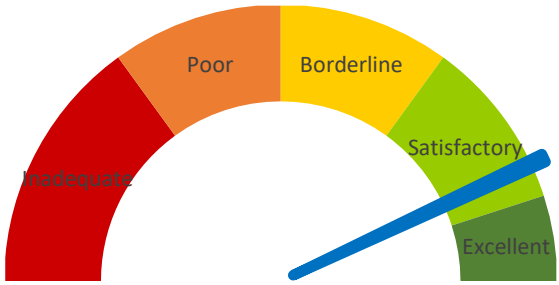
DMPS FACILITY ASSESSMENT | JEFFERSON ELEMENTARY

11.15.2023

ARCHITECTS
ENGINEERS

219 Eighth Street
Suite 100
Des Moines, IA 50309
515.244.7167

www.bbsae.com



REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Jefferson Elementary's on-site facility conditions assessment was conducted on 11.15.2023, 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.

Immediate maintenance items identified for Jefferson Elementary include exterior door latch repair, fence repair, elevator flooring repairs, and identification of elevator maintenance records. Additionally noted is the winter maintenance of the exterior elevated walk ways. These walkways around the building are showing signs of rebar corrosion and concrete deterioration. Any use of salt during the winter will speed up this corrosive process and repairs will need to be made sooner than recommended later in this report. Generally this building is in good condition and appears to be well maintained. Continued regular maintenance and proactive planning will keep this building in satisfactory to excellent condition.

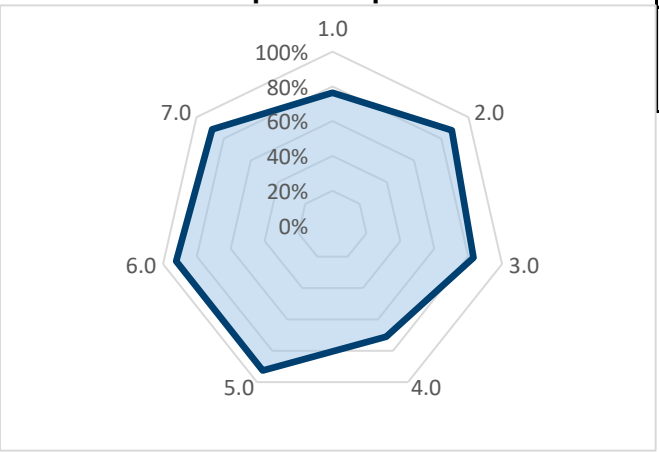
A summary of the recommended projects for Jefferson Elementary to be completed in the next 1-2 years are as follows:

- Furniture Replacement
- Acoustic Improvements
- Guardrail Replacement
- Site Pavement and Asphalt Replacement
- Stoop Installation
- Concrete Patio Repair

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	126	2.00	330	252	76%	Satisfactory
2.0	Environment for Education	375	329	0.60	225	197	88%	Satisfactory
3.0	Exterior Envelope	95	79	3.00	285	237	83%	Satisfactory
4.0	School Site	100	71	1.50	150	107	71%	Satisfactory
5.0	Structural Conditions	135	125	1.30	176	163	93%	Excellent
6.0	Mechanical Systems	620	572	0.80	496	458	92%	Excellent
7.0	Electrical Systems	455	403	0.75	341	302	89%	Satisfactory
8.0	Elevator Conditions	65	63	1.00	65	63	97%	Excellent
Total					**2,068**	**1,778**	**86%**	**Satisfactory**

Jefferson 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 Jefferson Elementary scored a building health rating of 86%, 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. Jefferson Elementary falls well within this positive range. Improvements to educational adequacy and the school site as described in this report with make the largest impact in increasing the score to "Excellent".

Building Data Record

Building Name: **Jefferson Elementary**

Date: **11.15.2023**

Address: **2425 Watrous Ave**
Des Moines, IA 50321

High School Feeder System: **Lincoln High**

Building SF: **55,730 SF**

Site Acreage: **9.27 Acres**

Date(s) of Construction: **1972, 2013**

Date(s) of Roof Replacement: **2018**

Current/Scheduled Projects: **Technology fiber (underground) for school network**
Drainage Design
Replace pavement

Existing Building Data:

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

Site Items:

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

Energy Source:

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

Cooling:

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

Heating:

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

Structure Fireproofing:

- [x] No
- [ ] Yes

Construction:

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

Exterior Facade:

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

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Kaela Shoemaker

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	2	4	8	Music room 0110 would be better with a carpeted floor. Other floors are appropriate.
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	2	4	8	A couple light fixtures and acoustic baffles were broken and hanging away from the ceiling.
1.3	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	3	6	Acoustic treatment is needed either on the ceilings or walls. Wall paint colors could be improved to show more school spirit and unity but the current wall paint is in good condition.
1.4	**Music room** is adequate for providing introductory music instruction.	2	4	8	2 music rooms are provided. 0210 has teacher provided storage but is better set up and acoustically finished for music class or lessons. Room 0110 has hard floors, and a variety of furniture more adequate for young children to play and collaborate than lessons. It appears to be used partially for storage of larger toys, large instruments, and stage risers.
1.5	**Art room** has sufficient accommodations for program.	2	4	8	Furniture is very worn wood tables and chairs and appears large for some of the younger classes. Appears to function but is nearing the end of its useful life. Storage, daylight, and room size are excellent.
1.6	**Library/Resource/Media Center** provides appropriate and attractive space.	1	5	5	Great reading nook space for learning and reading. Soft furniture is great for the students in this space.
Core Classroom					
1.7	Classroom space permits arrangements for **small group activity.**	3	3	9	Class sizes and furniture arrangements made for most classes to have a small rug space, student desks, and maybe one smaller corner for reading or teacher group work. These spaces are close together making circulation and ease of use for various groups difficult.
1.8	**Student storage space** is adequate.	2	2	4	Student lockers and kindergarten cubbies are adequate for coats and backpacks. Classroom storage for student work and supplies is up to the teachers to provide and organize.
1.9	**Teacher storage space** is adequate.	3	3	9	A couple bookshelves and built in casework is provided. Many other items are teacher provided and it appears in many cases, that supplies for teachers and student exceeds storage availability.
1.10	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	4	12	Art room has an echo. Ceilings are wood with wood beams. Acoustical treatments could be added to the upper walls to add acoustic absorption.

A | Architectural, Programming

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.11	**Classroom power and data receptacles** are located to support current classroom instruction.	4	4	16	Classrooms seem to have sufficient access to power, but a few offices, specifically 0200, have only one outlet.
1.12	Educational **technology** supports instruction.	4	5	20	
Administration					
1.13	**Conference/Private meeting rooms** are adequate for large and small meetings.	1	3	3	One conference room shared with an office. Other meeting spaces are available in offices or student intervention rooms.
1.14	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			126	

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

2.0 Environment for Education

Design

		Weight Factor	Rating	Points	Comments
2.1	**Traffic flow** is aided by appropriate foyers and corridors.	1	5	5	
2.2	Communication among students is enhanced by **common areas.**	1	3	3	Common areas are present and appear to be used for some breakout lessons but furniture and general space is not engaging or collaborative. While functional at the base level the furniture lacks ergonomics and ease for multi-users to collaborate efficiently.
2.3	Areas for students to **interact are suitable to the age group.**	1	2	2	Furniture in all but 2 classrooms is worn and dated. Classroom furniture is lacking functionality in ergonomics, student engagement, and student storage. Soft seating throughout appears extremely worn. The library is the only space that has engaging student focused areas for collaboration 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	1	1	Furniture is dated and worn in all but 2 classrooms. Some furniture only has surface wear where others have more significant damage. Soft seating generally have ripped fabric and other more significant damage. Most student tables have chips or missing portions of edge banding. All are missing functionality in storage and ergonomics.
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	2	4	8	Bright primary colors are used throughout but there isn't a consistent theme present through the building. Use of bright colors should be utilized in an energetic yet unifying way.
2.7	Windows and skylights provide access to **adequately controlled daylight** for regularly occupied spaces.	3	5	15	Great use of clerestory windows throughout the building to bring daylight into the interiors.
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	4	8	Classroom (SPED) used blue covers but also had no access to daylight - This is a classroom that is worth considering relocating to another classroom with access to daylight.
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	3	3	Many shared administration functions versus dedicated spaces for separate work, meeting, and teacher prep spaces.

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.11	**Main office** is visually connected to the entry and is welcoming to students, staff, and guests.	2	3	6	Visual access is slightly limited, but camera is used for monitoring to assist.
2.12	**Break room** is adequately sized and furnished for proper use.	1	4	4	There are 2 break rooms. One is a proper administration break room the other is noted by signage as the associate break room as well as a work room / storage room.
2.13	**Mother's room** is a separate designated space properly furnished.	1	0	0	No dedicated mother's room observed.
Maintainability					
2.14	**Floor surfaces** are durable and in good condition.	1	4	4	Floor damage in boys restroom 0540. Other floors in good condition with minor cracks. Floor transitions between floor materials are okay, but need consultant maintenance to prevent damage and tripping hazards.
2.15	**Ceilings** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	5	5	Beautiful wood ceilings in portions of the building.
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	5	5	
2.18	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	5	15	
2.19	**Facility doors** are keyed to standardized master keying system.	3	3	9	Telecom and food pantry doors are separately keyed.
2.20	**Restroom partitions** are securely mounted and of durable finish.	2	4	8	Restrooms in the basement appear to be in good condition, however there is a strong odor.

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.21	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.22	Classroom doors are **recessed and open outward.**	4	5	20	
2.23	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	3	4	12	Mortise lock set with lock on interior and exterior, door stops used to prop doors open throughout the school.
2.24	**Door panels** into classrooms and other occupied spaces contain **vision lite.**	3	5	15	
2.25	**Vision lite** in doors is clear and uncovered.	2	4	8	Only 4 rooms had covered vision panels.
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	4	8	Flooring transition strips are quite large and need regular maintenance to prevent tripping hazards.
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	One stairway to the basement, but basement does exit directly to exterior on opposite side.
2.30	**Stairs (interior and exterior)** are well maintained and in good condition meeting current safety requirements.	5	4	20	Stairs to basement are not well lit, but current lighting level is not an immediate safety concern.

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.31	At least **two independent exits** from any point in the building	5	5	25	
2.32	**Emergency lighting** is provided throughout the building.	5	5	25	
	TOTAL			329	

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	5	10	No comments.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	4	12	Only the gym wing was able to be observed, however, 2021 roofing study identified roof in good condition throughout. Low-profile solar arrays are in place on majority of roof surfaces.
3.3	**Roof access** is safe for all roofs.	3	3	9	Provide fixed ladder for interior access to the roof access door in gym wing. Provide fixed ladder from Roof H to J. Original building & NW addition appear to only be accessible by portable stepladder on grade. Provide ladder docks for ladder tie-offs to Roofs D and A.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	4	12	Window sealant generally in good condition.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	5	5	No comments.
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	5	10	No comments.
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	4	8	All doors are painted steel or aluminum. 'Wet Paint' signage in place on several doors implies that repainting of steel doors underway. Entry #7 has rusting at base of door and frame.
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	4	4	Majority of building is brick. Repointing will be required at service enclosure and NW addition. Re-stain wood soffits on original bldg. Repair concrete deck on south side of original bldg where spalling and rust stained. EIFS on NW addition in good condition. Metal panels on NW and Gym additions, good condition.
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	(1) Door has operational issues--exterior door (into service tunnel) from Mechanical 0325 does NOT latch. (5) Entries have card readers. (2) Entries have keyed locksets. (5) Entries have exit-only hardware. All doors except 1 (Door at Room 0100) have exterior identification numbers.
	TOTAL			79	

C | Civil

ASSESSOR: Jack Gorman

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	1	1	NW of building is a large area where water has scoured out erosion channels. The channels are substantial with the depth reaching about 2' in some areas requiring substantial improvements.
4.2	**Parking areas** are in good condition.	5	5	25	The east parking lot was new concrete and in good condition. The south lot parking asphalt was cracking but not failing.
4.3	**Drive areas** are in good condition.	3	2	6	There are cracks through the south drive aisle but the pavement did not appear to be at risk of failing immediately, consider replacement 5-10 years. Where trash/ delivery trucks turn to get into the trash enclosure area was worn out substantially and needs replacement.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	3	3	The east lot was full with staff parking at the time of visit, DMPS states that staff parking is limited. There were spaces available in the south lot for visitor parking.
4.5	**Sidewalks** around the facility are in good **condition.**	1	4	4	There were few issues with the interior walk on site, the perimeter walks on the south and west sides had some trip hazards and other spots needing replacement in the 5+ year time frame.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	4	4	Sidewalks on site were easy to navigate. There is no sidewalk connection from the north asphalt playground to the southwest basketball area but the slopes and erosion issue there may make it unfeasible for a connecting piece of sidewalk. Consider adding a walk with stairs as an option.
4.7	**Hard surface** playground surfaces are in good condition.	3	4	12	The concrete playground surfaces were in good condition. Most of the asphalt was holding up well with one section on the north side experiencing some sagging.
4.8	**Fencing** around the site is in good condition.	1	4	4	A portion of the fence along the west side of the site needs the top fence post connection reattached, other sections of fence were in good condition.
4.9	**Trash enclosure** is in good condition.	1	5	5	The enclosure and pavement were both in good condition, and the gate was undamaged.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	2	2	A couple of the curbs along the intakes on the southeast side were a little beat up from snow removal but not seriously damaged. 12" storm sewer and a manhole need added on the NW side to fix large drainage issue.

ASSESSOR: Jack Gorman

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	3	3	There is a little space for parking expansion to the north of the east lot and some room for building expansion to the north of the existing building.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	2	2	Bus drop off is to the south of the school on Watrous Ave., parent pickup/drop off is in the south lot and backs up onto Watrous Ave.
	TOTAL			71	

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	5	5	
5.4	**Stoops** appear to be in good condition.	1	4	4	One door is missing a stoop.
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	4	4	Some shrinkage cracks.
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	A few lintels are showing some minor rust.
5.9	**CMU** is in good condition.	1	5	5	
5.10	**Precast** is in good condition.	1	5	5	Concrete Walls.

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	5	15	
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	5	5	
5.16	**Canopies** appear to be in good condition.	1	4	4	Canopy at front entrance connection to the precast is failing.
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	N/A	0	
5.19	**Stairs** appear to be in good condition.	1	5	5	
5.20	**Stair railings** appear to be in good condition.	1	4	4	Railing at mechanical mezzanine is insufficient. Room 0605.

S | Structural

ASSESSOR: Trevor Pullen

		Weight Factor	Rating	Points	Comments
5.21	**Tunnels** appear to be in good condition without cracks.	1	N/A	0	
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			125	

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	Spaces all appeared to have dedicated control (most through VRF system, though some served by packaged water-source heat pumps).
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	Generally appears to be true.
6.3	Appropriate **amount of ventilation** are provided to each space.	5	5	25	Ventilation rates generally appear to be reasonable.
6.4	**Ventilation** is provided during occupied hours.	5	5	25	Generally appears to be true.
6.5	**Outdoor air intake locations** are appropriate.	4	5	20	Locations typically appeared to be acceptable with adequate separation from contamination sources.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	5	25	Generally appears to be true.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	5	10	Appears to be true.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	5	25	Equipment appears to be in good condition and most is approximately ten years old. Appeared to be in better condition than some similar equipment types in other buildings of approximately the same vintage.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	Generally appears to be true.
6.10	**Heating loads** are within equipment operations capacity.	5	5	25	Generally 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	Generally appears to be true.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	Appears to be true.
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	5	25	Dual backflow preventers in parallel.
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	5	25	Multiple electric water heaters. Age varies but units appear to be in good condition.
6.15	Domestic **hot-water reicrulcating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	5	15	Appears to be true.
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	No issues identified.
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	3000 gallon grease interceptor.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	5	25	Systems appeared to be acceptable on accessible roofs. Portions of roof were not accessible without portable ladder.
6.19	**Restroom fixtures** are in good condition and comply with current DMPS standards.	3	4	12	Automatic flush valves and individual lavatories.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	4	12	Generally appears to be true. Some items more difficult to access above ceilings.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	5	10	Appears to be true.
6.22	**Filter** sizes are standard and filter types are standard.	2	3	6	Range of filter types due to different equipment types (AHUs, VRF fan coils, VRF cassettes, WSHPs, etc.).
6.23	**Equipment mounting heights** are reasonable.	3	4	12	Generally appears to be true. Some units above ceiling may be more difficult to access.
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	5	10	Appears to be true.
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	3	6	Only outdoor condensing units are serving kitchen equipment. No hydrant or hose bibb observed, but may be able to bring hose from nearby mechanical room.
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge as per OSHA standard 1910.28(b).	2	4	8	Limited roof mounted equipment may be less than 15 feet from edge of roof, but no clear safety issues for maintaining equipment given current conditions.
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	4	16	VRF system provides proprietary controllers with integration to BAS. No pneumatics remain.
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	Appears to be true.

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.31	Building is fully **sprinklered.**	5	5	25	Sprinkler system added in most recent renovation project.
6.32	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	5	25	Mixing valves (local) were observable at lavatories.
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	N/A	0	Not applicable.
6.35	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	N/A	0	None appear to be required.
6.36	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	N/A	0	Not applicable. No gas-fired equipment.
	TOTAL			572	

E | Electrical

ASSESSOR: David Carlson

7.0 Electrical Systems

Electrical Design

		Weight Factor	Rating	Points	Comments
7.1	**Transformer location** is easily accessible by utility line truck to allow for rapid transformer replacement in the event of an issue.	5	5	25	
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	5	25	Transformer located behind secured gates behind garbage cans.
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	5	15	
7.4	The **MDP** appears serviceable.	4	5	20	MDP is Square D I-Line HCR-U distribution panel installed in 2020 and is in excellent condition.
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	5	20	Panel allows for 108" of mounting space, with most breakers utilizing 4.5" of space each. There is 52.5" of space remaining which would usually score a 4 for having less than 50% capacity remaining, but two breakers installed are spare and off, which allows score to stay at a 5.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	4	16	Light-duty items are stored in front of panels, restricting access.
7.8	The Distribution Panel appears **serviceable.**	4	5	20	Distribution panels consist of Existing MDP and panel IDP, existing Square D panelboards manufactured in 2013 and are in excellent condition.
7.9	The Distribution Panel is **maintainable.**	4	3	12	Score is average of both distribution panels. Existing MDP has 72" of total mounting space, with 18" as spaces and two spare breakers (4). Panel IDP also has 72" of total mounting space, but only has 4.5" of space remaining with one spare breaker (2).
7.10	The Distribution Panel will support **future expansion.**	4	3	12	Score is average of both distribution panels. Existing MDP has 72" of total mounting space, with 18" as spaces and two spare breakers (25% space remaining, 4). Panel IDP also has 72" of total mounting space, but only has 4.5" of space remaining with one spare breaker (10% space remaining, 2).

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** observed during assessment are safe, serviceable, and maintainable.	2	4	8	Most panels observed had adequate clearance, but several in classrooms had educational storage obstructing access to panel. All panels are Square D NQ and NF panelboards and are in excellent condition, with at least 30% spare capacity in all panels observed. Several panels in hallways were unlocked.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	0	0	No exterior receptacles were noted.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	4	20	Good parking to entrance lighting. Back appears dark and could benefit from additional lighting.
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	MDF rack is 45U data rack and has approximately 40% remaining 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	0	0	No panel present within MDF. Circuits feeding MDF and fire alarm panel are unsecured in corridor.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of cabling is CAT5e.
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	3	3	IDF is fed by a 12-strand OM3 50µm multi-mode FO cable.

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	4	8	25% capacity remaining on TMGB.
7.22	Building is equipped with an **addressable fire alarm system.**	5	4	20	Panel is in good condition, but does not conform to current DMPS standard programming. Panel is Notifier NFW2-100 panel, but was noted to be monitored by Simplex.
7.23	Building is equipped with an **access control system.**	5	3	15	6/12=50%
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	Primex master clock located within IDF on upper level.
	TOTAL			393	

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	3	3	VCT flooring is cracking.
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			63	

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

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

Project Descriptions

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

Projects Requiring a Study

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

Cost Estimating

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

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

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

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

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

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

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

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

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

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

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

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

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

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

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

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

PROJECT RECOMMENDATIONS

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

Short Term Maintenance

Ceiling Baffle Repair	Reattach or replace 2 ceiling baffles that are damaged in the Gym. Replace damaged light fixture.
Floor Repair	Repair portion of flooring in Boy's Restroom 0540.
Exterior Door Latch Repair	Exterior door at north end of Mechanical Room 0325 does not latch. Repair door and latch as required.
Fence Repairs	Reattach top fence post connection along west side fence.
Elevated Walkway Maintenance	The elevated walkway is showing signs of significant corrosion of the rebar leading to cracking and spalling of the concrete. Don't use salt in the winter on the slab. It speeds up corrosion. Repairs included in future project.
Elevator Flooring Repairs	The VCT flooring is chipping around the elevator. Replace chipped areas.
Elevator Maintenance Records	There are no records on-site. The maintenance provider should have this included in their scope to provide on-site records. Maintenance and testing should be performed regularly each year.

1 - 2 Year Priority

		Project Costs
Furniture Replacement	Classroom furniture and furniture in intervention spaces, including corridor common spaces, should be replaced with furniture that is student focused, contains student storage, and offers opportunities for varied seating positions. The current furniture is lacking in functionality due to no student storage and lack of ergonomics. Staff indicated that some new furniture has arrived meeting these needs, however only 2 classrooms are equipped with this type of furniture.	DMPS
Acoustic Improvements	Acoustic material should be added to walls and or ceilings of the lower level cafeteria as well as in the Art Room to absorb some of the reverberating echoes. Approximately 600 SF material.	$25,000
Guardrail Replacement	Replace loose guardrail on the mechanical mezzanine in room 0605. Approximately 20ft in length.	$12,000
Repair and Repaint Exterior Door	Remove surface rust and repaint door and frame of Entry #7. Single door with 2' sidelight.	$6,000
Sidewalk Replacement	Take out and reinstall 34 SY of PCC sidewalk. For location, refer to civil site plan exhibit found in the appendix of this report.	$11,000
Playground Pavement Replacement	Remove and replace 22 SY of asphalt. For location, refer to civil site plan exhibit found in the appendix of this report.	$8,000
Parking Pavement Replacement	Remove 13 SY of asphalt in front of trash enclosure access and replace. For location, refer to civil site plan exhibit found in the appendix of this report.	$7,000
Erosion Repairs	Install storm sewer line down to detention basin from existing storm sewer outlets on N side of site. For location, refer to civil site plan exhibit found in the appendix of this report.	$110,000
Curb Repair	Return damaged curbs to new condition. Approximately 10 LF of 6" curbs. For locations, refer to civil site plan exhibit found in the appendix of this report.	$6,000

Stoop Installation	Add stoop at exterior door to room 0100. 4ft x 5ft. 8" thick stoop walls, 42" deep. Reinforce with #4 @ 12" o.c. each way. 5" thick slab w/ #4 @ 9" o.c. each way.	$8,000
VRF Head End and Branch Controller Replacement	VRF system is nearing end of serviceable life. Recommend replacement of head end controllers and branch controllers as 1-2 year Priority. See 5+ year Priority for replacement of condensing units and evaporator units.	$250,000
	Total 1-2 Year Project Costs:	**$443,000.00**

3 - 4 Year Priority

		Project Costs
Wood Soffits and Beams Refinish	Finish on exposed wood soffits and beams has deteriorated. These all should be cleaned, prepped, and re-stained and sealed. Approximately 1200SF.	$20,000
Roof Access Improvement	Provide (2) ladder docks for access to Roof A and to Roof D. Provide interior access ladder from mezzanine floor to roof access door (4 VLF). Provide exterior ladder from Roof H to J. (10 VLF)	$12,000
Sidewalk Replacement	Replace 3 SY of sidewalk pavement by east ADA parking. For location, refer to civil site plan exhibit found in the appendix of this report.	$6,000
Parking Pavement Replacement	Replace the drive access on the S side of side onto Watrous Ave, approximately 42 SY. For location, refer to civil site plan exhibit found in the appendix of this report.	$11,000
Canopy Repairs	Front entrance canopy attachment to precast is failing. The precast where the canopy is bolted has spalled loose at two of the bolts. Install (2) new bolts through the canopy steel into the precast. New 5/8" diameter bolts. Drill and epoxy all the way through the precast (12" thick). Patch spalled concrete at old bolt holes, 2SF.	$7,000
Stairwell Re-Lighting	The lighting in the stairwell to the lower level is inconsistent and dimly lit. Replacing and adding fixtures is recommended to achieve uniform lighting levels and increase visibility in the full stairwell.	$6,000
	Total 3-4 Year Project Costs:	**$62,000.00**

5-10 Year Priority

		Project Costs
Interior Refinishing	Refinish corridor and classroom walls. When repainting corridors, use colors that are bright but also contribute to a unified school character or wayfinding. Classrooms should also reflect this same unity. Approximately 25,500 SF. Recommendations based on expected finish life of additional 8-10 years.	$140,000
Exterior Masonry Repairs	Repoint brick at south service court screen wall and at north and west walls of the Northwest addition. Approx. 75 SF brick.	$7,000
Exterior Sealant Replacement	Replace and maintain exterior sealant at window frames around the building. Approximately 700 LF.	$14,000
Sidewalk Replacement	Remove and replace 143 SY of damaged sidewalk across site. For location, refer to civil site plan exhibit found in the appendix of this report.	$35,000
Parking Pavement Replacement	Take out and reinstall 1897 SY of pavement in trash enclosure drive. For location, refer to civil site plan exhibit found in the appendix of this report.	$340,000
Playground Pavement Replacement	Remove and replace 249 SY of asphalt. For location, refer to civil site plan exhibit found in the appendix of this report.	$45,000
VRF Fan Coil and Condensing Unit Replacement	VRF system is nearing end of serviceable life. Recommend replacement of head-end and branch controllers as Year 1-2 Priority. Replace fan coils and condensing units in 5+ Year Priority.	$1,100,000
	Total 5-10 Year Project Costs:	**$1,681,000.00**

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

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
Exterior Concrete Walkway Replacement	Elevated walkway that wraps around the south side. Rebar in the slab is corroding causing lots of cracking and spalling of the concrete. Further study is needed to determine the severity of the deterioration.	$2,000
	Total Study Design Service Fees:	**$9,500**

APPENDIX

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

60 0 30 60 120

bbs ARCHITECTS ENGINEERS

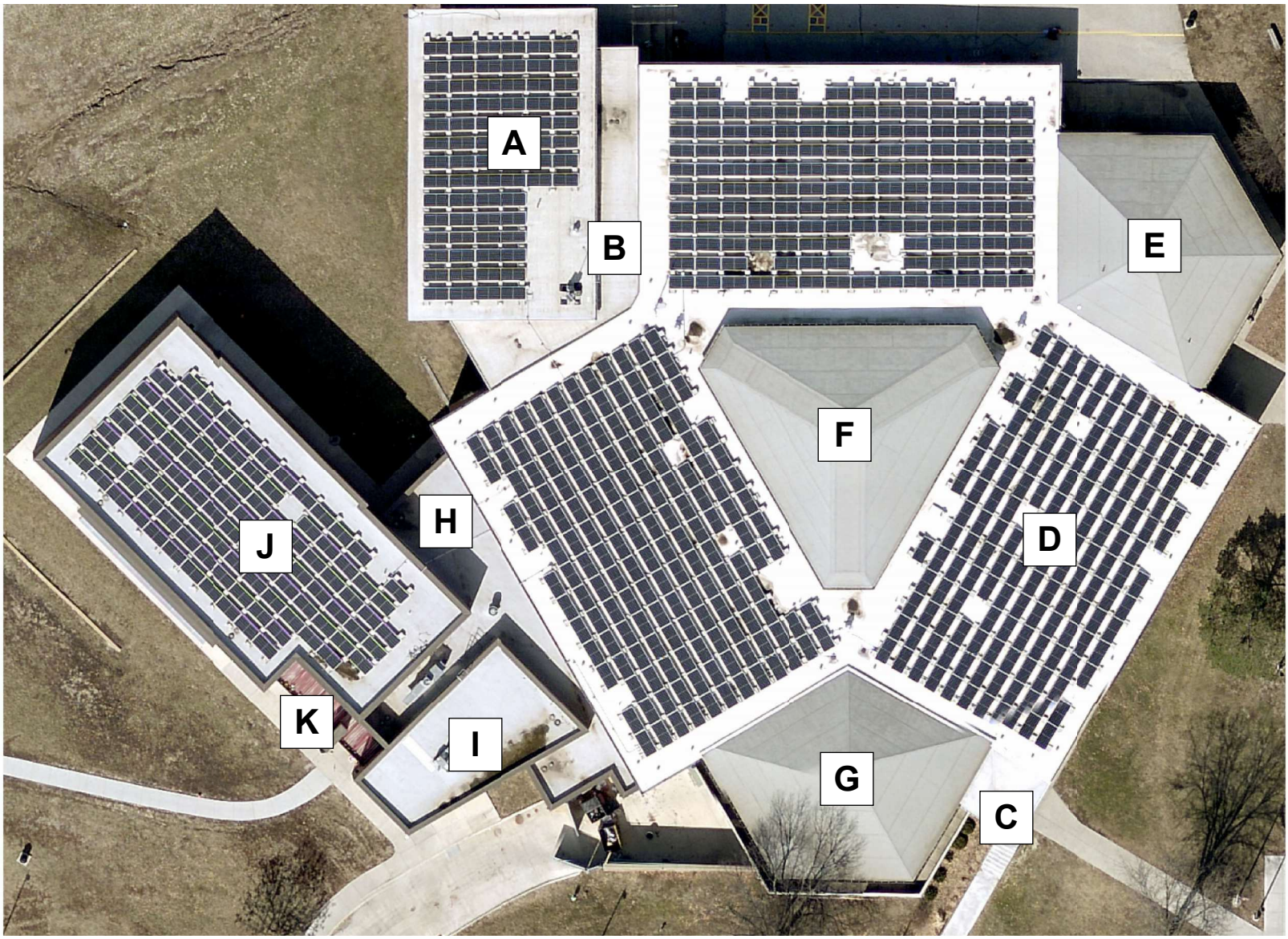
BISHOP ENGINEERING +

JEFFERSON ELEMENTARY

EXHIBIT

PROJECT # 230286-18

DATE 10/25/2023



N

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Jefferson Elementary
11.15.2023

JEFFERSON ELEMENTARY SCHOOL

2425 WATROUS AVENUE
DES MOINES, IOWA 50321

FIRST FLOOR

NORTH

MECHANICAL
MEZZANINE

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

bbs ARCHITECTS ENGINEERS

JEFFERSON ELEMENTARY SCHOOL

2425 WATROUS AVENUE
DES MOINES, IOWA 50321

SECOND FLOOR

NORTH

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

bbs ARCHITECTS ENGINEERS