DMPS FACILITY ASSESSMENT | GARTON ELEMENTARY

10.25.2023

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ENGINEERS

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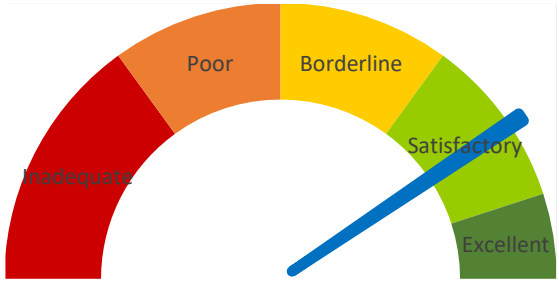

REPORT ORGANIZATION

COVER SHEET

REPORT ORGANIZATION

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BUILDING DATA RECORD

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APPENDIX
- Civil Site Plan
- Roof Identification Image

EXECUTIVE BUILDING SUMMARY

Garton Elementary's on-site facility conditions assessment was conducted on October 31, 2023, and included visual conditions assessment from professionals covering interior architecture, exterior building envelope, the property's grounds (site), structural condition, mechanical (HVAC/Plumbing) systems, electrical systems (power, exterior lighting, interior lighting, fire alarm, and general IT), and the elevator conditions.

Maintenance items flagged for Garton Elementary include:

- Intercom system grounding
- Exterior masonry mildew cleaning

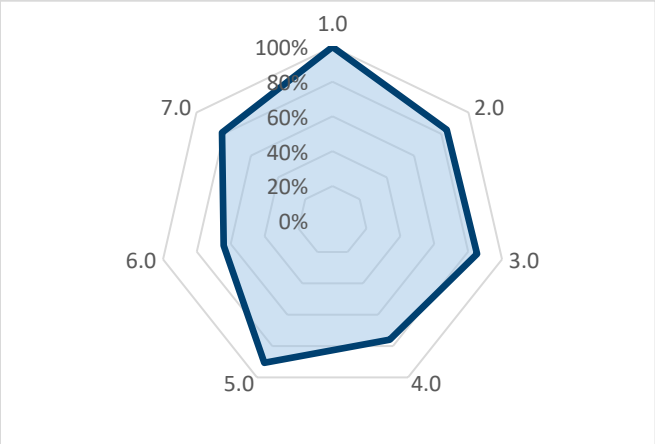
The potential projects for Garton recommended for action within the next 1-2 years include:

- Replace loading dock wall & stair
- Repair EIFS wall system damage
- Replace parking and sidewalk pavement
- Replace perimeter site fencing
- Replace aging heat pumps
- Install ERV/DOAS units
- Install demand-based ventilation system

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	165	2.00	330	330	100%	Excellent
2.0	Environment for Education	375	315	0.60	225	189	84%	Satisfactory
3.0	Exterior Envelope	95	81	3.00	285	243	85%	Satisfactory
4.0	School Site	100	76	1.50	150	114	76%	Satisfactory
5.0	Structural Conditions	150	136	1.30	195	177	91%	Excellent
6.0	Mechanical Systems	695	447	0.80	556	358	64%	Borderline
7.0	Electrical Systems	455	370	0.75	341	278	81%	Satisfactory
Total					**2,082**	**1,688**	**81%**	**Satisfactory**

Garton 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 disciplines, Garton Elementary scored a building health rating of 81%, or "Satisfactory", per the scale described within this report. Per the graph shown on the cover page of this report, scores within the "green" range are considered positive scores. Garton Elementary is within this positive range. Improvements to mechanical systems, building site, and eletrical system, further detailed in the report, could help increase this rating to "Excellent".

Building Data Record

Building Name: Garton Elementary

Date: October 25, 2023

Address: 2820 East 24th Street
Des Moines, IA 50317

High School Feeder System: North High School

Building SF: 65,648 square feet

Site Acreage: 9.46 acres

Date(s) of Construction: 1958, 1964, 2001, 2007

Date(s) of Roof Replacement: 2000, 2007

Current/Scheduled Projects: Exterior Restorations - 2024
Pavement Replacement - 2024
Acoustic Improvements - Gymnasium and Cafeteria - 2025

Existing Building Data:

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

Site Items:

- [ ] Student Garden
- [x] Loading Dock
- [ ] 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
- [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
- [x] Concrete
- [x] Wood
- [ ] Other

Exterior Facade:

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

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Tim Bungert

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	2	5	10	
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	2	5	10	Gymnasium is in excellent condition.
1.3	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	5	10	
1.4	**Music room** is adequate for providing introductory music instruction.	2	5	10	Back corner of room is currently used for miscellaneous furniture storage.
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	Good breakout and intervention spaces for groups of students and meeting spaces for faculty are available throughout the building.
1.14	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			165	

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	3	6	Two-zone controls provided are appropriate. However, in roughly 30% of classrooms staff have added colored fabric covers over light fixtures.
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	0	0	No mother's room provided.
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	5	5	Minor water stains were noted in rooms 128, 136, 179, and 185. We recommend further investigation of these stains to determine cause.
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	5	5	
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	4	4	Casework is in generally good condition. Counters and casework immediately at sinks in the following rooms have minor damage from use or water absorption into substrates: 104, 115, 118, 119, 124, 125, 130, 131, 132, 133, 137, 148, 149, 154.
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	Partitions are durable, but evidence of past vandalism is present in most student restrooms.

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	Five classrooms were noted with covered or partially covered vision lites: 118, 123, 141, 149, 154.
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	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: 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			315	

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	4	8	Maintenance cleaning of mildew outside rooms 136, 137, and 142.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	4	12	Minor ponding present. Replacement in 5-10 years
3.3	**Roof access** is safe for all roofs.	3	4	12	Some elevated portions of roof do not have permanent ladders, but could be accessed by step ladder.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	5	15	
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Low-e glazing cannot be determined. Windows are tinted.
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	3	6	No significant issues noted.
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	4	4	EIFS requires repair around Gymnasium 126. Base flashing requires repair outside door near room 120. Waterproofing membrane on masonry walls in courtyard is damaged above grade.
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	5	5	00 - Doors do not latch 10 - Doors with card readers 04 - Doors with locks or no exterior lock 14 - Doors with no signage. 3 - Doors at courtyard with no monitoring.
	TOTAL			81	

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	Site was fairly flat but had good drainage away from building. No ponding issues were observed.
4.2	**Parking areas** are in good condition.	5	5	25	The north parking lot was in fair condition.The parking lot would heavily benefit from a rock base and subdrain beneath pavement. The south lot was in better condition without any subsurface drainage issue observed.
4.3	**Drive areas** are in good condition.	3	3	9	The curve along the west side of the south parking lot has areas needing replacement. The drive area in the north lot appeared to be experiencing a subsurface drainage problem. The pavement was not in good condition and a considerable section is in need of replacement within 1-2 years.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	2	2	South parking lot was full with staff parking at the time of visit. The north lot was almost full with about 5 spaces available for visitors. DMPS states site is short parking and that events are challenging.
4.5	**Sidewalks** around the facility are in good **condition.**	1	3	3	Southeastern sidewalk in need of repair. Sidewalk and curb along the parent drop off in the south lot was in poor condition with tripping hazards observed. The sidewalk along the north side was in good condition with a few panels needing repair.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	5	5	No difficulties moving across site. All areas were accessible by sidewalk.
4.7	**Hard surface** playground surfaces are in good condition.	3	3	9	The asphalt in the southern playground area was not in good condition with lots of cracks and sagging. The west, asphalt playground is in good condition, it appeared the walking track was newly done and holding up well.
4.8	**Fencing** around the site is in good condition.	1	2	2	The fence was old but was marginal condition along the west and southwest sides. The southern section of fence along Morton Ave. is in need of immediate replacement, broken fence bars and bowed out mesh with holes were observed along this section.
4.9	**Trash enclosure** is in good condition.	1	4	4	The pavement around the bollards needs replacement. The gate and masonry brick around the enclosure both appeared to be in adequate condition.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	5	5	All intakes were in good condition. The site uses flumes to drain water out of parking lots and these were in adequate condition with some small cracks observed.

ASSESSOR: Jack Gorman

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	4	4	The creek to the west of the site limits expansion in that direction but there is a great deal of room elsewhere on site, particularly to the south of the south parking lot.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	3	3	Bus lane was adequate in length and to the east of the site on 24th Street. Parent pick up is in north lot and backs up onto Hull St.
	TOTAL			76	

S | Structural

ASSESSOR: Niles Quick

5.0 Structural Conditions

		Weight Factor	Rating	Points	Comments
Foundations					
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	5	5	
5.2	There does not appear to be any **foundation settlement.**	2	5	10	
5.3	**Basement walls** do not appear to have any cracks.	1	5	5	
5.4	**Stoops** appear to be in good condition.	1	4	4	Minor cracking at stoop near room 209 on the east side of the building.
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	5	5	
5.6	Slabs on grade do not appear to have any **settlement.**	1	5	5	
Exterior Walls					
5.7	**Brick masonry** appears to be in good condition.	2	4	8	Minor damage to brick pilasters at east side of the building. Brick is missing from the top of the pilaster near rooms 136/137.
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: Niles Quick

		Weight Factor	Rating	Points	Comments
Interior Walls					
5.11	**Interior walls** appear to be in good condition.	1	5	5	
Floor Framing (Elevated)					
5.12	**Floor framing** appears to be in good condition.	3	5	15	
5.13	Floor framing appears to meet the **code requirements.**	3	5	15	
Roof Framing					
5.14	**Roof framing** appears to be in good condition.	3	5	15	
Miscellaneous					
5.15	**Retaining walls** appear to be in good condition.	1	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	2	4	The wall below the loading dock bumper has significant cracking/spalling. The concrete stair has voids that have formed underneath due to failing concrete.
5.18	**Mechanical screening** appears to be in good condition.	2	5	10	
5.19	**Stairs** appear to be in good condition.	1	5	5	
5.20	**Stair railings** appear to be in good condition.	1	5	5	

S | Structural

ASSESSOR: Niles Quick

		Weight Factor	Rating	Points	Comments
5.21	**Tunnels** appear to be in good condition without cracks.	1	5	5	Boiler Room area has been modified multiple times over the years. No signs of water or cracking.
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			136	

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	4	12	Few rooms are combined on a single thermostat.
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	All classroom unit have wall mounted thermostats.
6.3	Appropriate **amount of ventilation** are provided to each space.	5	1	5	Classrooms are sufficient at 400CFM. Cafeteria and other areas are not sufficient. All ventilation through individual heat-pumps. ERVs removed from gym and cafeteria. Replaced with standard packaged RTUs without energy recovery. OA brought in only when RTU is actively heating or cooling space.
6.4	**Ventilation** is provided during occupied hours.	5	1	5	ERVs removed from gym and cafeteria. Replaced with standard packaged RTUs without energy recovery. OA brought in only when RTU is actively heating or cooling space. One ERV remains for library/media center but does not appear to be operational.
6.5	**Outdoor air intake locations** are appropriate.	4	2	8	ERV in classroom units are stacked right on top of each other. Simular setup for the rooftop units.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	3	15	Roof mounted exhaust fans operational. Need CTs on motors to detect belt failure. One fan has loose belt and motor running but fan is not operational.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	2	4	Building has insufficient OA to make up for exhaust when reviewing the plans. OA is bought in through unconditioned intake in the back of several heatpumps allowing for unconditioned air to be brought into the building.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	4	20	Two of three ERVs replaced recently with Packaged RTUs without ERV capability. Remaining equipment 15 years old.
6.9	**Cooling loads** are within equipment operational capacity.	5	3	15	Building unable to maintain cooling in summer. Humidity levels are not being controlled without ERV or DOAS available and adding this issue. Lack of OA and building pressurization is also adding to the problem.
6.10	**Heating loads** are within equipment operations capacity.	5	3	15	No heating issues. Expansion tank for system appears to be undersized and is not able to provide adequate capacity and using relief valve for pressure control and using glycol makeup system to makeup.

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	Little to no dehumidification of OA available. Supplemental dehumidification equipment installed in janitor closet and mechanical rooms is not effective at addressing the issue.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	No known issues
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	3	15	Single RPZ installed in tight location in mechanical room. Relief valve installed on downstream side of BFP for expansion control of system. Not piped to drain or sump.
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	1	5	Three electric hot water heaters are installed in 2006. Do not see expansion tanks on cold water side of DHW. Relief valve on the domestic cold water main in mechanical room appears to be used for expansion from domestic hot water.
6.15	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	2	6	Unable to locate hot water recirc pumps or mixing valve on schedules in plans or in building. Short distance to wash stations does not need recirc.
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	No known issues.
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	Exterior tank type grease interceptor installed in 2006.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	5	25	No known issues.
6.19	**Restroom fixtures** comply with DMPS preferences.	3	3	9	No automatic flush valves. Hand washing stations in restrooms.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	3	9	Existing mechanical room has limited height and undersized for equipment.

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	4	8	Unitary equipment has the same filters throughput the classrooms and accessible from the floor.
6.23	**Equipment mounting heights** are reasonable.	3	4	12	One RTU on raised curb requires ladder to access. All other equipment accessible. Classroom units are floor mounted.
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	5	10	No known issues
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	No known issues
6.26	Appropriate means are provided for **airflow and water balancing.**	3	5	15	No known issues
6.27	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	3	6	No rooftop water hydrant for RTUs.
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge.	2	5	10	No known issues
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	5	20	Recent DDC upgrade.
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	Glycol feed tank use. No hard-piped cold water makeup.

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	3	15	Thermostatic mixing valves in place but may to be rebuilt. Discharge temperature not maintained. Consider using electronic mixing valve.
6.33	**Emergency eye-washes and tempering valves** are located where required.	5	3	15	Single eyewash in Kitchen. None in Boiler Room. Recommend evaluation by an occupational safety and health professional to determine if eye irrigation is needed.
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	
6.36	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	N/A	0	
	TOTAL			447	

E | Electrical

ASSESSOR: David Carlson

7.0 Electrical Systems

Electrical Design

		Weight Factor	Rating	Points	Comments
7.1	**Transformer location** is easily accessible by utility line truck to allow for rapid transformer replacement in the event of an issue.	5	5	25	
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	5	25	
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	3	9	Clearance and exiting heavily obstructed by maintenance equipment and storage.
7.4	The **MDP** appears serviceable.	4	4	16	General Electric MDP installed circa 2007. (-1 for age greater than 10 years.)
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	3	12	There are three remaining open breaker positions of 14 total.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	3	12	Clearance and exiting heavily obstructed by maintenance equipment and storage.
7.8	The Distribution Panel appears **serviceable.**	4	4	16	Equipment installed circa 2007. (-1 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	There are three remaining open positions of 12 total.

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** are safe, serviceable, and maintainable.	2	3	6	Panels observed are both serviceable and maintainable, but do not meet clearance requirements due to rooms being utilized for storage. In several instances, semi-permanent shelving has been erected in front of panel clear area.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	0	0	No receptacles present on exterior walls. Two integral receptacles present on rooftop units.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	3	15	Pole light at south parking area inoperative. Dark areas at south, by playground, and NW corner.
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	4	16	Recently added patch cables are not organized, but the majority is neatly laced and trained with cable management.
7.15	MDF Equipment Racks have adequate space for **future growth.**	4	5	20	
7.16	MDF is equipped with Liebert UPS to back up main switch(es), providing **backup power** to necessary equipment in the event of a power outage.	5	5	25	MDF Utilizes Minuteman Power Technologies 2kVA unit for single branch circuit battery backup.
7.17	MDF Power is supplied by **20A circuits and receptacles.**	1	5	5	Dedicated circuits throughout.
7.18	MDF Power is supplied from a branch panel located in the room with **adequate spare circuit capacity.**	1	4	4	Panel has approximately 25% spare capacity remaining as it feeds several loads outside of the MDF in addition to local equipment.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Majority of cabling present is category 5E.
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	3	3	Fiber optic cable present is 62.5 µm multi mode.

E | Electrical

ASSESSOR: David Carlson

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	5	10	Grounding bars present and in good condition in both MDF and IDF. Adequate spare capacity remaining with all equipment connections present.
7.22	Building is equipped with an **addressable fire alarm system.**	5	5	25	Building utilizes DMPS standard Simplex 4100 ES panel.
7.23	Building is equipped with an **access control system.**	5	2	10	5/11=45%
7.24	Building is equipped with a **CCTV system.**	5	5	25	Camera image quality is poor after dark from two 180 degree cameras (East and West) and SW playground.
7.25	Building is equipped with an **intercom system.**	4	3	12	Grounding connections to intercom system components are disconnected and should be reattached.
7.26	Building is equipped with a **master clock system.**	4	5	20	
	TOTAL			370	

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

Exterior Wall Mildew Cleaning	Clean exterior walls near rooms 103, 137, 142, and to remove mildew stains from fascia and brick (100 SF).
Intercom Grounding Reconnect	Reterminate grounding connections to all intercom components.

1 - 2 Year Priority

		Project Cost
EIFS Repair	Repair cracking / damage on EIFS wall system - 30 linear feet of repair.	$6,000.00
Parking Pavement Replacement	Install a rock base underneath the pavement with subsurface issues. See appendix for specific areas targetd for replacement.	$25,000.00
Sidewalk Repair	Repair damaged sidewalks across the site. Approximately 61 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$13,000.00
Curb Repair	Return damaged curbs to new condition. Approximately 18 LF of 6" curbs. For locations, refer to civil site plan exhibit found in the appendix of this report.	$6,000.00
Playground Asphalt Replacement	Take out and restore significantly deteriorated playground asphalt. Approximately 87 SY. For location, refer to civil site plan exhibit found in the appendix of this report.	$14,000.00

Fencing Replacement	Remove and replace fence on south side of the building. See attached civil exhibit.	$25,000.00
Loading Dock Wall and Stair Replacement	Remove existing one step stair, roughly 4'-0" long and 7" tall. Replace with new concrete stair and 8" thick wall 42" below grade).	$6,000.00
Heat Pumps Replacement	Replace remaining heat-pumps that are over 15 years in age. Corridors, conference and commons. Consider a two-speed style heat-pump to reduce demand on wellfield.	$390,000.00
Replace ERV with DOAS/ERV	Install DOAS unit with ERV, DX and gas, and dehumidification to reduce heating and cooling load on heat-pumps and reduce humidity in space.	$1,600,000.00
	Total 1-2 Year Project Costs	**$2,085,000.00**

3 - 4 Year Priority

		Project Cost
Roof Access Installation	Provide guardrail at roof hatch. Provide 8 VLF ladder from roof B to A; 10 VLF ladder from roof I to G; and 6 VLF from roof I to H.	$14,000.00
Parking Pavement Replacement	Install a rock base underneath the pavement with subsurface issues. See appendix for specific areas targeted for replacement.	$20,000.00
Sidewalk Repair	Repair damaged sidewalks across the site. Approximately 13 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$8,000.00
Playground Pavement Replacement	Reinstall playground pavement in significantly deteriorated areas. See appendix for specific areas targeted.	$110,000.00
Dedicated Outdoor Air Unit Addtion	Add a dedicated outdoor air unit for the gym and commons area.	$410,000.00

Plumbing Fixtures Replacement	Replace push button type wash station faucets with preferred hands-free faucets. Replace flush valves on toilets and urinals with preferred autoflush type.	$130,000.00
	Total 3-4 Year Project Costs	**$692,000.00**

5-10 Year Priority

		Project Cost
Roof Replacement	Remove 24,000 SF of PVC roofing and insulation over roof areas C, F, G, H, I, and J. Install code compliant insulation and TPO roofing. Approx year 2032.	$85,000
Exterior Wall Base Flashing Repair	Repair exterior wall base flashing where protruding from the wall - 60 lineal feet.	$40,000.00
Below-Grade Waterproofing Repair	Repair damage of face-fastened membrane waterproofing above and below grade - 80 LF, 2' high.	$7,000.00
Plaground Pavement Replacement	Reinstall playground pavement in less deteriorated areas. See appendix for specific areas targeted.	$45,000.00
Fencing Replacement	Remove and replacee fencing on the south and southwest side of the building with new fencing. See attached civil exhibit.	$130,000.00
Parking Pavement Replacement	Remove and replace deteriorated sidewalks and parking pavement. See appendix for specific areas targeted for replacement.	$120,000.00
Sidewalk Repair	Repair damaged sidewalks across the site. Approximately 124 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$30,000.00
Circulator Pumps for Geoexchange Replacement	Install new circulation pumps and motors, including circulation pump on backup boiler.	$140,000.00

Domestic Hot Water Recirculation Replacement	Replace and modify domestic hot water recirculation to reduce time lag. Replace old mechanical mixing valves with digital mixing valves.	$85,000.00
Domestic Hot Water Heater Replacement	Replace older (over 10 years in age) domestic hot water heater.	$25,000.00
	Total 5-10 Year Project Costs	**$707,000.00**

Projects Requiring Study

		Design Services Fee
Mother's Room Space	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
Interior Lighting	Evaluate interior lighting systems to identify and implement best practices for color temperature, intensity, delivery, and control systems for all space types.	$5,000
Designated Hardened Area	No designated hardened area was observed. Study to determine the feasibility of adding a designated hardened area to the building including location within the existing building, schematic design concept if deemed feasible, and preliminary project costs.	$2,500
	Total Study Design Service Fees	**$12,500.00**

APPENDIX

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

60 0 30 60 120

970 LF CHAIN LINK FENCE

6 SY PCC

2 SY PCC

1 SY PCC

13 SY PCC

183 SY ASPHALT

18 SY PCC

4 SY PCC

749 SY ASPHALT

87 SY ASPHALT

5 LF 6" PCC CURB

142 SY PCC
+ ROCK BASE

13 SY PCC

92 SY PCC
+ ROCK BASE

21 SY PCC

79 SY PCC

15 SY PCC

7 SY PCC

3 SY PCC

125 SY PCC
+ ROCK BASE

7 LF 6" PCC CURB

60 SY PCC
+ ROCK BASE

222 LF CHAIN LINK FENCE

6 SY

12 LF 6" PCC CURB

60 SY PCC

REPLACE PAVEMENT
AROUND BOLLARDS

3 LF 6" PCC CURB

49 SY PCC

1 SY PCC

52 SY PCC

6 SY PCC

46 SY PCC

45 SY PCC

14 SY PCC

3 SY PCC

22 SY PCC

46 SY ASPHALT

3 LF 6" PCC CURB

3 SY PCC

bbs ARCHITECTS ENGINEERS

BISHOP ENGINEERING +

GARTON ELEMENTARY

EXHIBIT

PROJECT # 230286-09

DATE 10/10/2023

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Garton Elementary School
10.31.2023

GARTON ELEMENTARY SCHOOL

2820 E 24TH STREET
DES MOINES, IOWA 50317

FIRST FLOOR

NORTH

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

bbs ARCHITECTS ENGINEERS