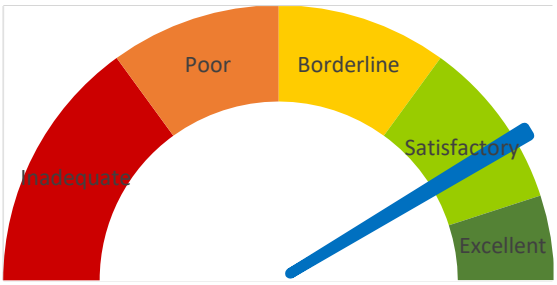
DMPS FACILITY ASSESSMENT | RIVER WOODS ELEMENTARY

10.31.2023

bbs
ARCHITECTS
ENGINEERS

219 Eighth Street
Suite 100
Des Moines, IA 50309
515.244.7167

www.bbsae.com



REPORT ORGANIZATION

EXECUTIVE BUILDING SUMMARY

River Woods 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.

There were no immediate concerns identified for River Woods Elementary. General maintenance of appears to be adequate, though with age, maintenance items will increase. The only mainteance item noted during assessment is to properly ground connections within the MDF and IDF rooms.

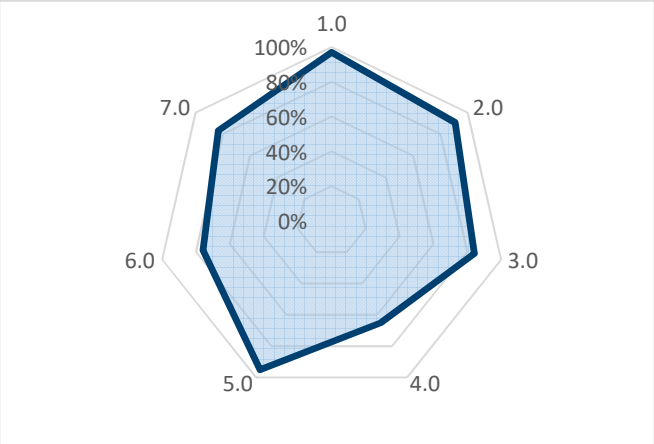
The potential projects for River Woods that are recommended for action within the next 1-2 years are as follows: The recommended projects for River Woods to be completed in the next 1-2 years include:

- Window Caulking Replacement
- Exterior Masonry Repairs
- Concrete and Asphalt Pavement Replacement
- Exterior Lighting Improvements
- Rebuild Air Handlers & Replace Pumps
- Replace VAV Boxes
- Install DOAS/ERV for 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	160	2.00	330	320	97%	Excellent
2.0	Environment for Education	325	295	0.60	195	177	91%	Excellent
3.0	Exterior Envelope	95	80	3.00	285	240	84%	Satisfactory
4.0	School Site	100	65	1.50	150	98	65%	Borderline
5.0	Structural Conditions	80	76	1.30	104	99	95%	Excellent
6.0	Mechanical Systems	670	509	0.80	536	407	76%	Satisfactory
7.0	Electrical Systems	375	313	0.75	281	235	83%	Satisfactory
Total					**1,881**	**1,575**	**84%**	**Satisfactory**

River Woods 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, River Woods Elementary scored a building health rating of 84%, 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. River Woods Elementary is within this positive range. After over 20 years of occupancy and use many areas of the facility are starting to show signs of wear and age. Some mechanical improvements and site improvements, as further detailed in the report, would increase this rating to "Excellent".

Building Data Record

Building Name: River Woods Elementary

Date: 10.31.2023

Address: 2929 Southeast 22nd Street
Des Moines, IA 50320

High School Feeder System: East High School

Building SF: 64,773 square feet

Site Acreage: 12.15 acres

Date(s) of Construction: 2000, 2016

Date(s) of Roof Replacement: 2000, 2013

Current/Scheduled Projects: HVAC Upgrades - 2024
Playground Safety Surfacing - 2024
Walking Track - 2024
Playground Fence - 2024

Existing Building Data:

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

Site Items:

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

Energy Source:

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

Cooling:

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

Exterior Facade:

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

Floor/Roof Structure:

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

A | Architectural, Programming

ASSESSOR: Tim Bungert

1.0 Educational Adequacy

		Weight Factor	Rating	Points	Comments
General					
1.1	**Floor materials** are appropriate for space type.	2	5	10	
Elective/Secondary Classroom					
1.2	**Gymnasium** is adequate for providing physical education programming.	2	5	10	
1.3	**Cafeteria** has adequate space, furniture, and acoustics for efficient lunch use.	2	4	8	Extra cafeteria tables are stored in the gymnasium. Is space in the cafeteria insufficient to hold enough tables for students?
1.4	**Music room** is adequate for providing introductory music instruction.	2	4	8	Music room is on the small side for larger class sizes.
1.5	**Art room** has sufficient accommodations for program.	2	5	10	
1.6	**Library/Resource/Media Center** provides appropriate and attractive space.	1	4	4	Media center is well organized and in good condition, but lacks visual interest, daylight, and access to quality views.
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	Breakout and intervention spaces for groups of students are available throughout the building. Staff meeting spaces also appear to be sufficient.
1.14	**Main office** has a check-in and waiting area.	2	5	10	
	TOTAL			160	

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	2	2	Outside of instructional and intervention spaces, there are very few places for students to gather that support creative collaboration.
2.3	Areas for students to i**nteract are suitable to the age group.**	1	3	3	Small group spaces within classrooms and intervention rooms are appropriate for elementary-aged children, but interaction opportunities outside of these rooms are very limited.
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	2	4	Many classroom teachers have decorated their spaces to create engaging environments. Outside of classrooms, most spaces lack interest and personality.
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	Classroom lighting is LED and adequate for general use. All classrooms have two-zone lighting control, but no dimming control. We noted many instances of fabric or paper coverings installed over light fixtures, especially in counselor and intervention rooms.
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 as is welcoming to students, staff, and guests.	2	4	8	A few graphics, but overall lacking in color or other character-defining elements. Reception desk immediately inside the entrance has visibility to the main entry, but that view is very limited for the rest of the office suite.
2.12	**Break room** is adequately sized and furnished for proper use.	1	3	3	Break room is small and sparsely furnished.
2.13	**Mother's room** is a separate designated space properly furnished.	1	0	0	No mothers 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	4	4	Ceiling tiles in nearly all classrooms exhibit sagging, likely due to combined factors of age, ceiling tile type, and exposure to humidity.
2.16	**Walls** throughout the building – including services areas – are easily cleaned and resistant to stain.	1	4	4	Wall base in all corridors is heavily stained, but still in usable condition.
2.17	**Built-in casework** is designed and constructed for ease of maintenance.	1	4	4	Casework in nearly all classrooms has water damage on the bottom of the doors in front of the sink. Other than this, casework is generally in good condition.
2.18	**Doors** are either solid core wood or hollow metal with a hollow metal frame and well maintained.	3	5	15	
2.19	**Facility doors** are keyed to standardized master keying system.	3	4	12	Some mechanical room doors and the roof access door are not keyed to the building master.
2.20	**Restroom partitions** are securely mounted and of durable finish.	2	5	10	

A | Architectural, Interior

ASSESSOR: Tim Bungert

		Weight Factor	Rating	Points	Comments
2.21	**Adequate electrical outlets** are located to permit routine cleaning in corridors and large spaces.	1	5	5	
Occupant Safety					
2.22	Classroom doors are **recessed and open outward.**	4	5	20	
2.23	Door hardware (into classrooms or any occupied rooms off of corridors) include **intruder classroom locksets.**	3	5	15	
2.24	**Door panels** into classrooms and other occupied spaces contain **vision lite.**	3	5	15	
2.25	**Vision lite** in doors is clear and uncovered.	2	5	10	
2.26	**Glass** is properly located and protected to prevent accidental injury.	2	5	10	
2.27	**Flooring** is maintained in a **non-slip** condition	2	5	10	
2.28	**Traffic areas terminate at exit or** stairway leading to egress	5	5	25	
2.29	Multi-story buildings have at least **two stairways** from all upper levels for student egress.	5	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			295	

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	Some expanded metal screening and lintels have lost some paint and are starting to rust.
Maintainability					
3.2	**Roofs** appear sound, have positive drainage, and are water tight.	3	3	9	Newer roof pulling from parapets at corners. Older roof loose / bubbled near drains and below south facing walls - these areas are intact and shedding water. Roof replacement in 5-10 years.
3.3	**Roof access** is safe for all roofs.	3	5	15	
3.4	Exterior **window sealant** is fully intact without cracks or gaps.	3	4	12	Only windows along main office wall require replacement of perimeter sealant.
3.5	**Glazing** is low-e coated, insulated, and overall in good condition.	1	4	4	Low-e Coating cannot be determined .
3.6	**Operable windows** are functional and safe. Operable portion of window fully seals when closed without gapping or leaking.	2	5	10	
3.7	**Exterior doors** are of durable material requiring minimum maintenance.	2	5	10	
3.8	**Exterior walls** are of material and finish requiring little maintenance,	1	4	4	Need to refinish some lintels to extend service life.
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	3	3	03 - Doors do not latch 13 - Doors with card readers 05 - Doors with locks or no exterior lock 18 - Doors with no signage.
	TOTAL			80	

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	No steep slopes were observed on site and drainage was away from the building.
4.2	**Parking areas** are in good condition.	5	3	15	The north parking lot has poor subsurface drainage and the pavement joints are wearing out as a result. Areas in the west lot also are experiencing the same issue. Both areas would benefit from a rock base and subdrain.
4.3	**Drive areas** are in good condition.	3	3	9	The north drive aisles have sections with subsurface drainage issues. The west drop off lane has a considerable amount patch work done and there are many spiderweb cracks around these patches.
4.4	**Sufficient on-site, solid surface parking** is provided for faculty, staff, and community.	1	3	3	The north lot was close to full at the time of visit with staff parking. There are 9 spaces reserved for visitor parking in the south drive through area.
4.5	**Sidewalks** around the facility are in good **condition.**	1	4	4	The sidewalks in front of the main entrance were cracking and wearing out in the joints in some spots but the majority of pavement was performing well. The south side sidewalk and sidewalk around the play area were both in good condition.
4.6	**Sidewalks are located** in appropriate areas with adequate building access.	1	5	5	All doors had access to sidewalks and there were no difficulties moving to different areas on site by sidewalk.
4.7	**Hard surface** playground surfaces are in good condition.	3	3	9	The basketball asphalt had cracks and was sagging in some locations. The asphalt in the center of the playground area was better but was still cracking. The concrete areas were in good condition.
4.8	**Fencing** around the site is in good condition.	1	5	5	There were a few post attachments that were broken but no areas of fence in poor condition were observed.
4.9	**Trash enclosure** is in good condition.	1	0	0	The dumpsters sit to the north of the wooden fence used to screen HVAC equipment. There are bollards but no enclosure near the dumpsters.
4.10	**Utilities** are in newly constructed conditions and placed in suitable locations.	1	3	3	Most of the site utilities were in good condition. The open space intake on the SW corner of the building should have the beehive grate flipped around to avoid creating a tripping hazard.

ASSESSOR: Jack Gorman

		Weight Factor	Rating	Points	Comments
4.11	**Site has sufficient room** for both building and parking expansion.	1	4	4	The wooded area to the south offers room for parking and/or building expansion. There is limited space in the remaining directions for expansion.
4.12	Site has **onsite bus and parent pickup** up with adequate length, good separation and general good site circulation.	1	3	3	Buses use the north lot and parents use the west lot. Parent pickup backs up onto 22nd St.
	TOTAL			65	

S | Structural

ASSESSOR: Erik Raker

5.0 Structural Conditions

		Weight Factor	Rating	Points	Comments
Foundations					
5.1	**Foundations** appear to be in good condition with no visible cracks.	1	5	5	
5.2	There does not appear to be any **foundation settlement.**	2	5	10	
5.3	**Basement walls** do not appear to have any cracks.	1	N/A	0	
5.4	**Stoops** appear to be in good condition.	1	4	4	Stoops appear structurally sound. There is some minor signs of distress but nothing alarming.
Slab on Grade					
5.5	**Slabs on grade** do not appear to have any cracks	1	5	5	There are a couple very small, old slab cracks that are migrating through the floor tiles. There is no sign of differential movement across the cracks.
5.6	Slabs on grade do not appear to have any **settlement.**	1	5	5	
Exterior Walls					
5.7	**Brick masonry** appears to be in good condition.	2	4	8	The top 5 or 6' of the brick on the north face of the east wing is showing some signs of discoloration. It would be wise to have a mason go look at it closer.
5.8	**Lintels** appear in good condition (no visible deflection or rust).	1	5	5	
5.9	**CMU** is in good condition.	1	4	4	
5.10	**Precast** is in good condition.	1	N/A	0	

S | Structural

ASSESSOR: Erik Raker

		Weight Factor	Rating	Points	Comments
Interior Walls					
5.11	**Interior walls** appear to be in good condition.	1	5	5	Existing CMU walls are in excellent shape.
Floor Framing (Elevated)					
5.12	**Floor framing** appears to be in good condition.	3	N/A	0	1 story building
5.13	Floor framing appears to meet the **code requirements.**	3	N/A	0	
Roof Framing					
5.14	**Roof framing** appears to be in good condition.	3	5	15	No visible signs of rust or modification to the original framing.
Miscellaneous					
5.15	**Retaining walls** appear to be in good condition.	1	N/A	0	Site is flat.
5.16	**Canopies** appear to be in good condition.	1	N/A	0	
5.17	**Loading dock concrete** appears to be in good condition.	2	N/A	0	
5.18	**Mechanical screening** appears to be in good condition.	2	5	10	
5.19	**Stairs** appear to be in good condition.	1	N/A	0	
5.20	**Stair railings** appear to be in good condition.	1	N/A	0	

S | Structural

ASSESSOR: Erik Raker

		Weight Factor	Rating	Points	Comments
5.21	**Tunnels** appear to be in good condition without cracks.	1	N/A	0	
5.22	There is a **designated hardened area** in the building.	1	0	0	No indication of hardened area. However, there are a lot of interior masonry walls and the building is 1 story. It would likely not be terribly difficult to add a storm shelter.
5.23	The hardened area appears consistent with the **ICC 2018 code.**	1	N/A	0	
	TOTAL			71	

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	3	9	VAV box provides control in each space in classrooms and smaller spaces. Gym and Cafeteria on one AHU constant volume with no individual control.
6.2	**Thermostat location.** Thermostats are properly located in the space.	3	5	15	
6.3	Appropriate **amount of ventilation** are provided to each space.	5	4	20	Appears acceptable based on code in place when design was completed. May be issues meeting current code requirements with VAV system and variable occupancy.
6.4	**Ventilation** is provided during occupied hours.	5	4	20	OA dampers are operational. No airflow measuring device to confirm.
6.5	**Outdoor air intake locations** are appropriate.	4	4	16	Roof mounted on single penthouse. Minimum acceptable separation provided by penthouse intake louvers.
6.6	Appropriate **levels of exhaust** are provided for areas requiring this such as restrooms, janitor's closets and locker rooms.	5	5	25	
6.7	**Building pressurization.** The design takes into account the balance between ventilation and exhaust air	2	2	4	System appears to be positively pressurized. No direct airflow measurement or other control provided to verify pressurization. Building maintenance has noted issues with failed fire-smoke detectors.
6.8	**Major HVAC Equipment** appears to be within it's acceptable **service life.**	5	3	15	Equipment approaching the end of useful life at 24 years. Pumps and building controls in need of replacement. This does not include the chiller and boilers recently replaced. AHUs 1 thru 3 appear to be in good shape. Leaks have been noted at perimeter radiation.
6.9	**Cooling loads** are within equipment operational capacity.	5	5	25	
6.10	**Heating loads** are within equipment operations capacity.	5	5	25	New boilers include high efficiency unit but are operating at 170 to 180 F HWS all the time with minimal opportunity for condensing and high efficiency operation. Boilers venting with PVC is NOT recommended and opt for AL-29C stainless steel.

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	4	12	No dehumidification sequence or measurement included in design. No noted issues with humidity at this time.
Plumbing Design					
6.12	**Water Supply Pressure** is adequate to allow for operation of plumbing fixtures.	5	5	25	
6.13	Appropriate **backflow preventer** is provided at connection to city water supply.	5	5	25	Dual RPZ ad accessible
6.14	**Domestic hot-water systems** are within equipment operational capacity.	5	5	25	
6.15	Domestic **hot-water recirculating systems** allow for hot-water at fixtures within a reasonable amount of time.	3	5	15	
6.16	**Sanitary sewer systems** are sized and sloped to allow for proper drainage.	5	5	25	
6.17	Appropriately sized **grease interceptors** are provided for facilities with food service.	3	5	15	Tank added in 2016 with addition.
6.18	**Roof drainage** systems are sized appropriately and overflow drainage systems are installed.	5	5	25	
6.19	**Restroom fixtures** comply with DMPS preferences.	3	3	9	Autoflush on WC and manual flush everywhere else.
Maintainability					
6.20	Equipment is provided with **adequate service clearance** to allow for regular maintenance	3	3	9	All VAV boxes in corridor ceiling. Air Handlers service requires ladder to access fan sections and filters.

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.21	AHUs and chiller are provided with **coil pull space.**	2	3	6	AHU coil pull provided with wall knockout for AHU 1. AHU 2 and 3 do not have adequate space for coil replacement.
6.22	**Filter** sizes are standard and filter types are standard.	2	3	6	Filters located in AHUs vary by size of unit. Some bypass present at AHU 2.
6.23	**Equipment mounting heights** are reasonable.	3	2	6	AHUs require ladder to access fans and filters.
6.24	**Floor surfaces** throughout the mechanical room are non-slip and are dry.	2	5	10	
6.25	**Isolation valves** are located in the plumbing and hydronic systems to allow for isolation of only portions of the system for servicing.	2	5	10	
6.26	Appropriate means are provided for **airflow and water balancing.**	3	5	15	
6.27	**Hose Bibbs** located in proximity to **outdoor condensers and condensing units**. Is cottonwood an issue at this location?	2	5	10	Exterior wall hydrant and screens provided for chiller
6.28	**Fall protection** is provided for equipment within 15 ft of roof edge.	2	4	8	Most equipment located indoors with minimal on roof. One exhaust fan located on roof close to roof edge.
6.29	**Building devices are on DDC controls** and fully visible through Building Automation System. No pneumatic controls remain.	4	1	4	Older DDC with pneumatics mixed in for cabinet unit heaters in entries. n Recommend DDC control upgrade to replace everything and include airflow measuring and replace pneumatics and control valves.
Occupant Safety					
6.30	**Backflow prevention** is provided at all **cross-connections** to non-potable water.	5	5	25	

MP | Mechanical & Plumbing

ASSESSOR: Chuck Heldenbrand

		Weight Factor	Rating	Points	Comments
6.31	Building is fully **sprinklered.**	5	0	0	No Fire Sprinkler. Existing water service is 4-inch. Recommend new fire service and sprinkler system.
6.32	**Domestic hot-water temperature** at lavatories used by students or staff is provided with a thermostatic mixing valve and adjusted properly.	5	5	25	
6.33	**Emergency eye-washes and tempering valves** are located where required.	5	0	0	None observed. 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	0	0	No CO sensor in mechanical room observed. Recommend a CO sensor to be added to mechanical room and connected to DDC.
	TOTAL			509	

E | Electrical

ASSESSOR: Rob 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	5	25	500kVA
7.2	**Transformer** has adequate clearance from non-combustible building components, paths of egress, etc. 10' clear working area in front of doors.	5	4	20	Small, combustible storage shed adjacent to xfmr. Not attached to building.
7.3	**The MDP environment** is safe, has adequate clearances and exiting.	3	4	12	Light equipment (floor polisher units) stored in front of panel.
7.4	The **MDP** appears serviceable.	4	4	16	Square D 208Y/120VAC - 2500A,
7.5	The MDP is **maintainable.**	3	5	15	
7.6	The MDP will support **future expansion.**	4	4	16	31.5% capacity for additional breaker mounting.
7.7	The Distribution Panel **environment is safe**, has adequate clearances and exiting.	4	N/A	0	
7.8	The Distribution Panel appears **serviceable.**	4	N/A	0	
7.9	The Distribution Panel is **maintainable.**	4	N/A	0	
7.10	The Distribution Panel will support **future expansion.**	4	N/A	0	

E | Electrical

ASSESSOR: Rob Hedgepeth

		Weight Factor	Rating	Points	Comments
7.11	**Electrical panels and disconnect switches** are safe, serviceable, and maintainable.	2	4	8	Light equipment stored in service areas.
7.12	Building has adequate and appropriately located, **safe exterior power** to allow for regular maintenance activities.	1	4	4	Mostly adequate. Building has a mix of In-use and WeatherProof only covers. All appear in good condition. In-use by mech equipment.
7.13	Building has adequate **exterior lighting** to promote safety and security of the property.	5	4	20	Playground lighting and East end could use additional.
Electronic System Design					
7.14	MDF is **neatly organized** and has appropriate clearances and working spaces. Cables are neatly laced or trained. Entry to the room is restricted.	4	3	12	MDF room organization is obstructed by storage for lots of chairs and cleaning equipment.
7.15	MDF Equipment Racks have adequate space for **future growth.**	4	2	8	Rack is mostly full. Multi-mode fiber (not in use) could be removed to make additional room.
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	Two MinuteMan 2000VA. One new and one older.
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	2	2	Panel supplies classrooms in area as well as MDF. Limited capacity for expansion.
7.19	MDF employs up-to-date **network cabling.**	2	4	8	Mix of Cat 5e, Cat 6, Cat 6A
7.20	MDF is connected to Intermediate Distribution Frame (IDF) closets with **fiber optic cabling.**	1	5	5	Fed from Weeks Middle School

E | Electrical

ASSESSOR: Rob Hedgepeth

		Weight Factor	Rating	Points	Comments
7.21	MDF has adequate **grounding busbar capacity.**	2	3	6	Rack and CATV do not appear to be grounded to TMGB
7.22	Building is equipped with an **addressable fire alarm system.**	5	5	25	Simplex 4100U
7.23	Building is equipped with an **access control system.**	5	2	10	7/15=47%
7.24	Building is equipped with a **CCTV system.**	5	5	25	
7.25	Building is equipped with an **intercom system.**	4	5	20	
7.26	Building is equipped with a **master clock system.**	4	4	16	-Simplex Master Clock system does not meet district standard (Primex).
	TOTAL			303	

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

Intake Adjustment	Flip intake beehive grate to remove tripping hazard. For location, refer to civil site plan exhibit found in the appendix of this report.
MDF / IDF Grounding	Add #6 grounding connections for equipment racks in MDF and IDF room, and for CATV service entrance. Connect to TGB bars already located in rooms.
Exterior Door Adjustment	Adjust the following doors so that they latch from any closing position: door at kitchen and room 118.
Replace Boiler Flue	Replace boiler flue piping that is currently PVC with AL-294C stainless steel.
Carbon Monoxide Detection Installation	Install carbon monoxide detection in the mechanical room and connect to DDC.

1 - 2 Year Priority

		Project Cost
Exterior Sealant Replacement	Replace exterior sealant around four windows along the main office wall, approximately 140 LF.	$7,000
Lintel Refinishing	Refinish steel lintels above windows with brick above and expanded metal screening (three locations, 12 SF).	$6,000

Pavement Replacement	Remove and replace 192 SY of pavement in south drive and install a rock base. For location, refer to civil site plan exhibit found in the appendix of this report.	$40,000
Sidewalk Repair	Repair 24 SY damaged sidewalks across the site. For locations, refer to civil site plan exhibit found in the appendix of this report.	$9,000
Curb Repair	Return damaged curbs to new condition. Approximately 5 LF of 6" curbs. For locations, refer to civil site plan exhibit found in the appendix of this report.	$6,000
Exterior Lighting Installation	Add exterior lighting near playground and east end of building, (3) fixtures estimated.	$11,000
Heating Water Pumps Replacement	Install new heating water pumps. Confirm scope of B9074-Riverwoods-2024 HVAC Upgrades project to make sure replacement of pumps did not occur in this project.	$100,000
	Total 1-2 Year Project Costs:	**$179,000.00**

3 - 4 Year Priority

		Project Cost
Wall Base Replacement	Remove and replace rubber wall base in all corridors due to staining and damage (approximately 1,600 LF)	$14,000
Pavement Replacement	Remove and replace 587 SY of pavement across site and install a rock base under the 521 SY experiencing subsurface moisture issues. For location, refer to civil site plan exhibit found in the appendix of this report.	$120,000
Sidewalk Repair	Repair 83 SY damaged sidewalks across the site. For locations, refer to civil site plan exhibit found in the appendix of this report.	$15,000
Playground Asphalt Replacement	Take out and restore deteriorated playground asphalt. Approximately 75 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$13,000

Perimeter Fintube Replacement	Install new perimeter fintube and radiators with higher pressure rating and lower average hot water temperature to improve energy efficiency and work better with high efficiency boilers.	$210,000
Water Heater Replacement	Replace 120 and 140°F water heaters with one new water heater. Install digital mixing valve. Replace existing hot-water recriculation pump.	$75,000
	Total 3-4 Year Project Costs:	**$447,000.00**

5 - 10 Year Priority

		Project Cost
Roof Replacement	Remove 58,000 SF of modified bitumen roofing and insulation over roof areas A, B, C, D, and E Install code compliant insulation and TPO roofing.	$2,000,000
Pavement Replacement	Remove and replace 49 SY of pavement. For location, refer to civil site plan exhibit found in the appendix of this report.	$12,000
Sidewalk Repair	Repair 212 SY damaged sidewalks across the site. For locations, refer to civil site plan exhibit found in the appendix of this report.	$50,000
Playground Asphalt Replacement	Take out and restore deteriorated playground asphalt. Approximately 1,492 SY. For locations, refer to civil site plan exhibit found in the appendix of this report.	$270,000
Fire Smoke Damper Actuator Replacement	Replace fire smoke damper actuators. Include position switch on all fire smoke damper actuators to be monitored by DDC or include monitoring with LED for position identification.	$220,000
Flush Valves Replacement	Replace flush valves on toilets and urinals with preferred autoflush type.	$80,000
	Total 5-10 Year Project Costs:	**$2,632,000.00**

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
Addition of Fire Sprinkler System	Study feasibility of adding fire sprinkler system to serve building.	$10,000
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
	Total Study Design Service Fees:	**$17,500**

APPENDIX

5+ YEAR REPLACEMENT

3-4 YEAR REPLACEMENT

1-2 YEAR REPLACEMENT

NORTH

GRAPHIC SCALE

30 0 15 30 60

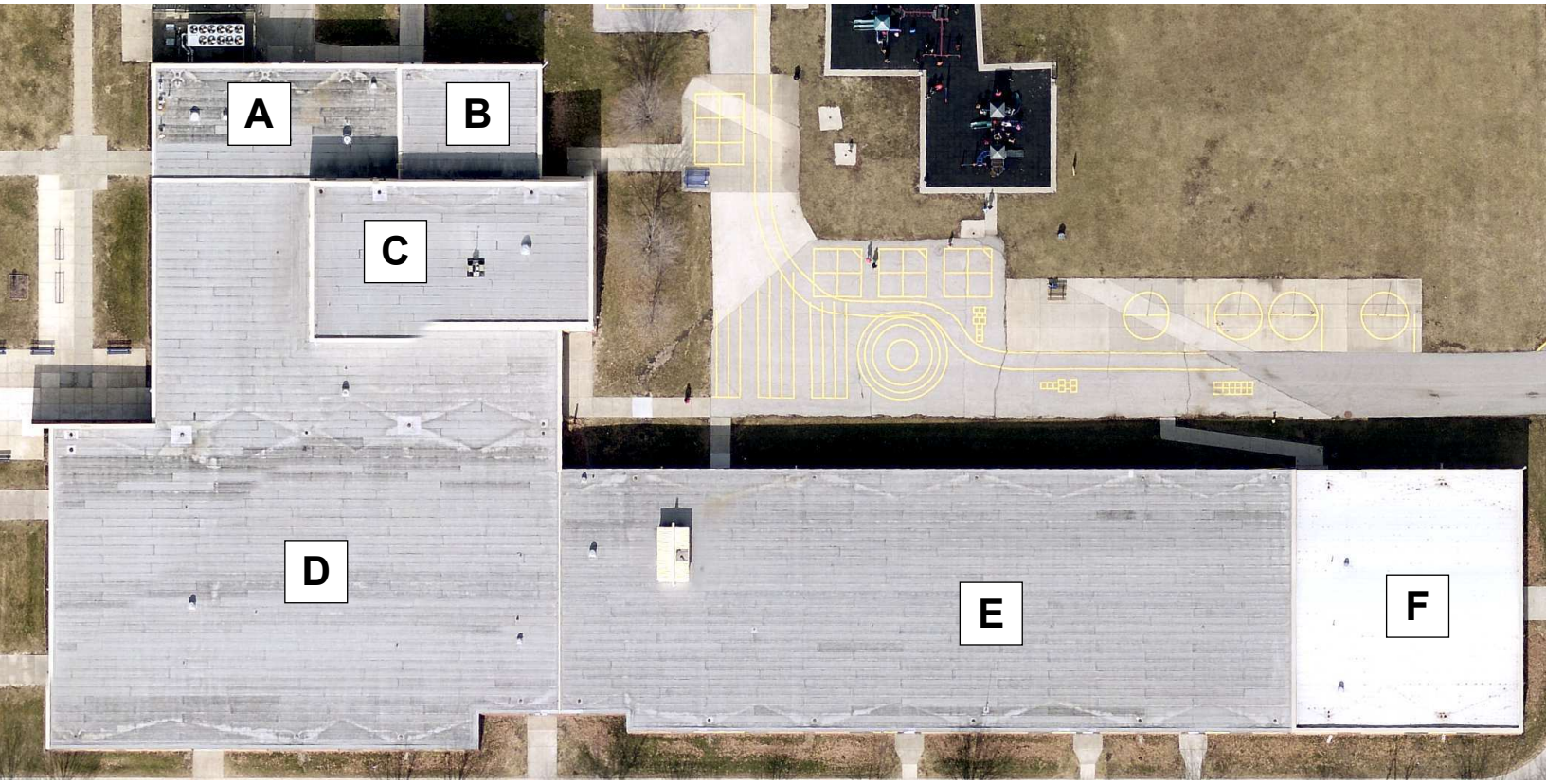
BISHOP ENGINEERING +

RIVER WOODS ELEMENTARY

EXHIBIT

PROJECT # 230286-30

DATE 10/11/2023



N

bbs ARCHITECTS ENGINEERS

23055 - DMPS Facility Conditions Assessment
Roof Identification Image
River Woods Elementary
10.31.2023

RIVER WOODS ELEMENTARY SCHOOL

2929 SE 22ND STREET
DES MOINES, IOWA 50320

FIRST FLOOR

NORTH

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

bbs ARCHITECTS ENGINEERS