MANCHESTER
SCHOOL DISTRICT

Beech Street Elementary School

Educational and Facilities Master Plan

smma

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Summary

Included in this report are assets that were collected during the long term facility planning process. Each school's report package contains an At-A-Glance summary report, Facility Evaluation Criteria sheets, and site plan(s). Site plans are included to illustrate the context of the building in relationship to the city, neighborhood, and other adjacent amenities and parcels. The At-A-Glance summary sheets include general information about each school building including school data, such as population and grade structure, etc., site and building data, tax assessor's information, community uses, State of NH Code of Administrative Rules, Operational Data, and Cost model information for repairs and renovations. The Facility Evaluation Criteria sheets are the facility assessment team's findings at each Tier 1 school building including building physical assets, sites, and educational facility effectiveness. On April 24, 2023, the assessment team visited all the Tier 1 school buildings.

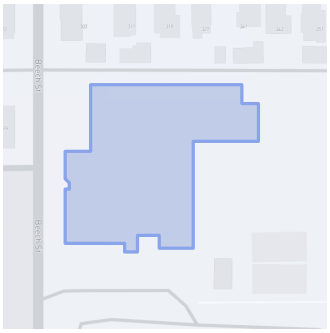
SCHOOL NAME

Beech Street Elementary School

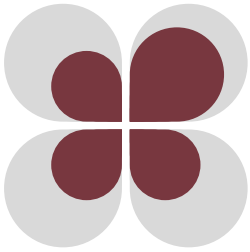
SITE VISIT

August 2023

At-a-Glance



FA: Building FA: Site



EFE: Learning EFE: Spaces

Excellent Deficient

Address
333 Beech Street, Manchester, NH 03103

Gross Square Footage (GSF)
68,896 sf

Grades
Kindergarten–5th Grade

Site Acreage
1.5

Hours of Operation
8:25am–2:50pm

Date of Construction
1973

2022–2023 Enrollment
471

Date of Addition Construction

SCHOOL NAME

Beech Street Elementary School

SITE VISIT

August 2023

Site Plans

SCHOOL NAME

Beech Street Elementary School

SITE VISIT

August 2023

SCHOOL NAME
Beech Street Elementary School

SITE VISIT
August 2023

Facility Evaluation Criteria

Physical Analysis	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Roof Membrane (Architectural)				●	
	"Original built-up roof system appears to have been replaced at some point with EPDM roof membrane. Several areas of ponding were noticed on the upper roof and a significant area of ponding was identified at the lower roof above the kitchen. Roof leaks were reported in that area. This section of roof should be addressed immediately. All roofs are beyond their useful lifespan and typical warranty period, so replacement is recommended."				
Existing Photovoltaics					○
	"N/A"				
Space for Solar on Roof					○
	"Space on the roof is available. Exact locations and size must be evaluated based on the existing structure and mechanical units."				
Façade	●				
	"Overall the original split faced block walls appear to be in good shape. Discoloration at several walls and around window sills suggest prolonged exposure to moisture. Minor repointing at mortar joints in several areas will be required. Exposed steel lintels need repainting as there are some areas of rusting."				
Windows			●		
	"Exterior storefronts and curtainwalls at stair towers were replaced in 2004 with double paned thermal units; however, thermal performance is not as efficient as current fenestration products. All punched window openings in administration and classrooms are original single paned aluminum units that are well past their useful lifespan and are in need of replacement."				
Boilers (Mechanical)		●			
	"There are three boilers from 2014 and are in good condition. The district standard seems to be Lochinvar and this building has Bosch boilers."				

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REPORT TYPE

Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Boilers (Plumbing)			●		

"Refer to mechanical report for HVAC boilers. Domestic water heating - There are two domestic hot water systems. The first is a gas fired boiler; Laars 850,000 Btu/hr model PW0850IN09KIACXX. The water heater was installed in 1999 and includes two 119 gallon storage tanks. The storage tanks were replaced just over a month ago The system appears to be in good working order. The water heater was manufactured in 1999 and is past its expected lifespan of 10-15 years. Replacement is recommended. The second hot water heater is a gas fired HTP model PH160-55 (40,000 - 160,000 Btu/hr). The water heater was installed in 2015/2016. The water heater is approaching its useful lifespan (10-15 years."

Heating Distribution Systems		●			

"All hot water equipment appeared in good working order. The hot water is pumped in a primary-secondary arrangement and pumps have VFDs for speed control. The piping and insulation appeared in good condition. Terminal heating equipment in the classrooms (and most spaces) is perimeter fin tube radiation. Cabinet unit heaters are used to provide additional heat at entrances and the end of corridors. In the kitchen and pantry areas, there are ceiling-hung unit heaters."

Building Envelope Thermal Performance			●		

"Original building dates from 1974. Only minimal insulation in exterior walls and roofs was provided (2?). Air vapor barriers were not provided. Exterior storefronts and curtainwalls at stair towers were replaced in 2004 with double paned thermal units; however, thermal performance is not as efficient as current fenestration products. All punched window openings in administration and classrooms are original single paned aluminum units that are well past their useful lifespan and are in need of replacement. Vestibules are not provided at building entrances."

Interior Finishes		●			

"Interior wall, floor and ceiling finishes are mostly in good condition. Interior improvements were made during renovations in 2004 and 2015. Some of the original toilet rooms wall and floor tiles are tired and dated. Most of the interior wood doors were replaced in 2015."

Rooftop HVAC Equipment		●			

"The 6 Valent units providing ventilation were replaced this summer (new and provide heating and cooling of the ventilation air), the 2 Trane units are from 2005 and reaching the end of useful life, and another fan is from 1999 and past useful life. The ductwork to the fan was replaced in 2021, but not pitched right so there is standing water on top of the ductwork."

HVAC Controls			●		

"The building has JCI Metasys controls (District Standard). There are various thermostats in use some of which appear beyond useful life."

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REPORT TYPE

Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Technology Infrastructure				●	
"Bandwidth of fiber optic and copper network cabling is inadequate for School Communications. Telecom Rooms are not adequately secured allowing staff to use them for storage."					
Technology Systems				●	
"Telephone and WiFi systems are at the end of useful life. Network switches have been recently replaced. Not all Telecom Rooms are air conditioned, leaving equipment vulnerable to overheating."					
Security Systems		●			
"The City is working with a Security Systems Vendor to deploy 500 CCTV cameras throughout the District's Schools. Adequate bandwidth is a concernfor transmitting video. Notification and Lock Down systems are not present. Indoor cellular signal booster system is desired."					
Kitchen Equipment and Systems (Electrical)	●				
"A few kitchen receptacles were observed non-GFCI type and shall be replaced."					
Kitchen Equipment and Systems (Plumbing)		●			
"The kitchen is larger than the other elementary school as meals in the district are prepared here. Overall the equipment is in fair to good condition and seems to be functional (no issues reported) The hand sink has a metal pipe "bumper". Natural gas is piped to kitchen equipment. There is a grease trap cover recessed in the floor."					
Natural Gas Distribution System	●				
"The natural gas service supplies gas to HVAC boilers, the domestic water heater, and kitchen equipment. Piping observations were limited to exposed areas. The piping appears to be in good working order."					
Current Fuel Source	●				
"The building has an elevated pressure gas service. One line runs up the exterior wall of the building to the roof."					
Generator					○
"N/A"					
Elevator		●			
"Due to age of elevator, controls replacement may be required and cab finishes need to be updated."					

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REPORT TYPE

Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Ventilation Distribution Systems		●			

"Generally, the ductwork distribution appears to be in good working condition. Many spaces use ceiling supply of ventilation air with ceiling plenum return. The gym used high supply low return. Ductwork appeared in good condition but return grilles especially could use a cleaning. Kitchen has compensating hoods with exhaust and makeup air connections. Appears to be a UV device on wall for air quality. Dishwasher also has a direct exhaust connection. Some ductwork on roof had been newly replaced. A few rooms adjacent to kitchen have wall mounted mini-splits, appear to be working although older."

Electrical Services		●			

"Electrical service is provided by PSNH via a pad-mounted transformer with secondary voltage 277/480v 3ph 4w. The transformer was recently replaced and appears in good condition. The transformer secondary feeder is extended underground towards the school building and terminates in the Main Switchboard "SWBD" located in the Main Electric room 159. The switchboard is manufactured by GE, rated 800 Amp 277/480v 3ph 4w. It was provided in year 2015 in lieu of the "original" one. The switchboard appears in good operational condition. Downstream panelboards appear in good operational condition too. Majority of them were also provided in lieu of the "original ones around year 2015. The stepdown 480/120-208v transformers installed throughout the school building appear in good operational condition, tagged year 2014. There is no documented records verifying if "original" power feeders to downstream panels (constructed in year 1973) were replaced. The "original" wiring (power feeders and branch wiring) at this point would reach the end of their useful life expectancy (about +/- 40 years) and shall be replaced."

Life Safety: Means of Egress (Architectural)		●			

"Size and quantity of egress components appear to be adequate. Not all egress doors are handicapped accessible as they exit at landings or exterior landings are not at grade."

Life Safety: Means of Egress (Electrical)	●				

"Self-contained internally lighted LED exit signs and battery units are provided along egress pathways. Emergency lighting throughout is observed in adequate operational condition."

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Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Life Safety: Fire Protection (sprinklers)	●				

"The building is currently protected by an automatic sprinkler system. A 6-inch fire service enters the building and reduces to a 4-inch vertical double check valve assembly. The original riser is capped and abandoned. The new riser has the hydraulic design placards (stickers) attached. The city water supply can accommodate the sprinkler system demands (Pump not required). The system includes a wall post indicator valve on the service, a water motor gong and related drain (may not be functional), electric bell, 2-inch main drain, and a 4-inch storz fire department connection at the exterior wall. Sprinklers are a mix between older soldered sprinklers and newer glass bulb quick response sprinklers. There is a spare sprinkler cabinet located at the fire service. Standard response sprinklers require replacement (or representative testing) at 50 years. The newer quick response sprinklers require replacement or representative testing at 20 years."

Life Safety: Fire Alarms	●				

"Existing Fire Alarm (FA) system was installed in 2005 and shows later upgrades. The FA system is zoned, consisting of FACP manufactured by Notifier, remote annunciator, smoke and heat detectors, double action pull stations, speaker/ strobes and strobe only unit, and connections to fire protection equipment. The Fire Alarm Control Panel (FACP) and radio master box are in Main Office 102. The FA remote annunciator, knox box and FA red alarm light are located outside of the main entrance door. Classrooms and similar educational spaces, corridors, teacher areas, kitchen, Cafeteria, Gym, etc. are equipped with FA signaling devices. The FA equipment was observed in good operational condition."

Security: Entry Sequence			●		

"The main entrance has controlled card access and an intercom system. There is no visual access to the exterior from the main office. There is no secured vestibule beyond the exterior set of doors."

Lighting Quantity / Control	●				

"The Lighting system throughout the building was replaced in the year 2015. The majority of lights are LED 2'x4' recessed "basket reflector" design, in good operational condition. Stair lights are linear LED wall brackets, in good operational condition. The Gym has 4-lamp fluorescent fixtures with integral occupancy sensors. A few Cafeteria lights installed along the perimeter windows were observed "dimmed down" - assumed as proper reaction to presence of adequate natural daylight level. All school building areas are equipped with multi-level dimming light switches and ceiling-mounted occupancy sensors, observed in good operational condition."

Toilets and Fixtures		●			

"Although a little dated, the plumbing fixtures appear in good condition when compared to other elementary schools in the district. ADA fixtures were observed in most areas, however there are some toilet rooms that do not have ADA fixtures. Drinking fountains have been replaced with bottle filling stations in a many locations."

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REPORT TYPE
Facility Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Plumbing Distribution Systems		●			
"The domestic cold water is provided through a 4-inch service that reduces to a 3-inch main valve and again to a 2-inch meter. with a 6"OS&Y valve. The system also includes a 2-inch reduced pressure backflow preventer. The system includes a master mixing valve, and recirculation system with domestic circulator pumps. The age of the domestic water piping throughout the building varies. Original piping is close to 50 years old. Existing drawings showing plumbing renovations are not available and thus the age of any plumbing piping revisions/replacements is not known. . Piping greater than 40 years old (lifespan 40-50 years) should be evaluated (sample destructive testing, water quality testing) to determine the condition and help estimate the longevity left in the piping. Original valves and pipe solder pre-date current lead free regulations and requirements. Observation of sanitary and vent, storm water piping was limited to exposed areas. Above ceiling observations were not performed. The expected lifespan of cast iron piping is 50 years. Future renovations should consider scoping/testing to confirm the expectancy left in the piping."					
Accessibility (Architectural)			●		
"Most ganged toilet rooms do not provide accessible toilet stalls, required door clearances or wheelchair turning radii. One of the stair exits is not accessible as it exits at a landing level. Drinking fountains project into the accessible path more than the maximum allowable distance."					
Accessibility (Plumbing)			●		
"Many of the plumbing fixtures appear to meet ADA requirements. A few locations did not have the traps insulated."					

Structural Systems: Signs of Deterioration Observed?

	YES	NO
Roof		✕
"Steel frame with wide flange girders and bar joists with metal deck roof. Gym roof framed with lonspan steel joists with a metal deck roof."		
Floor		✕
"Floor framing bar joist with form deck."		
Walls / Columns		✕
"Steel framed structure with wide flange girders and bar joists with concrete slab placed on form deck."		

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REPORT TYPE

Facility Evaluation

Structural Systems: Signs of Deterioration Observed?

	YES	NO
Foundations		✕
"Foundations in very good condition. No issues noted."		
Façade		✕
"Masonry facade in relatively good condition. No major issues observed. A couple of minor settlement cracks noted."		
Is Lateral System Identifiable?	✓	
"CMU masonry shear walls throughout they building."		

Community

	YES	NO
Emergency Shelter	✓	
"Short Term Shelter, Staff and Family Shelter"		
Are there Separate Community / Non-School Spaces on Site?	✓	
“The school shares a site and parking facilities with JFK Coliseum and Gill Stadium.”		

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Site Evaluation Criteria

Physical Analysis	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Parking Capacity	●				
	"Significant amount of parking available on site and around adjacent Coliseum. Unclear how much overlap there is between Coliseum/Stadium parking use and school parking use."				
Parking Quality	●				
	"Some staff parking spaces in rear lot by loading. Large lot between school and Coliseum. Parking lot pavement in decent condition."				
Ground Cover		●			
	"Some trees, lots of grass, minimal shade."				
Fields	●				
	"Multi-purpose field on site, connected to bituminous play lot via gate in fence. Multiple public parks and other athletic facilities adjacent to the school site."				
Neighborhood Streets		●			
	"Relatively high speed traffic along Beech St. Residential areas to the west and north, commercial areas to the east and south. Connections to public parks in on multiple sides. Traffic calming measures would improve safety and neighborhood connectivity."				
Drop-off / Pick-up Routes	●				
	"Bus drop off loop off of main parking lot. Active loading/unloading zone along edge of parking lot adjacent to field."				
Walkways / Curbs / Sidewalks		●			
	"Sidewalks and granite curbing around parking lot and site perimeter, in varying condition. Mix of bituminous and concrete walks."				

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REPORT TYPE

Site Evaluation

Physical Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
ADA Accessibility	●				
"Main entrance is accessible, with ramps, crosswalks and 2 ADA spaces. Rear and side entrances not accessible."					
Site Lighting (Civil)	●				
"Plenty of light fixtures in parking and play areas."					
Site Lighting (Electrical)	●				
"Exterior lighting is LED type, in good operational condition."					
Fencing	●				
"Chain link fencing around play areas."					
Drainage	●				
"Some catch basins. Most of the site drains into the adjacent street."					
Play Areas	●				
"Play structure, bituminous play lot, and field on site, adjacent to the park. Smaller separate play area between school and street. Both play structures small, but in decent condition. Multiple adjacent parks with public play areas."					
Monuments and Memorials	●				
"Wooden dedications signs in front of trees along parking lot."					
Walls / Slopes	●				
"No significant slopes or walls. Cheek wall surrounding small play area adjacent to Beech St, likely for privacy, noise reduction, safety from traffic."					

Physical Analysis

	YES	NO
Are there any Wetlands on Site?	✓	
"No wetlands per GIS, no areas of potential wetland concern per site assessment."		
Are there any Easements on Site?		✕
"Potential easements for shared access/parking between school and coliseum/stadium."		
Are Play Structures Age-Appropriate?	✓	
"Two play structures at the site, each suitable for a different age range."		

SCHOOL NAME

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REPORT TYPE

Site Evaluation

Physical Analysis

	YES	NO
Is there an Outdoor-Learning Area?	✓	
"Picnic tables under shade structure in play area."		
Should there be a Question on Environmental Justice Populations / Vulnerable Populations?	✓	
"NH GIS designates site as "Medium High" Social Vulnerability Index. based on census analysis."		
Is the Building Expandable on the Current Site?	✓	
"Site is relatively flat, bound by Beech St to west and residential parcels to north. Opportunities to expand building east or south into adjacent paved areas or athletic fields."		
Is the Site Expandable?	✓	
"Potential to expand into adjacent field."		

Community Analysis

	YES	NO
Historical Commission Status: Inventory of Archaeological Assets (Site Review)		✕
"The site is not listed on the National Register of Historic Places (per the National Park Service website)ÿor the New Hampshire State Register of Historic Places (per the New Hampshire Division of Historical Resources website). The site is also not within the Manchester Historic District or listed as a locally-designated historic site, per Manchester GIS."		
Are there School Buses?	✓	
"1 MTA and 4 SPED buses, per bus counts provided by the district."		
Bikeable?		✕
"Bike racks outside school, and bike usage in adjacent parks. No bike lanes/ infrastructure on adjacent streets."		
Walkable?	✓	
"Sidewalks along adjacent streets, connections to residential areas, commercial development, and nearby parks."		

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REPORT TYPE

Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Bike Facilities **Beech St**	●				
	"No bike lane provided. Consideration may be given to striping a bike lane as Beech Street is a two-lane roadway for southbound travel within a 30-mph posted speed limit area."				
Bike Facilities **Maple St**	●				
	"No bike lane provided. Consideration may be given to striping a bike lane as Maple Street is a two-lane roadway for southbound travel within a 30-mph posted speed limit area."				
Parking **Parking Lot**		●			
	"Pavement markings for accessible parking space and access aisle in front of school are faded. Parking space locations and accessibility should be evaluated for ADA compliancy."				
Parking **Parking Lot**	●				
	"Signs are posted within parking lot for vehicles to create two lanes in northbound direction toward school with left lane for buses/staff only and right lane for parents/guardians to use for student pick-up/drop-off. These lane markings are faded."				
Pedestrian Connections **Beech St at Sheridan-Emmett Park**		●			
	"Dirt connection between sidewalk and Sheridan-Emmett Park entrance on Beech Street at crosswalk."				
Pedestrian Connections **Crosswalk at school entrance within campus (south of building)**			●		
	"Crosswalk is striped but no signage. Ramp does not have a detectable warning panel. Pedestrian crossing and curb ramp should be evaluated for ADA compliancy."				
Pedestrian Connections **Sidewalk south of playground**	●				
	"Some sand and weeds are accumulated along fence on edge of sidewalk."				

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REPORT TYPE

Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Roadway Characteristics **Auburn St South Back**	●				
"No pavement markings to separate directional flows and white edge lines are faded. Plants reduce visibility and encroach into roadway at intersection with Beech Street. Pavement is in poor condition."					
Sidewalks **Auburn St South Back**		●			
"There is a sidewalk on south side of street. East of school, sidewalk is narrow with plant overgrowth encroaching into sidewalk. Adjacent to school, sidewalk is wide except for where a loading ramp takes up sidewalk. At time of field visit, pallets and a parked vehicle were blocking sidewalk east of school loading driveway."					
Sidewalks **Beech St**		●			
"East sidewalk has frequent curb cuts and is not very level."					
Sidewalks **Maple St**	●				
"At JFK Coliseum and Maple Street Youth Center driveways, sidewalk slopes down toward Maple Street. Should be checked for ADA cross-slope compliancy."					
Standalone Crosswalks **Beech St at Sheridan-Emmett Park**		●			
"Crosswalk is striped across Beech Street between school and Sheridan-Emmett Park, but no crosswalk signage or detectable warning panels on curb ramps. Pedestrian crossing should be evaluated for ADA compliancy."					
Standalone Crosswalks **Maple St at Sheehan-Basquil Park**	●				
"Crosswalk is striped across Maple Street between school and Sheehan-Basquil Park. No detectable warning panels on curb ramps. Crossing should be evaluated for ADA compliancy."					
Unsignalized Intersections **Auburn St South Back at School Loading driveway**			●		
"No crosswalk or detectable warning panels provided at driveway crossing, and west sidewalk has a steep slope. Pedestrian crossing should be evaluated for ADA compliancy. At time of field visit, pallets were stacked within sidewalk blocking curb ramp on southeast corner of intersection. No STOP sign or STOP line provided on driveway approach."					

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REPORT TYPE

Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Unsignalized Intersections **Beech St at Auburn St South Back**	●				
	"No crosswalks striped across Beech Street or Auburn Street South Back west leg. Painted brick crosswalk pattern across Auburn Street South Back east leg is faded. Pothole where pedestrians would cross Auburn Street South Back west leg. Pedestrian crossings should be evaluated for ADA compliancy. No STOP signs or STOP lines provided on Auburn Street South Back approaches."				
Unsignalized Intersections **Beech St at Bell St/parking lot (south)**		●			
	"No crosswalks striped at intersection, but there are metal detectable warning panels on northwest and southwest curb ramps at intersection. Northeast and southeast curb ramps do not have detectable warning panels. Pavement is cracked on west and east sides of intersections along where pedestrians would cross. Pedestrian crossings should be evaluated for ADA compliancy."				
Unsignalized Intersections **Beech St at Green St**		●			
	"Crosswalk is striped across Green Street, but no detectable warning panels. Pothole is located at end of curb ramp on northwest corner of intersection. Pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Beech St at Grove St**		●			
	"No crosswalks striped at intersection, but there are metal detectable warning panels for a pedestrian crossing Grove Street. Potholes across Grove Street where pedestrians would cross. Pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Beech St at Grove St North Back**	●				
	"No STOP signs, STOP lines, or centerline markings provided on Green Street North Back approach. No crosswalks striped at intersection and no detectable warning panels. No street signs posted to indicate name of Green Street North Back roadway. Pedestrian crossing across Green Street North Back should be evaluated for ADA compliancy."				
Unsignalized Intersections **Beech St at Grove St South Back**		●			
	"No STOP signs, STOP lines, or centerline markings provided on Grove Street South Back approach. No crosswalks striped at intersection and no detectable warning panels. No street signs posted to indicate name of Grove Street South Back roadway. Potholes across Grove Street South Back where pedestrians would cross. Pedestrian crossing across Grove Street South Back should be evaluated for ADA compliancy."				

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REPORT TYPE

Site Evaluation

Traffic Analysis

	NONE / MINOR	MODERATE	MAJOR	REPLACE	N/A
Unsignalized Intersections **Beech St at parking lot (middle)**		●			
	"No STOP sign on driveway approach. Faded crosswalk provided across driveway and there are detectable warning panels provided on driveway curb ramps. Pedestrian crossing should be evaluated for ADA compliancy. Island in middle of parking lot driveway is not marked or signed."				
Unsignalized Intersections **Beech St at parking lot (north)**	●				
	"Crosswalk striping across driveway is faded. Detectable warning panels are provided on driveway curb ramps but not at Beech Street crosswalk. No signs posted for Beech Street crossing. Pedestrian crossings should be evaluated for ADA compliancy."				
Unsignalized Intersections **Beech St at Summer St**	●				
	"Crosswalks are striped across Beech Street south leg and across Summer Street, but no signs posted for Beech Street crossing. Pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Maple St at Auburn St South Back**	●				
	"No STOP sign or STOP line provided on Auburn Street South Back eastbound approach. No crosswalks striped or detectable warning panels at intersection. Auburn Street South Back pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Maple St at parking lot (middle & south)**	●				
	"No crosswalks striped or detectable warning panels provided at driveway crossings. Pedestrian crossing should be evaluated for ADA compliancy."				
Unsignalized Intersections **Maple St at parking lot (north)**	●				
	"No STOP sign or STOP line provided on school driveway eastbound approach. No crosswalk striped or detectable warning panels provided across driveway. Pedestrian crossing should be evaluated for ADA compliancy."				

SCHOOL NAME
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SITE VISIT
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Educational Facility Effectiveness: Learning Environments (EFE: LE)

Grade Levels

Building Originally Designed as:	1st Grade–6th Grade
Which Educational Program are you Assessing?	Kindergarten–5th Grade
The Grade Configuration this School is Best Suited to:	Kindergarten–4th Grade

Educational Building Analysis

	GOOD	FAIR	POOR	DEFICIENT	FAILING
Acoustical		●			
Adjacencies of Learning Environments		●			
Environment (Inviting / Stimulating / Comfortable)				●	
	"Many classrooms without exterior windows: classrooms in basement, some interior classrooms."				
Furniture		●			
	"Newer furniture is ergonomic and conducive to flexible arrangements."				
Lighting Quality		●			
Natural Daylighting			●		
	"About half of the classrooms have no windows."				
Technology: Power		●			
Technology: Wireless		●			
Ventilation	●				

SCHOOL NAME

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REPORT TYPE

EFE: LE Evaluation

This Site Includes:	YES	NO	
Accessible		✕	
Play Fields	✓		
Playgrounds / Areas	✓		

Building Assessment	YES	NO	
Can the Building Change Typology Easily?		✕	
Can the Building be Transformed Educationally to Serve 21st Century Needs?	✓		
	"Would require extensive renovation and additions to resolve windowless classroom issues."		
Can the Building Serve as Swing Space?	✓		
	"However, windowless classrooms do not make for ideal swing space."		
Is the Building between 85%—115% Utilization Rate?		✕	

Educational Facility Effectiveness: Spaces (EFE)

Space Assessment	QUANTITY	ACTUAL AREA (SF)	MORE INFO
Administration and Guidance (Quantity Varies)	Varies	2995	
Art Classroom (Min Area 900 sf or 36 sf / Student)	1	1010	
Cafeteria (Min Area 12-15 sf / Student for Max Number of Diners per Lunch Period)	1	3605	LUNCH PERIODS: 3
	"Kitchen serves as commissary to all of the District's elementary schools."		
Classroom: General Education (Min Area 900 sf or 36 sf / Student)	22	760, 830, 840, 850, 870, 880, 900, 1015	
Faculty Lounge	1	535	
Gymnasium (Min Area 6000 sf)	1	5695	STAGE: No
Kindergarten (Min Area 1000 sf or 50 sf / Student)	5	760, 770, 840, 940	TOILET ROOM: No
Media Center (Min Area 1800 sf or 4 sf / Student x Design Capacity)	1	2020	
Music Classroom (Area 1200 sf)	1	1000	
Pre-K0/K1 (Min Area 1000 sf or 50 sf / Student)	0	0	
Sensory Room	1	760	
	"No exterior windows"		
Special Education: Resource of Small Group (Area 500 sf)	6	95, 100, 120, 145, 255	

SCHOOL NAME

Beech Street Elementary School

SITE VISIT

August 2023

REPORT TYPE

EFE: Space Evaluation

Space Assessment

	QUANTITY	ACTUAL AREA (SF)	MORE INFO
Special Education: Self Contained (Area 950 sf)	1	900	TOILET ROOM: No
Stage (Area 1000 sf)	None	0	
Teacher Planning	0	0	
	"None observed."		
Technology Lab	1	895	

Adequacy of Rooms

	GOOD	FAIR	POOR	DEFICIENT	FAILING
Administration and Guidance			●		
	"Transaction window located in lobby, not in vestibule. Inefficient route from Main Entrance to Main Office and no visibility of visitors once going past transaction window."				
Art Classroom			●		
	"No exterior windows."				
Cafeteria		●			
	"Very little natural light. Finishes are worn."				
Classroom: General Education			●		
	"Some classrooms do not have exterior windows. No sinks. When exterior windows are present, they are small and few in number."				
Faculty Lounge			●		
Gymnasium	●				
	"Newer finishes - slightly undersized from recommended 6000 sf."				
Kindergarten (K2)			●		
	"Some undersized and some classrooms do not have exterior windows. No sinks. When exterior windows are present, they are small and few in number."				

SCHOOL NAME

Beech Street Elementary School

SITE VISIT

August 2023

REPORT TYPE

EFE: Space Evaluation

Adequacy of Rooms	GOOD	FAIR	POOR	DEFICIENT	FAILING
Media Center		●			
Medical		●			
Music Classroom			●		
	"No exterior windows."				
Sensory Room			●		
	"No exterior windows, or access to daylight."				
Special Education: Resource of Small Group		●			
	"Not many and most are undersized."				
Special Education: Self Contained			●		
	"EBD room has no exterior windows."				
Stage					●
	"School does not have stage."				
Teacher Planning					●
	"None observed."				
Technology Lab			●		
	"No windows."				

Special Education Assessment	YES	NO
18+		✕
Autism Spectrum		✕
Cognitively Impaired		✕
Deaf and Hard of Hearing		✕
Emotional Disturbance	✓	
	"Self-Contained"	

SCHOOL NAME

Beech Street Elementary School

SITE VISIT

August 2023

REPORT TYPE

EFE: Space Evaluation

Special Education Assessment	YES	NO	
English Learners	✓		
	"Push-In and Pull-Out"		
Intellectual Disability		✕	
Life Skills		✕	
Medically Fragile		✕	
PT/OT/Speech	✓		
	"Occupational Therapy: 0.6 FTE 1 day at Hillside, 1 day at Wilson. Physical Therapy: 0.2 FTE"		
Reset Program		✕	
Social Emotional		✕	
Title 1	✓		

Assessment Team Scoring Rubric

Educational and Facilities Assessment Approach

Assessment Criteria

Educational and Facilities Assessment (E+FA) Approach - Led by architects, engineers, and educational planners from SMMA and its consultants, and in partnership with each school principal, the team conducted both a facility assessment (to take inventory of the building layout and condition) and an educational assessment (to determine the adequacy of spaces for the educational programs offered) in each building. The following report outlines the team organization, methodology and approach taken to assess the Manchester Public School portfolio over the Spring and Summer of 2023.

Overall Assessment

Categories and criteria were strategically selected for assessment based on stated objectives, past experience, and nature of the Manchester School District portfolio of buildings. Ultimately, the E+FA team created a customized "Manchester School District methodology" which encompassed approximately 75 areas of criteria, organized either facility or site categories that examined physical components, as well as community components.

Facility Assessment Criteria

Facility Assessment: Building Evaluation

Facilities varying in terms of age, design, construction methods, and materials were reviewed to determine the condition of the district's portfolio. Building assessments were performed to determine existing components and/or systems' conditions at a specific point in time. The resulting information was then used to guide recommendations regarding maintenance, renovation, and/or replacement. The assessment team conducted visual inspections to observe signs of deterioration. No exploratory demolition, removing finishes, or viewing above ceilings was conducted. Areas that were hard to reach, off limits, or obscured by other systems that prohibited view of the some building components were not assessed. Systems and categories that were assessed included:

- Building Envelope
  - Roof Membrane
  - Facade
  - Windows
  - Thermal Performance
- Boilers
- Heating Distribution
- Interior Finishes
- Rooftop HVAC Equipment
- HVAC Controls
- Kitchen Equipment and Systems
- Natural Gas Distribution
- Generator
- Elevator
- Ventilation Distribution Systems
- Electrical Service
- Life Safety:
  - Means of Egress
  - Fire Alarm
  - Fire Protection: Sprinklers
- Security: Entry Sequence
- Lighting Quantity/ Control
- Toilets and Fixtures
- Plumbing Distribution Systems
- ADA/Accessibility
- Structural Systems (consisting of the following components):
  - Roof framing: This is the horizontal framing consisting of decking, slabs, joists, beams, trusses, etc.
  - Floor framing: This is the horizontal framing consisting of decking, slabs, joists, beams, trusses, etc.
  - Walls and columns: These are the vertical elements that hold up the floors and roof structures.
  - Foundations: Foundations occur at the base of the building and transfer the weight of the building onto the underlying soils.
  - Facades: These are the outside walls of the building including many non-structural elements (doors, windows, insulation, vapor barriers, etc.) that are part of the weather enclosure for the building.
- Lateral System: The lateral system in a building is the structural system that keeps the building from falling over when it is subjected to horizontal loads such as wind and earthquake forces.

Building Evaluation: Criteria Rating Hierarchy

The facility assessment building evaluations used a quintile classification hierarchy as defined below:

- None / Minor: System or element functioning reliably; routine maintenance and repair is needed.
- Moderate: System or element functioning minimally. Repair or replacement of some components is needed.
- Major: System or element is barely functioning. Repair or replacement of most components is needed.
- Replace: System or element is non-functioning, not functioning as designed, or is unreliable. Total replacement all components is needed.
- Not Present: System or element is non-existent, non-functioning, not functioning as designed, or is unreliable. Replacement is needed.

Building Evaluation: Physical Analysis Definitions

Roof
Roof Membrane: Apparent condition status noted for the roofing material and flashings. Note any obvious deterioration.

Existing Photovoltaics
Yes / No: Criteria noted. However, presence or absence of photovoltaic did not impact overall building condition.

Space for Solar
Yes / No: Comments, if applicable. Evaluation of whether roof space exists for solar (if there are relatively flat areas for possible future solar panels). Note that the roof structure was not evaluated for structural capacity of future PV panels. Criteria noted; however, presence or absence of photovoltaic panels did not impact overall building condition.

Façade
Description of apparent condition and materials of the exterior walls. Observations of any spalling or disintegration of brick or concrete masonry unit (CMU) walls and the condition of the mortar. Notes if there is any obvious movement or structural cracking, and if there is failure, the percentage of failure. With prefabricated panel system facades, notes the types and apparent conditions of attachment systems, panel material, and whether there is deterioration of the surface or caulking or movement in the panels.

Windows
Description of types and apparent conditions of exterior windows. Considers whether most windows appear to be in good working condition, if windows are transparent or translucent, and if they are single or double-paned.

Boilers (Mechanical)
Review of fuel sources and apparent conditions of boilers.

Boilers (Plumbing)
Observation of heating media (e.g. water or steam) of boilers.

Heating Distribution Systems
Evaluation of type and apparent conditions of piping, type, and apparent corrosion.

Building Envelope Thermal Performance
Review of the existing drawings of envelope elements (exterior walls, roof, foundations and slabs). Notes presence of vestibules at building entrances for temperature control.

Interior Finishes
Evaluation of types and conditions of interior wall, flooring, and ceiling finishes.

Rooftop HVAC Equipment
Review of type and apparent condition of roof top units (RTUs), exhaust fans, and air conditioning equipment, if present.

HVAC Controls
Review of types of thermostats and type and apparent condition of Building Management System (BMS) if present.

Kitchen Equipment and Systems (Architectural)
Evaluation of adequacy and apparent condition of kitchen equipment.

Kitchen Equipment and Systems (Electrical)
Observation of electrical kitchen appliances.

Kitchen Equipment and Systems (Plumbing)
Observation of gas kitchen appliances. Observation of apparent condition of kitchen plumbing fixtures, and whether there are separate sinks for handwashing and dishwashing, per health and plumbing codes. Notes if proper fire suppression system exists where required.

Natural Gas Distribution System
Review of apparent condition of the natural gas system, how it enters the building and is distributed, and of shut-off valves.

Generator
Review of type of generator, type of fuel source, and apparent condition if one is present.

Elevator
Evaluation of apparent condition of elevator if present.

Ventilation Distribution Systems
Review of locations and apparent condition of fans, ductwork, duct grilles, and other ventilation components.

Electrical Services
Apparent condition status noted. Review of available capacity, location and appearance of electrical service and meter age.

Life Safety

- Means of Egress:
  - (Architectural): Evaluation of apparent existence of proper smoke and/or fire doors, and if mechanical hold-open devices appear in good working condition. Notes if egress paths are direct and unencumbered, and whether there are enough exits relative to the facility population.
  - (Electrical): Review of illuminated exit signs and whether they are in the proper locations and appear to be in good condition.
- Fire Protection (Sprinklers): Observation of type and age of system and components. Review of maintenance records and certifications, if available.
- Fire Alarms: Observation of type, age, and appearance of systems. Review of available testing records.

Security

Entry Sequence: Observes if schools have only a camera/buzzer system at their main entrance or whether the main building entrance is adjacent or near the main office. (Adjacency/proximity of main office to main entrance allows for direct observation of the entire person, as well as control of their movements)

Lighting Quality/Control

Observed (not measured) light levels at the working surface, type of light fixtures and whether they provide an even dispersion and control of light for general academic tasks as well as for use of technology. Apparent condition, locations, and lighting uniformity are noted.

Toilets and Fixtures

Review of locations and apparent conditions of fixtures. Notes the maintenance and cleanliness of fixtures and flow of fixtures.

Plumbing Distribution Systems

Review of piping type, apparent corrosion, and equipment, including presence or absence of water heater & back-flow preventer.

ADA / Accessibility

- (Architecture): Observes whether the facility is compliant with the Americans with Disabilities Act (ADA) of 1990 standards. Evaluates adequacy and conditions of ramps, lifts, and elevators and whether every occupiable space in the facility can be accessed by anyone with a disability. Other considerations include compliancy of building elements such as clearances and door hardware.
- (Plumbing): Evaluation of whether toilet facilities and plumbing fixtures are ADA-compliant.

Structural Systems

The assessment team conducted visual inspections to observe signs of deterioration. No exploratory demolition, removing finishes, or viewing above ceilings was conducted. Areas that were hard to reach, off limits, or obscured by other systems that prohibited view of the structure were not assessed. Each of the criteria listed below is considered as it relates to the structural elements of the building.

A “Yes” comment in the assessment indicates that we observed signs of deterioration. A “Not Observed” comment in the assessment indicates that we either did not observe any distress in the structural element or were not able to observe the element due to the aforementioned limitations, and this does preclude an unobserved area from distress.

- Roof structural framing: As the framing is covered by roofing, observations are usually made from below. Water leaks are a common cause of damage to roof framing and part of the visual assessment is to look for signs of water damage. In wood framed structures, visual signs include mold or rotting wood. In structures with metal deck, visual signs include rusting of the deck and in concrete structures it can be cracks with rust stains or spalled concrete, indicated where a section of concrete has broken off (typically caused by water penetrating concrete through small cracks causing the steel reinforcing to rust and expand putting outward pressure on the concrete and causing it to break off).
- Floor structural framing: Common signs of deterioration in floors can be cracks in floors finishes (such as terrazzo), cracks in the bottom of concrete slabs or beams, water damage like that in roofs and longitudinal cracks (or checks) in wood framing. Cracks in floor finishes while cosmetically objectionable is not necessarily an indication of a structural failure. There are several causes for cracks in wood framing members (joists or beams) which does not necessarily mean the member is structurally inadequate.
- Walls/columns: Walls are typically framed with masonry, concrete, or wood or light gage metal studs with varying finishes. Columns typically consist of steel, concrete, or wood posts and can also be masonry piers. Common signs of deterioration in concrete and masonry walls are cracks in the walls. Cracks typically run vertically (bottom to top), although in masonry walls the cracks often follow the mortar joints. Cracks in walls can be caused by many factors: shrinkage in the wall due to changes moisture or temperature, movement of the supporting structure, or stresses in the wall caused by other loads. Concrete columns can have spalled concrete, wood posts can have longitudinal cracks (similar to floor members), and masonry piers can have cracks similar to walls.
- Foundations: Notes the type of foundation. Some types include shallow spread footings (concrete pads) and deep foundations such as caissons and piles that extend deep into the ground. Foundations generally include concrete components and are located below ground – making the system difficult to observe without performing some excavation. Some common signs of deterioration are cracks in foundation walls and areas where there has been vertical movement, indicating some settlement of the structure over time, which can be common. The causes of the cracks are like those described for walls.
- Facades: The structural components of the façade are typically the wall structure (see “Walls” above) but can also include the structural framing for overhangs or other horizontal elements that are part of the walls. Like in roof framing, moisture is a common cause for distress in facades. Common signs of distress are spalled concrete, cracks in concrete or masonry walls, and rusting steel members such as angle lintels over window and door openings in masonry walls. Note that some of these signs of deterioration do not necessarily indicate a structural deficiency and may only require maintenance.
- Identifiable Lateral System: Notes the presence and type of lateral load-resisting system, such as steel braced frames or shear walls consisting of concrete or masonry walls. Often, steel braced frames are imbedded within walls, making them difficult to identify. With masonry walls, it can be difficult to determine if a wall is a shear wall or just a partition wall. It is not possible to determine the structural adequacy of shear walls or braced frames without an in-depth investigation and it should be noted that many masonry walls in older buildings have little or no reinforcing. Common signs of distress in concrete and masonry shear walls are like those described for walls above.

Community Assessment: Building Evaluation

The Community – Building assessment included several categories including historical value, emergency shelter status, and use of community and school within/without the buildings. Historical value reviewed the historic inventory and register status of the building. Because schools are often the largest structure in a neighborhood, the City has designated certain facilities as emergency shelters. Additionally, several schools are directly connected to community centers or utilize adjacent neighborhood facilities for athletics and enrichment. Whether the community utilized the building after hours or on weekends was also considered.

New Hampshire Division of Historical Resources (DHR) Status
Yes/No; Comment, if applicable. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

Inventory of Historic Assets
Yes/No; Comment, if applicable. Notes whether the building is listed on any inventory of historic assets. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

State Register of Historic Places
Yes/No; Comment, if applicable. Notes whether the building is listed on a state Register of Historic Places. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

Locally Designated Historic District
Yes/No; Comment, if applicable. Notes whether the building is within a local historic district. Criteria will inform opportunities and constraints for modifying the existing building to meet changing physical demands for a 21st century learning environment.

Emergency Shelter
Yes/No; Comment, if applicable. Criteria noted and considered as part of the overall community building score. A designation by the city does not certify compliance for all state and federal requirements for the designation.

Community-Use Spaces
Yes/No; Comment, if applicable. These were determined after speaking with school administration during site visits. Community spaces attached to schools were also considered. Criteria noted and considered as part of the overall community building score.

Building Suitability for School Use
Yes/No; Comment, if applicable. Considered any major life-safety concerns for suitability. Criteria will inform opportunities and constraints for modifying the existing building.

Overall Community Building Rating
This is a judgment on the part of the reviewer(s) that considers all aforementioned factors, as well as amenities located in proximity to school sites and access to public transportation.

Facility Assessment: Site Evaluation

The site assessment team performed evaluations at each school facility in the district's portfolio. These evaluations considered the quality, condition, and capacity of the various exterior spaces of the facility. These spaces included: landscaped, educational, recreational, vehicular and pedestrian areas. This field effort was complimented by a study and research of the sites from web-based resources. The resulting information was then used to guide recommendations regarding maintenance, renovation, and/or replacement.

The diverse scope of site elements for schools varies in their relative impact to education and school operations. Priorities include elements that have large impacts to education and/or incur substantial impact to improve or repair.

- ADA Accessibility
- Walkways/Curbs/Sidewalks
- Play Areas
- Drainage
- Parking Quality
- Drop-Off/Pick-Up Routes
- Walls & Slopes
- Site Lighting
- Fencing
- Neighborhood Streets
- Evaluation Criteria

Site Evaluation: Criteria Rating Hierarchy

The site evaluations were judged on a scale as defined below:

- None / Minor: Element is functioning reliably and requires a little repair and routine maintenance.
- Moderate: Element is functioning minimally and requires some repair by a specialist.
- Major: Element is barely functioning and requires substantial repair by a specialist.
- Replace: Element is not functioning correctly and requires total replacement.
- Not Present: Element does not exist or completely failed. This element should be replaced and/or provided. In some instances (parking, walls/slopes and fencing) this element is not required.

Site Evalutation: Physical Analysis Definitions

Parking & Vehicular Circulation
Quality of vehicular area paving and quantity of parking spaces considered. This element may not be required if "Not Present".

Ground Cover
Presence and condition of landscaping, lawn areas, and any other non-hardscape areas. Ground cover evaluated for aesthetic value, shading, and functionality for outdoor gathering

Fields
Presence and apparent condition of athletic or play fields on the property.

Neighborhood Streets
Connectivity to residential areas surrounding the site. Condition of adjacent/ off-site roadways, sidewalks, and accessible elements considered.

Drop-Off/Pick-Up Routes
Segregation of buses, private vehicles, parking, and neighborhood traffic considered. Both on-site and off-site routes considered. This element may not be required if “Not Present”.

On-Site Walkways/Curbs/Sidewalks
Quality of all pedestrian spaces considered.

ADA Accessibility
Availability, location, and condition of accessible routes considered. The accessible routes connect building entrances, handicap parking, public streets, and site facilities. Accessibility is considered “Not Present” if there is no accessible building entrance.

Site Lighting
Condition, location, and quantity of lighting considered.

Fencing
Condition of fencing and gates of various types considered. This element may not be required if “Not Present”.

Drainage
Surface ponding, water quality structures, and condition of visible infrastructure considered.

Play Structures
Evaluation of apparent condition of play structures and if they are appropriate for range of ages of students at a school, if present.

Walls and slopes
Condition of retaining walls and stabilized slopes considered. This element may not be required if “Not Present”.

Wetlands on site
Yes/no; proximity of wetlands or natural resources to the site, which – if present – may add restrictions or regulatory challenges to site renovations or expansion.

Play Areas
Presence, suitability, and physical condition of casual recreation and play for students. Play structures, surfacing, and courts considered. This element may not be required if “Not Present”.

Outdoor Classrooms
Evaluation of apparent condition of outdoor classrooms or learning areas if present.

Environmental Justice Populations
Review of designation of site and adjacent neighborhoods on the Social Vulnerability Index, per state GIS.

Feasibility of Building Expansion on the Current Site
Evaluation of whether building is capable of appropriately expanding on its current site. Expansion can be horizontal, vertical, or infill, depending on the building's configuration. Feasibility of expansion based on size of property, existing coverage, regulatory restrictions, and physical constraints such as topography and proximity to natural resources.

Feasibility of Site Expansion
Evaluation of whether site expansion is possible, based on adjacent properties, and physical constraints, such as roads, proximity to protected lands, and easements.

Community Assessment: Site Evaluation

The Community – Site assessment included the broad categories of transportation access and neighborhood elements. Transportation access considered the condition of the adjacent streets, the ability of students and adults to bicycle and walk to the school, and the accessibility of public transportation. Neighborhood elements considered the school's proximity to community, civic, educational, commercial, and athletic facilities.

New Hampshire Division of Historical Resources (DHR) Status
Inventory of Archeological Assets (Site Review)
Comment, if applicable. Criteria will inform opportunities and constraints for modifying the existing building. In some cases, data may not be available.

School Buses
Review of types and numbers of school buses and bus queuing.

Accessible to Transit
Building is located within 2 blocks (1000 feet) of at least 2 stops on bus lines of regular frequency (at least every 10 minutes, during rush hour and mid-afternoon). Criteria noted and considered as part of the overall community building score.

Bikeable
Facility is considered bikeable if within 2 miles of multiple residential neighborhoods, without riding on busy streets that lack dedicated bike areas. Criteria noted and considered as part of the overall community building score.

- Wide sidewalks and/or low-traffic streets
- Adjacent to or within a residential neighborhood, without crossing busy & wide (4+ lanes) streets
- Not located on a steep street
- Bike racks are present at the school and are safely accessed from site entry points

Walkable
Facility is considered walkable if within 1.4 miles of residential neighborhoods, with consistent sidewalks, and walking route does not require students to cross busy or dangerous streets (per district eligibility criteria).

- Consistent, accessible sidewalks with crosswalks
- Adjacent to or within a residential neighborhood, without crossing wide (4+ lanes) streets

Site suitability for school use?
Yes/No, Comment if applicable. Considers overall site conditions, overall community rating, and size of site.

Overall Building – Community Condition:
This is the professional judgment on the part of the reviewer(s), considering all aforementioned factors and with consideration of nearby neighborhood, community, educational, and athletic facilities. Criteria noted and considered as part of the overall community building score.

Educational Assessment Criteria

Educational Facility Effectiveness Evaluation

Educational Facility Effectiveness of Learning Environments (EFE-LE)

The quality of physical environments has direct impacts on educational outcomes. The EFE analysis considers both inherent building characteristics of physical appearance and condition, and introduced equipment (e.g., furniture and technology). These qualitative factors have a large impact on overall student performance, as they influence students' comfort and ability to concentrate on tasks; teacher and student health and wellness; as well as absenteeism and retention.

Building environments also affect the overall educational effectiveness rating. Fixed elements, such as walls and windows, are components that are not easily remedied and may require extensive or invasive renovation. Other elements, such as furniture or finishes, can be more easily updated, replaced, or supplemented.

Fixed Building Elements include:

- Ventilation
- Natural Daylighting
- Lighting Quality
- Acoustical
- Environment (Inviting/Stimulating/Comfortable)
- Power and Technology Infrastructure
- Access to water for student projects
- Access to toilet facilities

Repairing these fixed elements may require buildings to be unencumbered of students (i.e., vacant) for the duration of the work, depending on the upgrades required.

- Adaptable elements
- Technology: ubiquitous wireless access for teachers and students and classroom technology
- Furniture: light weight, ergonomic and supportive of collaboration
- Finishes
- Adjacencies of Learning Environments
- Access to outdoor learning (classrooms or other)

These considerations often consist of singular systems and can be repaired or replaced independent of other systems. They may change frequently with the evolving landscape of educational pedagogy and should support a building that can adapt flexibly at relatively low costs. These upgrades can be executed internally, by facilities personnel or with arranged contracts.

Educational Facility Effectiveness Evaluation: Criteria Rating Hierarchy

The EFE-LE uses the following classification system:

- Excellent: Elements meet needs for 21st century (Next Generation) teaching and learning
- Good: Elements contribute to teaching and learning
- Fair: Elements somewhat interfere with teaching and learning
- Poor: Elements detract from or interfere with teaching and learning
- Deficient: Non-existent or inoperable systems or elements

Educational Facility Effectiveness Evaluation: Analysis Definitions

Evaluation Criteria

Building Originally Designed As: Over time, a school building may have modified the range of grades served. Knowing their original use quickly provides some insight into space types and building appointments.

Best Grade Configuration for this School Building

A school building may be best suited for a different range of grades or use depending on the types, quantities, and sizes of spaces, as well as the existing site attributes, including:

- Heights of casework, markerboards and other elements the students use
- Configuration and heights of toilet room fixtures

Ventilation

Fresh air is a critical component for health, wellness, and overall student performance. An even distribution of ventilated air is also important. Different ventilation systems (unit ventilators, central air ventilation, no mechanical ventilation) provide varying levels of outdoor air percentages and filtration. Observe whether mechanical ventilation is provided and what the apparent quality of the ventilation system is. Qualitative measurements are not taken, however visual, olfactory, and thermal observations are made.

Natural Daylighting

Considered to be a better quality of light than artificial lighting. Evaluates the general quantity/quality of the natural light and note if most spaces have access to daylight.

Artificial Lighting Quality

Observed (not measured) light level at the working surface. Type of light fixture and whether it provides an even dispersion of light for general academic tasks, and whether the fixture is dimmable, to accommodate use of technology.

Acoustical
The proper balance between voice reinforcement and sound absorption impacts “speech intelligibility.” This includes both sound performance within the space, as well as sound coming from outside the space. Observe whether the space appears to have appropriate acoustical properties for teaching and learning.

Technology (Power):
There are enough electrical outlets to support a future technology-rich classroom/school and they are properly distributed throughout the space.

Technology (Wireless):
There are sufficient access points throughout the school to support a 1:1 technology environment and fiber optic wiring exists within the building The main distribution room (server room) is air-conditioned, to ensure system reliability.

Technology (Interactive):
Classrooms and other teaching spaces have working interactive technology, such as interactive marker boards and document cameras.

Furniture
Different educational-delivery models can be reinforced by furniture type and flexibility. Ideal furniture is light and mobile enough to be easily re-arranged in multiple configurations. Furniture is ergonomic, comfortable, in good condition and promotes student collaboration.

Finishes
Materials and conditions of the walls, floors and ceilings. Both physical and aesthetic conditions are considered.

Environment (Inviting/Stimulating/Comfortable)
Evaluates whether building is aesthetically pleasing and if it is a place where students and teachers feel comfortable and want to spend time in each day.

Adjacencies of Learning Environments
Classrooms and other learning environments have a relationship to each other which promotes collaboration, communication, and other aspects of 21st century teaching and learning. Spaces promote interdisciplinary learning.

Outdoor Classrooms
Students have access to outdoor classrooms or other outdoor learning opportunities to learn in different ways, sometimes involving nature and hands-on activities.

Site Components

Playgrounds/Play Areas
Description of play surface materials (hard or soft). Evaluates condition of on-site play structures and whether structures are age-appropriate to the school's student population.

Accessibility
Evaluates conditions of play areas, including the ground surface/material, and whether areas are accessible to children of various disabilities.

Play Fields
Describes conditions of play fields, if present, and whether fields natural grass or synthetic turf.

Flexibility in Building Typology
Evaluates whether the building can serve alternative grade levels or support a special needs-focused curriculum.

Educational Transformation to Support 21st Century Needs
Evaluates if the building's construction easily allows for renovations that may change room sizes, replace or upgrade mechanical and electrical systems, and accommodate alternative educational-delivery methods (e.g., project-based learning [PBL]). This can often be the largest difference between a modern steel-frame building and interior masonry-bearing wall construction.

Building as Swing Space
Assuming the building is otherwise unoccupied, the ability to use the building for educational purposes for the temporary relocation of a school population during a period of renovation or construction.

Utilization Rate
Description of the utilizations rate and if it is 85% or higher. For high schools, classroom utilization of 85% are considered at capacity. Rates higher than 85% show levels of overcapacity and overcrowding. Middle schools generally work to a utilization of 90% and elementary schools at near 100%.

Educational Facility Spaces Effectiveness Evaluation

The Educational Facility Effectiveness – Spaces (EFE-S) metric compares the sizes of educational spaces to the New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines for 21st century teaching and learning in new capital projects. This quantitative analysis is important for establishing the level of adequacy of the existing spaces for educational delivery. It also indicates whether a facility is deficient/missing dedicated educational spaces normally found in buildings of its grade level and typology.

Primary considerations often affect core curriculum and include:

- Classrooms (Depending on typology, these may include Pre-K and Kindergarten)
- Teacher Planning
- Small Group
- Science
- Art
- Music
- Vocations and Technology
- Media Center
- Cafeteria

Secondary considerations may allow for district flexibility in programming and community resources outside the traditional building environment, and include:

- Gymnasium (This program space is sometimes served by local community spaces)
- Gymnasium Options
- Auditorium
- Stage
- Medical
- Administration & Guidance
- Air Conditioned Technology Network Room
- Other considerations
- Special Education: Self-Contained
- Special Education: Resource or Small Group

Note: If a school has a special education program, its quantity of spaces will vary. Also, some substantially separate programs do not require full-size classrooms to be effective. For this reason, special education was considered differently than typical classroom spaces.

Educational Facility Spaces Effectiveness Evaluation: Criteria Rating Hierarchy

The educational facility effectiveness assessment for spaces used a quintile classification hierarchy as defined below:

- Excellent: Exceeds New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines (+10% or greater)
- Good: School facilities are appropriate to house current enrollment and educational program. NSF meets New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines (-10% to +10%)
- Fair: School facilities appear to be adequately sized for current enrollment and educational program. NSF somewhat less than New Hampshire Code of Administrative Rules, Section Ed. 321 (-10% to -20%)
- Poor: School facilities may not be adequately sized for current enrollment and educational program. Net square footage (NSF) at least 20% less than New Hampshire Code of Administrative Rules, Section Ed. 321 guidelines
- Deficient: Dedicated space does not exist.

Educational Facility Spaces Effectiveness Evaluation: Analysis Definitions

Narratives

The team considered the long-term goals relative to each building's capability of supporting Manchester School District's educational vision for 21st century (next generation) learning and teaching.

Engaged Learning

Engaging with the curriculum, applying it to an authentic context. Making connections between content areas and values/curiosity and interest. Finding connections to the community and making a difference. Public and tangible products. There is selective and intentional engagement, and agency in how one keeps focused and takes breaks.

- The following were criteria used for evaluating the levels of Engaged Learning at each school:
- The building (is/is not) comfortable to learn in.
- The building (has/lacks) appropriate temperature control and ventilation.
- The building (has/lacks) a space that can be used as a flexible learning commons for collaborative learning and presentations.
- The building (makes use/does not make use) of public space for teaching and learning.
- The building (provides/lacks) display space for student work to reinforce student accomplishments.
- The building (provides/lacks) space for teacher collaboration and planning.

Differentiated Learning

Acknowledging different learning styles. Encouraging how to understand one's self (self-knowledge). Flexibility that occurs within instruction, which also promotes flexibility in how students demonstrate learning. The following were criteria used for evaluating the levels of Differentiated Learning at each school:

- Classrooms (are/are not) large enough to support Universal Design for Learning (UDL), including the ability to create learning zones.
- The building (has/lacks) breakout spaces for differentiated/personalized learning and special education.
- The furniture in the building (can be/has difficulty being) flexibly arranged.

Cognitively Demanding Tasks/Programs

- The classroom environment (is/is not) sufficiently flexible to allow for different teaching and learning styles.
- Building (supports/lacks) learning environments that support music.
- Building (supports/lacks) learning environments that support art.
- Building (supports/lacks) learning environments that support physical activity/education.
- The building environment (supports/does not support) STEM adequately.
- The building (provides/lacks) space to experiment, create and collaborate.
- The building (has/lacks) performance/presentation space.
- Based on location and proximity to community resources and public transportation, teachers and students (can/have difficulty) access(ing) the City as a learning tool.

Overall EFE Rating

NH Code of Administrative Rules, Section Ed. 321 areas are based on current enrollment within school. Actual areas were determined by measuring CADD plans provided by Manchester School District. SMMA did not field-measure the buildings but verified general conformity with existing conditions by measuring spot values to determine the rough accuracy of CADD drawings. The design team reviewed the 2018 CMK Long-Range Facilities Plan, which informed some of the educational effectiveness ratings.

The following outlines the rating system used for evaluating the Overall Educational Facility Effectiveness:

- Excellent: Elements meet needs for current AND future teaching and learning.
- Good: Elements contribute to teaching and learning.
- Fair: Elements somewhat interfere with teaching and learning.
- Poor: Elements detract from or interfere with teaching and learning.
- Deficient: Non-existent or inoperable systems or elements.