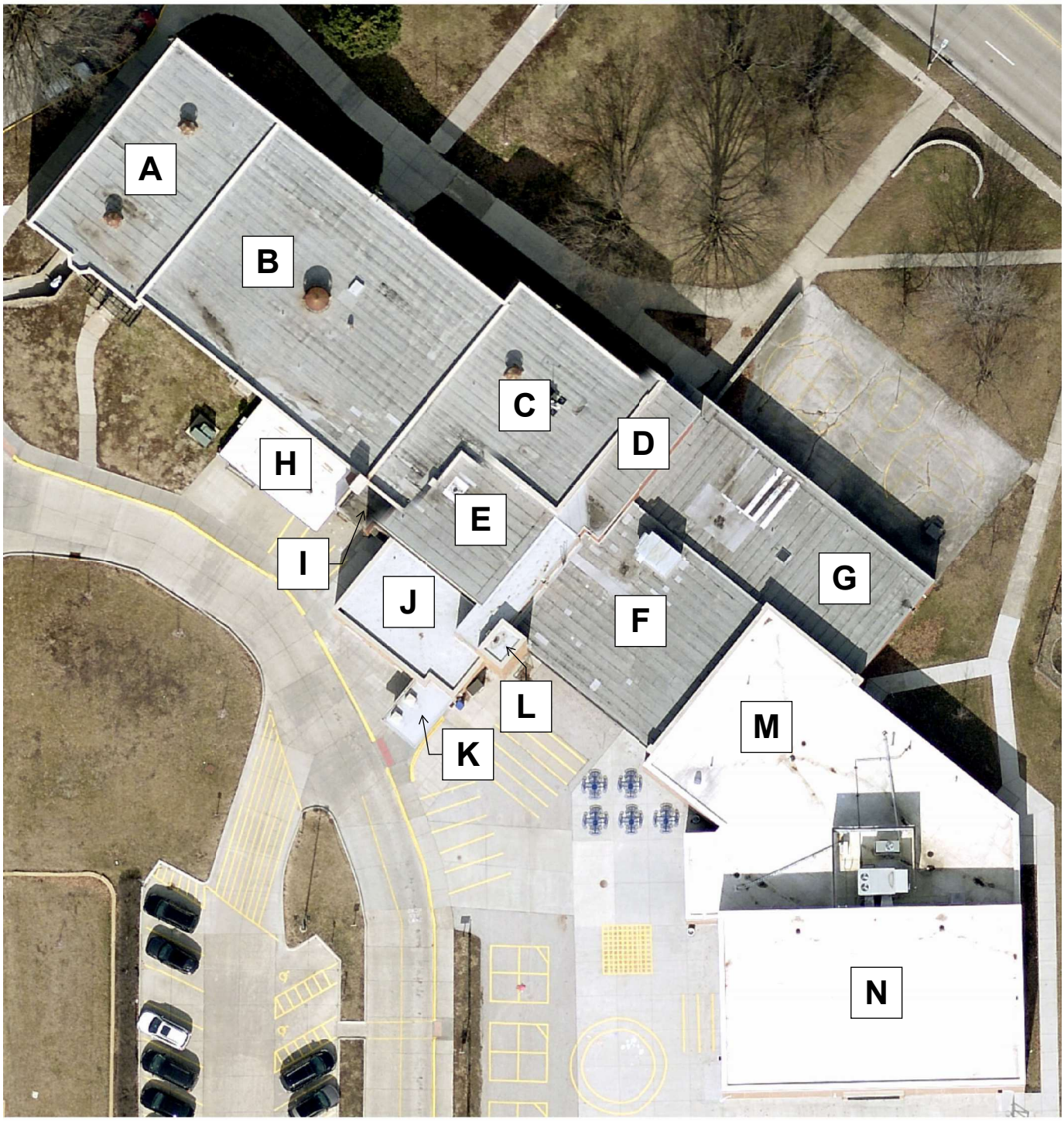
BISHOP ENGINEERING +

HOWE ELEMENTARY

EXHIBIT

PROJECT # 230286-13

DATE 10/27/2023



N

bbs ARCHITECTS ENGINEERS

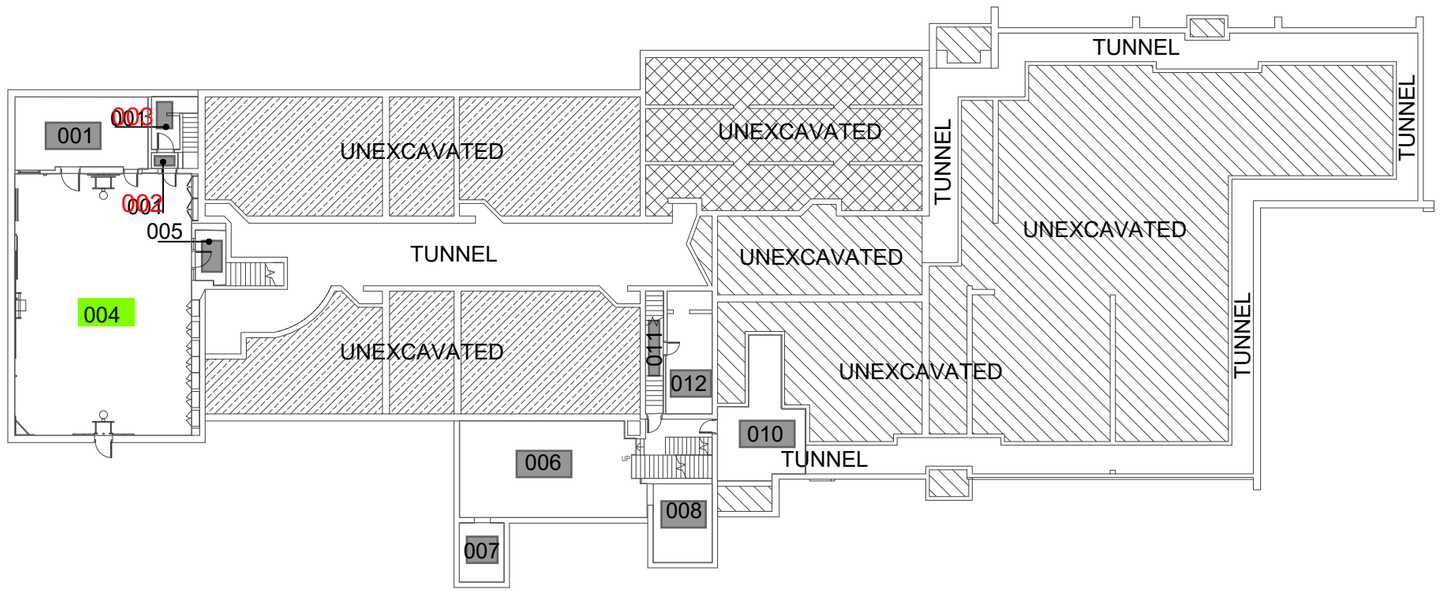
23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Howe Elementary
November 14, 2023

HOWE ELEMENTARY SCHOOL

2900 INDIANOLA AVENUE
DES MOINES, IOWA 50315

FOUNDATION

NORTH



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

bbs ARCHITECTS ENGINEERS

HOWE ELEMENTARY SCHOOL

2900 INDIANOLA AVENUE
DES MOINES, IOWA 50315

FIRST FLOOR

NORTH

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

bbs ARCHITECTS ENGINEERS

HOWE ELEMENTARY SCHOOL

2900 INDIANOLA AVENUE
DES MOINES, IOWA 50315

SECOND FLOOR

NORTH

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

bbs
ARCHITECTS
ENGINEERS