



Project: A060800 Town of Maynard
Campus: Green Meadow Elementary School
Asset Name: Green Meadow Elementary School

Statistics:

Total Requirements Cost: \$8,061,171.30
 Assessed Value: \$6,022,300.00
 Current Replacement Value: \$0.00

Year Constructed:	Original - 1954	Address	1 Tiger Drive
Year Last Renovated:	1974 (25,000 SqFt) - 1988 (35,000 SqFt)	City:	Maynard
Size:	84,000 SqFt	State:	MA
Construction Type:		Zip:	01754-
Use:	Elementary School / Administration / Classrooms		

Description:

Building Description: The existing Green Meadows Elementary School building was built in 1954 with an addition in 1974 of 25,000 sqft creating an "L" shape. This consists of a single story building with gym / cafeteria wing and an administration and classroom area wing. There is a full basement used for mechanical and storage. In 1988 a single story addition was built in a quarter circles shape to enclose the ends of the original "L" shaped building. There is no basement in the 1988 addition.

Architectural:

Substructure: **Floor and Foundation Structure:**
 The original school building has a full concrete cast-in-place basement, a concrete slab-on-grade for the lower level, and a cast in place slab and beam floor system for the main level. There are apparently some abandoned mechanic tunnels under portions of the original buildings main floor. There is a concrete areaway with a steel stair to grade off the basement. The newer addition has no basement, with the main level a concrete slab-on-grade. Both buildings are founded on spread footings with an allowable soil bearing capacity of 2 tsf.

Superstructure:

Exterior Walls: **Wall and Column Structure:**
 The open web joists in the original building roof appear to be supported on steel tube columns, while glu-lam arches make up and support the cafeteria roof. The exterior walls of the original building appear to be masonry with large wood windows. The interior walls are masonry which provides lateral stability for this portion of the building. In the 1980's addition, the roof is supported on steel columns (both tubes and w-sections). This addition is braced for lateral loads with structural steel braced frames. There are masonry infill walls at the corridors, and the exterior is brick veneer on steel stud back-up with punched windows and some curtain wall.

Exterior Doors: All windows and glazing in the 80's addition appear in very good condition including the exterior doors which are galvanized. It appears that the galvanizing was not fully prepared for paint as there is evidence of peeling. The original buildings fixed and operable glazing walls of wood and single thickness glass are in very poor condition and in need of full replacement. This includes the doors within this system and concrete threshold slab edge.

Exterior Windows: All windows and glazing in the 80's addition appear in very good condition including the exterior doors which are galvanized. It appears that the galvanizing was not fully prepared for paint as there is evidence of peeling. The original buildings fixed and operable glazing walls of wood and single thickness glass are in very poor condition and in need of full replacement. This includes the doors within this system and concrete slab edge.

Roofing: **Roof Structure:**
 The roof structure of the original classroom/administration wing appears to be framed with steel open web joists and roof deck. The cafeteria roof is framed with glu-laminated wood arches with heavy timber purlins and decking. The roofs of the 1980's addition are framed with exposed steel w-sections supporting bulb "T"s spaced at 32"c/c, and gypsum plank. The roof has asphalt shingles. The roof structures appear to have been designed for the appropriate gravity loads. There is an aluminum structure canopy along the front of the building.

Interior Partitions: The majority of interior partitions are made of concrete block and are generally in good condition. The original building wing has GWB which is in average condition.

Interior Doors: Interior doors visually seem in good condition with no major signs of damage.

Wall Finishes: Wall finishes vary from GWB, tile and concrete block. They are generally in good condition.



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Floor Finishes: The floors in the classrooms and the corridors are carpet, showing some signs of wear. Under the original building wing carpet are asbestos tiles. The gymnasium has a rubber sports floor while the cafeteria has 12 x 12 VAT floor tiles.

Ceiling Finishes: Ceiling finishes in 1987 addition are tectum panels and seem in good shape overall. The ceilings in the original building are ACT and are in good to average condition.

Sitework: The existing Elementary school facilities are in fair to poor condition. Utilities to the site will require more in depth research to confirm their condition. The Stormwater drainage system did not appear to comply with the current DEP Stormwater Management Policy and would require upgrades to meet these standards. The existing play equipment is in good condition and can be re-used in other locations if desired. Parent drop off and bus circulation could use improvements. Although there is a turn around area now, the area could be redesigned to work more efficiently by separating bus and car traffic. The one parking area for the school was at capacity during the school day. This school needs to provide adequate handicap parking and accessibility to the school and its facilities.

Water Service and Sanitary Sewer Service:
There are no known problems with these utility services. A video inspection of the sewer system would be required to determine the actual condition. The water line may need replacement depending on age and pipe material. Water pressure was not raised as an issue from the school staff.

Storm Water Drainage:
The existing drainage system utilized many swales and shallow channels throughout the site. Many of these channels were eroded or caused erosion Catch basins did not have hoods and most seemed clogged and requires maintenance. The system discharges untreated stormwater directly into low lying depressions off site. This does not comply with the MA DEP Stormwater Management Policy. Drainage within the enclosed courtyard is in very poor condition and in need of complete replacement.

Play Equipment:
There are two pieces of play equipment on site. Both look new and in good condition. More thorough investigation is necessary to see if the equipment is code compliant. The equipment needs to be handicap accessible from at least one transfer station on the equipment. The systems could be relocated if necessary.

Athletic Fields:
There is one open field to the south west of the school. It did not appear to be delineated as any one type of sports field, however appeared to be in satisfactory condition.

Basketball courts and hard surface play areas:
All paved play surfaces are bituminous concrete and in poor condition. The surface has many cracks and un-level surfaces causing tripping hazards.

Bituminous Concrete Pavement:
The bituminous concrete on site is in poor condition and in need of replacement.

Sidewalks and Ramps:
The sidewalks and ramps are in poor condition and in need of replacement. The majority of the walks and ramps do not meet current ADA and MAAB requirements.

Curbing:
Much of the site is not curbed. The small amount of granite curbing on site could be removed and reset.

Fencing and guard rails:
There is limited fencing on site which is in poor condition and needs replacement. The site has some wood guard rails which is in need of some repair.

Parking:
The one parking lot on site was at capacity during the middle of the school day. The lots need additional directional signage (i.e. visitor parking, faculty parking) and striping. There is some signage which is mounted too low. Currently there are two marked handicap parking space that are not compliant. The parking lot as designed requires at least four handicap spaces.

Circulation:
The general circulation pattern is satisfactory. A turnaround is provided, however the area is closed off expect during morning and afternoon times when busses arrive. This limits access to any late drop off or early pick ups during the day.

Emergency Access:
There currently is Emergency access around the entire site via a dirt road.

Delivery and Trash Services:
The dumpster is located in the parking area on a concrete pad with no screening or fencing. Delivery and maintenance access to the site is via a paved area in front of the school. It appears this is also an area where classroom activities take place at some point in the day.

Signage:
There was some on-site signage, most of which seemed to be mounted too low and mixed with other signs. The signage could be improved to help circulation be more efficient and access to other parts of the site be clearer.



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Handicap Accessibility:

Parking:

There were not enough handicap parking spaces. The 2 that were marked were not compliant with current regulations.

Walkways and Ramps:

The majority of the walkways on site were over the 5% maximum grade and had greater than 2% cross slopes.

Building Access:

Most doors from classrooms (assumed to be emergency exits) had a step making them non-compliant. The front entrance was marked as a Handicap Accessible entrance due to an interior ramp, however, there were no accessible curb cuts providing a direct route to this entrance. Overall, there appeared to be no accessible route into the building that meets current regulations. The main pedestrian access from the street has icing issues in the winter is a constant maintenance issue due to an adjacent slope. This walkway is also non-compliant with current regulations.

Site Lighting:

The existing site lighting consists of utility pole mounted fixtures with flood lights. The system appears to be owned by the Utility Company and monthly charged to the Owner. The quantity of lighting does not appear to be in accordance with IFS-NA recommendations (0.5 fc). The canopy lighting is not operational.

Exterior lighting would be replaced with new where required in parking and circulation areas. A new system of building mounted perimeter luminaires would be provided for general security and at exit discharges.

Luminaires will be of the high intensity discharge "HID" type, more than likely metal halide. Luminaires at exit discharge areas will contain a quartz restrike feature for instant "on" during cold or hot restrikes. The fixtures at exit discharge areas will be connected to normal/emergency panelboards. All exterior lighting will be controlled via photocell "on" and timed "off". The timing "off" of these luminaires will be by zone to allow flexibility and energy conservation. The schedule will be coordinated with the end user and programmed by the contractor.

Mechanical:

The schools have received average maintenance of the HVAC systems over their occupied years. Even with adequate maintenance, through normal operation systems do gradually deteriorate due to scale, poor water conditions, and lack of preventive maintenance, etc. Systems will gradually deteriorate to a point of exceeding their maximum serviceable life. These buildings are a typical example of such projects. While generally speaking, most systems are operating and maintaining reasonable space temperature control, but due to the antiquated nature of the mechanical systems and their gradual scaling of the various piping systems, heat transfer rates have become reduced and the overall system is taxed to a point of inefficiency being created by the slowly depreciating system. In addition automatic temperature control appears compromised due to failed controls and equipment and ventilation rates and good air-quality are compromised due to the progressing surface contamination on many systems as well as failed controls. While there are no catastrophic failures obvious with the present systems, the systems could continuously be repaired and modified on a sectional basis that will keep the systems operating maintaining acceptable space temperature control however, continued operation will be at the expense of increased operating costs due to inefficiency in heat transfer and through the generally antiquated nature of the systems themselves. Overall air quality will also be continuously compromised since many of the controls in the ventilation systems do not operate. With overall maintenance, cleaning and calibrating of the system, a continued limited service could be achieved however, unpredictable at best.

Electrical:

Electric Service and Distribution:

Power:

The existing electrical service is located below in the main electrical room. The service rating is 1200 amps, 120/208 volt, 3Ø, 4 wire manufactured by ITE and is in good condition.

The service is back feeding original service equipment which should be replaced.

The electrical service capacity is rated at 960 amps or 345.6 Kw. The existing service yields approximately 4.11 watts/square foot. New service standards are typically designed for 10 watts/square foot. We recommend a new 1200 amp, 277/480V, 3Ø, 4 wire service if air conditioning for the facility is required in the future.

Emergency Lighting and Power:

Emergency Generator, Lighting and Exit Signs:

The existing facility is equipped with emergency battery units. There are no wire guards present in gymnasium emergency lights or exit signs.

It is recommended that a new generator fired with natural gas or diesel be provided for the entire facility.

Emergency lighting will be by the same normal/emergency luminaires used for general lighting. These fixtures may be utilized for night/light purposes when power is available and automatically switch to emergency power when normal power fails.

Exit signs would be of the long life, energy efficient "LED" type.

Two automatic transfer switches would be provided, one for the life safety systems and the other for essential loads that are not life safety including kitchen coolers and freezers, freeze protection including boilers and pumps, sump pumps, telecommunications systems, lifts and elevator, etc.



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Fire Alarm:

The building is equipped throughout with an automatic fire alarm system with smoke detectors in the corridors and heat detectors in the classrooms. The horn/lights do meet ADA.

There is a backlighted annunciator and master box at the main entrance.

The fire alarm devices in the gym do not have wire guards installed and stopper covers on the pull stations.

Therefore, the equipment is subject to physical damage.

The fire alarm system is conventional and manufactured by Simplex model 4002. The control panel is obsolete.

A new fire alarm system is recommended for ADA and life safety compliance.

Lighting and Branch Wiring:

Branch Circuit Wiring:

Existing wiring consists mostly of Romex cable including places of assembly. All Romex should be removed from the project.

Existing wiring should be replaced as phasing progresses. A system of double neutral feeders will be used for computer grade panelboards and dedicated neutrals in branch circuits feeding devices that connect to these panels. Normal/emergency wiring will be kept entirely separate from normal only power in accordance with code.

Devices for computers and other electronic loads would be circuited to computer grade panelboards and identified as such by having a different finish. Devices installed on existing walls would be on surface type raceways similar to wiremold. It is recommended that an uninterruptible power supply "UPS" be provided for the telecommunications system such as voice mail, data, etc.

Theatrical Lighting:

There is no theatrical lighting present at the platform in the cafetorium.

A new system for stage theatrical lighting should be provided. A new dimming system for theatrical lights with remote controls should be provided.

Communication and Security:

Telephone System/Paging System:

There is an existing telephone system present. There is a Panasonic key switch present. The system appears to have been recently upgraded. Each classroom is equipped with a telephone hand set. The system is in good condition but should be relocated to head room. The telephone system is used for paging. Upgrade should include new paging system including two-way speakers in classrooms.

Lighting System:

The existing lighting system consists of various types of fixtures. Incandescent fixtures are still present in mechanical areas.

Generally the types of fixtures are as follows:

The main corridor is not adequately lighted. The light level appears low.

Corridors: Wraparound fluorescent Fixtures

Cafeteria: 2' x 4' acrylic lensed fixtures renovated in the 1980's.

Classrooms/Instructional Spaces/Offices: Fluorescent Industrial fixtures with acrylic sides.

Exposed structure area: Indirect Fluorescent strip lighting fixture

Security System:

No Security system was observed.

It is recommended that a new security system be provided with contacts at exterior doors, roof access hatches, overhead doors, etc. Also passive infrared/motion sensors be provided in grade level perimeter rooms with windows. The system would be zoned strategically to meet the Owner's needs. The system would remain connected to a remote monitoring service. Panic stations should be provided at the main reception area. Other auxiliary functions would be provided such as automatically turn "on" all lighting in public spaces upon alarm.

It is recommended that a solid state system with high resolution cameras be provided with digital storage into a hard drive. This eliminates the need for VCR and changing of tapes. Recording would be into a computer hard drive with network accessibility.

It is recommended that a card access system be provided at all exterior doors.



Asset Summary Report

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Requirements

Name:	Prime System:	Category:	Priority:	Action Date:	Cost:
Classroom Unit Ventilators	Other HVAC Systems and Equipment	Code Compliance	1-Currently Critical	06/01/2007	\$156,000.00
Exhaust Fans	Other HVAC Systems and Equipment	Functionality	1-Currently Critical	06/01/2007	\$85,800.00
Fuel Burning System	Site Mechanical Utilities	Beyond Service Life	1-Currently Critical	06/01/2007	\$134,550.00
Kitchen Hood	Other HVAC Systems and Equipment	Beyond Service Life	1-Currently Critical	06/01/2007	\$7,722.00
Power Plant	Energy Supply	Beyond Service Life	1-Currently Critical	06/01/2007	\$308,880.00
Roofing	Roofing	Beyond Service Life	1-Currently Critical	06/01/2007	\$49,523.76
Automatic Temperature Control System	Controls and Instrumentation	Beyond Service Life	2-Potentially Critical	06/01/2008	\$356,928.00
Branch Circuit Wiring	Electrical Service and Distribution	Functionality	2-Potentially Critical	06/01/2008	\$612,300.00
Exterior Glazing and Doors	Exterior Doors / Walls / Windows	Beyond Service Life	2-Potentially Critical	06/01/2008	\$876,458.70
Exterior Masonry and Siding	Exterior Walls	Beyond Service Life	2-Potentially Critical	06/01/2008	\$10,512.84
Termite Plan	Architectural	Environmental	2-Potentially Critical	06/01/2008	\$0.00
Water Service and Sanitary Sewer Service	Sanitary Waste	Functionality	2-Potentially Critical	06/01/2008	\$17,940.00
Access Road and Parking Areas	Architectural	Code Compliance	3-Necessary-Not Yet Critical	06/01/2009	\$266,760.00
Hard surface play areas	Architectural	Functionality	3-Necessary-Not Yet Critical	06/01/2009	\$56,160.00
Site signage	Architectural	Functionality	3-Necessary-Not Yet Critical	06/01/2009	\$10,296.00
Storm Water Drainage	Rain Water Drainage	Environmental	3-Necessary-Not Yet Critical	06/01/2009	\$95,472.00
Cafeteria Air Handling Unit	Terminal and Package Units	Air and Water Quality	4-Recommended	06/01/2010	\$85,800.00
Ceiling Finishes	Architectural	Appearance	4-Recommended	06/01/2010	\$150,735.00
Domestic Water Piping	Domestic Water Piping	Functionality	4-Recommended	06/01/2010	\$82,875.00
Dumpster Pad, Enclosure and Service Area	Architectural	Functionality	4-Recommended	06/01/2010	\$4,875.00
Emergency Generator, Lighting and Exit Signs	Electrical Service and Distribution	Life Safety	4-Recommended	06/01/2010	\$198,900.00
Fencing and Guardrails	Architectural	Security and Safety	4-Recommended	06/01/2010	\$100,425.00
Fire Alarm	Electrical Service and Distribution	Life Safety	4-Recommended	06/01/2010	\$245,700.00
Floor Finishes	Floor Finishes	Beyond Service Life	4-Recommended	06/01/2010	\$459,225.00
Inner Courtyard	Civil and Landscape	Accessibility	4-Recommended	06/01/2010	\$507,000.00
Lighting System	Electrical Service and Distribution	Functionality	4-Recommended	06/01/2010	\$613,275.00
Local Area Network System	Communications and Security	Functionality	4-Recommended	06/01/2010	\$571,350.00
Mechanical System Wiring	Electrical Service and Distribution	Functionality	4-Recommended	06/01/2010	\$245,700.00
Media Center	Terminal and Package Units	Air and Water Quality	4-Recommended	06/01/2010	\$17,550.00
Plumbing Fixtures	Plumbing Fixtures	Functionality	4-Recommended	06/01/2010	\$4,875.00
Power	Electrical Service and Distribution	Functionality	4-Recommended	06/01/2010	\$292,500.00
Security System	Electrical Service and Distribution	Functionality	4-Recommended	06/01/2010	\$251,940.00
Site Lighting	Electrical Service and Distribution	Functionality	4-Recommended	06/01/2010	\$80,925.00
Telephone System / Paging System	Communications and Security	Functionality	4-Recommended	06/01/2010	\$56,940.00
Theatrical Lighting	Electrical Service and Distribution	Functionality	4-Recommended	06/01/2010	\$117,000.00
Vestibule Interlocks	Other HVAC Systems and Equipment	Energy	4-Recommended	06/01/2010	\$64,350.00
Automatic Sprinkler System	Sprinklers	Functionality	5-Does Not Meet Codes / Standards	06/01/2011	\$403,572.00
Kitchen Grease Traps	Kitchen	Functionality	5-Does Not Meet Codes / Standards	06/01/2011	\$30,420.00
Walkways and Ramps (Accessibility)	Architectural	Accessibility	5-Does Not Meet Codes / Standards	06/01/2011	\$429,936.00

Total of Requirements

\$8,061,171.30