DMPS FACILITY ASSESSMENT | HOOVER HIGH SCHOOL

3.5.2024

ARCHITECTS
ENGINEERS

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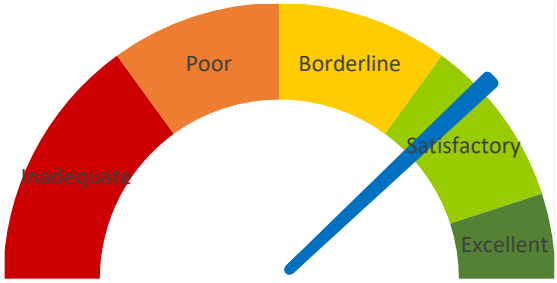


REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

Hoover High's on-site facility conditions assessment was conducted on March 5, 2024 and included visual conditions assessment from professionals covering interior architecture, exterior building envelope, the property's grounds (site), structural condition, mechanical (HVAC/Plumbing) systems, electrical systems (power, exterior lighting, interior lighting, fire alarm, and general IT), and the elevator conditions.

One immediate item that needs to be addressed is the lack of safe egress from the level 2 equipment room near classroom 2095. There is a project addressing this work in the 1-2 year project list. Before this project is completed care needs to be taken to ensure the safety of anyone in that room.
A few of the short term maintenance identified for Hoover High are: egress clearing, stage floor repair, casework support repairs, roof cleaning, exterior door repairs, exterior repairs, cleanout lid replacement, site drainage repairs, and site grading at transformer gate. Other maintenance items are found in the recommended potential project portion of the report.

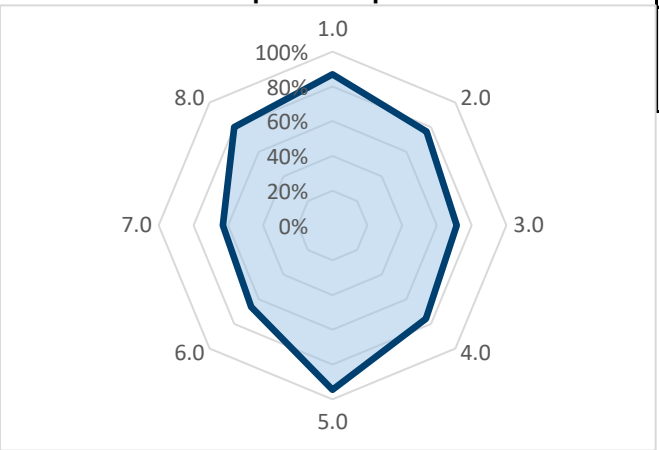
A summary of the recommended projects for Hoover High to be completed in the next 1-2 years are as follows:

- Emergency Egress
- Locker Room Signage
- Library Ceiling Repairs
- Acoustic Installation
- Roof Repair
- Roof Access Improvement
- Interior Stair Railing Repairs
- Exterior Stair Replacement
- Site Repairs
- RTU Installation at Natatorium
- HVAC Improvements
- Elevator Modernization

Additional 1-2 year project information 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	245	213	2.00	490	426	87%	Satisfactory
2.0	Environment for Education	360	275	0.60	216	165	76%	Satisfactory
3.0	Exterior Envelope	105	75	3.00	315	225	71%	Satisfactory
4.0	School Site	100	76	1.50	150	114	76%	Satisfactory
5.0	Structural Conditions	145	137	1.30	189	178	94%	Excellent
6.0	Mechanical Systems	725	480	0.80	580	384	66%	Satisfactory
7.0	Electrical Systems	455	287	0.75	341	215	63%	Borderline
8.0	Elevator Conditions	65	52	1.00	65	52	80%	Satisfactory
Total					**2,281**	**1,707**	**75%**	**Satisfactory**

Hoover High School
Discipline Comparison



Rating Table				
1-29%	30-49%	50-69%	70-89%	90-100%
Inadequate	Poor	Borderline	Satisfactory	Excellent

After totaling the scores from the various discipline assessment reports Hoover High scored a building health rating of 75% 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. Hoover High is just within this positive range. Improvements to the exterior envelope, mechanical, and electrical systems would make the largest impact in increasing the score to Excellent.

Building Data Record

Building Name: Hoover High School

Date: 3/5/2024

Address: 4800 Aurora Avenue
Des Moines, IA 50310

High School Feeder System: --

Building SF: 191,700 square feet

Site Acreage: 46.12 acres

Date(s) of Construction: 1967, 1971, 1974, 2012

Date(s) of Roof Replacement: 2000, 2012, 2019

Current/Scheduled Projects: HVAC Upgrades - 2024
Door Security - 2024
Pavement Replacement Phase 3 - 2024
Roofing Phase 2 - 2024
Library Door Installation - 2025

Existing Building Data:

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

Site Items:

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

Energy Source:

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

Cooling:

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

Heating:

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

Structure Fireproofing:

- [x] No
- [ ] Yes

Construction:

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

Exterior Facade:

- [x] Brick
- [ ] Stucco
- [x] Metal
- [ ] Wood
- [x] Other
  Precast
  Precast Concrete w/ embedded rock face
  Precast Concrete w/ embedded brick face

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Tim Bungert / Kaela Shoemaker

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	1	5	5	
Athletics					
1.2	**Gymnasium(s)** are accessible and in good condition. Space is adequate for practice and competition.	3	5	15	
1.3	Athletic department is supported with adequate **training and practice spaces.**	1	4	4	Weight room is proportionally smaller than at other schools. No dedicated wrestling room was observed.
1.4	Athletics are supported by adequate **locker rooms** for each sport.	2	3	6	Locker rooms appear to be recently renovated and in good condition. Lack of wayfinding signage, updated egress plans, and general graphics contributed to the inability to determine what locker rooms were dedicated to what use. Number of boys locker rooms are more than girls but appear similar to other DMPS high schools.
1.5	**Natatorium** is accessible and in good condition. Space is adequate for practice and competition.	2	5	10	
Arts					
1.6	**Vocal music room** is adequate for providing music instruction.	2	5	10	
1.7	**Band room** is adequate for providing music instruction. Practice and storage rooms are sufficient to support use and instruction.	2	5	10	
1.8	**Orchestra room** is adequate for providing music instruction. Practice and storage rooms are sufficient to support use and instruction.	2	5	10	
1.9	**Auditorium** has sufficient arrangement, technology, and acoustics for program.	2	5	10	
1.10	**Industrial Arts** space has sufficient accommodations for program.	2	5	10	

A | Architectural, Programming

ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.11	**Art room** has sufficient accommodations for program.	2	5	10	
1.12	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	1	4	4	Cafeteria is partially open to adjacent corridors, which increases volume of sound in the space. Visibility is also somewhat limited to the full space by the curving core of the restrooms.
1.13	**Library/Resource/Media Center** provides appropriate and attractive space.	2	5	10	
Core Classroom					
1.14	**Science** classrooms and labs have sufficient access to water, gas, and emergency safety equipment for program.	1	5	5	
1.15	**Family Consumer Science** classrooms and labs have sufficient accommodations for program.	2	5	10	Kitchen lab space and classroom are in a single room, but with ample space. Sewing and health are in a separate classroom.
1.16	Classroom **acoustical treatment** of ceiling, walls, and floors provide effective sound control.	3	1	3	At least 28 classrooms suffer from poor acoustics.
1.17	**Classroom power and data receptacles** are located to support current classroom instruction.	4	3	12	Long power strips and extension cords were observed stretched across the space in nearly half of all classrooms.
1.18	Classroom space permits **flexibility of arrangements.**	4	4	16	Rooms 1120, 1130, 1135, 1140, 1150, and 1155 all have more student desks than other typical classrooms, limiting flexibility of arrangements in these rooms.
1.19	**Furniture systems** are adequate for the intended use of the space and age of students.	1	5	5	
1.20	**Student storage** space is adequate.	2	5	10	

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ASSESSOR: Tim Bungert / Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
1.21	**Teacher storage** space is adequate.	2	4	8	Most classrooms do not have any built-in storage. A handful of rooms were observed that would benefit from additional storage space in the room.
1.22	**Educational technology** supports instruction.	1	5	5	
Administration					
1.23	**Conference/Private meeting rooms** are adequate for large and small meetings.	2	5	10	
1.24	**Counseling suites** are provided with adequate privacy and meeting spaces.	1	5	5	
1.25	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			213	

A | Architectural, Interior

ASSESSOR: Tim Bungert, Kaela Shoemaker

2.0 Environment for Education

Design

		Weight Factor	Rating	Points	Comments
2.1	**Traffic flow** is aided by appropriate foyers and corridors.	3	5	15	
2.2	Communication among students is enhanced by **common areas.**	3	4	12	Cafeteria makes a great commons space based on location, media center has various seating and study spaces. Entry lounge at media center, and flex academy both offer additional working and study spaces. Lacking general, open, study spaces.
2.3	Areas for students to i**nteract are suitable to the age group.**	2	5	10	
2.4	Large group areas are designed for effective **management of students.**	2	4	8	Cafeteria is partially divided by restrooms and serving, it is also open to adjacent corridors, making student visibility and management slightly more difficult.
2.5	**Furniture Systems** are in good or like new condition.	1	3	3	Flex academy furniture has minor areas of damage. Furniture doesn't appear to support current learning or power needs. Classroom 1182, needs new chairs and new desks for 5 students. Classroom 2070 teacher chair is badly damaged.
2.6	**Color schemes**, building materials, and decor are **engaging and unify** the school character.	3	5	15	General classrooms could benefit from the color schemes more typically used in the athletic areas, but are in acceptable condition.
2.7	Windows and skylights provide access to **adequately controlled daylight** for regularly occupied spaces.	3	3	9	Approximately 16, or about half, classrooms have no access to daylight.
2.8	Windows provide access to **quality views** (to exterior, courtyards, artwork etc.) for regularly occupied spaces.	3	3	9	See above comment. Several other views are to a roof or adjacent building walls.
2.9	**Lighting has proper controls** to provide the required light levels for various teaching and learning needs.	2	4	8	Many classrooms have single zoned lighting without dimming. No alterations with in the classrooms were observed, but this is a deviation from ideal and standard across other areas of the district.
2.10	**Staff dedicated spaces** include conference space, work space, and dedicated restrooms.	1	5	5	

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ASSESSOR: Tim Bungert, Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.11	**Main office** is visually connected to the entry as is welcoming to students, staff, and guests.	3	2	6	There is an entry vestibule and security desk in the corridor, but main office is not connected to main entry. Event entrance is not visible from main office at all. Future/upcoming project may address this need.
2.12	**Break room** is adequately sized and furnished for proper use.	1	4	4	Minor acoustic improvements could be helpful.
2.13	**Mother's room** is a separate designated space properly furnished.	1	0	0	None observed.
Maintainability					
2.14	**Floor surfaces** throughout the learning and common areas are durable and in good condition. Spaces include classroom, offices, labs, cafeteria etc.	1	3	3	4 Classrooms have VCT has issues at transition between doors and corridor. 3 classrooms have VCT damage along the walls, appears to be staining from cleaning. Asbestoses and VCT flooring in Meredith/Hoover crossover needs replaced due to wear and damage.
2.15	**Floor surfaces** throughout the support and circulation areas are durable and in good condition.Spaces include corridors, restrooms, storage rooms etc.	1	3	3	Restroom flooring is highly textured epoxy which is difficult to clean and maintain. Level 1 locker rooms have 2x2 tile that is starting to show staining and wear around fixtures. Floor in storage room 1231 is eroded from running water under ice maker.
2.16	**Ceilings** throughout the learning and common areas are easily cleaned and resistant to stain. Spaces include classroom, offices, labs, cafeteria etc.	1	4	4	1350 - 1381 classrooms at Meredith / Hoover crossover were in poor condition. Minimal damage throughout other spaces.
2.17	**Ceilings** throughout the support and circulation areas are easily cleaned and resistant to stain. Spaces include corridors, restrooms, storage rooms etc.	1	4	4	ACT ceilings in restrooms did have minor damage in most all areas. Hard lid ceilings were adequate.
2.18	**Walls** throughout the learning and common areas are easily cleaned and resistant to stain. Spaces include classroom, offices, labs, cafeteria etc.	1	2	2	Wall base is failing in most all classrooms. Wall paint is generally in good condition with a few minor areas of paint touch up. Meredith/ Hoover cross over area appears to have a larger need for wall painting and patching.
2.19	**Walls** throughout the support and circulation areas are easily cleaned and resistant to stain. Spaces include corridors, restrooms, storage rooms etc.	1	3	3	Wall base, typically tile, is damaged throughout corridors.
2.20	**Built-in casework** is designed and constructed for ease of maintenance.	1	5	5	

A | Architectural, Interior

ASSESSOR: Tim Bungert, Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.21	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	3	9	Chase access doors in restrooms are in poor condition, these are wood doors that should be replaced with hollow metal. Approximately 15 doors were noted with issues concerning damage, or hardware concerns. See project list for more information.
2.22	**Facility doors** are keyed to standardized master keying system.	3	3	9	Hoover and Meredith are connected as a single building. Rooms 1350 - 1381 (8 rooms) are present on Hoover plans but keyed to Meredith keying systems. These rooms currently appear to be programmed for Meredith use, however administrators reported these classrooms do change uses as needed.
2.23	**Restroom partitions** are securely mounted and of durable finish.	2	4	8	Minor graffiti damage in 2 restrooms.
2.24	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.25	Classroom doors are **recessed and open outward.**	4	5	20	
2.26	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	4	3	12	Classrooms have updated intruder hardware. Secondary and administration spaces typically do not have intruder function hardware, but are locked from the exterior.
2.27	**Door panels** into classrooms and other occupied spaces contain **vision lite.**	4	4	16	Rooms 2030, 2050, 1125, 1145 have vestibules that prevent visible access from corridors to classrooms.
2.28	**Vision lite** in doors is clear and uncovered.	2	4	8	Most of them were clear however, at least 10 classrooms had coverings or partial coverings.
2.29	**Glass** is properly located and protected to prevent accidental injury.	2	5	10	
2.30	**Flooring** is maintained in a **non-slip** condition	2	5	10	

A | Architectural, Interior

ASSESSOR: Tim Bungert, Kaela Shoemaker

		Weight Factor	Rating	Points	Comments
2.31	**Traffic areas terminate at exit or** stairway leading to egress	5	5	25	
2.32	Multi-story buildings have at least **two stairways** from all upper levels for student egress.	5	3	15	Locker room egress from level 2 needs to be more adequately noted. No egress path should be through another occupied room.
2.33	**Stairs (interior and exterior)** are well maintained and in good condition meeting current safety requirements.	5	3	15	Guardrails are low but grandfathered in. Below staircases there is no cane detection. Stair nosing at SW locker room stairs missing in one location.
2.34	At least **two independent exits** from any point in the building	5	2	10	Orchestra room 2nd door should be cleared and exit light un-blocked. Corridor outside 1350 serves as partial storage. Storage does reduce the exit width. There is no legal entry or exit from equipment room on level 1, north of room 2030.
2.35	**Emergency lighting** is provided throughout the building.	4	5	20	
	TOTAL			320	

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	Design is aesthetically pleasing, but nearly every entry requires maintenance repainting, which impacts the impression the building has on students, staff, and families. Some areas of efflorescence at entry doors to be cleaned.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	4	12	Next roof replacement at this time.
3.3	**Roof access** is safe for all roofs.	3	3	9	Roof hatch lacks guardrails and some short roof transitions should have ladders to appropriately provide access.
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	4	12	At west facade of library windows, some seals do not extend fully across width/height of glass allowing air infiltration at least to the backside of the interior seals.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	2	2	Low-e glazing cannot be determined. Windows are tinted. Large areas of glazing and framing at north-east wing are single pane, with frames that are likely not thermally broken. These are nearing end of service life and are due for replacement.
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	5	10	No comments.
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	4	8	Doors are of durable material, but require maintenance upkeep.
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	3	3	A significant amount of exterior sealant is in need of replacement in the 1-2 year or 5+ year timelines. Walls faced with corrugated metal have fading and flaking paint finishes. At one location adjacent to a driving path, these metal panels are damaged.
3.9	**Exterior Doors** open outward and are equipped with **panic hardware.**	1	5	5	No comments.
3.10	**Exterior Doors are monitored** or controlled by an access control system.	3	2	6	5 - Doors do not latch 7 - Doors with card readers 3 - Doors with locks 19 - Doors with no exterior lock 0 - Doors with no signage. 1 - Door at courtyard with no monitoring.
	TOTAL			75	

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	4	4	Good drainage away from building, one location where rip-rap should be installed and one location where a concrete splash pad should be installed to prevent further erosion.
4.2	**Parking areas** are in good condition.	5	3	15	The northwest lot appeared new and in good condition. The east lot asphalt is in poor condition, the whole lot should be replaced within 4 years and some areas may require immediate patching
4.3	**Drive areas** are in good condition.	3	4	12	One panel of the northwest lot drive access is cracking and will need to be replaced in the future. Some of the concrete of the north access into the east parking lot is cracking and the drive up to the building entrance is also cracking.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	2	5	10	DMPS states staff parking okay and events are managed with the parking at Meredith Middle School
4.5	**Sidewalks** around the facility are in good **condition.**	2	4	8	Some of the concrete outside the SE building exit appears to be experiencing subsurface moisture issues, and the pavement along the north and east sides of the school has heaved and created tripping hazards.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	2	4	8	**There are a couple of door without sidewalk access on the west side of the school.**
4.7	**Fencing** around the site is in good condition.	1	4	4	Most of the fencing is in good condition, the fencing along the northwest side is old and should be replaced in the future.
4.8	**Trash enclosure** is in good condition.	1	5	5	Pavement, brick, and gate all appeared in good condition.
4.9	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	4	4	There was a cleanout missing a lid and a deteriorated utility box that was filled with debris.
4.10	**Site has sufficient room** for both building and parking expansion.	1	3	3	There isn't a whole lot of space to work with on site, any building or parking expansion would remove some of the space used for athletics. There is some space between the building and the street that could be used for building or parking expansion.

ASSESSOR: Jack Gorman Joel Jackson

		Weight Factor	Rating	Points	Comments
4.11	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	3	3	Bus drop off is to the north of the building, parents can use the northwest or east parking lots. There is good separation between the two parking lots, some congestion occurs during dismissal but it is manageable
	TOTAL			76	

S | Structural

ASSESSOR: Trevor Pullen

5.0 Structural Conditions

		Weight Factor	Rating	Points	Comments
Foundations					
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	5	5	
5.2	There does not appear to be any **foundation settlement.**	2	5	10	
5.3	**Basement walls** do not appear to have any cracks.	1	5	5	
5.4	**Stoops** appear to be in good condition.	1	5	5	
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	4	4	There are some shrinkage cracks in the polished concrete floor of the cafeteria.
5.6	Slabs on grade do not appear to have any **settlement.**	1	5	5	
Exterior Walls					
5.7	**Brick masonry** appears to be in good condition.	2	5	10	
5.8	**Lintels** appear in good condition (no visible deflection or rust).	1	4	4	Exterior steel plate lintel over the second floor Trainer and Team Rooms is rusted and needs maintenance.
5.9	**CMU** is in good condition.	1	5	5	
5.10	**Precast** is in good condition.	1	5	5	

S | Structural

ASSESSOR: Trevor Pullen

		Weight Factor	Rating	Points	Comments
Interior Walls					
5.11	**Interior walls** appear to be in good condition.	1	5	5	
Floor Framing (Elevated)					
5.12	**Floor framing** appears to be in good condition.	3	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	4	12	There is an area in the hallway above the boys 2nd floor locker room where the roof deck has buckled and sagged.
Miscellaneous					
5.15	**Retaining walls** appear to be in good condition.	1	5	5	
5.16	**Canopies** appear to be in good condition.	1	5	5	
5.17	**Loading dock concrete** appears to be in good condition.	2	5	10	
5.18	**Mechanical screening** appears to be in good condition.	2	N/A	0	
5.19	**Stairs** appear to be in good condition.	1	4	4	Exterior site concrete stair out side of southeast entrance located between rooms 1346 & 1350 is deteriorated and needs to be replaced.
5.20	**Stair railings** appear to be in good condition.	1	3	3	The railings in the boiler room and room 1315 are loose and need to be replaced or re-anchored.

S | Structural

ASSESSOR: Trevor Pullen

		Weight Factor	Rating	Points	Comments
5.21	**Pool Deck** appears in good condition without cracks.	1	5	5	
5.22	**Balconies** appear in good, stable, condition	1	N/A	0	
5.23	**Tunnels** appear to be in good condition without cracks.	1	N/A	0	
5.24	There is a **designated hardened area** in the building.	1	0	0	
5.25	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			137	

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	Some offices and conference rooms appear to be combined on a thermostat.
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	4	12	Changes in floorplan and use of rooms require thermostat relocation.
6.3	Appropriate **amount of ventilation** are provided to each space.	5	2	10	OA supplied through damper opening directly to AHU. Damper positions and actual airflow not calibrated or measured
6.4	**Ventilation** is provided during occupied hours.	5	3	15	OA dampers not all open during site visit.
6.5	**Outdoor air intake locations** are appropriate.	4	4	16	Outdoor air intakes restricted due to screening or may re entrain exhaust.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	4	20	Noted exhaust deficiencies in some restrooms and janitor closets. Possibly due to exhaust fan not working.
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	3	6	Some airflow in corridors between buildings may be due to lack of building pressurization control. Building is connected to Meredith MS
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	1	5	Most of equipment is form 1971. This includes the air handlers and all the terminal units in classrooms. Exceptions are the boilers, RTUs serving Media Center Addition and classrooms adjacent to Media Center.
6.9	**Cooling loads** are within equipment operational capacity.	5	3	15	Chiller study currently be completed to confirm cooling load. It is suspected that current chiller is undersized as building was originally served by both an absorption and centrifugal chiller but only a centrifugal chiller remains.
6.10	**Heating loads** are within equipment operations capacity.	5	5	25	No noted heating capacity issues.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.11	**Dehumidification** is provided and addressed humidity loads in incoming outside air.	4	3	12	No dedicated dehumidification equipment in building. All OA treated at AHU along with return air. Hydronic system is also dual water so only chilled water and heating water not available simultaneously at AHUs.
6.12	Appropriate levels of ventilation, cooling and dehumidification are being provided within **Natatorium.**	5	1	5	Original HVAC equipment serving the nanatorium. No active cooling or dehumidificaiton.
Plumbing Design					
6.13	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	
6.14	Appropriate **backflow preventer** is provided at connection to city water supply.	5	3	15	Single RPV BFP device. Recommend dual setup in High School buildings to allow for repair and reduced pressure drop.
6.15	**Domestic hot-water systems** are within equipment operational capacity.	5	4	20	All domestic hot water provided by heat exchanger off boilers. Summer as well.
6.16	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	4	12	Some areas do not appear to get hot water recirc. Possibly due to piping and pump deficiencies.
6.17	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	
6.18	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	Grease interceptor sized per the DMWRA installed in recent renovations .
6.19	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	5	25	
6.20	**Restroom fixtures** comply with DMPS preferences.	3	3	9	Majority of flush valves are manually operated. Faucets are metered.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

Maintainability

		Weight Factor	Rating	Points	Comments
6.21	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	3	9	AHU rooms have limited space and access is difficult for service. Boiler and chiller room is adequately sized for current equipment.
6.22	AHUs and chiller are provided with **coil pull space.**	2	3	6	Little to no coil pull space for AHUs. Chiller space appears to be adequate.
6.23	**Filter** sizes are standard and filter types are standard.	2	4	8	Varies by equipment type.
6.24	**Equipment mounting heights** are reasonable.	3	4	12	Some equipment have issues with access to mechanical room except by ladder.
6.25	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	4	8	Noted water on floor due to pump seal or piping leak.
6.26	**Isolation valves** are located in the plumbing and hydronic systems to allow for isolation of only portions of the system for servicing.	2	4	8	Many valves appear to be original and may not be operable for shutoff of service.
6.27	Appropriate means are provided for **airflow and water balancing.**	3	4	12	Many dampers appear to be original or not are not present due to age and may not provide airflow balancing.
6.28	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	4	8	Minimal equipment on roof that requires cleaning. Wall hydrant at grade level, though the space is 1-story high volume.
6.29	**Fall protection** is provided for equipment within 15 ft of roof edge.	2	5	10	Most equipment is set back 15 ft from roof edge.
6.30	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	5	20	

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
Occupant Safety					
6.31	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	
6.32	Building is fully **sprinklered.**	5	0	0	No fire sprinkler system in place.
6.33	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	4	20	Hot water supply to some lavatories not provided due to thermostatic valve or hot water recirculation issues.
6.34	**Emergency eye-washes and tempering valves** are located where required.	5	0	0	None observed. Recommend evaluation with an occupational safety and health professional to determine necessity of eye wash(es) for facility spaces.
6.35	**Emergency boiler stop switches** are located at exits from boiler rooms.	5	5	25	
6.36	**Refrigeration evacuation systems** are provided in rooms with chillers.	5	2	10	No refrigeration evacuation system for chiller. May not need due to large volume of the room.
6.37	**Carbon Monoxide monitoring** and alarming is provided for areas with gas-fired equipment.	5	0	0	No CO detector observed in boiler room.
	TOTAL			480	

E | Electrical

ASSESSOR: Hedgepeth

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	0	0	Two transformers outside boiler room in fenced enclosure
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	0	0	One transformer does not appear to have 10' clearance. Unclear if both are in service
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	5	15	
7.4	The **MDP** appears serviceable.	4	3	12	>25 years old. 800A 480Y/277 main panel with 400A fuse switch.1966 era ITE (Siemens) vacu-break fuse/switch panel fed from 1200A Westinghouse switch. Also feeds Pringle switch (no tag) for 800A 480Y/277V MCC. Or is Pringle switch the main?
7.5	The MDP is **maintainable.**	3	5	15	Vacu-break switches appear to still be available. Two have been added or replaced to the MDP.
7.6	The MDP will support **future expansion.**	4	0	0	All switch spaces are used and it appears four separate breakers or disconnect switches have been added for additional loads.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	5	20	Panel MP and MCC in boiler room
7.8	The Distribution Panel appears **serviceable.**	4	3	12	>25 years old. Replacement fuse bays are available.
7.9	The Distribution Panel is **maintainable.**	4	5	20	
7.10	The Distribution Panel will support **future expansion.**	4	0	0	Panels appear full.

E | Electrical

ASSESSOR: Hedgepeth

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** observed during assessment are safe, serviceable, and maintainable.	2	0	0	Panels observed appear to be full with no spare capacity.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	0	0	No exterior outlets observed.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	5	25	Good exterior lighting.
Electronic System Design					
7.14	MDF is **neatly organized** and has appropriate clearances and working spaces. Cables are neatly laced or trained. Entry to the room is restricted.	4	5	20	Fiber entry room/MDF and building switch room MDF. Plus Meredith MDF. Lots going on here.
7.15	MDF Equipment Racks have adequate space for **future growth.**	4	5	20	
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	0	0	Building UPS. Natural Gas Generator (located beside Meredith Middle School) providing power to building UPS.
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	
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Cat 5e/6A
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	5	5	

E | Electrical

ASSESSOR: Hedgepeth

		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 in boiler room office
7.23	Building is equipped with an **access control system.**	5	2	10	8/35=35%. MDF rooms not equipped with card readers
7.24	Building is equipped with a **CCTV system.**	5	4	20	Camera looking west by pool renders pixilated after dark. Verify if camera or lighting issue.
7.25	Building is equipped with an **intercom system.**	4	5	20	
7.26	Building is equipped with a **master clock system.**	4	5	20	Primex. Although Hoover has a Simplex system as well. Does not appear to be active as date/time are wrong.
	TOTAL			287	

EV | Elevator

ASSESSOR: Mike Brown - ATIS

8.0 Elevator Conditions

		Weight Factor	Rating	Points	Comments
Design					
8.1	**Size** meets minimum as directed by ADA.	2	5	10	
8.2	**Control protections and signals** meet ADA standards.	2	5	10	
8.3	**Signage** meets code requirements.	1	5	5	
Operation and Safety					
8.4	Elevators have **proper level accuracy and door times.**	1	5	5	
8.5	**Safety devices** are in place and operable.	1	3	3	There is no cartop inspection operation.
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	1	2	The elevator has exceeded its lifecycle. Obsolete parts will be a problem.
8.8	**Finishes** are adequate and maintainable.	1	3	3	The interior and doors are worn and dated.
8.9	**Maintenance** is adequate.	1	4	4	
8.10	**Testing** is up to date, and all **record and logbooks** are present and filled out.	1	5	5	
	TOTAL			52	

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

Keying Coordination	Coordinate keying and egress plan locations for classrooms 1350 -1381 which appear to be both within Hoover and Meredith schools.
Egress Clearing	Clear path of egress from Orchestra room. Remove covering over exit lighting.
Stage Floor Repair	Patch or repair 4"x24" hole in subfloor of the back stage.
Casework Support Repairs	Countertop within Girls Restroom outside of room 2065 is under supported and pulling away from the wall. This is likely used to sit on and additional supports should be added. Countertop should be resealed to the wall.
Roof Cleaning	Remove debris from roof low spots, drains, overflows, gutters, and other areas where it collects so that the roof membrane remains in good condition and sheds water efficiently as designed. Remove birds nests from under roofs N, O, and P; as well as wall light north of roof A. Remove efflorescence between north doors, approx. 8 SF. See appendix for roof identification plan. Remove sealant at stone at room 1320 and 1330.
Exterior Door Adjustment	Adjust 5 exterior doors so that they latch from any closing position at the following locations: 1 door across from room 1305; 2 doors south of room 1155; 1 door north of room 1122; 1 door from room 1240.

Exterior Repairs	Replace junction box cover at east end of roof G. Replace junction box cover between BOILER room and room 1315. Replace power cable extending across roofs C, D, E, and H - it's exterior jacket is worn through. Replace weatherstripping at base of double doors from room 1240. Bend window sash frame at room 1380 back into shape. Repair leaking window at room 1320. Reattach card reader to wall near room 1160.
Replace Cleanout Lid	Replace the missing cleanout lid to prevent debris from clogging cleanout. For location, refer to the civil site plan exhibit found in the appendix of this report.
Remove Guardrail Remains	Remove the remains of an old guardrail that create a tripping hazard. For location, refer to the civil site plan exhibit found in the appendix of this report.
Drainage Repair - Install Concrete Splash Pad	Install a concrete splash pad underneath the roof drain outlet to prevent further erosion. For location, refer to the civil site plan exhibit found in the appendix of this report.
Drainage Repair - Install Rip-Rap	Install rip-rap beneath the outlet of a drainage pipe to prevent erosion of the soil. For location, refer to the civil site plan exhibit found in the appendix of this report.
Stair railing anchorage	At the wood stair leading to the storage mezzanine in room 1315. The railing needs to be re-attached to the stair treads more securely. (3) Post attachments, 2 bolts per post.
Exterior Wall Column Paint Repair	Surface prep (paint and rust removal) and paint (2) exterior steel columns at exterior double doors of corridor outside of room 1316. Approximate total area of repairs is 3 square feet.
Exterior Steel Lintel Surface Repair	Surface prep (paint and rust removal) and paint 18'-0" long steel plate lintel over windows at the second floor trainer and team rooms. Exposed surface depth the plate lintel is 4".
Re-establish Outdoor Air Damper Operation	Retro-commission and balance outdoor air dampers at AHUs to ensure correct amount of outdoor air is provided to the building for ventilation and pressurization.

Site Grading at Transformer Fence	Adjust grading at fence gate to allow gate to open.	
CO Monitoring in Boiler Room	Confirm if a carbon monoxide monitoring exists in the Boiler Room. (Could not locate during site visit.)Add it, if it does not.	

1 - 2 Year Priority

		Project Costs
Emergency Egress at Equipment Room	Currently there is no safe, or legal, egress from the equipment room adjacent to level 2 classroom 2095. This is an immediate concern. The recommendation is to enlarge the existing crawl-through opening between the custodial closet and the equipment room and clear a full egress path. Demo approx. 25 SF of CMU wall, tooth in bullnose CMU at sides, and provide steel lintel above. Approximately 15 LF of piping will need to be re-located, or re-routed, around the opening. Custodial and storage items will all likely need to be relocated. The custodial double door will need to be replaced with new hardware and an outward door swing. The existing frame can remain. **This is an immediate priority.**	$35,000
Locker Room Signage Installation	Install wayfinding signage and graphics on level 2 at new and renovated locker rooms. Signage should include room numbers and either permanent or removable signage indicating gender or sport designation. Graphics should enhance wayfinding as well as engage school spirit. Approximately 12 door signs and 4 wall graphics.	$25,000
Library Ceiling Repairs	Library metal ceiling panels have peeling paint in many areas. It appears there is a temperature or moisture issue, perhaps due to the metal panels being under insulated. Paint should be removed and panels recoated as appropriate. PET baffles are recommended to be installed to improve acoustics. Approximately 2,700 SF of metal panel refinishing. Approximately 1,000 SF of acoustic treatment.	$55,000
Acoustical Treatment Installation	28 classrooms are in need of improved acoustics. Ceiling structure is exposed egg-crate concrete structure. Ceiling baffles and wall treatments would help decrease the echo. Approximately 21,000 SF, total, of acoustic baffles recommended. Break room 1180 should also include additional acoustic treatment on the walls: approx. 240 SF acoustical treatment.	$770,000

Roof Repair	Patch torn membrane at overhangs at north façade. Most tears are at the east end where vertical transitions to horizontal at the valleys. Approx. 100 SF. Patch loose modified bitumen at SE corner of roof A 6 SF; south of south-most divider parapet (extends east-west across roof) 6 SF; Replace lead flashing at pipe penetration near south side of roof A.	$8,000
Roof Access Installation	Provide guardrail around roof hatch. Provide (2) 4 VLF ladders from roof area M to S and from valley of M to higher area across from S. Provide (2) 4 VLF ladders from roof area M to higher areas north and south of roof area O. Provide 2 VLF ladders from roof area H to K. Provide 12 VLF ladder from roof C to B. See appendix for roof identification plan.	$20,000
Exterior Glazing Replacement	Replace insulated glazing units: 4'x4' above door at room 1315; 1'x7' next to door near room 1160;	$8,000
Exterior Repainting	Repaint the following exterior doors: Double door near room 1346; (4) Triple doors and sidelites near room 1160, room 1120, room 1115, and room 1100; (4) triple doors and sidelites along north entry; 300 SF garage door at room 1315; single door and frame at room 1390. Repaint wall north of room 1240, approx. five double doors and frames. Repaint wall west of BOILER room, approx. four double doors and frames. Repaint 24 SF enamel metal panels over doors near room 1385. Repaint hollow metal window and steel framing between room 1365 and BOILER room, approx. double door size and approx. 60 SF. Repaint exterior steel between room 1320 and 1180, approx. 300 SF. Repaint exterior steel at east and west end of courtyard, approx. 110 SF. Repaint hollow metal windows at courtyard, equivalent of 15 8'x4' frames.	$45,000

Exterior Sealant Replacement	Replace sealant at most masonry soft joints around building, including at the following locations: 2 LF N face of roof R; 340 LF at joints from room 1340 south to next major change in building direction; 310 LF around south and east sides of room 1330, 1332, and 1333; 60 LF near room 1320; 10 LF east of corridor east of room 1305; Approx. total: 722 LF Replace sealant between stone joints at wall and wall base of room 1330 addition, approx. 1,000 LF. Replace sealant at perimeter of windows / louvers: 64 LF as sills of clearstory east under roofs N and P, and north under roof O; 36 LF at jambs of louvers on west wall of roof A; 140 LF around louvers south of roof G; 80 LF at jambs of windows at east side room 1330; 50 LF at louvers north of room 1120; 280 LF at north windows of room 1220; Approx. total: 650 LF Replace sealant at roof flashing at vertical walls: 180 LF at east side of roofs C, D, and E; 80 LF at south side of roof E. Approx. total: 260 LF Glazing seals at clearstory below roofs N, O, and P do not extend across the full height/width of the glazing at all IGUs -- sealant is needed to fill these gaps and eliminate air infiltration to backside of interior seals. Budget 20 LF sealant.	$35,000
Concrete Patching	Patch spalled concrete outside room 1355/1360, 1 SF 2" deep. Patch spalled concrete under door at room 1222, 8 SF 2" deep. Replace grout below precast panels around room 1320, approx. 60 LF.	$9,000
Exterior Wall Repair	Replace insulated metal panels at hollow metal frames at north end of courtyard, approx. (5) 5'x2.5'.	$11,000
Pavement Replacement	Remove and replace 101 SY of PCC and 420 SY of asphalt. For locations, refer to the civil site plan exhibit found in the appendix of this report.	$70,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 127 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$25,000
Stair railing replacement	At the exist stair at the southwest corner of the boiler room. 20LF of railing needs to be replaced and anchored to the concrete stair and landing.	$14,000

Exterior Site Stair Replacement	Replace concrete site stairs outside of southeast corridor doors between rooms 1346 & 1350. Provide #5 epoxy coated bottom mat at 12" o.c. each way with (3) - #4 x 6'-0" epoxy coated nosing bars. Stair footprint is 6'-4" x 3'-6". Base thickness at bottom tread is 18" thick and 32" thick at top tread.	$7,000
Domestic Water Heater Replacement	Existing domestic hot water is heated through a heat exchanger connected to the hydronic boiler requiring the boiler to run in summer. Consider installation gas-fired domestic water heater to separate operation of domestic hot-water system from hydronic system.	$130,000
Cooling and Dehumidification for Natatorium	Install new AHU to serve the Pool with energy recovery gas-fired heat and DX cooling/dehumidification.	$580,000
Redundant BFP Installation	Add second RPZ backflow preventer on water service to allow for maintenance and repair without disruption and to reduce pressure loss.	$13,000
Refrigerant Evacuation System	Confirm if refrigerant evacuation and monitoring is required in Chiller Room. (This will be completed under the Hoover Chiller Study.) Add to room if required.	$65,000
Comprehensive Elevator Modernization	Replace the obsolete control system, power unit, door equipment, signal equipment and related parts.	$260,000
	Total 1-2 Year Project Costs:	$2,185,000

3 - 4 Year Priority

		Project Costs
Furniture Replacement	Replacement of select furniture in FLEX Academy as well as classroom furniture in room 1182. Staff seating should be updated as needed. Appeared to need 5 typical classroom student desks and chairs, as well as collaborative seating for Flex Academy that incorporates access to power for 15 students. Approximately 5 staff chairs were noted to be in poor condition.	DMPS

Ceiling Replacement	Ceiling tile panels and portions of grid are showing water staining, minor damage, and rust spots throughout the building. Replace damaged tiles, following any known leak repairs. Approximately 2,000 SF. Hoover / Meredith restroom ACT ceiling and grid should be replaced with a gypsum board ceiling, approximately 500 SF. Classrooms 1350 - 1381 have sagging and damaged 2x4 ceiling tiles throughout. Replace all tiles, approximately 6,000 SF.	$150,000
Flooring Replacement	Restroom epoxy floors are too rough causing issues with maintenance and cleaning. These floors should be re-done. Approximately 600 sf. VCT is showing age and wear in many areas. Replace VCT as required in athletic coaches offices, un-renovated locker rooms, and classrooms 1350-1380. Transition strips should always be provided at material changes. Approximately 10,000 SF of VCT replacement. Replace all classroom resilient base throughout the school. Approximately 1500 LF of resilient wall base. Use rolls, not 4' lengths. Replace all corridor tile wall base in 2 story wing of the school. Approximately 1400 LF of tile wall base.	$150,000
Window Replacement	Two story hollow metal glazing system at north east wing of building requires replacement. Seals at glass are reaching end of life and in some locations are falling out. Glass is only single pane. Frame is not thermally broken. Replacement should be with a curtain wall system and insulated glazing units. Two-level curtain wall at the northwest wing is 28 units at approximately 55 SF and 4 units at approximately 70 SF. Single-level curtain wall is 8 units at approximately 25 SF and 10 units at 15 SF near room 1225. Replacement units should include one section of operability for each level, sill, and blind replacements at approximately 3'-0" LF per unit.	$370,000
Pavement Replacement	Remove and replace 352 SY of PCC and 3,351 SY of asphalt. For locations, refer to the civil site plan exhibit found in the appendix of this report.	$530,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 117 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$25,000
Replace Brick Pavers	Remove the deteriorated pavers and replace with new brick pavers. Approximately 60 LF. For locations, refer to civil site plan exhibit found in the appendix of this report.	$10,000

Restroom Fixture Replacement	Install auto flush and hands-free fixtures in restrooms and other public areas.	$150,000
Floor Drain Relocation	Relocate floor drain in room 1231 to be under ice machine. Floor has eroded away due to constant water stream. Repair concrete floor as required and install an epoxy flooring. Approximately 120 SF. Floor drain should be relocated approximately 6' from existing location.	$25,000
Replace aged MDP/DP	Replace electrical service entrance and distribution equipment over 25 years old.	$310,000
	Total 3-4 Year Project Costs:	**$1,720,000**

5 - 10 Year Priority

		Project Costs
Door Hardware Replacement	Locks on Offices and Administration spaces should be replaced with new intruder function hardware. Hardware currently allows for interior locking only. Hardware should be replaced on approximately 20 single doors. Doors may remain, only hardware to be replaced.	$30,000
Exterior Sealant Replacement	Replace sealant at precast panels around NE wing. Approx. total: 1,000 LF	$35,000
Exterior Repainting	Repaint 12 VLF ladder at roof A. Repaint (6) 3'x3' windows and (6) 3'x5' windows west of roof A. Repaint 1,100 SF corrugated metal wall around roof G. Repaint single door south of roof G.	$20,000
Pavement Replacement	Remove and replace 35 SY of PCC and 127 SY of asphalt. For locations, refer to the civil site plan exhibit found in the appendix of this report.	$30,000
Sidewalk Repairs	Repair damaged sidewalks across the site. Approximately 377 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$85,000

Fence Replacement	Remove and replace 384 LF of 6' chain link fence. For locations, refer to civil site plan exhibit found in the appendix of this report.	$55,000
Re-paint Roof Deck and Joints	The large mechanical room at the second floor, adjacent to the auditorium has patches corrosion on the underside of the roof deck and on segments of the roof joists. They'll need to be scraped, and re-painted. Approximately 300SF of deck and 150LF of joists.	$9,000
Fire Sprinkler Installation	Include new wet pipe fire sprinkler system. This work should be done in conjunction with other building renovation projects for efficiency.	$3,400,000
	Total 5-10 Year Project Costs:	**$3,664,000**

Projects Requiring Study

		Design Services Fee
Mother's Room Study	Study to define a private dedicated space for a Mother's Room that includes a sink, side table, chair, and privacy door hardware.	$5,000
Weight Room Expansion	The weight room was notably smaller than other schools in the area. A study to determine the desired and projected space needs should be conducted. Anticipated capitol investment for 6,000 SF expansion/ addition to include needs for the athletic department. Possible needs based on observations may include an expanded weight room, storage, office space, and wrestling room. Anticipated Capitol Investment: $2,700,000	$15,000
Daylight Study	A study should be conducted to determine how to best expand existing windows to increase access to natural light as well as how to get daylight into interior classrooms. **This study should be conducted prior to a window replacement project.**	$5,000
Roof Access Prevention	Design a way to prevent someone from climbing the exterior gas line and ductwork near the south end of roof K. Consider taking the gas lines inside the building and up through the roof in lieu of an exterior fence or other screening. Consider sheet steel wraps at other locations to eliminate hand/foot holds. See appendix for roof identification plan.	$5,000

Ponding at Stoop	Determine cause and solution for of ponding water at stoop near room 1155 -- where is the water coming from and why is it not shedding away from building.	$5,000
Replace Exterior Walls	Determine best replacement materials, composition, and strategy for west and south walls of room 1315. Theses walls are corrugated metal up to approx. 8 foot with approx. 4 feet of single pane glazing above, which is covered with tarps internally as shades against sunlight. Both the metal and the glazing are significantly damaged by vehicular traffic and possibly rocks kicked up by mowers -- includes significant denting (approx. 20 SF and deep) and at least 10 glass panes (approx. 200 SF).	$5,000
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
Roof deck buckling/sagging study.	A portion of roof deck over the hallway at the men's locker room 2099 is sagging. Further study is needed to determine the extent of the problem and how to fix it.	$3,000
HVAC Replacement Study	Conduct study to review options to update the HVAC system which has been largely untouched since original construction. Review access issues with current AHUS, comfort issues with 2-pipe system (only chilled or hot at AHUs) and ventilation issues.	$50,000
	Anticipated Capital Investment $13,200,000	
Power Installation	Study to determine the best practices to add power within classroom spaces as necessary. Additional access to power appears to be needed in approximately 10 classrooms. Power could be added to exterior walls with a surface mounted raceway, power columns within the classroom, or an underfloor system select carpets or similar flooring materials.	$10,000
	Anticipated Capital Investment Costs:	**$15,900,000**
	Total Study Design Service Fees:	**$105,500**

APPENDIX

PAVEMENT QUANTITIES (SY)			
	SIDEWALK	PCC	ASPHALT
	377	35	127
	117	352	3351
	127	101	420

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

120 0 60 120 240

bbs ARCHITECTS ENGINEERS

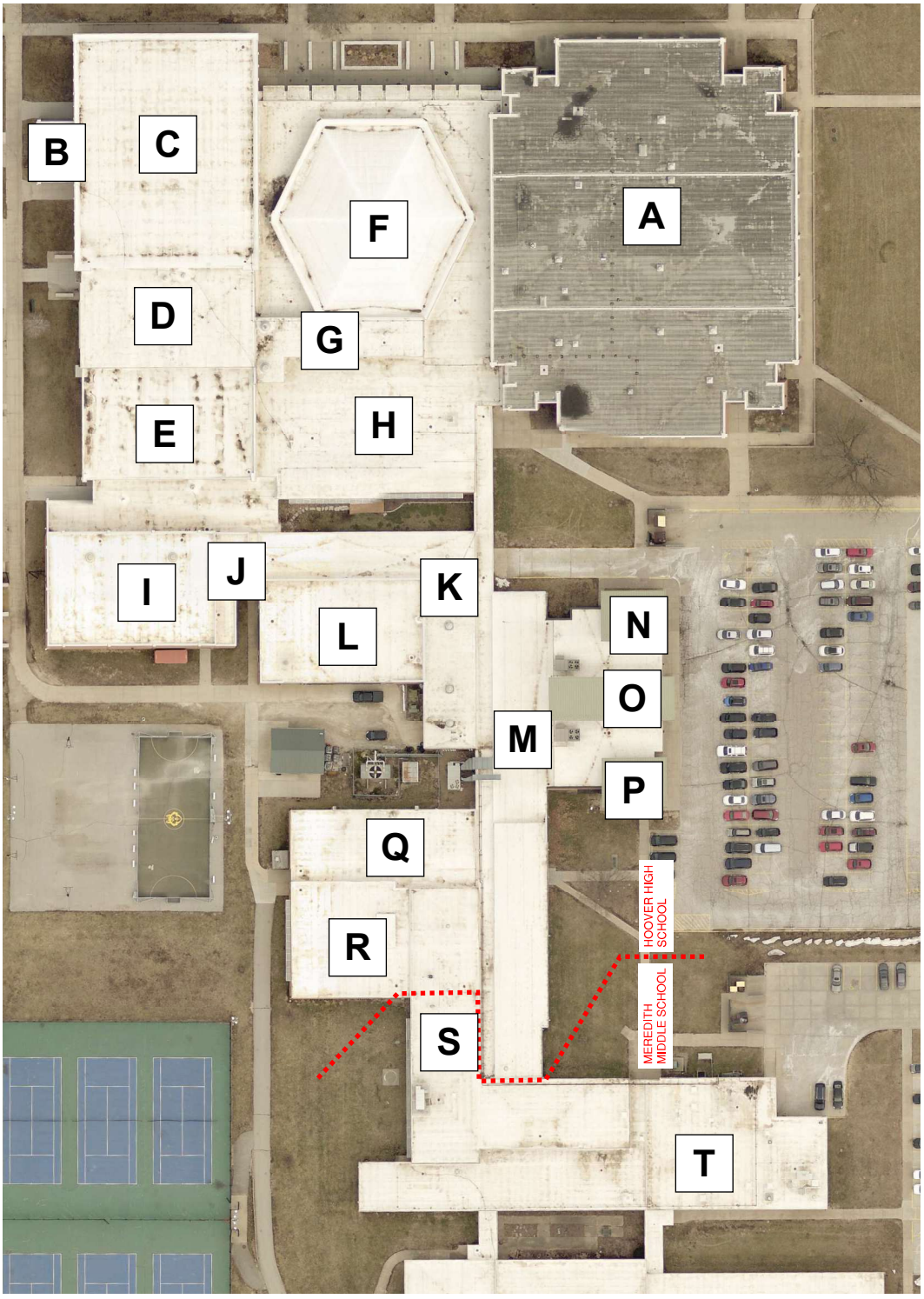
BISHOP ENGINEERING +

HOOVER HIGH SCHOOL

EXHIBIT

PROJECT # 230286-50

DATE 3/15/2024



N

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment
Roof Identification Image
Hoover High School
3.5.2024

DesMoines PUBLIC SCHOOLS

HOOVER HIGH SCHOOL

4800 NW AURORA AVENUE
DES MOINES, IOWA 50310

FIRST FLOOR

NORTH

Rooms in green boundary are on Meredith Middle School key system.

HOOVER HIGH SCHOOL

4800 NW AURORA AVENUE
DES MOINES, IOWA 50310

SECOND FLOOR

NORTH