DMPS FACILITY ASSESSMENT | SOUTH UNION ELEMENTARY

11.14.2023

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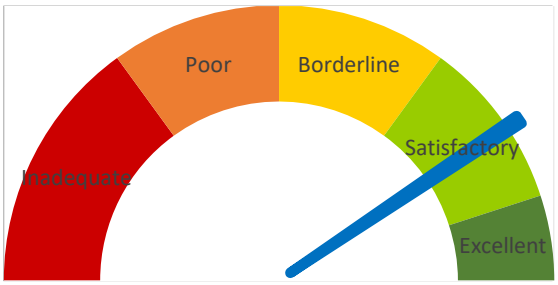


REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

South Union Elementary's on-site facility conditions assessment was conducted on November 14, 2023 and included visual conditions assessment from professionals covering interior architecture, exterior building envelope, the property's grounds (site), structural condition, mechanical (HVAC/Plumbing) systems, electrical systems (power, exterior lighting, interior lighting, fire alarm, and general IT), and the elevator conditions.

There were no immediate concerns noted for the building, but a number of maintenance items requiring attention were documented. These items include needed adjustments to exterior doors, removing debris from the roof, and exterior sealant maintenance.

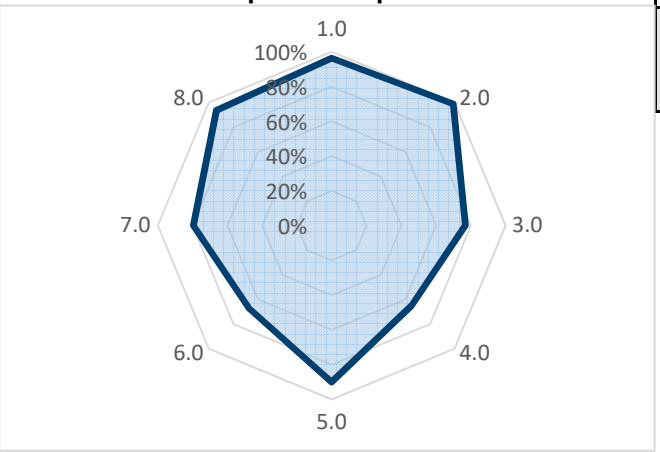
The recommended projects for South Union Elementary to be completed in the next 1-2 years include:

- Drywall repairs and corner guard installation
- Casework repainting
- Acoustic improvements for gymnasium, cafeteria, and music room
- Repair of exterior soffits
- Paving replacements
- Mechanical HVAC equipment replacements
- Exterior lighting improvements

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

Discipline Comparison				Building Health				
Assessment Category Summary		Max Pnts	Earned Pnts	Bldg Weight Factor	Max Pnts	Earned Pnts	%	Rating
1.0	Educational Adequacy	165	159	2.00	330	318	96%	Excellent
2.0	Environment for Education	375	371	0.60	225	223	99%	Excellent
3.0	Exterior Envelope	95	73	3.00	285	219	77%	Satisfactory
4.0	School Site	100	65	1.50	150	98	65%	Borderline
5.0	Structural Conditions	120	108	1.30	156	140	90%	Excellent
6.0	Mechanical Systems	635	427	0.80	508	342	67%	Borderline
7.0	Electrical Systems	455	362	0.75	341	272	80%	Satisfactory
8.0	Elevator Conditions	65	61	1.00	65	61	94%	Excellent
Total					**1,995**	**1,611**	**81%**	**Satisfactory**

South Union 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 South Union Elementary scored a building health rating for 81% or "Satisfactory", per the scale described above. Per the graph shown on the cover page of this report, scores within the "green" range are considered positive scores. Improvements proposed in this report to mechanical systems, building envelope, and the building site would help increase this rating and extend the useful life of the building.

Building Data Record

Building Name: South Union Elementary

Date: November 14, 2023

Address: 4201 South Union Street
Des Moines, IA 50315

High School Feeder System: Lincoln High School

Building SF: 68,508 square feet

Site Acreage: 9.99 acres

Date(s) of Construction: 1954, 2006

Date(s) of Roof Replacement: 2000

Current/Scheduled Projects: Underground Fiber for School Network - 2024
HVAC Upgrades - 2024

Existing Building Data:

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

Site Items:

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

Energy Source:

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

Cooling:

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

Heating:

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

Structure Fireproofing:

- [x] No
- [ ] Yes

Construction:

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

Exterior Facade:

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

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Tim Bungert

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	2	5	10	
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	2	4	8	Tectum wall panels are not entirely sufficient to reduce reverberation time in the gym. Recommend additional acoustic absorption (ceiling baffles, etc.) be added.
1.3	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	4	8	Perforated metal deck provides some sound absorption, but room is still acoustically very bouncy. Recommend additional acoustic absorption (ceiling baffles, wall panels, etc.) be added.
1.4	**Music room** is adequate for providing introductory music instruction.	2	4	8	Large volume space with mostly hard surface finishes. Recommend additional acoustic absorption (ceiling baffles, wall panels, etc.) be added.
1.5	**Art room** has sufficient accommodations for program.	2	5	10	
1.6	**Library/Resource/Media Center** provides appropriate and attractive space.	1	5	5	
Core Classroom					
1.7	Classroom space permits arrangements for **small group activity.**	3	5	15	
1.8	**Student storage space** is adequate.	2	5	10	
1.9	**Teacher storage space** is adequate.	3	5	15	
1.10	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	5	15	

A | Architectural, Programming

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
1.11	**Classroom power and data receptacles** are located to support current classroom instruction.	4	5	20	
1.12	Educational **technology** supports instruction.	4	5	20	
Administration					
1.13	**Conference/Private meeting rooms** are adequate for large and small meetings.	1	5	5	
1.14	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			159	

A | Architectural, Interior

ASSESSOR: Tim Bungert

2.0 Environment for Education

Design

		Weight Factor	Rating	Points	Comments
2.1	**Traffic flow** is aided by appropriate foyers and corridors.	1	5	5	
2.2	Communication among students is enhanced by **common areas.**	1	5	5	
2.3	Areas for students to **interact are suitable to the age group.**	1	5	5	
2.4	Large group areas are designed for effective **management of students.**	2	5	10	
2.5	**Furniture Systems** are in good or like new condition.	1	5	5	
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	2	5	10	
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	
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	5	5	

A | Architectural, Interior

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
2.11	**Main office** is visually connected to the entry and is welcoming to students, staff, and guests.	2	5	10	
2.12	**Break room** is adequately sized and furnished for proper use.	1	5	5	
2.13	**Mother's room** is a separate designated space properly furnished.	1	4	4	Dedicated space is provided, but only equipped with a folding chair and very small table. Furnishings and quality of the space could be improved.
Maintainability					
2.14	**Floor surfaces** are durable and in good condition.	1	4	4	VCT is in generally good condition, but significant damage was noted in classrooms 113 and 221.
2.15	**Ceilings** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	5	5	
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	4	4	Gypsum board walls in nearly all classrooms have cosmetic damage to faces and corners.
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	4	4	Repainting of casework doors and minor repairs to laminate counters needed in most classrooms with original wood casework. Newer plastic laminate casework is generally in excellent condition.
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	5	15	
2.20	**Restroom partitions** are securely mounted and of durable finish.	2	5	10	

A | Architectural, Interior

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
2.21	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.22	Classroom doors are **recessed and open outward.**	4	5	20	
2.23	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	3	5	15	
2.24	**Door panels** into classrooms and other occupied spaces contain **vision lite.**	3	5	15	
2.25	**Vision lite** in doors is clear and uncovered.	2	5	10	
2.26	**Glass** is properly located and protected to prevent accidental injury.	2	5	10	
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	

A | Architectural, Interior

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
2.31	At least **two independent exits** from any point in the building	5	5	25	
2.32	**Emergency lighting** is provided throughout the building.	5	5	25	
	TOTAL			371	

A | Architectural , Exterior

ASSESSOR: Matthew Gaul

3.0 Exterior Envelope

		Weight Factor	Rating	Points	Comments
Design					
3.1	Overall **design is aesthetically pleasing** and appropriate for the age of students.	2	5	10	
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	3	9	2 areas of ponding have white staining that appear to be mineral deposits without any apparent origin. Roof is nearing end of life; approx 7 years.
3.3	**Roof access** is safe for all roofs.	3	3	9	1 roof hatch lacks guardrails; hatch is not within 15 feet of roof edge. 4 roof transitions lack access. Locations based on 2021 assessment: H to A, A to B, B to C, and F to low roof over door, which is blocked from access from grade by roof fence.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	4	12	Only one instance of a window requiring sealant at glazing. location: at south end of room 213.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Windows appear to be tinted. Low-e coating cannot be determined.
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	5	10	
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	5	10	
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	3	3	Two areas of soffit need repair and refinishing at north east corner. Sealant joints at west facade of gym need immediate repair, approx 10 LF. Other caulk joints at gym as well as two west facing walls of school are weathered and will require repair in 3-4 years.
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	3	3	One door at both pairs of doors at gym do not open. Door must open for egress, but the other door for each pair does open.
3.10	**Exterior Doors are monitored** or controlled by an access control system.	1	3	3	05 - Doors do not latch 10 - Doors with card readers 03 - Doors with locks or no exterior lock 13 - Doors with no signage. 02 - Doors at courtyard with no monitoring.
	TOTAL			73	

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	5	5	The SW side of the site is steep but walkable. The retaining walls were in good condition and there was good overall drainage on the site.
4.2	**Parking areas** are in good condition.	5	3	15	The west parking area was primarily asphalt with some concrete areas, concrete was new and asphalt had some cracking. The east lot asphalt was cracking but not failing, pavement most likely to need replacement in 5+ years.
4.3	**Drive areas** are in good condition.	3	2	6	The areas that transition from concrete to asphalt are cracking substantially between the concrete and asphalt interface in both lots. Pot holes were observed in the east lot as well.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	5	5	There were multiple available parking spaces in both the east and west lots.
4.5	**Sidewalks** around the facility are in good **condition.**	1	3	3	The sidewalk to the north of building was in fair condition but will need replacement. There is a section of new sidewalk pavement connecting the S Union St. and Leach St. corner that is new and in good condition. The set of handrails on the west stairs were not in good condition.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	5	5	All of the doors on site had sidewalk access and the sidewalk circulation is sensible for students.
4.7	**Hard surface** playground surfaces are in good condition.	3	3	9	The west asphalt pad was cracking and had sag locations in the center of the area. The SW asphalt area was better, with only the western edge cracking significantly. The sections to the east and west of the playground equipment have exposed old pavement that needs replacement.
4.8	**Fencing** around the site is in good condition.	1	4	4	Most of the site's fence was in good condition. There is a section on the south side of the site near the walk track that was old and rusty and due for replacement.
4.9	**Trash enclosure** is in good condition.	1	5	5	The fence, gate, and surrounding asphalt were all in good condition.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	2	2	Some of the open space intakes to the west of the building had cracked rims. The soil around intake in the SE corner of the east lot has eroded substantially from collapsed wall, intake needs removal and replacement.

ASSESSOR: Jack Gorman

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	4	4	There is a lot of space to the SW of the site for another parking lot, some space to the north of the existing building for a building addition.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	2	2	Bus lane is to the north on Leach St., parent drop off is in the west parking lot. There is large conflict with parents backing up onto South Union St. and impeding traffic.
	TOTAL			65	

S | Structural

ASSESSOR: Erik Raker

5.0 Structural Conditions

Foundations

		Weight Factor	Rating	Points	Comments
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	5	5	
5.2	There does not appear to be any **foundation settlement.**	2	5	10	
5.3	**Basement walls** do not appear to have any cracks.	1	5	5	
5.4	**Stoops** appear to be in good condition.	1	3	3	Several stoops and associated handrails are deteriorating.

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	5	10	
5.8	**Lintels** appear in good condition (no visible deflection or rust).	1	5	5	
5.9	**CMU** is in good condition.	1	N/A	0	
5.10	**Precast** is in good condition.	1	5	5	

S | Structural

ASSESSOR: Erik Raker

		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	N/A	0	
5.13	Floor framing appears to meet the **code requirements.**	3	N/A	0	
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	The canopy between rooms 224 and 225 on NE corner has distress in the EIFS.
5.17	**Loading dock concrete** appears to be in good condition.	2	4	8	Well worn, but functional.
5.18	**Mechanical screening** appears to be in good condition.	2	5	10	
5.19	**Stairs** appear to be in good condition.	1	4	4	Interior stairs are okay. Exterior stairs need attention.
5.20	**Stair railings** appear to be in good condition.	1	4	4	Interior railings are okay. Exterior stair railings need attention.

S | Structural

ASSESSOR: Erik Raker

		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	No designated hardened area observed.
5.23	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			108	

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

6.0 Mechanical Systems

HVAC Design

		Weight Factor	Rating	Points	Comments
6.1	**Zone Control.** Thermostats are provided in each space for individual zone control of space temperatures.	3	5	15	
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	
6.3	Appropriate **amount of ventilation** are provided to each space.	5	2	10	Generally the system shows 300 CFM per classroom per equipment schedules and need 400+ for each classroom.
6.4	**Ventilation** is provided during occupied hours.	5	2	10	One of the main rooftop ERVs was not operational while on site. Other units were operational.
6.5	**Outdoor air intake locations** are appropriate.	4	4	16	Rooftop ERVs with both Exhaust and Intake.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	4	20	Exhaust connected into ERVs and operational except for one ERV.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	2	4	A clear path for return path for air back to ERVs is not identified on the drawings. It appears that Unit "B" and "C" may be using the corridor as a return air path which is not code compliant and likely was not when installed, as it presents a life safety issue, allowing smoke to travel from occupied areas to the egress corridor.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	1	5	Majority of equipment is 20 years old and will need replaced in the next 5 years.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	
6.10	**Heating loads** are within equipment operations capacity.	5	4	20	Heating Loads are within system capacity, and a back-up boiler is provided for wellfield. Backup boiler is not sized to provide redundancy to the wellfield, though, in the event there is a wellfield failure.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.11	**Dehumidification** is provided and addressed humidity loads in incoming outside air.	3	1	3	Does not appear to have dehumidification included in HVAC equipment in the building.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	3	15	Single RPZ. Prefer dual RPZ to reduce pressure drop and provide redundancy for RPZ testing and repair.
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	5	25	Single electric hot water heater for entire building recently replaced with new unit.
6.15	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	3	9	Appears central mixing valve requires service or maintenance. Slow or extended delay for hot water to fixtures. Exceeds 2 minutes to get tepid water.
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	1	3	Only a small indoor grease trap is installed No outdoor tank type grease interceptor installed. Addition of a DMMWRA approved device appears to be needed.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	2	10	Appears the overflow roof drains incorrectly installed with too much height to keep water ponding at 2 inches or less.
6.19	**Restroom fixtures** comply with DMPS preferences.	3	1	3	Wash stations have manual operation and no auto-flush for restrooms.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	2	6	Ceiling plenum mounted equipment continues to be tight and limits regular service.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	N/A	0	
6.22	**Filter** sizes are standard and filter types are standard.	2	2	4	Multiple filter sizes for mechanical equipment. 20 x 20 and 24 x 24 for equipment
6.23	**Equipment mounting heights** are reasonable.	3	3	9	Ceiling plenum mounted equipment requires ladder for access and service.
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	5	10	
6.25	**Isolation valves** are located in the plumbing and hydronic systems to allow for isolation of only portions of the system for servicing.	2	5	10	
6.26	Appropriate means are provided for **airflow and water balancing.**	3	5	15	
6.27	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	4	8	No roof mounted hydrant to clean rooftop equipment including RTU and ERVs.
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge.	2	3	6	Some minimal equipment may require some fall protection.
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	4	16	Older DDC system form 2005 upgrades still in place.
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.31	Building is fully **sprinklered.**	5	5	25	
6.32	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	2	10	Appears central mixing station requires maintenance to be able to control HW temps.
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	5	25	Yes, Located on inside of boiler room door.
6.35	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	N/A	0	
6.36	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	N/A	0	
	TOTAL			427	

E | Electrical

ASSESSOR: Bart Caldwell / David Carlson

7.0 Electrical Systems

Electrical Design

		Weight Factor	Rating	Points	Comments
7.1	**Transformer location** is easily accessible by utility line truck to allow for rapid transformer replacement in the event of an issue.	5	5	25	
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	5	25	
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	4	12	Light equipment stored in front of MDP.
7.4	The **MDP** appears serviceable.	4	4	16	Equipment is in good condition. Installation date is 2005.
7.5	The MDP is **maintainable.**	3	5	15	277/480V, 2000A GE MDP.
7.6	The MDP will support **future expansion.**	4	3	12	There are 3 of 15 total breaker spaces available for future expansion.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	5	20	
7.8	The Distribution Panel appears **serviceable.**	4	2	8	The original 480V, 125A Kinney distribution panel is antiquated. The remaining two distribution panels installed in 2005 are in good condition.
7.9	The Distribution Panel is **maintainable.**	4	3	12	All panels in good condition except original Kinney distribution panel.
7.10	The Distribution Panel will support **future expansion.**	4	3	12	Majority of panels have approx. 30% expansion capability.

E | Electrical

ASSESSOR: Bart Caldwell / 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	Combi-oven disconnect located in kitchen does not have adequate clearance. Panels in Room 104 do not have adequate clearance due to file cabinets in center of room.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	1	1	Building only has one exterior receptacle. Receptacle does not have cover, and box is recessed behind brick.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	3	15	Picnic shelter and playground very dark. NW door, North side, SW corner, and staff parking dark. HPS light by loading dock.
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	3	12	Floor cleaner is stored in the room blocking access.
7.15	MDF Equipment Racks have adequate space for **future growth.**	4	4	16	Approx. 20 rack units of space in the rack for future growth.
7.16	MDF is equipped with UPS to back up main switch(es), providing **backup power** to necessary equipment in the event of a power outage.	5	5	25	
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	There are 20A circuits to the rack and receptacles on the wall, however, no branch panel in the room.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of horizontal cabling is Cat5e.
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	4	4	50µm OM2 multimode fiber from the MDF to IDF.

E | Electrical

ASSESSOR: Bart Caldwell / David Carlson

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	5	10	
7.22	Building is equipped with an **addressable fire alarm system.**	5	5	25	Simplex 4100U panel.
7.23	Building is equipped with an **access control system.**	5	3	15	7/13=54%
7.24	Building is equipped with a **CCTV system.**	5	5	25	
7.25	Building is equipped with an **intercom system.**	4	4	16	Surface rust noted on PCM module.
7.26	Building is equipped with a **master clock system.**	4	5	20	
	TOTAL			362	

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	3	3	Lower level is missing Fire instruction signage
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	4	8	This is an early version of an OTIS 211 controller. Certain boards will require updated versions.
8.8	**Finishes** are adequate and maintainable.	1	5	5	
8.9	**Maintenance** is adequate.	1	5	5	
8.10	**Testing** is up to date, and all **record and logbooks** are present and filled out.	1	5	5	
	TOTAL			61	

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

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

Project Descriptions

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

Projects Requiring a Study

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

Cost Estimating

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

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

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

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

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

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

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

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

RECOMMENDED PROJECTS AND COST ESTIMATING METHODOLOGIES

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

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

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

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

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

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

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

PROJECT RECOMMENDATIONS

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

Short Term Maintenance

Exterior Door Adjustment	Adjust one door at each pair of doors in the gymnasium so that they open freely. Doors are currently inoperable.
Roof Cleaning	Clean debris from roof and roof drains.
Exterior Sealant Replacement	Install sealant at two joints in precast concrete panels on the west façade of the gymnasium (total 10 LF).
Exterior Door Adjustment	Adjust closers and latches on the following exterior doors so that they close and latch from any closing position: 2 doors near rm 233; 2 doors at NW of courtyard; and one door at SE of courtyard.
Riprap Installation	Add rock below lamb's tongue between rooms 111 and 112 to minimize erosion.
Exterior Lighting Replacement	Replace high pressure sodium (HPS) light fixture near loading dock with a new LED light fixture.
Correct Overflow Roof Drain Issue	Overfloor roof drains have a standpipe that will cause excessive ponding on the roof. Replace the standpipe with a correctly sized one.

1 - 2 Year Priority

		Project Costs
Drywall Repair and Corner Guard Installation	In rooms 201-205, 216, 218, 219, 221, 225-235, and 237 repair damage to drywall faces and corners including patching and painting (estimated total 120 SF). Install 48" high corner guards on all outside corners of gypsum board walls (estimated at 35 corner guards).	$14,000
Casework Refinish	Repaint casework rooms 207-214, 216, 218, 219, 221, and 225-234. (22 rooms with approximately 200 SF of painted casework per room).	$110,000
Acoustic Improvements	Install acoustic baffles and/or acoustic wall panels in music room (1,050 SF), gymnasium (4,115 SF), and cafeteria (2,400 SF). SF of baffels assumed to be 1/3 of room SF.	$95,000
Roof Access Installation	Install roof access ladders or stairs at four locations, each 4 VLF. Roofs H to A, A to B, B to C, and F to low roof over door. Refer to attached roof identification image.	$12,000
Exterior Soffit Repair	Repair direct-applied finish system on soffit from the northeast entrance out to the northeast corner of the building and repaint (75 SF total).	$7,000
Sidewalk Replacement	Remove and replace 91 SY of damaged sidewalk and tripping hazards. See attached civil exhibit.	$15,000
Parking Pavement Replacement	Remove and replace 47 SY of asphalt sidewalk in the east parking lot and rebuild curb. See attached civil exhibit.	$12,000
Intake Replacement	Remove and replace the stormwater intake in the southeast corner of the east parking lot. See attached civil exhibit.	$20,000
Exterior Stairs and Railings Replacement	Remove and replace exterior stairs and railings on grade near northwest corner of the building (45 LF, 11 risers) and near the southeast corner of the gymnasium	$25,000

ERV Replacement	Replace all ERVs with DOAS/ERV to improve dehumidification and select larger airflows to meet current classroom ventilation standards. Current unit is providing 75% of the required amount of ventilation. Confirm scope of B9701 South Union HVAC Upgrades to make sure this work did not occur in that project.	$1,100,000
Heat Pumps Replacement	Replace heat-pumps that are over 15 years in age. Consider 2-stage heat-pump to reduce demand on well-field and better match load. Confirm scope of B9701 South Union HVAC Upgrades to make sure this work did not occur in that project	$1,700,000
HVAC Rooftop Unit Replacement	New packaged RTU for Gym and Commons that included ERV. Confirm scope of B9701 South Union HVAC Upgrades to make sure this work did not occur in that project	$710,000
Exterior Lighting Installation	Add exterior lighting at picnic shelter, playground, northwest door, southwest building corner, and staff parking lot.	$13,000
Elevator Signage Installation	Install missing fire signage outside elevator at all levels.	$6,000

Total 1-2 Year Project Costs: $3,839,000.00

3 - 4 Year Priority

		Project Costs
Interior Refinish	Replace VCT flooring in classrooms 113 and 221 (1,650 SF total).	$14,000
Interior Refinish	Replace VCT flooring in boys and girls restrooms 255 with rubber flooring (total 725 SF).	$15,000
Exterior Sealant Replacement	Replace exterior sealant at windows (21 @ 30 LF each), concrete watertable (30 LF), precast concrete joints, (18 @ 26 LF each), and masonry soft joints on the north and east facades (25 LF).	$15,000

Playground Pavement Removal	Remove old concrete paving on the edges of the new south playground equipment. See attached civil exhibit.	$12,000
Parking Pavement Replacement	Remove and replace 22 SY of asphalt paving in the west parking lot. See attached civil exhibit.	$9,000
Sidewalk Replacement	Remove and replace 14 SY of sidewalk paving. See attached civil exhibit.	$8,000
Stoop Replacement	Remove and replace concrete stoop at the northeast entrance (15 ft x 10 ft area).	$20,000
Hand Wash Stations Replacement	Install new hand washing stations at restrooms with sensor operated faucets.	$11,000
Grease Interceptor	Install new grease interceptor sized to meet WRA requirements	$530,000
Power Panel Replacement	Replace antiquated 480V, 125A distribution panel in electrical room 277 with a new panel.	$25,000
Combi-Oven Disconnect Relocation	Relocate disconnect switch for combi-oven to provide adequate working clearances around the equipment.	$7,000
	Total 3-4 Year Project Costs:	**$666,000.00**

5+ Year Priority

		Project Costs
Roof Replacement	Remove and replace 60,000 SF of PVC roofing with TPO roofing. Typical lifespan of PVC roofing is 30 years. Approx year 2030.	$2,000,000

Playground Pavement Replacement	Remove and replace 705 SY of asphalt paving at the playground. See attached civil exhibit.	$190,000
Fencing Replacement	Remove and replace 245 LF of chain link fence on the south side of the site. See attached civil exhibit.	$50,000
Parking Pavement Replacement	Remove and replace 2,747 SY of asphalt pavement in the east and west parking lots. See attached civil exhibit.	$730,000
Sidewalk Replacement	Remove and replace 325 SY of sidewalk pavement. See attached civil exhibit.	$110,000
Stoop Replacement	Remove and replace concrete stoop at the northwest entrance (15 ft x 10 ft area).	$25,000
Loop Well Pumps and VFDs Replacement	Install new geothermal loop water pumps including VFDs. Confirm scope of B9701 South Union HVAC Upgrades to make sure this work did not occur in that project	$190,000
Domestic Hot Water Mixing Valve Installation	Install digital mixing valve in place of existing thermostatic mixing valve. . Rebalance hot water recirculation system.	$15,000
Elevator Controller Replacement	Elevator controller model is reaching end of life. It is expected to be obsolete in five (5) years.	$290,000

Total 5-10 Year Project Costs: **$3,600,000.00**

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.	$5,000.00

Door Frame Corrosion / Water Infiltration Study	Further investigation may be needed to determine cause of corrosion noted on the interior side of the sidelight frame at the south door from the courtyard. Evidence of previous water damage was also noted on CMU walls on lower level immediately below this area.	$5,000.00
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.	$2,500.00
Ventilation and Exhaust System Improvements	Replace or modify ventilation and exhaust systems to address code concerns identified throughout the building. These concerns include using the corridor as a return path and inadqequate levels of ventilation to Classrooms. This study is a high priority and should be completed ahead of any mechanical replacement projects.	$10,000.00
	Anticipated Capital Investme $1,700,000	
	Anticipated Capital Investment Costs:	**$1,700,000**
	Total Study Design Service Fees:	**$22,500**

APPENDIX

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

80 0 40 80 160

bbs ARCHITECTS ENGINEERS

BISHOP ENGINEERING +

SOUTH UNION ELEMENTARY

EXHIBIT

PROJECT # 230286-32

DATE 10/27/2023

bbs ARCHITECTS ENGINEERS

N

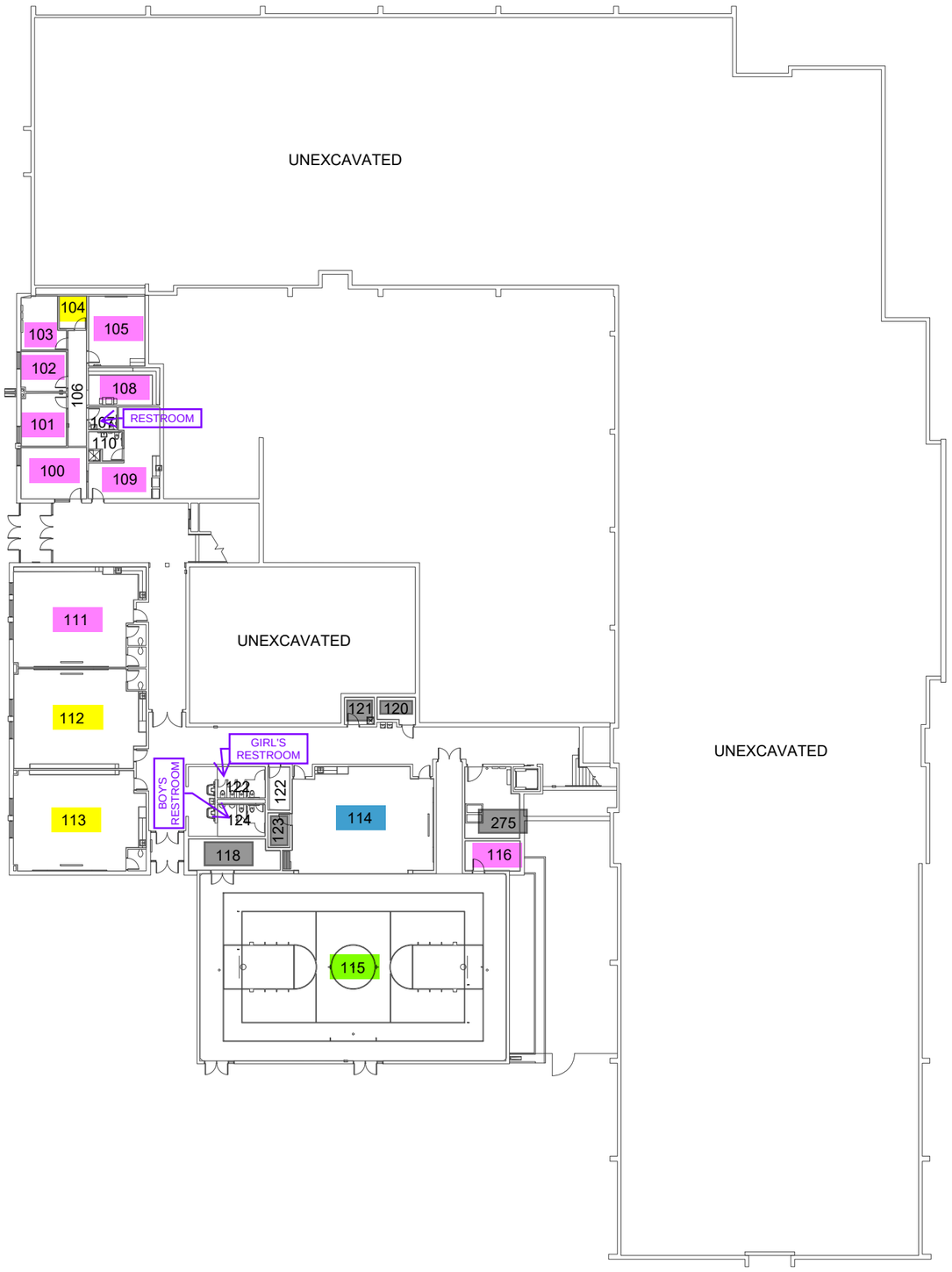
23055 - DMPS Facility Conditions Assessment
Roof Identification Image
South Union Elementary
November 14, 2023

SOUTH UNION ELEMENTARY SCHOOL

4201 S UNION STREET
DES MOINES, IOWA 50315

GROUND FLOOR

NORTH



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

bbs ARCHITECTS ENGINEERS

SOUTH UNION ELEMENTARY SCHOOL

4201 S UNION STREET
DES MOINES, IOWA 50315

FIRST FLOOR

NORTH

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

bbs ARCHITECTS ENGINEERS