DMPS FACILITY ASSESSMENT | SAMUELSON ELEMENTARY

12.13.2023

ARCHITECTS
ENGINEERS

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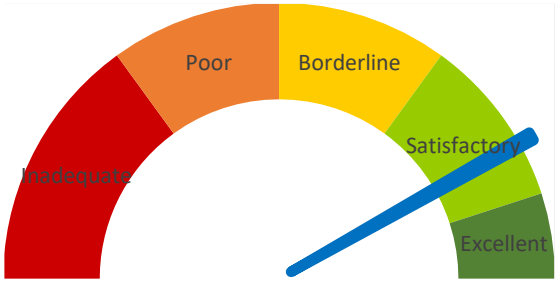


REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Samuelson Elementary's on-site facility conditions assessment was conducted on December 13, 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 concerns identified for Samuelson Elementary is a door hardware replacement for rooms 119 and 121. These rooms are serving as special education classrooms and have a toddler lock on the door handle for protection of the students, however this is an emergency egress concern. Other maintenance items are: storage casework replacement, window blind repair, RTU support frame refinishing, exterior camera cover replacement, and data rack installation. Overall Samuelson Elementary has been well maintained and is in good condition. There are several studies identified for long term improvements and continued maintenance and long term projects recommended for the continued success and health of the overall facility.

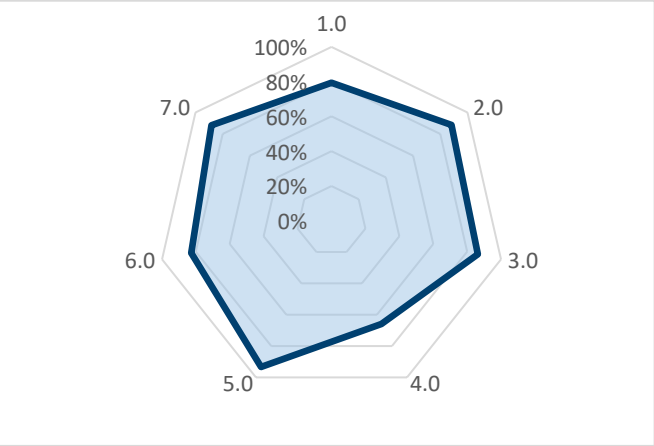
A summary of the recommended projects for Samuelson Elementary to be completed in the next 1-2 years are as follows:

- Door Hardware Replacement
- Ceiling Repair and Installation
- Roof Drainage installation
- Exterior Door Refinish
- Skylight Repair
- Exterior Site 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	131	2.00	330	262	79%	Satisfactory
2.0	Environment for Education	325	287	0.60	195	172	88%	Satisfactory
3.0	Exterior Envelope	95	82	3.00	285	246	86%	Satisfactory
4.0	School Site	100	66	1.50	150	99	66%	Borderline
5.0	Structural Conditions	90	84	1.30	117	109	93%	Excellent
6.0	Mechanical Systems	610	505	0.80	488	404	83%	Satisfactory
7.0	Electrical Systems	450	397	0.75	338	298	88%	Satisfactory
Total					**1,903**	**1,590**	**84%**	**Satisfactory**

Samuelson 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 Samuelson Elementary scored a building health rating of 84% or "Satisfactory", per the scale described above. Per the graph shown on the cover page of this report, scores within the "green" range are considered positive scores. Samuelson Elementary is within this positive range. Improvements to the educational adequcy and school site as described in this report would make the largest impact in increasing the score to "Excellent".

Building Data Record

Building Name: Samuelson Elementary

Date: 12.13.2023

Address: 3929 Bel-Aire Road
Des Moines, IA 50310

High School Feeder System: Hoover High

Building SF: 58,678 SF

Site Acreage: 8.90 Acres

Date(s) of Construction: 1965, 2008

Date(s) of Roof Replacement: 2005, 2020

Current/Scheduled Projects: Technology fiber (underground) for school network - 2024/2025

Existing Building Data:

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

Site Items:

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

Energy Source:

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

Cooling:

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

Heating:

- [ ] Gas/Electric RTU or DOAS
- [x] 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
- [x] Stucco
- [x] Metal
- [ ] Wood
- [ ] Other

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Kaela Shoemaker

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	2	5	10	
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	2	3	6	Small white-board is present but no projector was observed. Acoustics are adequate for gym function. Sound amplifier would be beneficial in teaching.
1.3	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	5	10	
1.4	**Music room** is adequate for providing introductory music instruction.	2	3	6	Space is adequate but acoustics are insufficient for music and instrument instruction.
1.5	**Art room** has sufficient accommodations for program.	2	4	8	Acoustics could be improved. Other conditions are satisfactory .
1.6	**Library/Resource/Media Center** provides appropriate and attractive space.	1	3	3	Windows to the corridor are 50% covered with the book shelving. Portions of the media center double as teacher storage and copy/work space. No collaborative spaces or soft seating. Other tables and chairs are sized appropriately for classroom learning.
Core Classroom					
1.7	Classroom space permits arrangements for **small group activity.**	3	5	15	
1.8	**Student storage space** is adequate.	2	4	8	Kindergarten furniture are tables and chairs without storage, however there are cubbies in those rooms and lockers in corridors. Tables with built in storage would be ideal in these classrooms. Other student furniture within the classrooms provide storage, but are showing age and wear.
1.9	**Teacher storage space** is adequate.	3	3	9	Room 119 (1119) has casework in poor condition throughout the room. Wood veneer is splitting and peeling off in many areas. The media center serving as a part storage room may indicate a lack of general teacher storage.
1.10	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	3	9	The north addition, classrooms 122-134 all have exposed metal deck. Slight echo was observed, less than ideal for classrooms. The younger grades are quite noticeable.

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	Many classrooms have several cords all at the front of the classroom. None that are a tripping hazard.
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	One single conference room for 8-12 people in excellent condition. There is not a separate small conference room, but principal office provides a small meeting table.
1.14	**Main office** has a check-in and waiting area.	2	3	6	Main office space is satisfactory, however it does not connect with the main entry vestibule. Doors to the main office do open out into the corridor.
	TOTAL			131	

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	5	5	
2.3	Areas for students to **interact are suitable to the age group.**	1	4	4	Media center furniture is lacking in creative collaboration space. Classroom furniture is dated but in good condition making collaborative arrangements a bit more difficult.
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	3	3	Room 119 has significantly damaged storage cabinets. Student desks are showing age and have surface markings and minor scratches but are generally in acceptable condition.
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	2	4	8	Brick in the interior corridors offers a warmth and refinement to the character. The addition is lacking this and as a result feels added on and less refined. As 2 long corridors, the separation in materials is also more noticeable.
2.7	Windows and skylights provide access to **adequately controlled daylight** for regularly occupied spaces.	3	4	12	Room 118's blinds were pulling away from the window head. Other blinds in the building as well as use of solar tubes/skylights was satisfactory for daylight control.
2.8	Windows provide access to **quality views** (to exterior, courtyards, artwork etc.) for regularly occupied spaces.	3	4	12	Many views are out into a parking lot, which is less ideal. Installation of artistic or natural screening could help improve view qualities in some areas.
2.9	**Lighting has proper controls** to provide the required light levels for various teaching and learning needs.	2	2	4	Most all of the classrooms had all or most of their lights covered with blue light covers. Many appeared to be using these to better dim the rooms.
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	5	5	Media center shares some curriculum type storage

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	Main office is excellent, however it is not connected to the main entry vestibule.
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	Mother's room is a dedicated space that also can be used as a flex office. There is no sink, but otherwise the room is adequate. There is a sink in other staff dedicated areas outside of food prep and restrooms.
Maintainability					
2.14	**Floor surfaces** are durable and in good condition.	1	5	5	
2.15	**Ceilings** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	2	2	Corridor and administration ACT tile is in good condition. All classrooms on the original south portion of the building have peeling material from the boards attached to roof deck. The classrooms in the north portion have no ceilings.
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	4	4	Single occupant restrooms gypsum walls, ok condition currently but will show wear and damage faster than tile. Restroom walls 167 and 168 are all tile, but grout joints and base of walls are significantly stained.
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	4	4	Plastic laminate counters and cupboards. All in good condition now but will show wear, chipping, and water damage faster than other materials.
2.18	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	4	12	Many of the classroom doors are showing minor surface scratches and wear from daily use.
2.19	**Facility doors** are keyed to standardized master keying system.	3	4	12	Custodial main office is a separate type of lock. This appears to be a similar lock to many of the telecom rooms in other facilities.
2.20	**Restroom partitions** are securely mounted and of durable finish.	2	5	10	

A | Architectural, Interior

ASSESSOR: Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.21	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.22	Classroom doors are **recessed and open outward.**	4	5	20	
2.23	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	3	4	12	2 special education rooms (121 and 119) had toddler locks on the interior for safety of their students. This is an egress code concern.
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	Only 3 doors had paper covering 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	Restroom floors are non-slip epoxy, but are showing lots of discoloration throughout. Addition restroom floors are concrete.
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	N/A	0	
2.30	**Stairs (interior and exterior)** are well maintained and in good condition meeting current safety requirements.	5	N/A	0	

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			287	

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	
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	4	12	Roofs generally in excellent condition, All roofs have good slope to perimeter gutters. Some dome skylights have fractures and/or condensation. Need to add gutter at one location on north end of building.
3.3	**Roof access** is safe for all roofs.	3	4	12	Hatch has access ladder and guard around unit, however it does not have a self-closing gate. Access ladders provided to all roof levels except at Roof E (main entry vestibule.) Ladders do require repainting. Provide safety screen or guards at perimeter of all skylights.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	4	12	Sealant in good condition.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	5	5	
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	4	8	All exterior doors are hollow metal. Several frames have rust at base of sidelights. All doors should be painted.
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	4	4	Exterior walls primarily brick, with small areas of stucco below windows, and metal wall panels and vented metal soffits. All are generally in good condition.
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	5	5	
3.10	**Exterior Doors are monitored** or controlled by an access control system.	1	4	4	All entries except one (Entry 5) have card readers. This location also contains the Knox Box for fire department access keys- but no reader or keyway at the door. Electric strike (not active) is in place on the door for future access control.
	TOTAL			82	

C | Civil

ASSESSOR: Jack Gorman Joel Jackson

4.0 The School Site

		Weight Factor	Rating	Points	Comments
4.1	**Site topography** and grading drains water away from the building and retaining walls.	1	1	1	Good drainage away from building. However, in the NE corner of the site a stormwater pipe has eroded the slope and created a slope stability issue for the adjacent property owners.
4.2	**Parking areas** are in good condition.	5	4	20	Most of the parking pavement is in good condition, a couple of panels need replacement.
4.3	**Drive areas** are in good condition.	3	2	6	Drive along the east cracking and chipping, sizable sections needs replacement.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	2	2	DMPS reports staff is parking in the street daily but functions ok. Good street parking for large events.
4.5	**Sidewalks** around the facility are in good **condition.**	1	4	4	Some panels have cracked and deteriorated but sidewalk conditions are mostly good.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	5	5	Site was easy to walk across and all doors have sidewalk access.
4.7	**Hard surface** playground surfaces are in good condition.	3	2	6	Asphalt will need replacement in 5+ years, walk track in good condition.
4.8	**Fencing** around the site is in good condition.	1	4	4	The fencing on site appeared old but in good condition, the SW corner had a section of bowed out fence from snow removal.
4.9	**Trash enclosure** is in good condition.	1	4	4	Gate slightly damaged but pavement and fence screening in good condition.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	5	5	Utilities appeared in good condition and placed appropriately.

ASSESSOR: Jack Gorman Joel Jackson

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	5	5	Plenty of room to the west for expansion.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	4	4	Seems a little tight on east side, conflict may arise where parents leave and bus drop off but it clears quickly.
	TOTAL			66	

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	N/A	0	
5.4	**Stoops** appear to be in good condition.	1	5	5	
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	4	4	There are a few visible shrinkage cracks in the hallways. Nothing that needs to be repaired.
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	5	5	
5.10	**Precast** is in good condition.	1	N/A	0	

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	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	N/A	0	
5.16	**Canopies** appear to be in good condition.	1	5	5	
5.17	**Loading dock concrete** appears to be in good condition.	2	N/A	0	
5.18	**Mechanical screening** appears to be in good condition.	2	5	10	
5.19	**Stairs** appear to be in good condition.	1	N/A	0	
5.20	**Stair railings** appear to be in good condition.	1	N/A	0	

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			84	

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	
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	4	20	Some spaces may be slightly short, but values generally appear close to code requirements (appears Ev from ASHRAE Standard 62.1 was likely assumed to be 1.0 when it probably should be 0.8)
6.4	**Ventilation** is provided during occupied hours.	5	5	25	
6.5	**Outdoor air intake locations** are appropriate.	4	4	16	Generally true - separation at minimum in a few spots
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	4	20	Appears true from design - some odors observed in group restroom
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	4	8	Generally true - may run negative when kiln hoods operates for short periods
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	3	15	Heat pumps at - 15 years - ERVs as well likely nearing useful life
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	
6.10	**Heating loads** are within equipment operations capacity.	5	3	15	Appears true - appear to be concerns about drafts from OA supplies in classrooms during winter - given supply air configuration this is not unexpected

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	ERVs provided with DX cooling.
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	4	20	Single backflow preventer provided. A dual backflow preventer set-up would provide redundancy.
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	5	25	Capacity appears acceptable but no hot water at fixtures.
6.15	Domestic **hot-water reicrulcating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	3	9	No hot-water recirucalting systems are present, though water heaters distributed throughout the buildng and are near most fixtures requiring hot-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	5	15	Appears true - 2500 gallon.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	N/A	0	All roofs utilize gutters - no internal roof drainage observed.
6.19	**Restroom fixtures** are in good condition and comply with current DMPS standards.	3	3	9	Manual valves and metered faucets - generally appear to be in acceptable condition. Des Moines School's preference is for sensor operated flush valves and faucets.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	5	15	

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	N/A	0	N/A
6.22	**Filter** sizes are standard and filter types are standard.	2	3	6	Multiple sizes/types (console/ horizontal WSHPs, ERVs, etc.)
6.23	**Equipment mounting heights** are reasonable.	3	2	6	Multiple significant pieces of equipment are mounted very high - likely not addressable without system retrofit or upgrades, but improved access might be possible.
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	5	10	
6.25	**Isolation valves** are located in the plumbing and hydronic systems to allow for isolation of only portions of the system for servicing.	2	5	10	
6.26	Appropriate means are provided for **airflow and water balancing.**	3	5	15	
6.27	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	3	6	Condensers on roof. No roof hydrants, but there are wall hydrants and the building is only one story.
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge as per OSHA standard 1910.28(b).	2	5	10	Appears to be generally true
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	5	20	
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	

MP | Mechanical & Plumbing

ASSESSOR: Corey Metzger

		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	3	15	Not for all locations - some observed without mixing valves.
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	
6.35	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	N/A	0	N/A
6.36	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	N/A	0	N/A
	TOTAL			505	

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	Access is unobstructed. Main service is 750kVA transformer from 13.2kV to 480/277V.
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	5	25	
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	5	15	All clearances are met and exiting is to code.
7.4	The **MDP** appears serviceable.	4	4	16	Switchboard MSH installed in 2008. -1 point for age greater than 10 years.
7.5	The MDP is **maintainable.**	3	5	15	MSH is two sections of Square D QED switchboard. QED line has been replaced with QED-2, but all products to date are backwards compatible between all Square D products.
7.6	The MDP will support **future expansion.**	4	4	16	MSH has 126" available mounting space, and has 49-1/2" remaining (39% spare). -1 point for less than 50% spare capacity, but amount present is excellent.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	4	16	DPL has one ladder stored in front of it, but is easily movable.
7.8	The Distribution Panel appears **serviceable.**	4	4	16	Square D I-Line distribution panel DPL installed in 2008. -1 point for age greater than 10 years.
7.9	The Distribution Panel is **maintainable.**	4	5	20	
7.10	The Distribution Panel will support **future expansion.**	4	4	16	DPL has 72" of available mounting space, and 27" remain (37.5% spare). -1 point for less than 50% spare capacity, but amount present is excellent.

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	5	10	All panels are in secured environments and have adequate clearance. All panels observed have spare breakers and spaces for additional breakers present.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	1	1	Only one NEMA 14-50 receptacle is present adjacent to the playground. Will note absence of standard duplex receptacles as maintenance project if exterior power is requested by Samuelson staff.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	3	15	Two exterior pole lights inoperative. East and west building perimeters dark and could use enhancement. West side camera not supported by exterior lighting well.
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	2	8	Only 5 remaining usable spaces of 45. -3 points for only having ~10% remaining capacity. Recommend adding a second data rack in MDF.
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	5	5	Panel LT serves the MDF, with each receptacle being a dedicated circuit. 11 of 24 positions are open spaces.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of cabling present is CAT5e. -1 point for less than CAT6/6A.
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	N/A	0	No IDF present.

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	5	10	
7.22	Building is equipped with an **addressable fire alarm system.**	5	5	25	DMPS standard programming Simplex 4100U.
7.23	Building is equipped with an **access control system.**	5	5	25	Only one door of five exterior doors does not have a card reader, but door is intended for use as exit only and as entrance for fire department. Fire alarm annunciator panel and knox box are present at this location. 4/5=80%
7.24	Building is equipped with a **CCTV system.**	5	4	20	One camera at SE corner of building missing the exterior cover, cable and fasteners exposed to the elements. Noted as maintenance project. West side exterior camera not supported by exterior lighting.
7.25	Building is equipped with an **intercom system.**	4	5	20	DMPS standard programming Bogen system.
7.26	Building is equipped with a **master clock system.**	4	5	20	DMPS standard programming Primex system.
	TOTAL			397	

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

Storage Casework Replacement	5' wooden standalone casework is in poor condition in room 119. This is a special education classroom and splitting wood and visible nails are an additional safety concern for these students. Remove these units and provide comparable bookshelves or other closed storage units.
Window Blind Repair	Repair blinds that are falling in room 118.
Condenser Support Frames Paint	Support frames for roof mounted condensers have some chipping paint. Should be re-painted in the next 4-5 years.
Camera Cover Replacement	Replace exterior cover for camera on SE corner of building to protect fasteners and cable.
Data Rack Installation	Add second data rack to MDF to increase available capacity for expansion as required.

1 - 2 Year Priority

		Project Costs
Door Hardware Replacement	Classrooms 119 and 121 are currently used for special education learning. Both have a single door with a toddler locking device added to the interior hardware. This is recommended to be removed and the hardware replaced with a delayed egress system for the safety of the occupants both during regular daily use and in emergency egress situations.	$10,000

Ceiling Replacement	Original building's classrooms have acoustic panels attached to the structural roof decking. These are showing significant wear. Replacement of approximately 18 classrooms, total of approximately 11,200 SF. Classrooms in the addition have fully exposed structure and roof deck. Install tectum ceiling panels, or similar, to match the rest of the building in approximately 10 classrooms, total of 7,500 SF. Recommendations based on assessment items 1.4, 1.5, 1.10, and 2.15.	$310,000
Roof Drainage Installation	Add gutter at east side of north roof bay of Roof "A". Approximately 200 LF. Grading washout and brick mildew observed at base of wall, due to standing water. No interior damage noted at this time. Provide concrete splash block at fire sprinkler test outlet on north side of same bay.	$9,000
Exterior Door Refinish	Repair and refinish exterior doors and frames: Repair rust at sidelight frames, and repaint exterior of all doors. 6 sets of exterior double doors with sidelights.	$13,000
Skylight Replacement	Replace (8) 4'x4' domed skylights. Fracturing of outer acrylic shell observed in (5) of the (8) dome skylights. Condensation observed between shells in (4) units. Evidence of moisture observed on interior sidewalls of (5) units. Custodian reported no known leakage into the classrooms.	$80,000
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
Sidewalk Repair	Repair damaged sidewalks across the site. Approximately 6 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$6,000
Domestic Hot Water Recirculation	Install domestic hot water recirculation systems.	$20,000
Thermostatic Mixing Valves	Provide individual mixing valves to control water temperature at all domestic hot water outlets accessed by students and staff. Remove the thermostatic mixing valve at EWH-5 as it is nearing end of life.	$30,000
	Total 1-2 Year Project Costs:	$484,000.00

3 - 4 Year Priority

		Project Costs
Exterior Wall Flashing Replacement	Replace wall flashing at perimeter of Gymnasium above Roof A. Asphaltic coating on wall flashing below metal panels on upper gymnasium wall has melted and oozed onto face of roofing. No indications of moisture issues at this time, but this condition is common with this flashing material and will continue to worsen. Approximately 280 LF of flashing. Will also require removal/reinstallation of wall panels, approximately 1400 SF.	$25,000
Roof Access Installation	Install self-closing gate at roof hatch and install fall protection screen or guardrails at each of (8) skylights. This project is recommended based on current OSHA regulations.	$490,000
Pavement Replacement	Remove and replace 224 SY of PCC. For locations, refer to civil site plan exhibit found in the appendix of this report.	$35,000
Sidewalk Repair	Repair damaged sidewalks across the site. Approximately 19 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$9,000
Replace Heat Pumps	Replace heat pumps with two-stage heat pumps that provide better dehumidification.	$2,600,000
DOAS unit and Condenser Replacement	Replace all existing DOAS units and condensers. Replacements shall be similar to existing units, indoor units with DX cooling and electric heat.	$1,100,000
Flush valve replacements	Replace flush valves to match district's preference for sensor operated.	$90,000
Interior Lighting Control Installation	Install lighting dimming controls for the classrooms and student support spaces. Approximately 27 rooms. Project recommendation is based off assessment item 2.9 and observations of the use of covers over classroom lighting or the use of personal lamps.	$120,000

Total 3-4 Year Project Costs: $4,469,000.00

5-10 Year Priority

		Project Costs
Furniture Replacement	Replacement of furniture in classrooms, approximately 27, and media center. Classroom furniture for each classroom should include student storage and provide flexibility for seating postures in different areas. Media center furniture should include various seating types including typical classroom seating, active seating, and collaborative soft seating. Project recommendation based primarily on current furniture conditions.	DMPS
Interior Refinish	Refinish single occupant and multi-user restrooms with new wall tile, wall paint, and flooring. Replace fixtures, accessories, and partitions. 4 multi-use restrooms of approximately 200 SF and 6 users. 8 single occupant restrooms of approximately 35 SF	$930,000
Casework replacement	Recommendation to replace plastic laminate countertops with solid surface countertops in all classrooms. Approximately 175LF and 28 new sinks. Recommendation based off of life expectancy of plastic laminate at wet locations being approximately 8-10 years. Maintaining good seals at all sinks, joints, and backslashes will extend the useable life of the current casework.	$260,000
Roof Replacement	Replace Roofs A and B (PVC) with TPO. Roof, approximately 25,000 SF, nearing end of expected service life. Will include replacement of 300 LF gutters and 115 LF of downspouts	$810,000
Exterior Flashing Replacement	Replace wall flashing at north addition. Asphaltic coating on masonry through-wall flashing has oozed to face of brick. This condition is common with this type flashing material and will continue to worse. Approx. 450 LF flashing. Will include removal and reinstallation of brick.	$290,000
Pavement Replacement	Remove and replace 891 SY of PCC. For locations, refer to civil site plan exhibit found in the appendix of this report.	$160,000
Sidewalk Repair	Repair damaged sidewalks across the site. Approximately 138 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$35,000
Playground Pavement Replacement	Take out and restore deteriorated playground asphalt. Approximately 1896 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$340,000

Replace Geothermal Loop Pumps	Replace geothermal loop pumps and VFDs.	$120,000

Total 5-10 Year Project Costs: $2,945,000.00

Projects Requiring Study

		Design Services Fee
Main Office Relocation Study	A study is recommended to define how best to extend or relocate the main office and entrance vestibule to connect. Currently the vestibule and main office are separate but adjacent spaces which poses a security concern.	$10,000
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. This could be completed simultaneously with the above study.	$5,000
North Drainage Swale	Study the north drainage swale erosion issue to determine the most economical way to fix the erosion issue.	$10,000
Parking Expansion	Determine the number of stalls, location, associated utility work, and construction cost of increasing on-site parking.	$2,500
Designated Hardened Area	No designated hardened area was observed. Study to determine the feasibility of adding a designated hardened area, including location, within the existing building, schematic design concept if deemed feasible, and preliminary project costs.	$2,500

Total Study Design Service Fees: $30,000

APPENDIX

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

80 0 40 80 160

bbs ARCHITECTS ENGINEERS

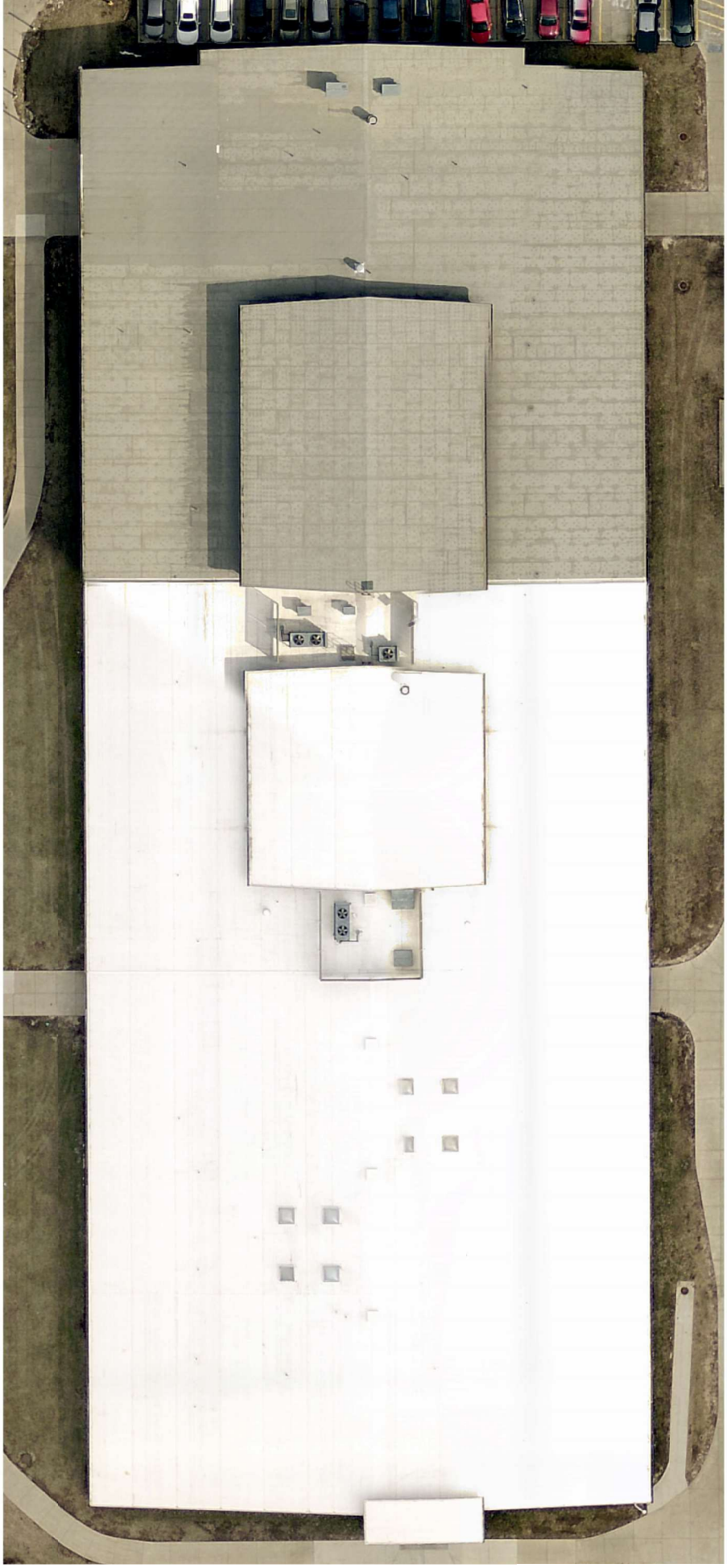
BISHOP ENGINEERING +

SAMUELSON ELEMENTARY

EXHIBIT

PROJECT # 230286-31

DATE 11/3/2023



N

bbs
ARCHITECTS
ENGINEERS

23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Samuelson Elementary
12.13.2023

SAMUELSON ELEMENTARY SCHOOL

3929 BEL AIRE ROAD
DES MOINES, IOWA 50310

FIRST FLOOR

NORTH

Note: All numbers in the building are 100's not 1000's

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

ARCHITECTS ENGINEERS

SAMUELSON ELEMENTARY SCHOOL

3929 BEL AIRE ROAD
DES MOINES, IOWA 50310

SECOND FLOOR

NORTH