LINCOLN SCHOOL REPAIR ANALYSIS REPORT

A Report to: Town of Lincoln
October 15, 2012

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Executive Summary

CDR Maguire performed an existing conditions survey and analysis of the Smith School and Brooks School, Link Building and Field House to identify the condition of the existing facility to allow for the continued operations. A team of professional architects and engineers representing each of the major building disciplines visited the site and worked in collaboration to develop and ultimately refine this report. The assessment contained herein is intended to provide the necessary background to support the recommendations presented and to provide information to the decision makers that could impact an ensuing project.

The condition survey of the existing facility identified the immediate needs of the facility, analyzed and forecasted the life expectancy of the existing building systems and identified code issues as well as threshold that trigger additional items. Most of the items identified are from deferred maintenance and from items forecasted to approach the end of their useful life within the next ten years based on ASHRAE Estimated Life Expectancy tables and an evaluation of current conditions.

Based on the identification of these items a construction cost of $18.3 million was calculated to address all of the issues. Including all overhead, profit and contingencies a complete project cost of $33.3 million was estimated (2013 dollars).

In addition to identifying the issues, a time line of scheduled repairs was provided, dividing the repairs into three different time periods. This revealed that $2.6 million is required for immediate repairs. $19.3 million for repairs required within 5 years and $11.3 million for repairs required within ten years. Based on the amount of scheduled repairs within the 5 year time frame, several code thresholds are triggered requiring additional scope items included in the estimate such as full handicap access as well as the implementation of a fire suppression system.

Recommendation

While there are several different ways to implement the repairs to the school, we feel that the most cost effective solution is to perform the work as one project within the 5 year time frame. Performing the work in one phase minimizes the disturbances to the student population, addresses all of the issues sooner rather than later and reduces the school's maintenance and operational costs. Additionally since only one contractor is involved there is no issue with project continuity and systems compatibility between separate contractors and time frames.

Based on this information we recommend that the town implement a single comprehensive building repair/upgrade to the school within the five year time frame.

Introduction

The Town of Lincoln has commissioned CDR Maguire Inc. to perform a comprehensive building assessment of the Brooks School, Smith School, Link Building and the Field House to identify existing building deficiencies, prioritize their repairs and provide associated construction costs to address the identified issues.

A team of architects and engineers from CDR Maguire and RDK Engineers performed a visual assessment of the facility and identified existing building issues within the following categories that will need to be addressed within the next ten years. At this time civil engineering, site needs and programmatic needs were not included in the evaluation.

Structural
Exterior Façade
Roofs
Windows
Building Interiors
Plumbing
HVAC
Electrical
Fire Protection
Kitchen
Accessibility
Hazardous Materials
Code Compliance

The building evaluation presented in this report is based on field observations, review of available construction documents, prior reports and discussions with personnel from the facility. Building codes and pertinent guidelines, presently in force locally and federally, were utilized in evaluating the buildings.

This report describes the existing conditions of the facility on a per-system, per-discipline basis. Code violations, deficiencies and building issues are identified along with the probable repair costs.

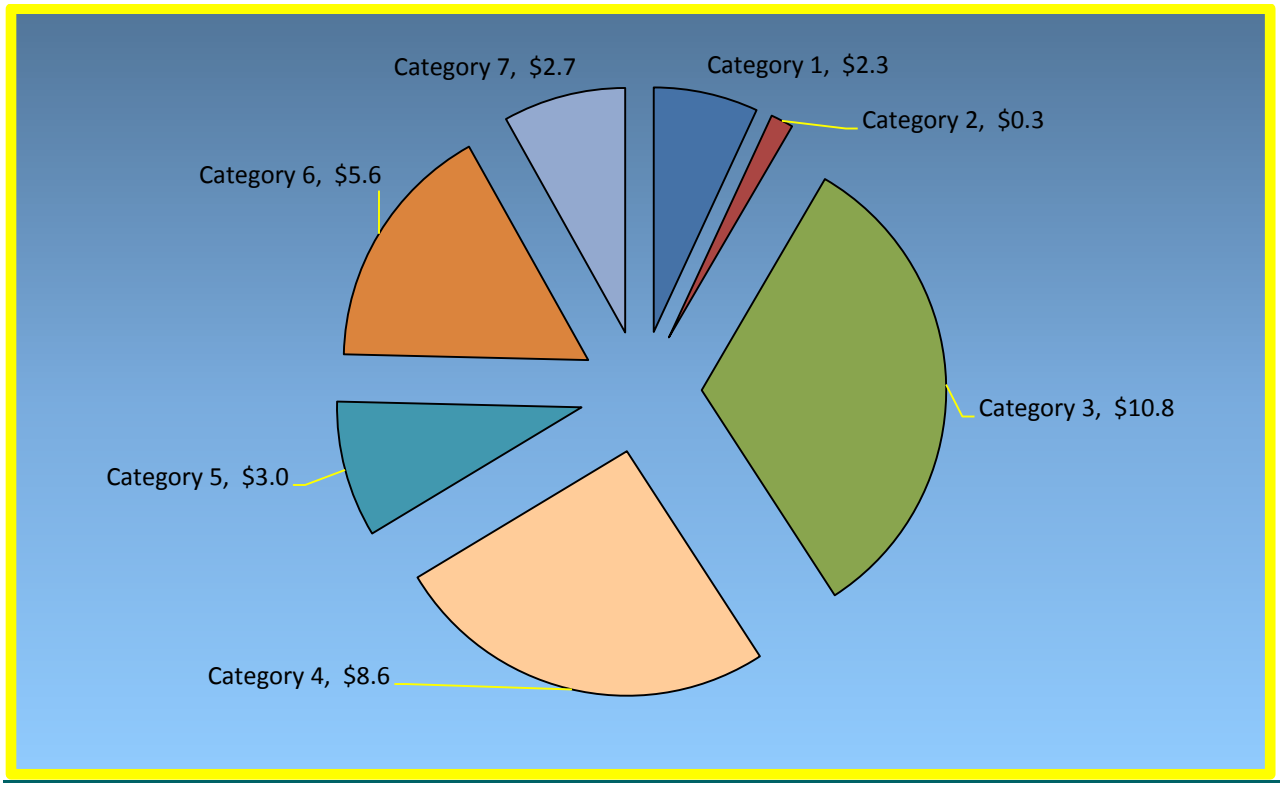
Findings

Overall, visually, the facility appears to be well maintained and in good shape. However the in-depth evaluation revealed a facility with the majority of its interior finishes, roofing, mechanical, electrical systems approaching the end of their useful life based on an estimation of life using the equipment or system´s current state of wear and the ASHRAE tables and forecasted to be in need of replacement within the next ten years. As typically occurs with school facilities, the majority of

the maintenance has been reactive rather than preventative and consequently a lot of the building systems will need to be replaced.
A complete list of identified items is located within the Facility Information section of this report.

Estimate

From our findings, along with an estimate was created by an independent construction cost estimator, the sum of the trade costs from the identified building issues is slightly over $18 million. Factoring in the general contractor's overhead, profit, designer fees, OPM fees, construction & design contingencies, phasing and escalation premiums, the total project cost is $33.3 million.



Breakdown of tasks

To assist the Town of Lincoln to make an informed decision on what building related issues need to be performed and the associated time period for the repairs, we have subdivided the construction costs into seven categories, identified as:

Category 1 – Immediate Replacement

- Equipment or systems that are not presently functioning and require repair or replacement to bring to a functioning state, or
- Equipment or systems highly likely to fail in the upcoming school year and require repair or replacement to mitigate a disruption to the school program.

Subcategory	$MM	Reason for Work
Replace Reed Field House precast wall panels	$1.1	Forecast to fail - remove safety risk
New Smith boiler & air handling units	$0.9	Forecast to fail - avoid potential disruption
New Kitchen equipment	$0.1	Reduce safety risk
Miscellaneous	$0.2	
Total:	**$2.3**	

Category 2 – Life Safety System Upgrades

- Life/safety issues that should be addressed immediately.

Subcategory	$MM	Reason for Work
New life safety power generator equipment	$0.2	Reduce safety risk and maintenance cost
Brooks main electrical switch	$0.1	Failed to reset
Total:	**$0.3**	

Category 3 – Items Identified for Replacement Between 1 and 5 Years

- Equipment or systems likely to fail in 1-5 years that are recommended for repair or replacement based on an estimation of life using the equipment or system´s current state of wear and the ASHRAE tables.

Subcategory	$MM	Reason for Work
Roofing	$4.1	Forecast to fail - avoid potential disruption & damage (135,000 sf)
Electrical Lights	$1.3	50% are forecast to fail - Improve energy efficiency & maintenance
Heating/ AC	$1.2	50% are forecast to fail - Improve energy efficiency & maintenance
Electrical wiring branch feeders/IT outlets	$1.0	Increase in electrical load and maintenance
Toilets, sink, related plumbing	$0.9	Replace 50% - Reduce water & maintenance and to meet town mandate (187 fixtures)
Windows/Storefronts	$0.8	Improve energy efficiency & comfort (6,000 sf)
Floors, carpets, ceilings	$0.6	Wear and tear
Miscellaneous	$0.9	
Total:	**$10.8**	

Category 4 – Items Identified for Replacement Between 6 and 10 Years

- Equipment or systems likely to fail within 5-10 years that are recommended for repair or replacement based on an estimation of life using the equipment or system´s current state of wear and the ASHRAE tables.

Subcategory	$MM	Reason for Work
Flooring	$2.1	Wear tear and moisture mitigation
Heating / AC	$1.5	50% are forecast to fail and Brooks Boiler - Improve energy efficiency & maintenance
Toilets, sink, related plumbing	$1.5	Reduce water usage & maintenance and to meet town mandate
Electrical Lights	$1.3	50% are forecast to fail - Improve energy efficiency & maintenance
Electrical wiring branch feeders/IT outlets	1.0	Increase in electrical load and maintenance
New auditorium seating	$0.4	Wear and tear and reduce maintenance costs
Carpets & painting	$0.3	Wear and tear and reduce maintenance costs
Miscellaneous	$0.5	
Total:	**$8.6**	

Category 5 – Temporary Classrooms

Subcategory	$MM	Reason for Work
Temporary classrooms	$3.0	Required to provide swing space during construction
Total:	**$3.0**	

Category 6 – Code Triggered Building or System Modifications

- Equipment or systems that require installation, repair or replacement due to a code trigger such as ADA or seismic or other

Subcategory	$MM	Reason for Work
Fire suppression system	$1.9	Level—2 building code upgrade
Lighting/Fire Alarm	$0.8	Level—2 building code upgrade
HVAC: Digital Controls	$0.8	Level – 2 Energy efficiency
Seismic Upgrade and masonry repairs	$0.7	50% of aggregate floor space renovated, Level—3 building code upgrade
Asbestos Abatement	$0.6	Required by work above ceiling for fire suppression system
ADA/MAAB	$0.5	30% of building cost renovated
Auditorium roofing & misc.	$0.3	Level—1 building code upgrade
Total:	**$5.6**	

Category 7.

- Optional items which are not required by code, but would greatly benefit the day-to-day operation of the school.

Subcategory	$MM	Reason for Work
Admin. Area HVAC upgrade	$1.3	Replace window units for comfort and efficiency
Public address & security system	$0.6	Reduce safety risk
Backup power & lighting protection	$0.4	Reduce safety risk
Auditorium lighting	$0.2	Expand auditorium capabilities
Exterior masonry veneer and insulation at Field House	$0.2	Improve comfort and energy efficiency
Total:	**$2.7**	

Code Triggers

In addition to the building deficiencies identified by building evaluation, CDR Maguire also assessed specific thresholds that trigger more involved and complex renovations to the existing facility. Some of these thresholds are percentage of construction costs as they relate to the building value, while others depend on the amount of the extent of work performed over a percentage of the building.

Building Code

The Massachusetts Building Code and the International Existing Building Code (IEBC) require the implementation of the current structural requirements and fire suppression systems on a sliding scale with full implementation when 50% of the aggregate floor area is renovated.

Structurally this includes but is not limited to evaluation of design gravity loads, lateral capacity, egress capacity, fire protection system, fire resistive construction, interior environmental, hazardous materials and energy conservation.

Level 1 Alterations – Include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials elements or fixtures.

a. *Structural assessment of roof loads, impacted by roof replacement and additional roof top equipment*
b. *Review of existing Means of Egress*
c. *Only new materials and finishes need to comply with Energy Code.*

Level 2 Alterations – include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.

a *Comply with the requirements of Level -1*
b. *All new work shall comply with building code*
c. *Existing vertical openings shall be enclosed in rated enclosures*
e. *Interior finishes within corridor and exits of the work area need to be fire retardant*

If work area exceeds 50% of building area.

a. *All interior finishes within corridors and exists need to be fire retardant*
b. *Corridors and doors need to be rated*
c. *Automatic sprinklers*
d. *Door hardware assessment and upgrades*
e. *Structural evaluation of gravity and lateral loads*

Level 3 Alterations – Applies where the work area exceeds 50% of the aggregate area of the building.

a. *Facility needs to comply with Levels 1 and 2*
b. *Seismic evaluation and upgrades of existing structure*

Handicap Accessibility

According to the MAAB and ADA, reasonable accommodations must be made to provide access to and within the existing facility. Currently the facility complies with this requirement, however as building improvements and renovations are implemented there are several thresholds that trigger greater accessibility improvements.

a. If the work performed is limited to less than $100,000, then only the work being performed needs to comply with the handicap requirements.

b. If the work performed is $100,000 or more, then in addition to the work performed, it is mandatory to comply with the handicap requirements, as well as to provide an accessible public entrance, accessible toilet room, drinking fountains and telephone. General upkeep will not trigger this requirement unless it exceeds $500,000.

c. When the work performed exceeds 30% of the full and fair cash value of the building, then the entire facility is required to be brought up to current standards.

d. Phased construction is calculated on 36 month time frame.

Additionally, other thresholds are not as clearly defined, but are required to be performed to accommodate other scope of works. For example, the replacement of light fixtures requires the abatement of the PCB within the ballast.

Alternative Equipment/System Choices

In addition to items identified above, we have also analyzed alternative solutions to resolve some of the identified issues. These alternative recommendations relate to the Kitchen and Boiler issues. They were not included within category 1-7, therefore the associated construction cost is a net addition to or reduction from the project cost.

Kitchen

The base cost for the kitchen refers to replacement of the equipment in kind and maintain the existing space and utilization.

Alternate #1: to expand each kitchen and provide the proper circulation and equipment. Project cost **add** of $524,985

Alternate #2: is to construct a new centralized kitchen and dining facility. Project cost add of $4,762,753

Boiler Room

The base cost refers to replacing the boilers in place, within the existing basement.

Alternate #1: to provide a packaged boiler room for the Smith School. Project cost add of $1,380,116

Alternate #2: is to construct a single central boiler room at the Brooks School with condensing gas fired modular boilers. Project cost **deduct** of $194,614

MSBA Reimbursement

Since the identified items do not address programmatic improvements to the facility, the only MSBA Reimbursement available to the community is for the Accelerated Repair Projects; formerly known as the Green Repair Program. This is a discretionary program without guaranteed funding that, if it is continued would provide reimbursement to schools solely for the replacement of windows, roofs and boilers. The Program focuses on the preservation of existing assets by performing energy-efficient and cost-saving upgrades, which will result in direct operational savings for school districts.

Based on this, the approximate reimbursement for the Town would be $1.5 million based on a 33% reimbursement rate. Obviously the final reimbursement will depend on the final costs for the window, roof and boiler replacement as well as the reimbursement rate for the town as determined by the MSBA.

MSBA Accelerated Repair Program Repairs

Roof	$2.7M
Boiler Replacement	$.4M
Window Replacement	$1.4
Total Project Costs (lower assumed markup)	$4.5M
MSBA Reimbursement based on prior statewide experience @33%	**$1.5M**

Recommendations

With building deficiencies identified, there are multiple ways for the repairs/replacements to be implemented, some more viable than others. We have scrutinized the options and have identified two schemes that address all of the identified items as well as a minimalistic approach that only addresses the immediate concerns along with items that could be eligible MSBA reimbursement under the Accelerated Repairs Program.

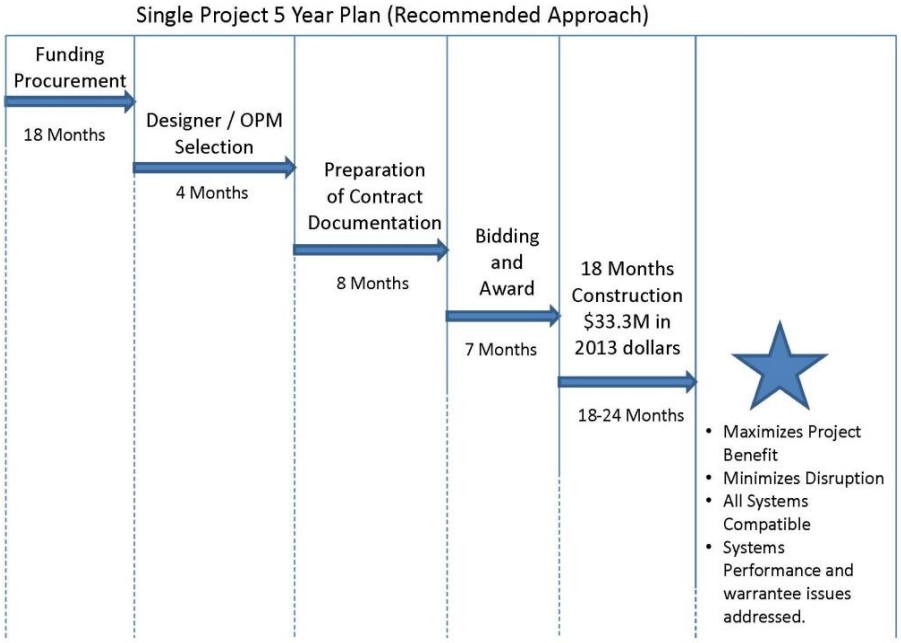
Each scheme has pros and cons as well as implications for construction cost, construction time, and disruptions to the school's educational process. Based on this information identified below, we feel that the best option for the Town of Lincoln is to perform the identified work in one phase within the five year time frame.

We also recommend that the Town include as bid alternates for the kitchen and boiler rooms projects described above as Alternative Equipment/System Choices. These would be designed into the contract documents and if the bids came in favorably, then they would be included in the project.

Recommended Approach to Repairs

In this option all of the deficiencies identified within the seven categories are addressed in one phase at a project cost of $33.3 million.

It is anticipated that project time line from the start of the process to the project completion would be approximately five years. This includes all of the following: appropriation of the project funding, hiring of the design firm and owners project manager, issuance of a new notice of intent and approval by MSBA and development of contract documents. Assuming that the construction period is approximately 24 months, the complete project duration from start to finish would be within the 5-year time line. That coincides with the majority of tasks from our estimate, grouping the majority of required work around the 5-year time frame.



There are numerous benefits from a single phase construction process:

Since the majority of the building systems need to be replaced within the ten year time span, being proactive and replacing all of the systems at once makes sure that all of the systems are compatible with one another as well as minimizes future risks.

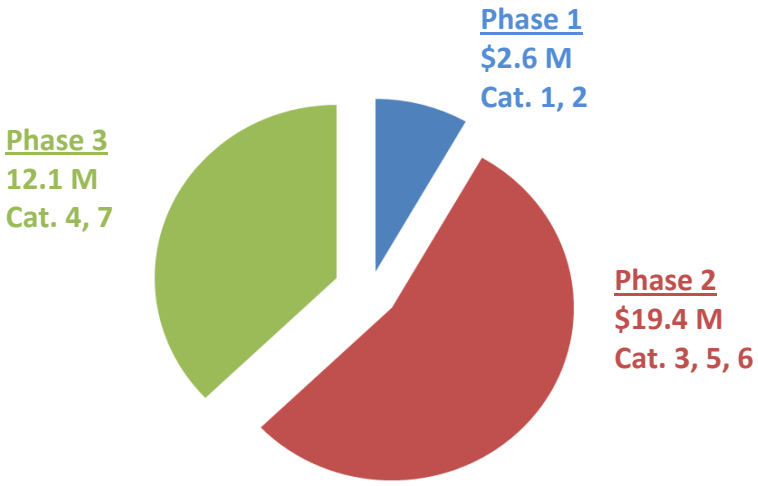
Maintenance costs and schools operational costs are reduced faster than waiting for several different construction phases, spaced out over a ten year period. Additionally all of the warranties and systems performances are aligned.

All code thresholds are triggered with work scheduled to be repaired at the five year time frame.

Over time a single construction project minimizes the disruption to the school and maximizes the dollar value for work performed.

Non-Recommended Approach #1: 3-Step Repair

In this option, which is not recommended, all of the deficiencies identified within the seven categories are broken down in three categories: immediate repairs, within 5 years and within 10 years.



Obviously the main advantage to this scheme is to spread the costs of the improvements over a ten year time period, and allows the Town to address immediate issues while observing whether systems and equipment life can be extended. However spreading the construction period to three phases over ten years is also a disadvantage. Knowing that the systems need to be replaced exposes the town to numerous issues.

Since the entire project will be performed in three bid documents and by three different contractors, continuity of work and compatibility of equipment, fixtures and warranties is an issue. Due to the multiple contractors, the Town would incur an additional $300,000 for contractor remobilization and office procedure, as well as $500,000 for temporary classrooms.

The school would be in various stages of construction for four of the next ten years.

It is subject to multiple town funding approvals, and it exposes the town to economic concerns.

Since some of the repairs are deferred to the ten years, it does not immediately provide operational savings and consequently it still exposes the school to maintenance and repair costs.

Non-Recommended Approach #2: Avoid Code Triggers

This option, although not recommended, is included to show that a lesser repair alternative is possible.

This scheme includes all of the items in category 1 and 2 (Smith boiler replacement, repair of the Field House wall, and replacement of the kitchen equipment) as well as some of the items in Category 3 (replacement of the roof and windows).

The advantages to this approach are as follows:

Increasing maintenance budgets will extend life of equipment which continues to function, including air handling units and lighting.

Other repair costs would need to be managed to avoid code triggers

Can be done during summers with little to no school program disruption

No temporary classroom space required

Potentially takes advantage of MSBA Accelerated Repairs Program Reimbursement

The anticipated Project Cost for this option is approximately $6.4 million. However, it does not address many of the identified deficiencies and it delays $28 Million in upgrades and replacement costs at the cost of the current estimate plus Inflation. Additionally, the Town will need to allocate a higher maintenance allowance to replace equipment.

The concerns with this approach are:

It does not address the on-going maintenance and repair costs.

If this $6.4 million option is implemented, it allows approximately only $200,00 of repairs and improvements within the following 3 years before ADA and Code upgrade thresholds will be triggered, which would require fire protection system, asbestos abatement and ceiling replacement.

Exposes systems to possible failure of mechanical, electrical and plumbing systems,

Exposes Town to Economic Concerns

Exposes Systems to Compatibility Issues from different mechanical systems.

Facility Information-General

Address	Ballfield Road, Lincoln MA
Present Use	Institutional, Education, Assembly
Grades	K-8
Year Constructed:	Smith School Constructed in 1948 Expanded in 1953 (East Classroom Addition) Expanded in 1955 (North Classroom Addition) Expanded in 1963 (Gym Addition) Renovated and expanded 1994 (South Classroom Addition) Brooks School Constructed in 1964 Expanded 1984 North Classroom Addition) Reed Field House Constructed in 1970 Link Constructed in 1994
Site:	Entire Educational Complex Approximately 55 Acres
Square Footage:	129,143 SF
Appraisal:	$22,000,000

Structure

The building structure for the facility varies with each building and typically reflects the standard construction method of its era. The structural system including the foundations, walls and roof are in satisfactory condition with no visible signs of settlement or cracks.

That said, the wall construction consists of a masonry veneer attached to a concrete block back-up wall. Neither the veneer nor the backup wall are reinforced or are seismically braced to the roof structure. The roof construction was designed based on the loading requirements in effect at that time.

Recommendation

Based the existing conditions, the facility as it currently stands is grandfathered from requiring structural improvements. However, as renovations and improvements are performed on the facility, the International Existing Building Code (IEBC) requires code upgrades on a sliding scale. The criteria are based on the extent of work performed within the following three levels.

Level 1 – Minor repairs and roof replacements.

Level 2 – Intermediate repairs, equipment and fixture replacement and some space alterations

Level 3 – Major repairs, with work being performed beyond 50% of the aggregate building area.

Based on the extent of renovations, the requirements of each level needs to be evaluated and implemented.

Exterior Façade

The exterior façade of the facility consists of a combination of brick, concrete masonry, precast concrete panels and metal panels. All, with the exception of the concrete panels, are of sound construction.

The brick and concrete masonry veneers, typical of the construction time, are not insulated and do not contain a cavity and associated weep holes to assist in the drying of the interior walls.

The precast concrete panels in the Field House have indications of moisture infiltration on the interior surface of the exterior walls. Further analysis and possible testing and a dew point analysis will need to be performed on the assembly to identify if this is moisture entering from the exterior or if is from moisture latent air condensing on the exterior wall. Additionally, there are areas of the existing concrete panels that are damaged and need to be repaired or replaced.

Recommendation

Repair or replace the damaged precast concrete panels. Due to the current moisture issue identified within the precast panels, the best solution is to remove all of the precast and replace it with an insulated metal panel. This would not only resolve the damaged panel issue and the moisture infiltration problem, but also provide building insulation, improving the energy efficiency of the building.

The remainder of the veneers would remain unchanged.

Roof

The facility has several different roofing types, conditions and vintage.

a. The Brooks School has a flat roof with a single-ply EPDM roof membrane.
b. The Link Building has a combination of flat and sloped roofs

c. The Smith School has a flat roof with a single-ply EPDM roof membrane.
d. The Field House has a flat, single-ply PVC roof membrane, with a life expectancy of approximately 20 more years

All of the roofs, with the exception of the Field House, have reached their useful life, some having been patched numerous times. In addition to the roofing, the storm water collection system on the majority of the sloped roofs needs to be repaired and or replaced.

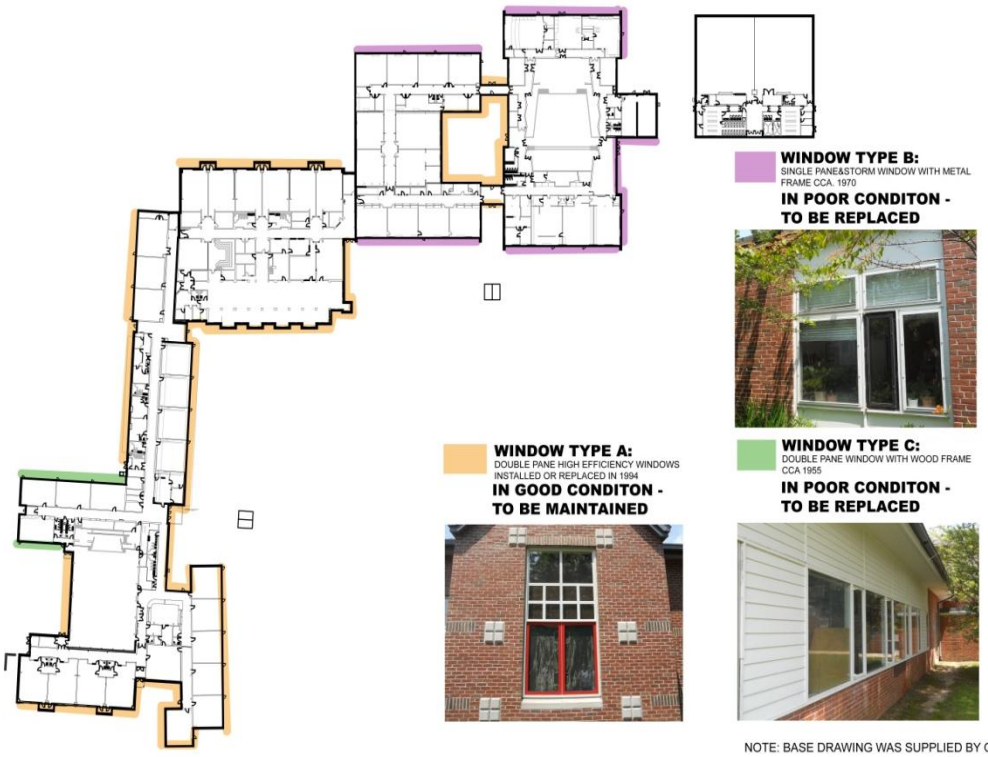
Recommendation

All of the flat roofs are in need of replacement, and should be replaced within the next five years. As part of the roof replacement, the insulation and ancillary roofing components should also be replaced.

The sloped roofs with the associated gutters and downspouts, similarly to the flat roofs, should also be replaced within the same time frame. At this time, all damaged and rotten fascia and wood trim should also be replaced.

Windows

The exterior windows of the facility vary within the vintage of the building. Consequently, the windows in the portion of the facility renovated in 1994 have insulated glass and are in good condition. This includes the majority of the Smith School and the Link Building. The windows in the 1963 addition to the Smith School are also insulated glass, however, the windows and the associated wood trim are in poor condition and are in need of replacement.



The windows in the Brooks School are the original 1970's vintage. As per the construction standards of the time the windows are not insulated and set in a non-thermally broken metal frame.

Recommendation

The replacement of the existing un-insulated windows is not mandated by any code or regulations; it is an occupancy comfort/energy efficiency issue for the building. It is anticipated that the replacement of single pane glazing to insulated glazing will pay for itself within 15 years. The replacement of the Brooks windows will also require the abatement of the existing transite panels.

In addition to replacing the windows, all of the deteriorated and damaged wood trim should also be replaced.

Building Interior

The finishes within the existing facility are in good conditions and properly maintained, albeit some of the colors, patterns and finishes are dated.

Flooring:

The majority of the existing flooring is either VCT, carpeting or ceramic tile. For the most part the flooring is in good condition. There are areas of worn carpeting, and expansion joints in the concrete substrate have telegraphed through the VCT.

Walls:

The walls consist of either painted CMU or gypsum wall board, with some acoustical wall tiles in dedicated areas. The walls surfaces are in good condition requiring only cyclic washing and painting.

Ceilings:

The ceiling construction varies from gypsum board to acoustical ceilings in 2'x2' and 2'x4' panels as well as concealed spline ceiling in a 12"x12" pattern, which was also identified as having asbestos containing materials (ACM's).

Classroom Built-ins:

The existing built-in casework is wood construction clad in a plastic laminate. The majority of the casework is 1994 vintage and in good condition.

Science Lab Casework:

The science lab casework is wood construction with a plastic laminate facing and an acid resistant counter top; the exact material is not clear. The casework is in poor condition and also identified as containing ACM's.

Recommendation

The entire wall surfaces, as part of cyclic maintenance program, need to be painted.

The carpet flooring is worn and is in need of replacement

The ceilings, with the exception of the concealed spline ceiling, are in good shape and can remain as is. The concealed spline ceiling, due to the installation method and the fact that it contains asbestos, is in poor condition and should be replaced. That said, when the facility undergoes the installation of a fire suppression system, it will require that all ceilings be replaced.

Interior finishes within primary assembly areas such as the library, auditorium, administration areas and gymnasiums should be refinished and upgraded.

The lab casework is in poor condition and should be replaced.

Plumbing

The Smith and Brooks buildings have independent water services that enter the existing boiler rooms in each building. According to verbal reports, the water delivery systems show traces of lead in the potable water. The town has tested the supply to the building and has indicated that the source of the lead is internal to the buildings. Although some of the piping was replaced in the 1994 renovation, there is still a good amount of piping original to the buildings. In addition, the faucets installed throughout contain some lead in the manufacturing process.

The majority of the sanitary, waste, vent and storm water systems are original to the building. New piping was installed for the additions and link installed in 1994 and connected to the original systems. The piping that is located in the tunnels, boiler room and crawl space of the Smith

buildings is in poor condition due to the continuous exposure to the moisture caused by the ground water condition. The Brooks building's exposed piping appears to be in fair to good condition.

The natural gas service enters the building at each school from an independent gas meter at the exterior of the building near each boiler room. The Smith building is run from the front of the building and runs up and exposed over the roof. Part of the piping has been painted and part is exposed steel. The piping is rusting and pitted due to the exposure to the elements. The Brooks piping enters the boiler room and is run interior to the building and is in good condition. A separate gas service serves the field house water heater and kitchen cooking appliances and is in good condition.

The Smith domestic water heater is a gas-fired storage tank type heater located in the basement boiler room. The exterior of the tank is in poor condition due to moisture corrosion and is in need of replacement. The Brooks domestic water heater is a gas-fired boiler and hot water maker indirect type system and is in good condition.

There is a duplex ejector that services the Smith boiler room floor drains and area way drain to the classroom crawl space access stair. This system is exposed to continuous ground water and is discharged to the building septic system. This is placing a burden on the sanitary disposal system. The system is missing a cover and the ground water is entering the system. The plumbing fixtures are in various stages of replacement/repair throughout the two buildings, but are mostly original to their installation date. The fixtures are all operational and in serviceable condition. Accessible fixtures are installed in some locations, but are not fully compliant to current standards of accessibility. Most of the facilities are not accessible. Water drinking fountains have been removed throughout due to the lead in the water. Bottled potable water and dispensers are located throughout the schools.

Recommendation

It is estimated that the domestic water distribution systems have an approximate ten to twenty years of service life; however, the testing of lead is of concern. Full replacement of the piping systems is recommended. An alternative for the lead issue is replacement of the piping serving potable fixtures only, such as the drinking fountains and kitchens. It is most likely that the plumbing fixtures will require replacement to address the accessibility needs, most of the bathrooms will require repiping of the plumbing fixture rough piping.

Much of the sanitary waste, vent and storm water piping is in fair condition and is expected to last another thirty years. Where exposed to continuous moisture in the Smith building, it is recommended that the piping and hangers be replaced. Where work will be required for provision of accessible plumbing fixtures, the piping, fixture supports and carriers will need to be replaced.

The natural gas piping system is in need of cleaning and painting where exposed at the Smith building roof to prolong its useful life. In the proposed alternate boiler single plant option, this service will be retired. The Brooks piping and field house piping are in good condition and do not need replacement. In the proposed alternate boiler single plant option, the gas service would need to be increased in size at the Brooks building.

The plumbing fixtures, although serviceable, will need to be replaced to address the issues of accessibility. The classroom sinks are mostly original to their respective date of installation and are recommended for replacement with ADA compliant depth and mounting height requirements and fitted with accessible faucets. Drinking bubblers should be added as the lead in the water issue is addressed. New bi-level drinking fountains/hydration station units should be reinstalled for code compliance as the lead in the water issue is addressed at the locations of the removed fixtures.

There are several cross connection control violations throughout the building with missing vacuum breakers and backflow preventers required for compliance.

The science classrooms will require replacement of the chemical waste and vent system, along with treatment tank for the proposed cabinet systems furniture upgrades. The natural gas piping to the lab benches is not compliant, as there is not an individual safety shut-off located in each room. New gas piping serving the lab benches and classrooms is required. There does not appear to be a dedicated non-potable hot and cold water system supplied to the science rooms. This is a code compliance issue. Backflow devices and a dedicated non-potable hot water system are recommended to serve the lab sinks.

The duplex ejector serving the Smith boiler room area should have the cover repaired/replaced to make water tight. Ground water discharge should be piped independent from the sanitary disposal system and dedicated pumping equipment provided. This shall be piped to the storm water system on site.

HVAC

The Smith Building is served by two gas-fired boilers located in a lower level mechanical room. The past history has shown that the room has been subject to extremely high level flooding above the burner height of the boilers on several occasions. The most recent was a 2009 flooding condition. One of the boilers was repaired with salvage parts from both burners and placed back in operation. The boilers are in fair to poor condition.

The Brooks Building is served by two gas-fired hot water boilers located in a ground level mechanical room. One boiler was installed in 1992 and retubed in 2002. The burner was replaced in 1995. The boiler has outlasted its ASHRAE table based expected service life and should be

replaced within the next five years. The second boiler was installed in 1995 and is in fair to good condition due to an effective maintenance program.

All pumping equipment for the systems is constant volume. Some motors have been replaced and some pumps have been re-sealed in both main boiler rooms. There are inline booster pumps located in the crawl space access areas at the staff lounge in Brooks and the auditorium mechanical rooms. Both pumps in the auditorium mechanical room have been replaced/rebuilt.

Classrooms in both buildings are served by unit ventilator heating and ventilation units. Outdoor air is obtained through exterior louvers and is damper controlled. Units are fitted with pneumatic driven thermostatic valves that are DDC controlled in the Brooks building. The 1994 classrooms near the link have been converted to full DDC control with penumatic interface as part of an independent energy measure test and monitoring. The equipment has been maintained and replaced on an as-needed basis. Units are serviceable and in general fair to good condition.

The field house is served by three heating and ventilating horizontal ducted systems. Two are serving the gym and one serving the locker rooms. Units have been converted to full electronic DDC control under a test program. The lobby area is served by fin tube radiation and an electric ceiling entry heater. The fin tube enclosures are heavily damaged.

The Smith staff lounge is served by hot water unit ventilators with DX cooling coils and a roof mounted condensing unit. It is reported that the DX condensing unit is in need of replacement.

There are scattered window-type air conditioning units serving office areas in both the Brooks and Smith buildings for the staff support areas.

The link support rooms and library are serviced by central station air handling equipment with hot water heating and DX cooling coils. The DX condensing unit is located on the roof. VAV control boxes serve the individual support spaces. The library is served by a single dedicated unit. There are several fan coil hot water/DX split systems located in the surrounding staff support areas. Two large rooms that are multipurpose spaces are used year-round and have independent DX cooling units and include classroom ventilator units for fresh air and space heating. Some staff support areas are heated with fin tube radiation.

The auditorium is served by single zone heating and ventilating units. The units are located in two mechanical rooms. Controls on the large units at the rear of the auditorium were taken apart and do not appear to be operational. The stage area units dampers for the outdoor air are rusted and in poor condition. These are most likely inoperable.

Toilet exhaust is via roof mounted exhaust fans and exhaust ductwork. The fans have been undergoing a planned replacement and approximately 25% of the exhaust fans have been replaced

in the last two years. Bathroom odors are evident throughout the building. Toilet rooms and the exhaust systems appear to be insufficient in performance.

Recommendation

The Smith boilers are in immediate need of replacement. An in-kind replacement has been provided as a base scenario but is not recommended due to the flooding condition of the room. Alternative scenarios have been provided for a standalone packaged boiler room replacement along with a recommended single boiler plant replacement located at the Brooks boiler room location serving the two school campus.

The Brooks boiler room is recommended to be replaced in kind or via the single boiler room alternate.

Pumping equipment is scheduled for replacement with more energy efficient VFD pumping equipment in all scenarios presented.

Classroom ventilators are scheduled for in-kind replacement. Under the single boiler alternate, the equipment would be selected for lower water temperature operation to take advantage of increased boiler efficiency.

DX cooling coil option and condensing units should be considered to increase the potential for year round use of classroom space where needed, but have not been factored into the estimate.

The scattered window air conditioning units serving the support spaces should be removed and replaced with more efficient central cooling DX fan coil units.

The Field House H&V equipment is original to the building and has outlasted its useful life expectancy. The units are recommended for replacement. Under the single boiler room alternate, we would recommend the units be selected at a lower hot water temperature to improve overall energy performance. A DX coil option should be considered for the Gym units with matching condensing unit to increase the year-round comfort and potential as a multipurpose space, and use as a shelter. This has not been factored into the estimate. The fintube radiation covers should be replaced at the entry lobby.

The Smith staff lounge unit ventilators are in need of replacement along with the condensing units and refrigerant piping. Under the single boiler room alternate, we would recommend the units be selected at a lower hot water temperature to improve overall energy performance.

The Link and library air handling systems have been well maintained and have approximately five years of useful life expectancy. The DX condensing unit located on the roof has seen

increased maintenance and is recommended for replacement. To extend the life of the renovated project, we would recommend the replacement of all the equipment. Ductwork distribution would need to be re-evaluated for reuse to match the replacement unit selections. Under the single boiler room alternate, we would recommend the units be selected at a lower hot water temperature to improve overall energy performance.

All of the units serving the multipurpose rooms are also at the end of their useful life and are recommended for replacement, along with their corresponding condensing units and refrigerant piping. Under the single boiler room alternate, we would recommend the units be selected at a lower hot water temperature to improve overall energy performance.

The H&V equipment serving the auditorium is beyond its useful life. We recommend that a new dedicated packaged rooftop system with displacement ventilation distribution system be installed in the space with a packaged Energy Recovery Unit, to recover energy to be transferred to the outside air requirements for the space. This would allow for expanded use of the auditorium during the cooling months.

We recommend that the exhaust air systems serving the bathroom and general exhaust of the building be re-evaluated and replaced with exhaust air systems providing increased ventilation for improved air quality. Where possible, the systems should be combined for potential energy recovery consideration for make-up and outdoor air systems.

The entire hot water distribution system would require replacement under the alternate single boiler room scenario. It is recommended that the existing piping remain in the tunnel system and used for phasing of the project. The new system is recommended to be installed in the corridor ceiling with runouts located in the tunnels. This recommendation comes from the evidence of damage caused by the ground water moisture condition within the tunnels.

Electrical

There are two electrical services that provide the power for the Smith and Brooks buildings. The main services for Smith also feed the Link Area of the campus. The service was upgraded to GE manufactured equipment in the primary electrical room, located off the main entry lobby of the Smith building. There are a few distribution panels that are recessed into the masonry walls that are original to the building. All of the distribution equipment that was located in the lower level boiler room has been replaced and relocated to the service maintenance area directly above the boiler room. The equipment is in good condition.

The second electrical service is located in the Brooks mechanical/electrical room at the far end of the campus. The main distribution panel and switch is manufactured by Federal Pacific and is original equipment. There are several Federal Pacific panel boards remaining in the remote electrical distribution system. The system is in poor condition. There is a standby generator that

provides power to key equipment and the Field House, which is used as an emergency shelter for the town. The standby power distribution system is manufactured by Siemens and is in good condition.

The lighting systems are of various make-up and types, and are primarily comprised of utility incentive rebate replacements and upgrades. The 1994 addition lighting is original equipment. Most of the fixtures are fluorescent type and fitted with T-8 lamps and energy saving ballasts. Switching is primarily local toggle switch with split rows of lighting control. There are no occupancy sensors or daylight controls installed.

The information technology data systems operate mostly on a wireless network system installed throughout the building. The original installed CAT 5 hard-wired infrastructure still exists within the building.

The fire alarm system is comprised of an Edwards main fire alarm control panel with remote zone annunciator located at the entrance to each building. The system has two additional panels installed to support the system and provide the interface with the main control panel. Detection and notification devices are installed throughout the building and pull stations are located at all egress doors. The devices are a mixture of type and vintage, and provide minimal detection and audio visual notification for general alarm. The system lacks voice notification.

Emergency lighting is provided with battery units and remote heads located throughout the buildings. Egress lighting is minimal and does not appear to provide enough light or locations to properly light the egress from the buildings. Exit signs are of the non-illuminated type and rely on chemical technology to provide the light source. Life safety systems are in fair to poor condition.

Recommendation

The Brooks Building's main switch and main distribution panel should be replaced immediately. Federal Pacific panel boards should be replaced immediately. These systems have poor reliability and parts are no longer available for service and replacement. The Smith building electrical distribution equipment has several years of service life remaining, and replacement should be prolonged into later phasing of any building renovations and repairs. Additional distribution equipment is required to be installed in each building to support the added recommended receptacle circuits for the classrooms. This will add much needed plug-in capacity for the technology and IT systems being used.

The lighting system will require replacement of fixtures installed, and the addition of controls to meet the requirements of the 2012 International Energy Code. This is recommended to provide better use of lighting and control of the energy use in the buildings.

Information Technology Systems support is meeting the current needs of the buildings and is not recommended for upgrade; however, alternate costs have been carried to reflect potential upgrades due to the renovation and phasing of the project.

The fire alarm system is recommended for upgrade to a fully addressable and voice notification system throughout. Addition of code compliant devices is necessary. The level of smoke detection devices in the building will be reduced with the addition of a fully designed automatic fire suppression system.

We recommend the installation of a dedicated life safety emergency power system for lighting and life safety support systems as part of the building systems upgrades. The existing standby generator is recommended to remain in service to support the non-life safety electrical support systems for extended power outages.

Fire Protection

There are no automatic fire suppression systems installed in the two school campus buildings or field house.

Recommendation

We recommend the installation of a multi-zone automatic fire suppression system to provide full sprinkler coverage throughout the entire building be installed. Level 2 alterations, of the existing building code, will trigger the need for the installation of the systems. This will be a significant improvement to life safety systems.

Kitchen

The facility is served by two kitchens, one at the Brooks School and the other at the Smith School. Both kitchens are currently being used as re-warming kitchens with only limited preparation being performed on site.

Food is served in three lunch periods of approximately 15-20 minutes each. Hot food is prepared and cooked in a facility off site, about 30 minutes away, and transported to the school kitchens. Since the transportation occurs only once, part of the food is served instantly while the remainder is held in a warming unit until served.

Brooks School Storage Room for paper goods, canned goods and cold food serving unit, milk cabinet are all located in a shared space with janitorial equipment (floor machines) mops, brooms and garbage containers and cafeteria tables. According to the Food Service Director, the room does not have any heat or cooling capabilities. The use of this room as a catch-all is not acceptable.

Cafeteria tables, food serving units, paper goods, and refrigeration units should not be stored in the same space as cleaning supplies, floor machines, garbage containers, mops, etc.

Brooks Schools Small Storage Room in kitchen has steel wire shelving used to store condiments, pans, bowls and dry food and goods. The space is small but otherwise acceptable.

Smith Storage Room is not specific to the kitchen, however, as in the Brooks School, kitchen supplies, dry goods, etc. are stored in a room share with janitorial equipment. Canned goods are also stored in the kitchen.

Serving and consuming of lunches for the Brooks School occurs in the Gymnasium. For the Smith School Lunch is consumed in the cafetorium. Space is adequate.

Kitchen Equipment

The kitchen equipment for the Brooks School has surpassed its use. There is a lack of proper refrigeration and freezer storage. The kitchen equipment includes the following:

- (1) Warm Storage cabinet. It is our understanding that this unit is being used to maintain food warm.
- (1) 3-Compartment Pot washing sink.
- (1) Hose reel.
- (1) Hobart under counter dishwasher currently not in working condition.
- (1) Stainless steel worktable with sink.
- (1) Hot wells Serving Unit. (Also used to re-heat food.)
- (1) Cold Food Serving Unit (Stored in janitorial space.)
- (1) Large milk Cabinet (It is being used as a produce refrigerator.)
- (1) Hand washing sink (Manual Operation)
- (1) Double convection oven (only top oven works.)
- (1) 4-Burner Range
- (1) Two-Compartment Steamer with boiler. (Boiler is currently not in working order.)
- (1) Side-by-side Reach-in Freezer (Currently not working.)
- (1) Exhaust Hood with fire suppression nozzle. (Undersized.)
- (1) Pan rack.
- (2) Snack Racks.
- (2) Small drinks coolers (Dasani and Vitaminwater.)

The kitchen equipment for the Smith School is in good working order and it includes the following:

- (1) Two-Door Reach-in. (Stored in Serving area)
- (1) Single reach-in. (Stored in Serving area)
- (1) Cold Food Serving Unit. (Stored in Serving area)
- (1) Hot Food Serving unit.
- (1) Sliding glass door refrigerator.

- (1) Single Convection oven. (about 3 years old)
- (1) hand sink.
- (1) Under counter warming unit.
- (1) "L" shaped pot washing sink.
- (1) pan rack
- (1) hose reel.

Facility Deficiencies:

It is our opinion that both kitchens are very cramped and undersized to be utilized as a prep kitchen. We feel that the space is not safe for staff, unless staff consists of only one person. It is impossible to pull out pans of hot food from oven or prepare food, without bumping into the pot washing sink.

Walls are CMUs, therefore not easily cleaned. According to Massachusetts Health Code 105 CMR 590.00 Paragraph 590.022 (F) Concrete blocks should be finished and sealed to provide a smooth and cleanable surface. Some walls are clad with FRP panels, but not all of them.

The Health Code (Paragraph 529.005 (G), requires that food that needs to be transported, be quick-chilled upon completion of cooking and transported at specific temperature and reheated to appropriate temperature prior to serving. Hot wells, food warmers are not adequate for re-heating.

Recommendation

Minimum Recommendation
The minimum recommendations for the kitchens are as follows and are made with the understanding that the scope of the work is to be limited to a warming kitchen.

Equipment Requirements Brooks

1. *Double convection oven. Replace existing double oven: currently the top portion works intermittently but the bottom one does not work at all.*
2. *New exhaust hood that meets overhang requirements of NFPA 96.*
3. *Fire Suppression System*
4. *3-compartment reach-in freezer.*
5. *One warming cabinet to hold food at a safe temperature between lunches, after it is re-heated.*
6. *A new 3-door reach-in refrigerator.*

Equipment Requirements Smith

1. *Single convection oven, in addition to existing single convection oven.*

2. *Two-Compartment Steamer*
3. *4-Burner Range*
4. *New exhaust hood that meets overhang requirements of NFPA 96.*
5. *Fire suppression system.*
6. *3-compartment reach-in freezer.*
7. *One warming cabinet to hold food at a safe temperature between lunches, after it is re-heated.*
8. *A new 3-door reach-in refrigerator.*

Kitchen Alternate #1

In addition to the equipment upgrades identified in the minimum recommendations, and in order for each kitchen to properly function, the space should be increased to 600-700 square feet per kitchen. This would also increase the size of the required exhaust hood. Additionally, all janitorial supplies, mops, trash buckets, floor machines should be stored in another location away from the kitchen and associated ancillary spaces.

Kitchen Alternate #2

Construct new centralized kitchen addition sized to accommodate the requirements of both Brooks and Smith with the required storage and janitorial storage spaces.

Accessibility

The areas of the facility constructed prior to the issuance of the Massachusetts Architectural Access Board (MAAB) and the Americans with Disability Act (ADA) fail in providing handicap access to and within the facility. Consequently, only the 1994 additions and renovations comply with the requirements of ADA. Even at that, ADA has undergone numerous revisions since its initial implementation in 1990.

Most of the issues identified are toilet room accessibility in the Brooks School, with minor toilet room accessibility issues within the remainder of the facility. Additionally, modifications need to be performed at numerous door approaches, door hardware replacement as well as upgrades to non–accessible exterior doors.

Recommendation

The implementation of full handicap accessibility is required once the project costs reach the 30% threshold of value of the building. Since the building is assessed at $22 million, full compliance is required when the project cost exceeds $6.6 million. Multi-phased construction projects are calculated over a three year time period.

Hazardous Materials

Previous reports have identified asbestos containing materials (ACM's) in the floor tiles, pipe and fitting insulation, insulation within ventilation units, concealed spline ceilings, transite panels, transite lab tables, and science sinks.

Additionally, other hazardous materials such as polychlorinated biphenyls (PCB's), Lead and Mercury were identified in the light ballasts, fluorescent bulbs, thermostat and switches, emergency light batteries, and dry type transformers.

Recommendation

Currently, the majority of these items are in fair to good condition; however, the abatement of these materials dovetails with other scheduled or required work. For example; Window replacement will require the abatement of the transite panels. The installation of a fire suppression system will require work above the ceiling and the abatement of the ceiling tiles.

Code Compliance

The original Brooks School and all of the various additions and renovations including Smith and the Link were constructed in compliance to the building codes in effect at the time. Since the primary purpose of the building has not been modified, the facility is grandfathered to the previous codes. However, as renovations are implemented those modifications need to comply with the current codes and standards.

Additionally in accordance with the Massachusetts supplements to the International Existing Building Code (IEBC) renovations and improvements to existing buildings are classified in one of three different levels, each level has different requirements for bringing up the facility to current standards, specifically relating to structural upgrades, energy improvements and fire protection system.

Recommendation

Based the existing conditions, the facility as it currently stands is grandfathered from requiring building code improvements. However, as renovations and improvements are performed on the facility, the International Existing Building Code (IEBC) requires code upgrades on a sliding scale.

APPENDIX A - Glossary of Acronyms and Terms

Glossary of Acronyms and Terms

ADA	American with Disabilities Act
ACM's	Asbestos Containing Materials
MAAB	Massachusetts Architectural Access Board
IEBC	International Existing Building Code
OPM	Owner's Project Manager
MSBA	Massachusetts School Building Authority
EPDM	Ethylene Propylene Diene Monomer
PVC	Polyvinyl-Chloride
VCT	Vinyl Composition Tile
CMU	Concrete Masonry Unit
DX	Direct Expanse
VAV	Variable Air Volume
H&V	Heating and Ventilation
PCB	Polychlorinated Biphenyls

APPENDIX B - ESTIMATE

Lincoln Public Schools
Lincoln, MA

Repairs Analysis

October 8, 2012

Consultant: Maguire Company

60 Dedham Avenue, Needham, Massachusetts

Lincoln Public Schools
Lincoln, MA

Repairs Analysis
ESTIMATE QUALIFICATIONS

1. Pricing is based on the review the repairs/improvement packaged provided by Maguire Group, Inc.
2. All work shall be completed during normal hours between 7 AM and 3 PM
3. All work shall be completed paying prevailing wage labor rates
4. Off hour work and overtime is excluded
5. Design contingency is included at 10.0%
6. Construction contingency is included at 10.0%
7. Phasing Allowance is included at 5.0%
8. Escalation contingency is included at 5.0%
9. Project cost include a soft cost markup of 22%

Print Date: 10/8/2012

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Lincoln Public Schools
Lincoln, MA
Repairs Analysis

Consultant: Maguire Company

Total Project Cost Estimate

	Total Program Area		GFA less Field House 129,143	Total Cost	Cost/SF Priority 1
			$/SF		
024100	Demolition		*$1.94*	251,172	0.80
024100	Abatement		*$2.41*	311,233	0.00
031000	Concrete Formwork		*$0.47*	61,300	0.49
032000	Concrete Flatwork		*$2.71*	350,000	0.00
040000	Masonry		*$2.11*	272,591	1.75
051000	Structural Steel Framing		*$0.00*	-	0.00
055000	Metal Fabrications		*$5.82*	751,583	5.98
061000	Rough Carpentry		*$1.94*	251,037	0.00
064000	Interior Architectural Woodwork		*$1.12*	144,000	0.00
075000	Roofing		*$20.01*	2,583,802	0.00
079200	Joint Sealants		*$0.44*	56,600	0.00
081000	Doors, Frames and Hardware		*$1.08*	139,000	0.00
088000	Glazing		*$3.44*	444,020	0.00
092000	Gypsum Board Assemblies		*$1.28*	165,044	0.00
093000	Tiling		*$0.24*	31,000	0.00
095000	Acoustical Panel Ceiling		*$1.10*	141,816	1.62
096500	Resilient Tile Flooring		*$6.15*	793,800	0.00
096800	Carpet		*$0.52*	67,410	0.40
099000	Painting		*$2.07*	267,242	0.00
101100	Specialties		*$0.47*	60,840	0.38
110000	Equipment		*$0.67*	87,100	0.68
120000	Furnishings		*$1.71*	220,400	0.00
130000	Temporary Classroom Units		*$12.82*	1,656,000	0.00
140000	Conveying Equipment		*$0.00*	-	0.00
210000	Fire Protection		*$7.50*	968,573	11.09
220000	Plumbing		*$10.54*	1,361,350	1.57
230000	HVAC		*$25.60*	3,306,065	8.90
260000	Electrical		*$25.15*	3,248,238	1.86
270000	Tel/Data System (Including Paging/PA)		*$4.80*	619,886	1.48
310000	Building Sitework		*$1.34*	173,400	1.34
	Subtotal for Direct Costs			**$ 18,464,516**	
	General Conditions			970,870	
	General Requirements			842,451	
	Construction Manager's Fee			553,935	
	Subtotal ECC Before Contingencies			**$ 20,831,772**	
	Contingencies				
	Design Contingency			2,083,177	
	Construction Contingency			2,083,177	
	Phasing Contingency			1,041,589	
	Escalation Contingency			1,301,986	
	Total Construction Cost			**$ 27,341,701**	
	Total Construction Cost/SF			*$ 211.72*	
	Total Construction Cost from above			27,341,701	
	Owner Project Soft Costs			5,969,635	
	Total Project Cost with Contingencies			**$ 33,311,336**	

ALTERNATES inluding all Markups	**CONST COST**	**PROJ COST**	
Equipment			
New Kitchen & Dining, allowance	**$ 3,903,896**	**$ 4,762,753**	
			$ 0
New Kitchen warming station equipment in extended space (1,400 SF)	**$ 430,316**	**$ 524,985**	
Plumbing			
PRIORITIZED CENTRAL SYSTEM Domestic HW Boiler (indirect) @ Brooks (including recirc system & new HW piping): deduct line #172: net add	**$ 266,175**	**$ 324,733**	
HVAC			
Packaged Boiler Room Alternate for Smith Replacement - net add	**$ 1,131,243**	**$ 1,380,116**	
Single Central Boiler Room @ Brooks with Condensing Gas-Fired Modular Boilers, VFD pumps, controls, new piping - net deduct	**$ (159,520)**	**$ (194,614)**	

October 8, 2012

Lincoln Public Schools
Lincoln, MA
Repairs Analysis

Consultant: Maguire Company — GSF 129,143

Building Project Cost

Code	Description	Assembly Cost	Category 1 thru 7	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Category 7	1,2,3 or Alt	Time Period 1 PRESENT	Time Period 2 UP TO 5-YEARS	Time Period 3 UP TO 10 YEARS	Alternates
				1	2	3	4	5	6	7		1	2	3	
024100	**Demolition**	**$ 251,172**		**$85,693**	**$0**	**$121,092**	**$205,213**	**$0**	**$0**	**$41,133**		**$85,693**	**$121,092**	**$246,346**	**$0**
	Demo extg precast wall panels	$ 47,500	1	$85,693	$0	$0	$0	$0	$0	$0	1	$85,693	$0	$0	
	Demo extg CMU veneer	$ 22,800	7	$0	$0	$0	$0	$0	$0	$41,133	3	$0	$0	$41,133	
	Demo extg flooring, VCT, partial	$ 100,000	4	$0	$0	$0	$180,407	$0	$0	$0	3	$0	$0	$180,407	
	Demo extg flooring, carpet	$ 2,550	3	$0	$0	$4,600	$0	$0	$0	$0	2	$0	$4,600	$0	
	Demo extg MEP systems, cut/cap/drop by others	$ 64,572	3	$0	$0	$116,492	$0	$0	$0	$0	2	$0	$116,492	$0	
	Demo auditorium seating	$ 13,750	4	$0	$0	$0	$24,806	$0	$0	$0	3	$0	$0	$24,806	
024100	**Abatement**	**$ 311,233**		**$0**	**$0**	**$221,901**	**$0**	**$0**	**$339,586**	**$0**		**$0**	**$561,487**	**$0**	**$0**
	Remove exterior windows including caulking	$ 59,000	3	$0	$0	$106,440	$0	$0	$0	$0	2	$0	$106,440	$0	
	Roof flashing, allowance	$ 20,000	3	$0	$0	$36,081	$0	$0	$0	$0	2	$0	$36,081	$0	
	Misc. caulking removal	$ 44,000	3	$0	$0	$79,379	$0	$0	$0	$0	2	$0	$79,379	$0	
	Extg ceiling tiles, 1' x 1'	$ 59,090	6	$0	$0	$0	$0	$0	$106,603	$0	2	$0	$106,603	$0	
	MEP Abatement & unknown conditions	$ 129,143	6	$0	$0	$0	$0	$0	$232,983	$0	2	$0	$232,983	$0	
031000	**Concrete Formwork**	**$ 61,300**		**$0**	**$0**	**$38,427**	**$0**	**$0**	**$72,163**	**$0**		**$0**	**$110,590**	**$0**	**$0**
	New exterior concrete ramps w/ frost walls, 40 LF EA	$ 40,000	6	$0	$0	$0	$0	$0	$72,163	$0	2	$0	$72,163	$0	
	Generator pad, exterior	$ 3,000	3	$0	$0	$5,412	$0	$0	$0	$0	2	$0	$5,412	$0	
	New exterior conc walks as req'd for temp classrooms, 300 LF	$ 10,800	3	$0	$0	$19,484	$0	$0	$0	$0	2	$0	$19,484	$0	
	Equipment pads	$ 7,500	3	$0	$0	$13,531	$0	$0	$0	$0	2	$0	$13,531	$0	
032000	**Concrete Flatwork**	**$ 350,000**		**$0**	**$0**	**$0**	**$631,426**	**$0**	**$0**	**$0**		**$0**	**$0**	**$631,426**	**$0**
	Floor leveling, patching from demo	$ 150,000	4	$0	$0	$0	$270,611	$0	$0	$0	3	$0	$0	$270,611	
	Moisture mitigation as required	$ 200,000	4	$0	$0	$0	$360,815	$0	$0	$0	3	$0	$0	$360,815	
040000	**Masonry**	**$ 272,591**		**$0**	**$0**	**$0**	**$0**	**$0**	**$313,531**	**$178,242**		**$0**	**$313,531**	**$178,242**	**$0**
	New CMU veneer on concrete brick-shelf including rigid wall insulation on vertical channels	$ 98,800	7	$0	$0	$0	$0	$0	$0	$178,242	3	$0	$0	$178,242	
	New infill's and patching of extg CMU walls as req'd	$ 53,700	6	$0	$0	$0	$0	$0	$96,879	$0	2	$0	$96,879	$0	
	Reinforcing of extg exterior CMU walls, approx. 4' OC		6	$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Rebar materials for above reinforcing work	$ 8,551	6	$0	$0	$0	$0	$0	$15,426	$0	2	$0	$15,426	$0	
	Saw cutting of extg CMU wall for above reinforcing work	$ 49,560	6	$0	$0	$0	$0	$0	$89,410	$0	2	$0	$89,410	$0	
	Install new rebar and grout fill at locations	$ 61,980	6	$0	$0	$0	$0	$0	$111,816	$0	2	$0	$111,816	$0	
051000	**Structural Steel Framing**	**$ -**		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$0**	**$0**	**$0**	**$0**
		$ -		$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
055000	**Metal Fabrications**	**$ 751,583**		**$942,628**	**$0**	**$0**	**$0**	**$0**	**$413,282**	**$0**		**$942,628**	**$413,282**	**$0**	**$0**
	New metal wall panels including rigid insulation, interior high-impact board on plywood	$ 522,500	1	$942,628	$0	$0	$0	$0	$0	$0	1	$942,628	$0	$0	
	Reinforce extg CMU walls with bolts/angles, 4' OC		6	$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Reinforcing CMU walls, materials for above work	$ 106,550	6	$0	$0	$0	$0	$0	$192,224	$0	2	$0	$192,224	$0	
	Reinforcing CMU walls, labor for above work	$ 122,533	6	$0	$0	$0	$0	$0	$221,058	$0	2	$0	$221,058	$0	
061000	**Rough Carpentry**	**$ 251,037**		**$0**	**$0**	**$208,262**	**$0**	**$0**	**$244,627**	**$0**		**$0**	**$452,889**	**$0**	**$0**

	New blocking for exterior storefront windows, operable	$ 15,000	3	$0	$0	$27,061	$0	$0	$0	$0	2	$0	$27,061	$0	
	Interior temporary partitions and barriers	$ 63,000	3	$0	$0	$113,657	$0	$0	$0	$0	2	$0	$113,657	$0	
	Support for other trades	$ 37,440	3	$0	$0	$67,544	$0	$0	$0	$0	2	$0	$67,544	$0	
	Auditorium, Low roof reinforcing, materials	$ 34,932	6	$0	$0	$0	$0	$0	$63,020	$0	2	$0	$63,020	$0	
	Auditorium, Low roof reinforcing, labor	$ 57,000	6	$0	$0	$0	$0	$0	$102,832	$0	2	$0	$102,832	$0	
	Auditorium, staging/lifts and access for work	$ 43,665	6	$0	$0	$0	$0	$0	$78,775	$0	2	$0	$78,775	$0	
064000	**Interior Architectural Woodwork**	**$ 144,000**		**$0**	**$0**	**$259,787**	**$0**	**$0**	**$0**	**$0**		**$0**	**$259,787**	**$0**	**$0**
	Classroom, built-ins replace - allow 10%	$ 144,000	3	$0	$0	$259,787	$0	$0	$0	$0	2	$0	$259,787	$0	
075000	**Roofing**	**$ 2,263,819**		**$0**	**$0**	**$4,084,094**	**$0**	**$0**	**$0**	**$0**		**$0**	**$4,084,094**	**$0**	**$0**
	Demo extg roofing (measured on surface)	$ 269,256	3	$0	$0	$485,757	$0	$0	$0	$0	2	$0	$485,757	$0	
	New roofing, EPDM	$ 1,132,754	3	$0	$0	$2,043,571	$0	$0	$0	$0	2	$0	$2,043,571	$0	
	New roofing, Asphalt shingles	$ 429,096	3	$0	$0	$774,121	$0	$0	$0	$0	2	$0	$774,121	$0	
	Additional new insulation requirements	$ 361,557	3	$0	$0	$652,275	$0	$0	$0	$0	2	$0	$652,275	$0	
	Flashing, downspouts and gutters	$ 24,104	3	$0	$0	$43,485	$0	$0	$0	$0	2	$0	$43,485	$0	
	Roof MEP penetrations. Flashing	$ 12,052	3	$0	$0	$21,743	$0	$0	$0	$0	2	$0	$21,743	$0	
	Walker pads	$ 35,000	3	$0	$0	$63,143	$0	$0	$0	$0	2	$0	$63,143	$0	
079200	**Joint Sealants**	**$ 56,600**		**$0**	**$0**	**$102,111**	**$0**	**$0**	**$0**	**$0**		**$0**	**$102,111**	**$0**	**$0**
	Exterior perimeter sealants, windows	$ 5,000	3	$0	$0	$9,020	$0	$0	$0	$0	2	$0	$9,020	$0	
	Exterior perimeter sealants, dissimilar materials	$ 17,200	3	$0	$0	$31,030	$0	$0	$0	$0	2	$0	$31,030	$0	
	Interior sealants and caulking	$ 34,400	3	$0	$0	$62,060	$0	$0	$0	$0	2	$0	$62,060	$0	
081000	**Doors, Frames and Hardware**	**$ 139,000**		**$0**	**$0**	**$0**	**$0**	**$0**	**$250,766**	**$0**		**$0**	**$250,766**	**$0**	**$0**
	New doors into extg frames	$ 65,000	6	$0	$0	$0	$0	$0	$117,265	$0	2	$0	$117,265	$0	
	New hardware sets onto extg doors	$ 40,000	6	$0	$0	$0	$0	$0	$72,163	$0	2	$0	$72,163	$0	
	Install doors/hardware	$ 34,000	6	$0	$0	$0	$0	$0	$61,338	$0	2	$0	$61,338	$0	
088000	**Glazing**	**$ 444,020**		**$0**	**$0**	**$692,800**	**$0**	**$0**	**$108,244**	**$0**		**$0**	**$801,045**	**$0**	**$0**
	Exterior														
	Type B New exterior storefront windows, operable, new in c. 1970	$ 335,790	3	$0	$0	$605,790	$0	$0	$0	$0	2	$0	$605,790	$0	
	Type C New exterior storefront windows, operable, new in c. 1955	$ 48,230	3	$0	$0	$87,010	$0	$0	$0	$0	2	$0	$87,010	$0	
	Interior														
	Interior door glazing	$ 60,000	6	$0	$0	$0	$0	$0	$108,244	$0	2	$0	$108,244	$0	
092000	**Gypsum Board Assemblies**	**$ 165,044**		**$0**	**$0**	**$154,645**	**$0**	**$0**	**$143,106**	**$0**		**$0**	**$297,751**	**$0**	**$0**
	Extg interior GWB wall patching	$ 23,220	3	$0	$0	$41,891	$0	$0	$0	$0	2	$0	$41,891	$0	
	New GWB dgs and soffits	$ 62,500	3	$0	$0	$112,755	$0	$0	$0	$0	2	$0	$112,755	$0	
	Interior CMU wall strengthening		6	$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Interior CMU wall strengthening, Sikawrap, furnish	$ 33,244	6	$0	$0	$0	$0	$0	$59,974	$0	2	$0	$59,974	$0	
	Interior CMU wall strengthening, Sikawrap, install	$ 46,080	6	$0	$0	$0	$0	$0	$83,132	$0	2	$0	$83,132	$0	
093000	**Tiling**	**$ 31,000**		**$0**	**$0**	**$55,926**	**$0**	**$0**	**$0**	**$0**		**$0**	**$55,926**	**$0**	**$0**
	New tiling in toilet rooms, sizes varies														
	F104A	$ 6,200	3	$0	$0	$11,185	$0	$0	$0	$0	2	$0	$11,185	$0	
	B140	$ 6,200	3	$0	$0	$11,185	$0	$0	$0	$0	2	$0	$11,185	$0	
	B141	$ 6,200	3	$0	$0	$11,185	$0	$0	$0	$0	2	$0	$11,185	$0	
	B150	$ 6,200	3	$0	$0	$11,185	$0	$0	$0	$0	2	$0	$11,185	$0	
	B151	$ 6,200	3	$0	$0	$11,185	$0	$0	$0	$0	2	$0	$11,185	$0	
095000	**Acoustical Panel Ceiling**	**$ 141,816**		**$0**	**$0**	**$127,923**	**$0**	**$0**	**$127,923**	**$0**		**$0**	**$255,846**	**$0**	**$0**
	New ACT, 2 x 2 from removed 1 x 1's	$ 141,816	3,6	$0	$0	$127,923	$0	$0	$127,923	$0	2	$0	$255,846	$0	
096500	**Resilient Tile Flooring**	**$ 793,800**		**$0**	**$0**	**$110,409**	**$1,321,664**	**$0**	**$0**	**$0**		**$0**	**$110,409**	**$1,321,664**	**$0**
	New VCT flooring, per McGuire Grp	$ 600,000	4	$0	$0	$0	$1,082,444	$0	$0	$0	3	$0	$0	$1,082,444	
	New rubber wall base	$ 10,000	4	$0	$0	$0	$18,041	$0	$0	$0	3	$0	$0	$18,041	

	Stage, Refinish wood flooring	$ 12,800	4	$0	$0	$0	$23,092	$0	$0	$0	3	$0	$0	$23,092	
	S100A Gym, Refinish wood flooring	$ 53,200	3	$0	$0	$95,977	$0	$0	$0	$0	2	$0	$95,977	$0	
	Other areas, Refinish wood flooring	$ 8,000	3	$0	$0	$14,433	$0	$0	$0	$0	2	$0	$14,433	$0	
	F101B Gym, New rubber flooring	$ 109,800	4	$0	$0	$0	$198,087	$0	$0	$0	3	$0	$0	$198,087	
096800	**Carpet**	**$ 67,410**		**$0**	**$0**	**$0**	**$121,613**	**$0**	**$0**	**$0**		**$0**	**$0**	**$121,613**	**$0**
	Auditorium New carpet, furnish	$ 21,690	4	$0	$0	$0	$39,130	$0	$0	$0	3	$0	$0	$39,130	
	Auditorium New carpet, install	$ 10,845	4	$0	$0	$0	$19,565	$0	$0	$0	3	$0	$0	$19,565	
	Offices/conf rooms carpet, furnish	$ 23,250	4	$0	$0	$0	$41,945	$0	$0	$0	3	$0	$0	$41,945	
	Offices/conf rooms carpet, install	$ 11,625	4	$0	$0	$0	$20,972	$0	$0	$0	3	$0	$0	$20,972	
099000	**Painting**	**$ 267,242**		**$117,265**	**$0**	**$182,430**	**$182,430**	**$0**	**$0**	**$0**		**$117,265**	**$182,430**	**$182,430**	**$0**
	Interior														
	New painting, CMU walls, cigs, soffits	$ 195,000	1,3,4	$117,265	$0	$117,265	$117,265	$0	$0	$0	1/2/3	$117,265	$117,265	$117,265	
	Exterior														
	Exterior façade/trim cleaning & painting as req'd	$ 72,242	3,4	$0	$0	$65,165	$65,165	$0	$0	$0	2/3	$0	$65,165	$65,165	
101100	**Specialties**	**$ 60,840**		**$0**	**$0**	**$50,514**	**$0**	**$0**	**$59,246**	**$0**		**$0**	**$109,760**	**$0**	**$0**
	Interior door signage	$ 15,000	3	$0	$0	$27,061	$0	$0	$0	$0	2	$0	$27,061	$0	
	Directory signage	$ 9,000	3	$0	$0	$16,237	$0	$0	$0	$0	2	$0	$16,237	$0	
	Interior wall signage	$ 4,000	3	$0	$0	$7,216	$0	$0	$0	$0	2	$0	$7,216	$0	
	Specialties		4												
	Fire extinguisher cabinets	$ 2,800	6	$0	$0	$0	$0	$0	$5,051	$0	2	$0	$5,051	$0	
	Grab bars	$ 3,040	6	$0	$0	$0	$0	$0	$5,484	$0	2	$0	$5,484	$0	
	Toilet Partition, ADA	$ 27,000	6	$0	$0	$0	$0	$0	$48,710	$0	2	$0	$48,710	$0	
110000	**Equipment**	**$ 87,100**		**$106,621**	**$0**	**$0**	**$50,514**	**$0**	**$0**	**$0**		**$106,621**	**$0**	**$50,514**	**$0**
	New Kitchen & Dining, allowance		7	$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	$0
	New Kitchen warming station equipment in extended space (1,400 SF)		3	$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Renovate Kitchen warming station equipment in existing space (700 SF)	$ 59,100	1	$106,621	$0	$0	$0	$0	$0	$0	1	$106,621	$0	$0	
	Auditorium Stage rigging system	$ 28,000	4	$0	$0	$0	$50,514	$0	$0	$0	3	$0	$0	$50,514	
120000	**Furnishings**	**$ 220,400**		**$0**	**$0**	**$0**	**$397,618**	**$0**	**$0**	**$0**		**$0**	**$0**	**$397,618**	**$0**
	New Auditorium Seating	$ 220,400	4	$0	$0	$0	$397,618	$0	$0	$0	3	$0	$0	$397,618	
130000	**Temporary Classroom Units**	**$ 1,656,000**		**$0**	**$0**	**$0**	**$0**	**$2,987,545**	**$0**	**$0**		**$0**	**$2,987,545**	**$0**	**$0**
	Temporary Classroom Units, 30 months	$ 1,656,000	5	$0	$0	$0	$0	$2,987,545	$0	$0	2	$0	$2,987,545	$0	$0
140000	**Conveying Equipment**	$ -		**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**		**$0**	**$0**	**$0**	**$0**
		$ -		$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
210000	**Fire Protection**	**$ 968,573**		**$0**	**$0**	**$0**	**$0**	**$0**	**$1,747,376**	**$0**		**$0**	**$1,747,376**	**$0**	**$0**
	New sprinkler branch lines and heads	$ 904,001	6	$0	$0	$0	$0	$0	$1,630,884	$0	2	$0	$1,630,884	$0	
	Risers and main line piping, ETR														
	Coordination's/permits/fees/as-built	$ 64,572	6	$0	$0	$0	$0	$0	$116,492	$0	2	$0	$116,492	$0	
220000	**Plumbing**	**$ 1,361,350**		**$131,388**	**$0**	**$826,150**	**$1,498,438**	**$0**	**$0**	**$0**		**$131,388**	**$826,150**	**$1,498,438**	**$0**
	Replacement plumbing fixtures in extg locations														
	P1-P1A Toilet	$ 134,200	2-3,3-4	$0		$121,053	$121,053	$0	$0	$0	2/3	$0	$121,053	$121,053	
	P2 - Urinal	$ 26,000	2-3,3-4	$0		$23,453	$23,453	$0	$0	$0	2/3	$0	$23,453	$23,453	
	P3 - Lav	$ 91,800	2-3,3-4	$0		$82,807	$82,807	$0	$0	$0	2/3	$0	$82,807	$82,807	
	PX-1 - Classroom Sinks including faucets	$ 108,500	2-3,3-4	$0		$97,871	$97,871	$0	$0	$0	2/3	$0	$97,871	$97,871	
	Shower heads with master mixing valve, Boys	$ 40,000	3	$0	$0	$72,163	$0	$0	$0	$0	2	$0	$72,163	$0	
	Floor drains, Boys	$ 40,000	3	$0	$0	$72,163	$0	$0	$0	$0	2	$0	$72,163	$0	

	Shower trim, new piping to stalls, Girls	$	75,000	3	$0	$0	$135,305	$0	$0	$0	$0	2	$0	$135,305	$0	
	Shower trim, new piping to stalls, M/W	$	10,000	4	$0	$0	$0	$18,041	$0	$0	$0	3	$0	$0	$18,041	
	HW Heater @ Smith, 120 gal, 199 MBH, conn to ex	$	6,500	1	$11,726	$0	$0	$0	$0	$0	$0	1	$11,726	$0	$0	
	Replacement H/C water piping, varied sizes	$	177,650	4	$0	$0	$0	$320,494	$0	$0	$0	3	$0	$0	$320,494	
	New science areas & Prep Areas (4 EA), new faucets, HW/CW piping, new water heater, recirc pump, lab wastes to treatment tanks, new gas piping, new safety cabinets with safety shut-offs, solenoid valve & trip	$	260,000	4	$0	$0	$0	$469,059	$0	$0	$0	3	$0	$0	$469,059	
	New drinking/hydration stations	$	40,500	1	$73,065	$0	$0	$0	$0	$0	$0	1	$73,065	$0	$0	
	New grease interceptors (2 EA), 600 gal and kitchen waste piping	$	80,000	4	$0	$0	$0	$144,326	$0	$0	$0	3	$0	$0	$144,326	
	Upgrades to extg equipment & systems	$	193,715	1/2 -3, 1/2 -4	$0	$0	$174,738	$174,738	$0	$0	$0	1,2,3	$0	$174,738	$174,738	
	Coordination's/permits/fees/as-built	$	77,486	split up	$46,597	$0	$46,597	$46,597	$0	$0	$0	1,2,3	$46,597	$46,597	$46,597	
	ALTERNATE															
	PRIORITIZED CENTRAL SYSTEM Domestic HW Boiler (indirect) @ Brooks (including recirc system & new HW piping): deduct line #172: net add			7	$0	$0	$0	$0	$0	$0	$0	ALT	$0	$0	$0	$0
230000	**HVAC**	**$**	**3,306,065**		**$937,614**	**$0**	**$1,250,364**	**$1,516,013**	**$0**	**$865,955**	**$1,394,436**		**$937,614**	**$2,116,319**	**$2,910,449**	**$0**
	DEMOLITION															
	Demo extg systems w/ piping back to main & cap	$	64,572	2-3,3-4	$0		$58,246	$58,246	$0	$0	$0	2/3	$0	$58,246	$58,246	
	NEW WORK															
	EQUIPMENT															
	New AHU equipment to serve link, corridors, gym & admin areas only	$	715,000	1-1,2-3,3-4	$429,971		$429,971	$429,971	$0	$0	$0	1/2/3	$429,971	$429,971	$429,971	
	Classroom Unit Ventilators	$	360,000	2-3,3-4			$324,733	$324,733				2/3	$0	$324,733	$324,733	
	Exhaust fans	$	87,500	2-3,3-4	$0		$78,928	$78,928	$0	$0	$0	2/3	$0	$78,928	$78,928	
	Condensors	$	24,000	2-3,	$0	$0	$43,298	$0	$0	$0	$0	2	$0	$43,298	$0	
	Condensors	$	40,000	2-3,	$0	$0	$72,163	$0	$0	$0	$0	2	$0	$72,163	$0	
	Reheats	$	129,143	2-3,3-4	$0		$116,492	$116,492	$0	$0	$0	2/3	$0	$116,492	$116,492	
	Boiler system replacement/upgrades in Brooks Boiler Room including VFDs, pumps, expansion system, breeching, etc	$	190,000	3-4,	$0	$0	$0	$342,774	$0	$0	$0	3	$0	$0	$342,774	
	Boiler system replacement/upgrades in Smith Boiler Room including VFDs, pumps, expansion system, breeching, etc	$	190,000	1	$342,774	$0	$0	$0	$0	$0	$0	1	$342,774	$0	$0	
	ALTERNATES															
	Packaged Boiler Room Alternate for Smith Replacement - net add			7	$0	$0	$0	$0	$0	$0	$0	ALT	$0	$0	$0	$0
	Single Central Boiler Room @ Brooks with Condensing Gas-Fired Modular Boilers, VFD pumps, controls, new piping - net deduct			7	$0	$0	$0	$0	$0	$0	$0	ALT	$0	$0	$0	$0
	DUCTWORK & ACCESSORIES															
	New Galvanized Ductwork in all Admin Areas	$	560,000	7	$0	$0	$0	$0	$0	$0	$1,010,281	3	$0	$0	$1,010,281	
	Duct Insulation	$	192,500	7	$0	$0	$0	$0	$0	$0	$347,284	3	$0	$0	$347,284	
	PIPING															
	RTU & Unit Ventilators Piping w/ Insulation	$	82,500	1-1,2-3,3-4	$49,612		$49,612	$49,612	$0	$0	$0	1/2/3	$49,612	$49,612	$49,612	
	New Boiler Piping w/ connections & insulation	$	42,500	1-1,3-4	$38,337	$0	$0	$38,337	$0	$0	$0	1/3	$38,337	$0	$38,337	
	Refrigerant Piping w/ Insulation	$	21,600	1-1,2-3,3-4	$12,989		$12,989	$12,989	$0	$0	$0	1/2/3	$12,989	$12,989	$12,989	
	Supply/return distribution piping	$	45,000	1-1,2-3,3-4	$27,061		$27,061	$27,061	$0	$0	$0	1/2/3	$27,061	$27,061	$27,061	
	DDC CONTROLS	$	480,000	6	$0	$0	$0	$0	$0	$865,955	$0	2	$0	$865,955	$0	
	MISCELLANEOUS															
	Mobilization	$	7,150	1,3,4	$3,225	$0	$3,225	$3,225	$0	$0	$3,225	1/2/3	$3,225	$3,225	$6,450	
	Rigging w/ equipment	$	24,000	1,3,4	$10,824	$0	$10,824	$10,824	$0	$0	$10,824	1/2/3	$10,824	$10,824	$21,649	
	Shop Drawings and Submittals	$	8,800	1,3,4	$3,969	$0	$3,969	$3,969	$0	$0	$3,969	1/2/3	$3,969	$3,969	$7,938	
	Inspections	$	11,000	1,3,4	$4,961	$0	$4,961	$4,961	$0	$0	$4,961	1/2/3	$4,961	$4,961	$9,922	

	Identification, cleaning	$ 4,400	1,3,4	$1,984	$0	$1,984	$1,984	$0	$0	$1,984	1/2/3	$1,984	$1,984	$3,969	
	Testing and Balancing	$ 13,200	1,3,4	$5,953	$0	$5,953	$5,953	$0	$0	$5,953	1/2/3	$5,953	$5,953	$11,907	
	Commissioning	$ 13,200	1,3,4	$5,953	$0	$5,953	$5,953	$0	$0	$5,953	1/2/3	$5,953	$5,953	$11,907	
260000	**Electrical**	**$ 3,248,238**		**$0**	**$293,709**	**$2,052,733**	**$2,224,992**	**$0**	**$757,196**	**$531,429**		**$293,709**	**$2,809,929**	**$2,756,420**	**$0**
	POWER EQUIPMENT														
	New power equipment	$ 258,286		$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Brooks		2,4		$116,492		$116,492				1/3	$116,492	$0	$116,492	
	Smith		3,4			$116,492	$116,492				2/3	$0	$116,492	$116,492	
	POWER DISTRIBUTION FEEDERS														
	New power equipment	$ 258,286		$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Brooks		2,4		$116,492		$116,492				1/3	$116,492	$0	$116,492	
	Smith		3,4			$116,492	$116,492				2/3	$0	$116,492	$116,492	
	LIGHTING FIXTURES														
	Light fixtures, LED, furnish	$ 1,033,144	2-3,3-4	$0	$0	$931,934	$931,934	$0	$0	$0	2/3	$0	$931,934	$931,934	
	Light fixtures, install	$ 387,429	2-3,3-4	$0	$0	$349,475	$349,475	$0	$0	$0	2/3	$0	$349,475	$349,475	
	Light fixture wiring	$ 226,000	2-3,3-4	$0	$0	$203,860	$203,860	$0	$0	$0	2/3	$0	$203,860	$203,860	
	Lighting Control Sensors	$ -	6	$0	$0	$0	$0	$0	$0	$0		$0	$0	$0	
	Lighting Control Sensors	$ 161,429	6	$0	$0	$0	$0	$0	$291,229	$0	2	$0	$291,229	$0	
	Switches	$ 64,572	2-3,3-4	$0	$0	$58,246	$58,246	$0	$0	$0	2/3	$0	$58,246	$58,246	
	Receptacles	$ 96,857	2-3,3-4	$0	$0	$87,369	$87,369	$0	$0	$0	2/3	$0	$87,369	$87,369	
	Branch wiring	$ 142,057	2-3,3-4	$0	$0	$128,141	$128,141	$0	$0	$0	2/3	$0	$128,141	$128,141	
	New Fire Alam system and FACP	$ 258,286	6	$0	$0	$0	$0	$0	$465,967	$0	2	$0	$465,967	$0	
	Auditorium lighting	$ 100,000	7	$0	$0	$0	$0	$0	$0	$180,407	3	$0	$0	$180,407	$0
	LIFE SAFETY POWER GENERATION														
	75 KW generator, diesel w/ ATS and feeders	$ 90,000	7	$0	$0	$0	$0	$0	$0	$162,367	3	$0	$0	$162,367	$0
	Day tank	$ 40,000	7	$0	$0	$0	$0	$0	$0	$72,163	3	$0	$0	$72,163	$0
	ALTERNATE														
	LIGHTNING PROTECTION SYSTEM														
	Lightning protection	$ 64,572	7	$0	$0	$0	$0	$0	$0	$116,492	3	$0	$0	$116,492	$0
	Misc.														
	Rigging w/ equipment	$ 12,000	2,3	$0	$10,824	$10,824	$0	$0	$0	$0	1/2	$10,824	$10,824	$0	
	Shop Drawings and Submittals	$ 8,800	2,3	$0	$7,938	$7,938	$0	$0	$0	$0	1/2	$7,938	$7,938	$0	
	Inspections	$ 4,400	2,3	$0	$3,969	$3,969	$0	$0	$0	$0	1/2	$3,969	$3,969	$0	
	Identification, cleaning	$ 4,400	2,3	$0	$3,969	$3,969	$0	$0	$0	$0	1/2	$3,969	$3,969	$0	
	Temporary power+lighting	$ 15,000	2,3	$0	$13,531	$13,531	$0	$0	$0	$0	1/2	$13,531	$13,531	$0	
	Seismic restrain-For equipment	$ 10,000	2,3	$0	$9,020	$9,020	$0	$0	$0	$0	1/2	$9,020	$9,020	$0	
	Start-up (motors), testing, commissioning	$ 7,932	2,3	$0	$7,155	$7,155	$0	$0	$0	$0	1/2	$7,155	$7,155	$0	
	Penetration through slabs, walls w/ cutting, sealing, patching+painting	$ 4,789	2,3	$0	$4,319	$4,319	$0	$0	$0	$0	1/2	$4,319	$4,319	$0	
270000	**Tel/Data System (Including Paging/PA)**	**$ 619,886**		**$0**	**$0**	**$232,983**	**$232,983**	**$0**	**$0**	**$652,354**		**$0**	**$232,983**	**$885,337**	**$0**
	IT Outlets, cables, terminations and equipment	$ 258,286	2-3,3-4	$0	$0	$232,983	$232,983	$0	$0	$0	2/3	$0	$232,983	$232,983	
	PUBLIC ADDRESS														
	Clocks/speaker/paging	$ 297,029	7	$0	$0	$0	$0	$0	$0	$535,862	3	$0	$0	$535,862	$0
	ALTERNATE														
	SECURITY SYSTEMS														
	Card readers/cameras/CCTV	$ 64,572	7	$0	$0	$0	$0	$0	$0	$116,492	3	$0	$0	$116,492	$0
310000	**Earthwork**	**$ 173,400**		**$0**	**$0**	**$82,987**	**$102,471**	**$0**	**$127,368**	**$0**		**$0**	**$210,355**	**$102,471**	**$0**
	E/B efforts and patching for new H/C exterior ramps w/ frost walls, 40 LF EA	$ 10,600	6	$0	$0	$0	$0	$0	$19,123	$0	1	$0	$19,123	$0	
	New FP water service, 6"	$ 60,000	6	$0	$0	$0	$0	$0	$108,244	$0	1	$0	$108,244	$0	

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