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DMPS FACILITY ASSESSMENT | MERRILL MIDDLE SCHOOL

2.7.2016

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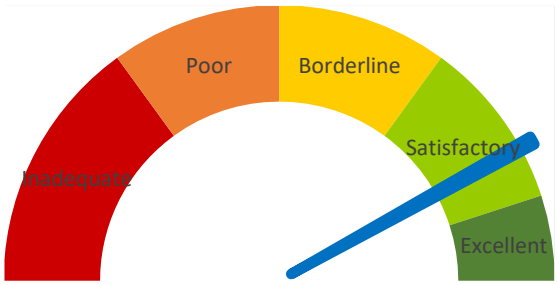


REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Merrill Middle School's on-site facility conditions assessment was conducted on February 7, 2024 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.

Short term maintenance items identified for Merrill Middle School are: interior door hinge repairs, exhaust fan replacement, lighting control repairs, railing repairs, roof and site intake cleaning, exterior door repairs, installation of boiler safety switches, and MDF grounding. Other regular maintenance should be continued including replacement of damaged ceiling and carpet tiles as they occur. Keeping up these regular maintenance tasks will extend the life of many of the building's finishes and systems.

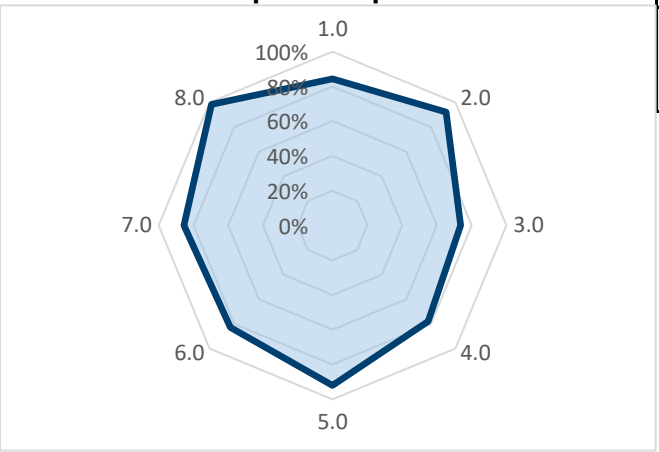
A summary of the recommended projects for Merrill Middle School to be completed in the next 1-2 years are as follows:

- Casework Replacement
- Fitness Room Refinish
- Masonry Veneer Repairs
- Exterior Refinishing
- Site Improvements
- Exterior Lighting Installation
- Elevator Modernization

Additional 1-2 year 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	115	97	2.00	230	194	84%	Satisfactory
2.0	Environment for Education	375	346	0.60	225	208	92%	Excellent
3.0	Exterior Envelope	95	70	3.00	285	210	74%	Satisfactory
4.0	School Site	95	74	1.50	143	111	78%	Satisfactory
5.0	Structural Conditions	150	138	1.30	195	179	92%	Excellent
6.0	Mechanical Systems	695	577	0.80	556	462	83%	Satisfactory
7.0	Electrical Systems	455	389	0.75	341	292	85%	Satisfactory
8.0	Elevator Conditions	65	64	1.00	65	64	98%	Excellent
Total					**1,975**	**1,655**	**84%**	**Satisfactory**

Merrill Middle School
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 Merrill Middle School scored a building health rating of 84% 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. Merrill Middle School is well within this positive range. Improvements to the exterior envelope and school site would make the largest impact in increasing the score to Excellent.

Building Data Record

Building Name: Merrill Middle

Date: 2.7.2024

Address: 5301 Grand Ave
Des Moines, IA 50312

High School Feeder System: Roosevelt High

Building SF: 94,162 SF

Site Acreage: 9.49 Acres

Date(s) of Construction: 1961, 2013 Classroom Addition

Date(s) of Roof Replacement: 2013, 2015

Current/Scheduled Projects: Walking track and basketball court (PERL) - 2024
HVAC upgrades - 2025

Existing Building Data:

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

Site Items:

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

Energy Source:

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

Cooling:

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

Heating:

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

Structure Fireproofing:

- [x] No
- [ ] Yes

Construction:

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

Exterior Facade:

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

Floor/Roof Structure:

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

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.	1	4	4	Fitness room has broadloom carpet. While a softer flooring surface in this area is appropriate the carpet is showing significant wear. Replacement with athletic flooring, mats or carpet, would be recommended for a more durable solution.
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	3	4	12	Additional acoustic absorption is recommended, but space appears to be functional as is. Center dividing wall is operable and provides separate gym areas for simultaneous classes to be held.
1.3	Gymnasium is supported by adequate **locker rooms.**	1	3	3	Locker rooms do not have lockers but appear to be utilized for equipment storage and sport meetings. Ceilings are in poor condition, bathroom fixtures are separated by a toilet room and wash room. Floors and walls are generally acceptable.
1.4	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	5	10	
1.5	**Vocal music room** is adequate for providing music instruction.	2	4	8	Flooring was a LVT or similar material. Acoustics seemed appropriate but carpet flooring would be an improvement in the future. Power strips with extension cords were pulled to the center of the room creating a couple minor tripping hazards.
1.6	**Instrumental music room** is adequate for providing music instruction, practice, and lessons.	2	4	8	Band, orchestra, practice rooms, and storage is all provided. Practice rooms have older style "Peg Board" acoustic wall panels, but in acceptable condition.
1.7	**Auditorium** has sufficient arrangement, technology, and acoustics for program.	2	N/A	0	
1.8	**Art room** has sufficient accommodations for program.	2	3	6	Storage "room" is a divided space at the back of the classroom with partial height wall and "island" counter. This area of casework is damaged and overall in poor condition. Kiln is provided with ventilation through the wall. Access to daylight is minimal. Furniture is showing wear but primarily surface staining and marks.
1.9	**Science classrooms** have sufficient access to water, gas and equipment for program.	2	5	10	
1.10	**Family Consumer Science** classrooms have sufficient accommodations for program.	2	5	10	

A | Architectural, Programming

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.11	**Industrial Arts** space has sufficient accommodations for program.	2	N/A	0	
1.12	**Library/Resource/Media Center** provides appropriate and attractive space.	1	3	3	Library has power poles that feed large power strips across the center of the room. Furniture is showing significant wear, there are no soft seating areas provided. General book shelving is showing wear at edges and corners. Flooring has minor stains in areas, appears dated, but generally in acceptable condition.
Core Classroom					
1.13	Classroom space permits arrangements for **small group activity.**	2	5	10	
1.14	**Student storage space** is adequate.	1	5	5	
1.15	**Teacher storage space** is adequate.	2	4	8	Art room storage appears to be lacking as well as a couple of other Language / Reading classrooms. Generally others appear adequate.
1.16	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	4	12	Acoustics within classrooms appear adequate. The west end of the corridor is all hard surfaces and is in need of additional acoustic material.
1.17	**Classroom power and data receptacles** are located to support current classroom instruction.	4	4	16	Approximately 1/3 of the classrooms utilize at least 2 or 3 additional power strips and extension cords to bring power to the center of the classrooms. Most cords are within the seating spaces so tripping hazards are minimal. The power arrangement in Classroom 214 is such that an extension cord extends across the main path of travel.
1.18	Educational **technology** supports instruction.	4	5	20	
Administration					
1.19	**Conference/Private meeting rooms** are adequate for large and small meetings.	1	4	4	One small/mid size conference room, office also provide space for private meetings.
1.20	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			159	

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.	2	4	8	Yes, however, doors protrude into corridor width approximately 1'. There is no immediate emergency concerns with this.
2.2	Communication among students is enhanced by **common areas.**	2	3	6	Media center is lacking in collaborative seating with various postures. At the upper level there is a dedicated corner in memory of an individual. This space is dedicated as a "common" seating space but lacks engaging furniture and finishes.
2.3	Areas for students to **interact are suitable to the age group.**	2	4	8	Classrooms and common areas should have consistent access to power and varied seating 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	Library furniture is in poor condition. Art room furniture is showing significant markings but is functional for the use and space.
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	2	5	10	Great school spirit displayed throughout the school. Locker rooms, if utilized, could be more engaging with these same character defined in wall paint or graphics.
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	Rooms 212 and 214 are experiencing issues with their lights turning on and off randomly.
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	4	4	Staff lounge is a combination of restrooms, break room, and work room. There appears to be adequate counter space, but a lack of tables and seating areas.

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.	3	5	15	Unique lighting makes for a great office and waiting space.
2.12	**Break room** is adequately sized and furnished for proper use.	1	4	4	Appears to be a lack of seating and tables. Combined with work room.
2.13	**Mother's room** is a separate designated space properly furnished.	1	4	4	Mother's room is a designated room off of the staff women's restroom. Finishes are showing wear but space is functional and a sink with counter space is provided.
Maintainability					
2.14	**Floor surfaces** are durable and in good condition.	1	4	4	Fitness room flooring is showing significant wear and is tearing in several locations. Library carpet is showing staining in select areas, but generally in okay condition. Other flooring, while varied throughout the building, appears in good condition.
2.15	**Ceilings** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	3	3	Most classroom ceilings are showing a few minor areas of wear or damage. Classrooms typically have a perforated acoustic tile that may be harder to clean. The dish room ceiling appears to be standard acoustic tile and is showing significant wear. replacement with a cleanable, moisture resistant tile
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	4	4	A few area of minor paint damage at darker colored accent walls in Health room and Fitness room.
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	4	4	Plastic laminate and veneer wood casework is starting to show damage. higher use areas such as the art room is showing significant damage. other typical classroom spaces appear in good condition.
2.18	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	3	9	3 Doors, 118, 119, and 112 do not fully close due to being misaligned on their hinges.
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: 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	4	16	Yes, however, doors protrude into corridor width approximately 1'. There is no immediate emergency concerns with this.
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	3	9	121 and 125 do not have vision lites into the room. All other classroom doors have very skinny vision panels adjacent to the doors. Visibility between the classroom and corridor is minimal.
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	
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	5	25	Basement stair access is extremely steep, this is likely acceptable but needs to be consistently maintained to keep in a non-slip condition.

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			362	

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	4	8	Building appears to be well-maintained with easily recognizable entry for students and guests.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	4	12	Fully-adhered TPO roofs appear to be in good condition, with only minor areas of ponded water. Staff stated that there is an active leak near rooftop equipment on Roof A (See appendix for roof identification plan) which has not been able to be identified/repaired.
3.3	**Roof access** is safe for all roofs.	3	3	9	Roof access by door onto Roof A, or by ladder/hatch to Roof A. Provide safety rail at hatch. Improve ladders to Roofs B and C. Provide safety rail at solar array. No ladder exists to one-story roofs E and F, where no equipment requires service access.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	3	9	Window sealant at most windows is beginning to craze and will require replacement in 3-4 years.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Tinted insulated glazing in place throughout.
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 issues observed. Approximately 10% of window screens missing or damaged.
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	4	8	All doors are hollow metal. (5) doors/windows require repair and repainting.
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	3	3	Exterior walls are generally brick or precast concrete. 2011 addition includes fiber cement wall panels and metal wall panels (above window heads.) Sealant joints in brick and precast will require replacement in 3-4 years.
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	5	5	No comments.
3.10	**Exterior Doors are monitored** or controlled by an access control system.	1	4	4	(6) Exterior doors have card readers. (3) Exterior doors have keyed locksets. (1) Exterior door has no exterior hardware. All doors have exterior identification signage.
	TOTAL			70	

ASSESSOR: Jack Gorman Joel Jackson

4.0 The School Site

		Weight Factor	Rating	Points	Comments
4.1	**Site topography** and grading drains water away from the building and retaining walls.	1	3	3	Site was a little steep along the NW fence line. Good drainage away from the building and the open space area also drains well. The wall along the east side was not in good condition and needs replacement.
4.2	**Parking areas** are in good condition.	5	4	20	There are a couple of cracks in the asphalt but nothing was profusely cracking or sagging.
4.3	**Drive areas** are in good condition.	3	3	9	The west drive has sections needing replacement soon, much of the east circle drive also needs replacement.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	4	4	DMPS states staff parking is good for day to day and that small events are manageable.
4.5	**Sidewalks** around the facility are in good **condition.**	1	4	4	Areas along the south side and along the west circle drive need replacement.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	4	4	The steps down to the play area do not have sidewalk connecting them to the new walk track. All doors have sidewalk access.
4.7	**Hard surface** playground surfaces are in good condition.	3	5	15	All playground surfaces appeared new and in good condition.
4.8	**Fencing** around the site is in good condition.	1	4	4	The fence along the NE corner needs replacement, all other sections appeared okay.
4.9	**Trash enclosure** is in good condition.	1	N/A	0	The dumpsters are out in the east drive area.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	4	4	The open space intakes were filled with debris and would benefit from a cleaning, no other issues observed.

ASSESSOR: Jack Gorman Joel Jackson

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	3	3	The parking lot could be expanded to the west. The building has room to expand to the north but the slope would require walls.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	4	4	Buses use the west side drive and parents use the east circle drive for pick up. DMPS states parents sometimes back up onto Grand Ave and that no other conflicts exist.
	TOTAL			74	

S | Structural

ASSESSOR: Trevor Pullen

5.0 Structural Conditions

		Weight Factor	Rating	Points	Comments
Foundations					
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	0	0	
5.4	**Stoops** appear to be in good condition.	1	4	4	Stoop near room 135 has cracking, spalling and exposed reinforcement.
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	5	5	
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	4	8	There is a section of loose brick outside of room 164. There is also a piece of brick that has broken off at the base of the wall outside of the stairs by room 112.
5.8	**Lintels** appear in good condition (no visible deflection or rust).	1	5	5	
5.9	**CMU** is in good condition.	1	5	5	
5.10	**Precast** is in good condition.	1	5	5	

S | Structural

ASSESSOR: Trevor Pullen

	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	There are numerous shrinkage cracks in the top of the first floor slab.
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	
Miscellaneous				
5.15 **Retaining walls** appear to be in good condition.	1	4	4	The curb walls along the exterior stairs by room 51 are falling over.
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	5	5	
5.20 **Stair railings** appear to be in good condition.	1	5	5	

ASSESSOR: Trevor Pullen

		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	
5.23	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			133	

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

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	5	15	Appears to be true.
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	Appears to be true.
6.3	Appropriate **amount of ventilation** are provided to each space.	5	3	15	Appears AHUs are designed for approximately 20% outdoor air - based on airflows to spaces, they may be under-ventilated.
6.4	**Ventilation** is provided during occupied hours.	5	4	20	Appears to be true - may be less than required by code as noted separately.
6.5	**Outdoor air intake locations** are appropriate.	4	4	16	Generally appears to be true. Intake at roof. A plumbing vent is relatively close to the intake.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	5	25	Appears to be true.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	4	8	Generally appears to be true. System design does not appear to be ideal for balancing OA and EA.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	4	20	True for chillers and boiler. AHUs appear to be older but have some remaining useful life.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	Appears to be true.
6.10	**Heating loads** are within equipment operations capacity.	5	5	25	Appears to be true.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.11	**Dehumidification** is provided and addressed humidity loads in incoming outside air.	3	5	15	Appears to be true.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	4	20	Appears true. Some galvanized pipe on domestic water supply line downstream of backflow preventer.
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	5	25	Yes. Dual backflow preventers.
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	5	25	Appears to be true.
6.15	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	3	9	Lukewarm water observed at outlets after wait.
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	Appears to be true.
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	Yes. Two grease interceptors - (1) 2,000 gallon unit and (1) 5,000 gallon unit
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	5	25	Yes. Scuppers are typically provided for overflow.
6.19	**Restroom fixtures** are in good condition and comply with current DMPS standards.	3	4	12	Automatic fixtures, no metering faucets.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	4	12	Generally true. There are some tight spots at AHUs.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	2	4	Appears most AHU coils do not have pull space.
6.22	**Filter** sizes are standard and filter types are standard.	2	5	10	Generally appears to be true.
6.23	**Equipment mounting heights** are reasonable.	3	5	15	Generally appears to be true.
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	4	8	Generally true. One wet spot observed behind main electrical gear. Appears to be leak from conduit carrying conductors from transformer into building.
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	Appears to be true.
6.26	Appropriate means are provided for **airflow and water balancing.**	3	5	15	Appears to be true.
6.27	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	2	4	Wall hydrants at grade level but building is 2-story. Limited condensers exist on roof along with single cooling tower.
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge as per OSHA standard 1910.28(b).	2	2	4	Not provided. Multiple pieces of equipment (typically exhaust fans) are less than 15 feet from roof edges without fall protection.
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	5	20	Appears to be true.
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	Yes.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.31	Building is fully **sprinklered.**	5	5	25	Yes.
6.32	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	4	20	High/low mixing valve installed - appears to have fair amount of scaling. May need service.
6.33	**Emergency eye-washes and tempering valves** are located where required.	5	0	0	Not observed. Recommend evaluation with an occupational safety and health professional to determine necessity of eye wash(es) for facility spaces.
6.34	**Emergency boiler stop switches** are located at exits from boiler rooms.	5	0	0	None observed (did search for them but they were not located).
6.35	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	5	25	Yes.
6.36	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	5	25	Yes.
	TOTAL			577	

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	Service entrance consists of 750kVA, 480/277V transformer.
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	Water ingress via FDP conduits was noted at entry from below grade. Water in conduits is not uncommon, but should be addressed before corrosion of conduits.
7.4	The **MDP** appears serviceable.	4	4	16	MDP (FDP) is 1600A Bus, 1600A MCB, GE Spectra Series Switchboard installed in 2011.
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	2	8	FDP has 19 total positions, of which two are spaces. There is one spare breaker. (-3 points for less than 15% spare capacity)
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	3	12	Chair and table storage in front of panel LDP. (-2 points for medium storage in clear area)
7.8	The Distribution Panel appears **serviceable.**	4	4	16	LDP is GE Spectra Series distribution panel installed in 2011.
7.9	The Distribution Panel is **maintainable.**	4	5	20	
7.10	The Distribution Panel will support **future expansion.**	4	5	20	LDP has 17 total positions, and 9 are space, plus one spare breaker for greater than 50% spare capacity.

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** observed during assessment are safe, serviceable, and maintainable.	2	5	10	All panels throughout are of GE make and are in good condition.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	0	0	No exterior receptacles noted.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	4	20	Front, west end, near drop-off loop and North side of west wing appear dark. Main drop off and staff parking areas are good.
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	13 of 45 rack units remain. (-1 point for less than 50% spare capacity)
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	Panel LC has 8 of 24 positions as space. (-1 point for less than 50% spare capacity)
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of cabling present is CAT5e. (-1 point for less than CAT6/6A)
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	3	3	IDFs connected with OM3 multi-mode cabling. One armored, one plenum-rated.

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	3	6	Grounding busbar has ample capacity, but grounding connections to cable tray, CATV, and main grounding bus are absent.
7.22	Building is equipped with an **addressable fire alarm system.**	5	4	20	FACP is Simplex 4010 panel (-1 point for deviation from current DMPS standard 4100 series).
7.23	Building is equipped with an **access control system.**	5	3	15	Of 10 exterior doors, 5 are controlled. 5/10=50%
7.24	Building is equipped with a **CCTV system.**	5	5	25	West wing, north side cameras render in Black & White, but this appears to be related to exterior lighting available on this side of the building.
7.25	Building is equipped with an **intercom system.**	4	5	20	DMPS Standard Bogen system. Simplex time clock still runs bells from main office controller, but all intercom is through the Bogen system.
7.26	Building is equipped with a **master clock system.**	4	5	20	
	TOTAL			389	

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	4	4	Maintenance records are incomplete .
8.10	**Testing** is up to date, and all **record and logbooks** are present and filled out.	1	5	5	
	TOTAL			64	

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.

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

Door hinge Repair	Doors to rooms 113, 119, and 118 do not latch due to the door leaf sitting off square of the frame. Recommendation is to repair hinges and door for security.
Replace Exhaust Fan	Replace a missing exhaust fan in restroom within room 136.
Lighting Control Repairs	Lighting controls were reported to be turning on and off periodically throughout classes without any occupant intervention. During assessment they appeared to operate but should be repaired to properly function throughout the day.
` Railing Repairs	Railing at Loading area, room 97 is loose. This should be secured.
Roof Cleaning	Significant buildup of leaves/acorns in several areas of roof, most notably on Roof D (see appendix for roof identification plan) where piles of vegetative debris found in several locations along roof edge, and surrounding a couple of roof drain strainers.
Exterior Door Repair	Exterior Door 6 frame head is warped, creating small gap between frame and adjacent metal. Repair and reseal. Replace sweep weatherstripping on same opening.
Clean Intakes	Remove debris from open space intakes across site. For approximate locations, refer to civil site plan exhibit found in the appendix of this report. Note that the aerial image does not reflect the recent playground and site improvements.

Boiler Safety Switches	Add boiler emergency stop switches.	
Water Leak Repair	Water appears to be leaking through FDP conduits that are below grade. Clean up standing water and repair leak to prevent corrosion of conduits.	
MDF Grounding	Install #6 grounding conductor from TMGB to cable tray. Install #6 grounding conductor from TMGB to cable TV entrance equipment.	

1 - 2 Year Priority

		Project Costs
Casework Replacement	Replacement of casework that is showing significant damage including the art room 223, room 215, and 114. Approximately 100 LF of countertop and base cabinet replacement. This should include replacement of 3 sinks.	$140,000
Add Vision lights	Replace single door leaf to include vision panel to match adjacent areas. The 2 doors are to rooms 125 and 121.	$11,000
Fitness Room Refinish	The fitness room flooring is fraying and showing heavy wear and damage. Walls are showing minor paint chipping. Replacement of the flooring material with athletic soft flooring, such as Kinetix carpet, suitable for stretching, cardio machines, and aerobics type activities is recommended. Approximately 650 SF of new flooring. Approximately 1,500 SF of wall painting.	$14,000
Masonry Veneer Repair	Repair spalling skim coat of concrete (20 SF) and re-install thin brick veneer on concrete (10 SF) at west end of south wing (near Classroom 164.	$7,000
Exterior Door and Window Refinish	Remove surface rust and repaint exterior doors and frames. (2) double doors (nos. 4 and 7); (1) single door (no. 6); one door plus 6' wide sidelight frame (roof access); and (2) HM window frames under entry canopy.	$10,000
Pavement Replacement	Remove and replace 22 SY of asphalt and 60 SY of PCC. For locations, refer to civil site plan exhibit found in the appendix of this report.	$13,000

Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 38 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$11,000
Sidewalk Connection Extension	Extend the sidewalk at the bottom of the playground stairs to connect to the new walk track. For location, refer to civil site plan exhibit found in the appendix of this report.	$8,000
Exterior Brick Repair	There is a section of brick coming off the wall outside of room 164. It should be replaced and correctly tied back to the structural wall behind it. Approximately 10SF.	$6,000
Exterior Stair Curb Replacement	The curb along the exterior stairs outside of corridor 51 is falling over. It will need to be replaced. The wall is 4" thick, 2ft tall. 45ft total length. Reinforce with #4 @ 12" O.C. vertical, and (2) #4 bars cont. at the top and bottom of the wall.	$15,000
Exterior Column Refinish, Partial	Spots of chipped paint to be sand blasted and repainted at front entry exterior canopy columns. Total area to be painted is approximately 50 SF.	$6,000
Exterior Lighting	Add building perimeter lighting at SW corner and on north side of west wing.	$11,000
Elevator Modernization	The elevator should be considered for a modernization. The existing controller is no longer supported with many parts.	$180,000
Thermostatic Mixing Valve	Install new digital thermostatic mixing valve.	$13,000
	Total 1-2 Year Project Costs:	$445,000.00

3 - 4 Year Priority

Locker Room Re-Finish	Replace ACT ceilings (approximately 2,000 SF) and grid and repaint walls (approximately 4,000 SF) of current locker rooms. Include wall graphic on at least one wall.	$55,000

Library Renovation	Library is lacking in accessibility for the various uses throughout the day. Recommended improvements include a finish update to walls, ceilings, and floors, casework replacement and an update to the furniture (not included in the listed project costs). Carpet replacement for the flooring is approximately 1,500SF. Ceiling replacement of ACT panels and grid is approximately 1,500SF. Wall re-painting is approximately 1,200SF. Built-in casework includes a circulation desk and casework behind the desk at approximately 20 LF. Book shelves should be provided for approximately 100 LF of storage. Furniture, while not included in the listed price, is recommended to be replaced and offer a variety of seating postures and provide personal and collaborative study spaces.	$150,000
Sealant Replacement	Remove and replace sealant at perimeter of ribbon window units at entire building with exception of 2011 building addition. (4,000 LF). Remove and replace sealant at joints between precast wall panels (860 LF) plus at masonry soft joints in 2011 addition (270 LF).	$80,000
Wall Replacement	Remove and replace retaining wall, approximately 148 LF long. For location, refer to the civil site plan exhibit found in the appendix of this report.	$90,000
Pavement Replacement	Remove and replace 176 SY of asphalt and 243 SY of PCC. For locations, refer to civil site plan exhibit found in the appendix of this report.	$60,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 78 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$15,000
Replace Section of Domestic Water	Replace galvanized domestic water piping (downstream of backflow preventer).	$60,000
	Total 3-4 Year Project Costs:	$510,000.00

5 - 10 Year Priority

		Project Costs
Mother's Room Refinish	Interior wall paint, flooring, casework, and furniture replacement recommended. Wall finish is approximately 300 SF. LVT Flooring replacement is approximately 60 SF. Casework is approximately 4 LF. Furniture replacement is not included in the listed project costs, but is recommended to include a side table and soft chair seating.	$13,000
Ceiling Replacement	Replace ACT ceiling panels in classrooms and select areas of corridors showing significant damage. Approximately 18,000 SF of ceiling panel replacement.	$400,000
Interior Wall Refinish, Partial	Replace pegboard acoustic wall panels in office and storage rooms with painted gypsum board panels. Approximately 550 SF. Replace acoustic wall treatment in practice rooms with updated acoustic wall treatments due to current damage and wear showing. Approximately 400 SF. Paint touch up within classrooms. Approximately 8,000 SF.	$75,000
Masonry Repointing	Brick mortar joints on north wall of gymnasium (above Roof A) are beginning to show signs of deterioration. Anticipate repointing of approximately 25% of mortar joints (approx. 250 SF) in 5-6 years.	$11,000
Roof Access Improvements	Provide guard rail at roof access hatch. Replace embedded wall rungs to auditorium roof (8 LF) and gymnasium roof (12 LF) with new ladder assembly. Provide fall protection rail or tie-offs at solar array on auditorium roof (40 LF railing.)	$40,000
Pavement Replacement	Remove and replace 121 SY of asphalt and 135 SY of PCC. For locations, refer to civil site plan exhibit found in the appendix of this report.	$50,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 136 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$30,000
Fence Replacement	Remove and replace 114 LF of 6' chain link fence. For location, refer to civil site plan exhibit found in the appendix of this report.	$20,000

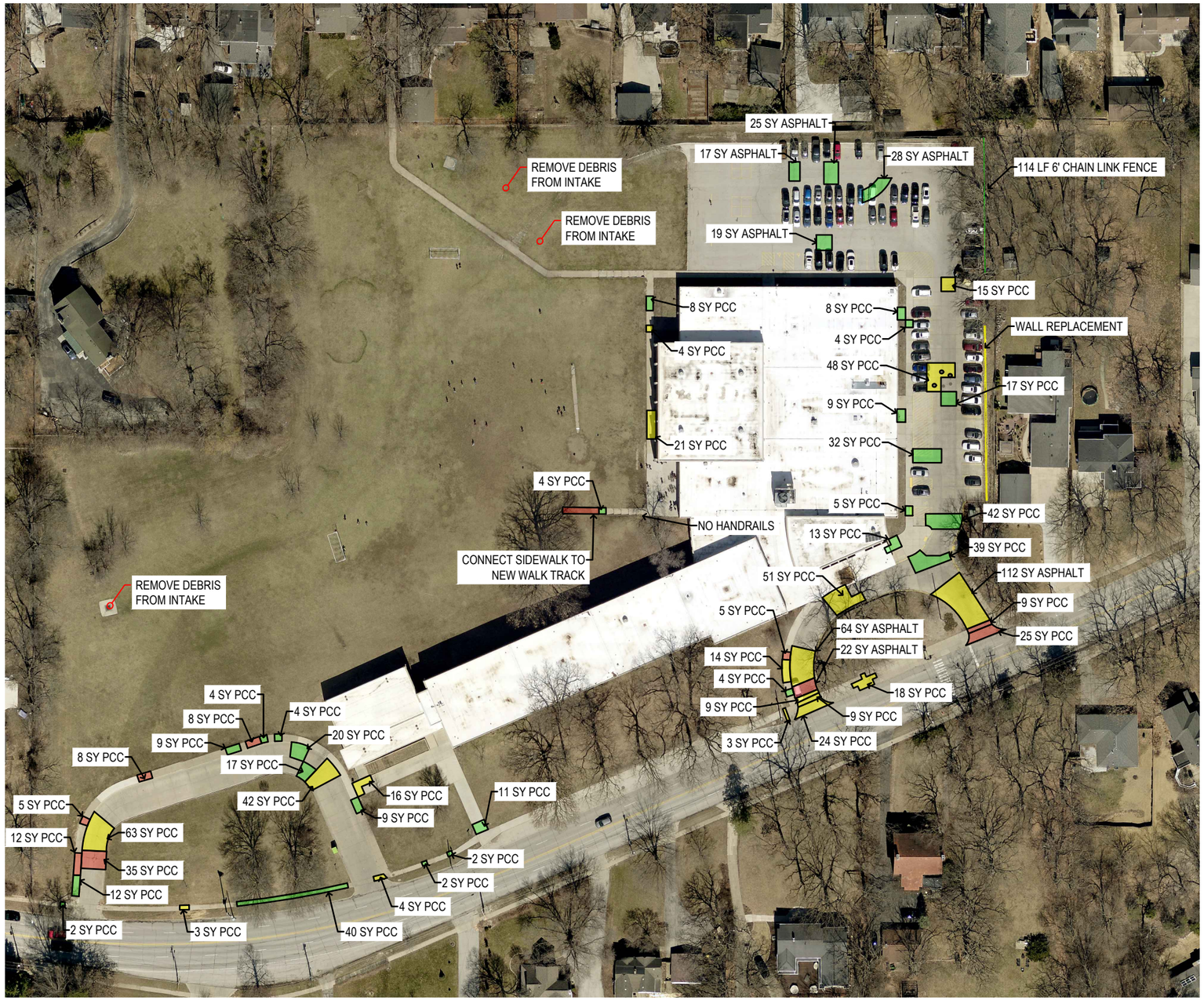
Brick Repair	There is an area of brick that has broken off at the base of the wall outside the stair by room 112. It should be filled in with new brick. Approximately 5 SF.	$6,000
Column Refinish, Gymnasium	The precast columns at the gym have some paint that has chipped off. Loose paint should be scraped or sand blasted and the column repainted. Approximately 150 SF total. One column along the western wall of the gym has paint chipped off. Loose paint should be scraped or sand blasted and the column repainted. 100 SF total.	$7,000
Stoop replacement	The stoop outside room 135 has significant cracking and spalling of concrete and some exposed reinforcement. It should be replaced. Stoop is 8ftX4ft. 5" thick slab w/ #4 @ 9" o.c. each way. 8" thick stoop walls, 42" deep w/ #4 @ 12" o.c. each way.	$10,000
Add Breaker Capacity to MDP	Add distribution section or equivalently sized branch panelboard to facilitate future electrical needs. Electrical service is currently constrained only by available breaker positions, not amperage of electrical service.	$70,000
	Total 5-10 Year Project Costs:	$732,000.00

Projects Requiring Study

		Design Services Fee
Power Installation, Study	A study should be conducted for classroom spaces to determine classrooms with an additional power need and most efficient and safe path to provide power to the center of classrooms. It appears 1/3 of the classrooms have an additional need for safe power access to the center of the room.	$7,500
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

Air Handling System Retrofit	Existing Air Handlers are dual duct units with dual duct boxes serving each space. These were updated in 2011. However, this system type is outdated and inefficient. There are also issues with maintenance and access to existing air handlers. Consider modifying HVAC systems with new custom units on roof to improve access and switch to single duct VAVs with reheat.		$20,000
	Anticipated Capital Investment:	$11,000,000	
		Anticipated Capital Investment Costs:	**$11,000,000**
		Total Study Design Service Fees:	**$30,000**

APPENDIX



5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

100 0 50 100 200

bbs ARCHITECTS ENGINEERS

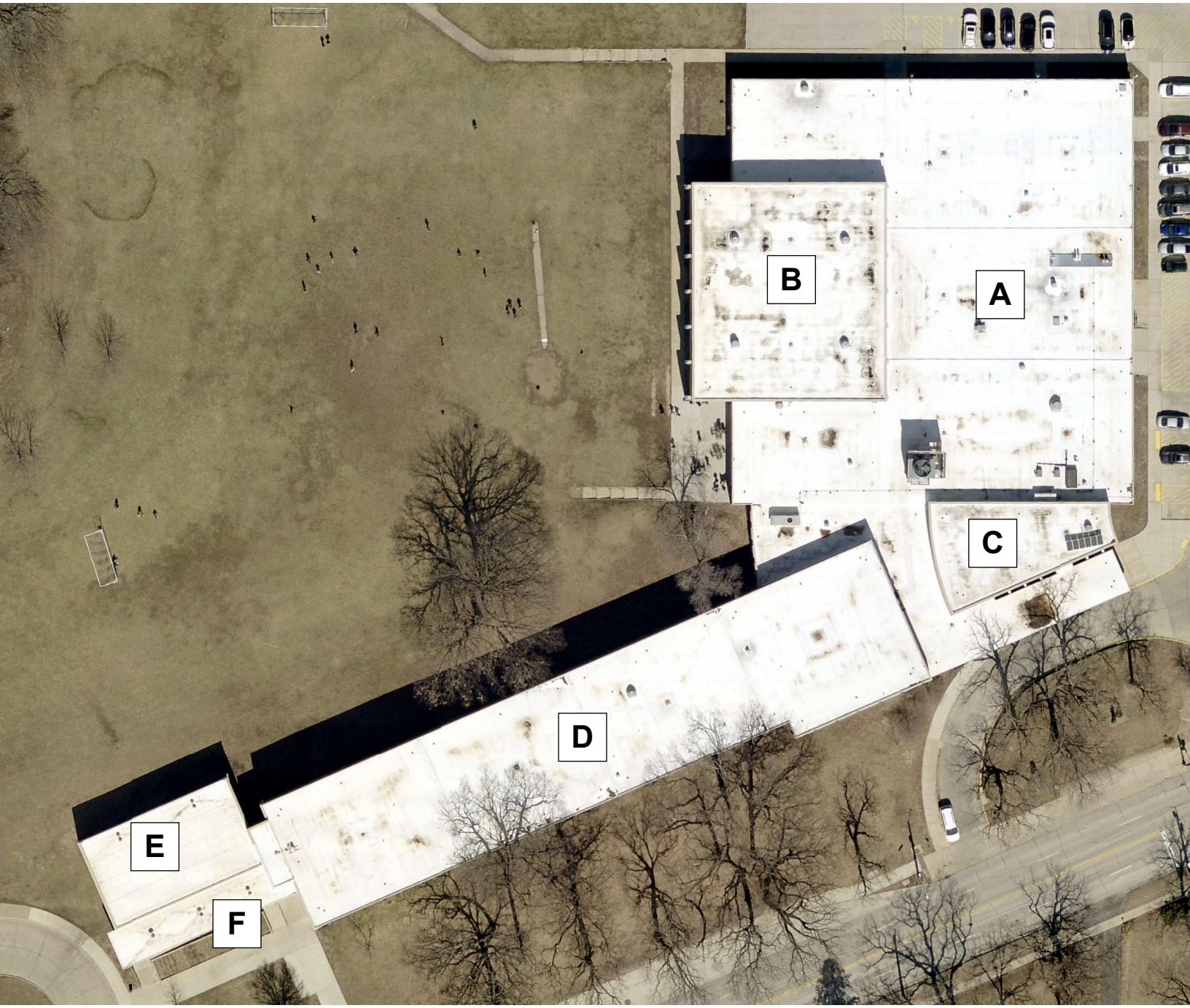
BISHOP ENGINEERING +

MERRILL MIDDLE SCHOOL

EXHIBIT

PROJECT # 230286-47

DATE 2/9/2024



N

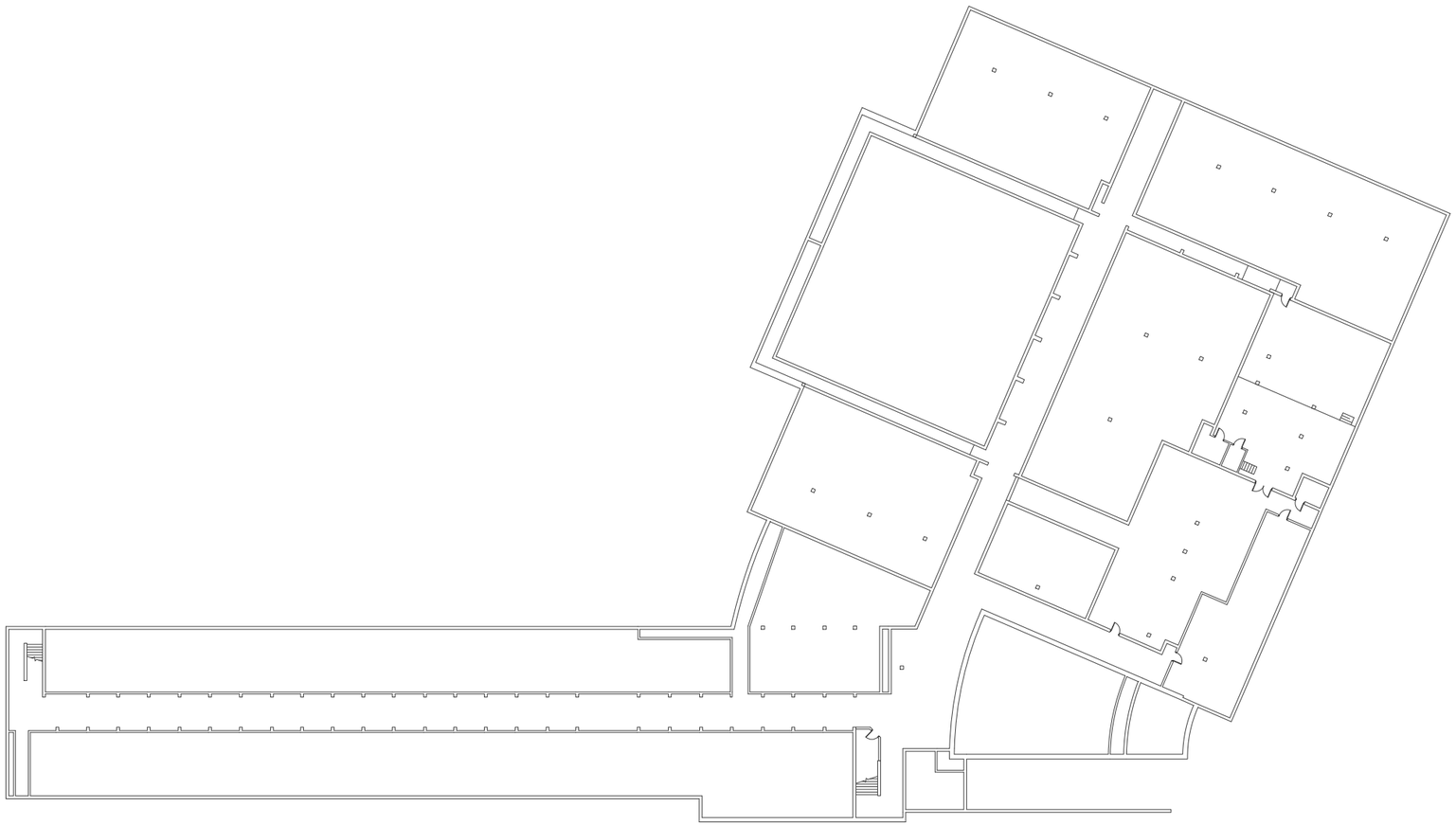
23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Merrill Middle School
2.7.2024

MERRILL MIDDLE SCHOOL

5301 GRAND AVENUE
DES MOINES, IOWA 50312

FOUNDATION

NORTH



MERRILL MIDDLE SCHOOL

5301 GRAND AVENUE
DES MOINES, IOWA 50312

FIRST FLOOR

NORTH

bbs
ARCHITECTS
ENGINEERS

23055 - DMPS Facility Conditions Assessment

2.7.2024

MERRILL MIDDLE SCHOOL

5301 GRAND AVENUE
DES MOINES, IOWA 50312

SECOND FLOOR

NORTH