NEWTON PAVILION AT BOSTON MEDICAL CENTER

88 East Newton Street
Boston, Massachusetts 02118

July 31, 2017

Report of Property Condition Assessment

DRAFT

FAITHFUL + GOULD

2318 Mill Road Suite 1410 Alexandria VA 22314
Tel. +1 703.684.6550

July 31, 2017

DRAFT

Payette
290 Congress Street, Fifth Floor
Boston, Massachusetts 02210

Attention: George E. Marsh, Jr., FAIA
Principal

Reference: Report of Property Condition Assessment
Newton Pavilion at Boston Medical Center
88 East Newton Street
Boston, Massachusetts 02118
Faithful+Gould Project No. 100056092

Dear Mr. Marsh:

Faithful+Gould, Inc. has completed a report of our Property Condition Assessment of the Newton Pavilion at Boston Medical Center located in at 88 East Newton Street in Boston, Massachusetts ("the Property"). This report was completed in connection with a potential acquisition of the Property. This report provides a summary of the project information known to us at the time of the study, the scope of work performed, an evaluation of the visually apparent condition of Property and a forecast of anticipated capital expenditures required over the next ten-years.

This report was completed in general accordance with the ASTM E2018-15 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process, and Faithful+Gould's proposal for Property Condition Assessment services.

Please review the attached report and advise us of any questions or comments.

Very Truly Yours,

H. Michael Day
Chief Facility Assessor

Benjamin J.M. Dutton, BSc (Hons), MCIOB, MRICS
Vice President

TABLE OF CONTENTS

SECTION 4 – APPENDIX ITEMS

SECTION 1 – EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Introduction

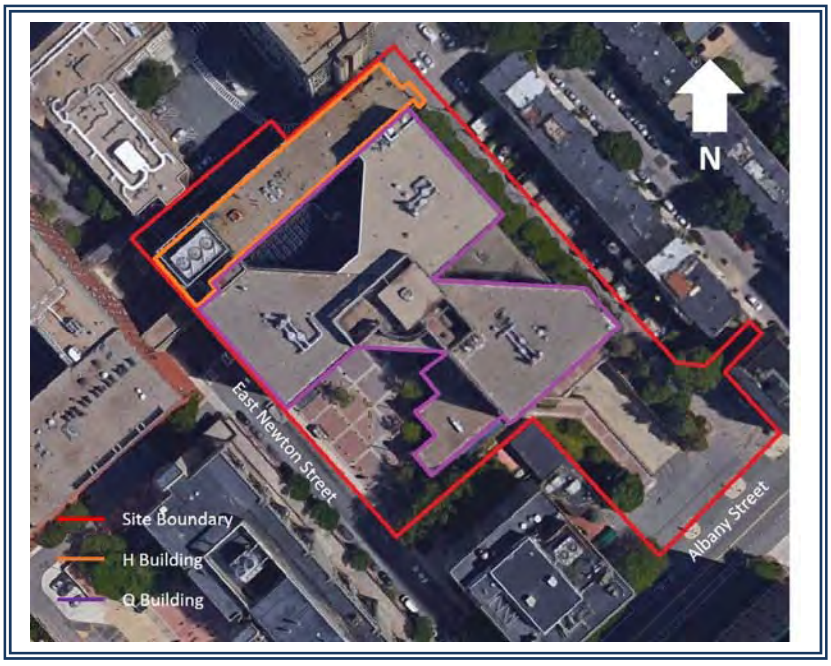
Newton Pavilion at Boston Medical Center ("the Property") consists of two interconnected variable size / variable age healthcare buildings located at 88 East Newton Street in Boston, Massachusetts. The smaller of the two buildings consist of the "H Building" which is located at the northern portion of the site, contains six stories plus a basement level and was completed in 1971. The second and larger of the two buildings consists of the "Q Building". The Q Building is located at the southern portion of the site, contains eight stories plus a basement level and was completed in 1986. Table EX-1 and Plan EX-1 provide a summary and aerial view of the two buildings.

Table EX-1 – Building Summary

Building	Completion Date	Stories (Above Grade)	Stories (Below Grade)	Gross Square Feet
H	1971	6	1	82,963 SF [1]
Q	1986	8	1	339,782 SF [1]
			TOTAL	**422,745 SF [1]**

1 Total Square Footage taken off Floor Plans provided by Boston Medical Center (418,833 SF), with an additional area (3,912 SF) added on to cover the link bridge above East Newton Street and the link bridge at the north elevation, totaling 422,745 SF. Areas of Q and H Buildings were not differentiated on the plans provided. As a result, H Building figure is a SF rate taken off aerial plans, multiplied by 7 (6 above-grade stories plus 1 basement story which equals 79,051 SF), plus the areas for the link bridges (79,051 + 3,912 = 82,963 SF).

Plan EX-1 Site Layout



Newton Pavilion is located on an urban site measuring approximately 2.675 acres in Boston's South End. The Property is bounded by public streets and sidewalks, hospital/medical buildings and facilities and residential accommodation.

Scope of Services

Faithful+Gould, Inc. was retained to complete a Property Condition Assessment (PCA) of the Property. The PCA was completed to determine the following two specific factors:

1. Physical condition and code compliance of all systems and determine capital expenditures required between 2019 and 2028.

2. Projects and expenditures required to separate the services that are 1) supplied to the buildings and 2) that feed from the buildings.

In order to complete this scope, on July 6, 2017 and July 7, 2017, Mr. Benjamin Dutton BSc (Hons), MCIOB, MRICS, Mr. David Evans BSc (Hons) MRICS and Mr. H. Michael Day of Faithful+Gould visited the Property to observe and document the condition of the building and site components. Our assessment was completed in general accordance with the ASTM E2018 - 15 Standard Guide for Property Condition Assessments: Baseline Property Condition Assessment Process and was completed in connection with a potential acquisition. Faithful+Gould was accompanied and assisted by the individuals listed in Table EX-2.

Table EX-2 – Personnel Interviewed

Person Interviewed	Employer	Position	Time at Property
Michael S. Vega	Boston Medical Center (BMC)	Capital Planning Manager, Design & Construction	4 Years

Our conversations focused on a per system discussion of installed systems, performance and planned/previous expenditures relating to those systems.

Separation

Table EX-3 below provides a summary of separation items required and their associated costs.

Table EX-3 – Summary of Separation Items

Separation Item	Opinion of Cost
A 2" oxygen line (along with medical gas alarm wiring) runs from the Evans Building to the Q Building. This medical gas service needs to be disconnected and a new service installed at the loading dock of the Q Building.	$403,000
A 4" natural gas line runs from the Q Building basement mechanical room to the Evans Building. This utility gas service needs to be disconnected and a new service installed at the street level.	$175,000
A 2" domestic water line runs from the Q Building basement mechanical room to the Evans Building. This utility water service needs to be disconnected and a new service installed at the street level.	$323,050
A 6" fire sprinkler water line runs from the Q Building basement mechanical room to the Evans Building. This fire suppression service would need to be disconnected and a new service installed in the Evans Building.	$416,000
The Evans emergency power runs from the Q and H Building electrical rooms to the Evans Building. This emergency power service would need to be disconnected and a new service installed in the Evans Building.	$604,000
The main electric power for the Q Building is fed from a vault in the Evans Building, and fed under the road to the Q Building. The vault appears to be a NSTAR vault, but access is gained through the Evans Building main electric room. To disconnect from the Evans Vault, a new Vault would need to be built and the feeders rerouted to the vault.	$1,137,500
The Preston Building emergency power runs from the H Building 4th floor electrical room to the Preston Building. This emergency power service would need to be disconnected and a new service installed in the Evans Building.	$513,500
Doctor's Office Building normal utility power runs from the H Building 4th floor electrical room to the Doctor's Office Building. This power service would need to be disconnected and a new service installed in the building.	$806,000
The Doctor's Office Building emergency power runs from the H Building 4th floor electrical room to the Doctor's Office Building. This emergency power service would need to be disconnected and a new service installed in the building.	$650,000

Separation Item	Opinion of Cost
The Doctor's Office Building chilled water runs from the H Building penthouse, exposed on the exterior, to the Doctor's Office Building. This chilled water service would need to be disconnected and a new service installed in the building.	$1,316,250
The H Building is linked to the Evans Building at Levels 2, 3 and 4 via an enclosed walkway and a below-ground basement tunnel.	$75,000
The H Building is also linked to the offsite Preston Building at the northwest of the site via an enclosed walkway at Level 3 of the H Building.	

Coordination with Master Plan

We understand that Newton Pavilion in its entirety (i.e. both Q and H Buildings) is subject to a future master plan, proposed to be starting in 2019. This program, prepared by Payette, will reportedly focus upon reconfiguration and alterations, including creation of new rooms and spaces and refurbishment of existing areas. The master plan work (and its associated costs) does not necessarily include costs for addressing defective conditions or separation. As such, the overlap between costs contained within this report of Property Condition Assessment and costs contained within the master plan are minimal. Table EX-4 details which costs have been included for within our report of Property Condition Assessment and which condition / code related costs have been excluded (and therefore included within the master plan).

Table EX-4 – Costs Included by Payette or Faithful+Gould

Condition	Faithful+Gould Included Cost	Payette Included Cost
Defective Site Elements	✓	X
Defective Structural Elements	✓	X
Defective Roof Elements	✓	X
Defective Exterior Elements	✓	X
Defective MEP Elements	✓	X
Defective Fire Elements	✓	X
Defective Elevator Elements	✓	X
Non-Compliant Exterior Accessibility	✓	X
Non-Compliant Interior Accessibility	X	✓

Condition	Faithful+Gould Included Cost	Payette Included Cost
Defective or Cyclical Replacement of Interior Finishes, Equipment & Elements	X	✓

Capital Requirements

Capital expenditures over the study period inclusive of separation costs total **$22,770,991** in current dollars. Table EX-5 provides a tabular listing of expenditures by year.

Table EX-5 - Capital Expenditures by Year

Year	Separation Costs	Capital Expenditures	TOTAL Expenditures
Immediate	$0	$0	$0
2019	$6,420,300	$7,680,550	$14,100,850
2020	$0	$1,330	$1,330
2021	$0	$1,330	$1,330
2022	$0	$1,890,257	$1,890,257
2023	$0	$1,414,856	$1,414,856
2024	$0	$42,830	$42,830
2025	$0	$19,330	$19,330
2026	$0	$1,330	$1,330
2027	$0	$8,673	$8,673
2028	$0	$5,290,205	$5,290,205
TOTAL	**$6,420,300**	**$16,350,690**	**$22,770,991**

Risks / Open Items

The Property and this report presents several risks and has identified various open items. These are discussed below:

Separation

- We were unable to fully access or review drawings for the Doctor's Office Building, Evans Building or Preston Building. As a result, we have made certain assumptions regarding the services within and structural capacity of elements and systems within these buildings.

- We have not met with any utility providers.
- We have not reviewed the presence or availability of easements.
- We have not determined the availability of access of Albany Street or Newton Street.

Refer to Section 2 (Decoupling of Systems) section of this report for further details.

Opinions of Cost

- Costs presented within this report represent our best estimate of anticipated open market contractor costs at the time of writing this report. It should be understood that the Boston market is extremely variable and that actual costs can vary significantly from those identified within this report.
- In the case of separation expenditures, opinions of cost have been prepared based upon our early conceptual view of what systems will be installed and how separation will occur. These costs should be seen as early rough order of magnitude allowances that will change as designs are prepared and additional due diligence is completed.

Open Item Related Risks

- We noted water ingress into the basement level. We have included an allowance for evaluation and repair of this condition. Our allowance for repair is a placeholder with the actual cost only known once the aforementioned evaluation is completed.
- The Certificate for Use for the elevators has expired. Elevators should be re-inspected immediately. In addition, elevators are subject to a poor level of maintenance. For safety and reliability reasons, this should be discussed with the elevator maintenance contractor.
- The City of Boston requires that façades for buildings over 70’ tall are inspected every five years. The Property is subject to these requirements; however, we understand that inspections have not been completed. Inspections should be completed in the near-term. We have included allowances for inspection and the completion of anticipated repairs within the attached capital expenditure forecast.
- The Property is subject to 26 permits that were not marked as completed or closed. These should be investigated to determine their status.
- We have requested from the City, but not yet received a copy of the most recent fire inspection report.
- Certificates of Occupancy have been requested but not received.

Terminology & Limitations

This report and the attached expenditure forecast generally identify the Expected Useful Life (EUL) and the Remaining Useful Life (RUL) of observed systems and components. EUL is projected based upon industry-standard guidelines and our experience with similar systems. RUL is projected based upon our assessment of age, condition and maintenance/repair history.

The timing of the projected expenditures and their associated costs represent our opinion considering the aforementioned factors. Alternative methods of managing the existing equipment or systems may be feasible over the 10-Year study period. However, these alternative methods will depend upon actual management practices, financing requirements and the ability of the engineering staff to perform some of the repairs in-house. Alternative scenarios that have not been presented to Faithful+Gould have not been considered within this report.

This report has been presented based upon our on-site observations, information provided to us, discussion with Building management and maintenance staff, our review of available documentation (see scope of services and document review section) and our experience with similar systems. If any information becomes available that is not consistent with the observations or conclusions expressed within this report, we request that this information be immediately forwarded to us. The evaluation of existing structures requires that certain assumptions be made regarding existing conditions. This evaluation was based upon our visual non-destructive evaluation of accessible conditions of the Property. Furthermore, this evaluation was limited in time on-site, fee and scope, and was not based upon a comprehensive engineering evaluation. As such, our report is not intended to represent a complete review of all systems, system components, a check or validation of design professionals' computations. Therefore, Faithful+Gould's evaluation and this report does not represent warranty or guarantee any system, system component or the future performance of any site improvement.

SECTION 2 – DECOUPLING OF SYSTEMS

DECOUPLING OF SYSTEMS - DISCUSSION

1.1 Mechanical Systems

1.1.1 Current Configuration

Connectivity of the heating, ventilation and air conditioning systems at the H and Q Buildings consists of chilled water being supplied from the Q Building, with three 900 ton chillers serving the H Building, Doctor's Office Building and through the Doctor's Office Building to the Preston Building.

The Q Building has three water-cooled centrifugal chillers which provide chilled water to the Q Building, the H Building, the Doctor's Office Building and the Preston Building. The chiller plant is in the basement of the Q Building. The current configuration for the Doctors Office Building HVAC has an 8" chilled water supply and return line feeding from the Q Building to the Doctor's Office Building and to the Preston Building. The Preston Building has its own chilled water pumps.

1.1.2 Decouple Doctor's Office Building AND Preston Building from Q HVAC

The decoupling of the buildings requires the chilled water pipes to be cut and capped in the Q Building mechanical room. With the decoupling of the chilled water lines from the Q Building, the Doctor's Office Building and the Preston Building would be left without air conditioning. *We have not reviewed drawings for the Doctor's Office Building to determine the best approach based on current design. Hence, any assumptions could be modified by representatives contracted to perform services for the Doctor's Office Building or by a design engineer during the renovation process.*

Based on our assumptions, as we have not assessed the Doctor's Office or Preston Buildings, an air conditioning system would need to be designed to handle the approximate load of 500 tons of air conditioning. Since the piping is currently located outside of the Doctor's Office Building, the most economical way to assure HVAC chilled water to the building would be to set an air-cooled water chiller on the roof and pipe the unit to the existing piping. This would eliminate the need to reconfigure the building, assuming the roof loading is such that the unit could be set with some structural improvements. We have based our assumption on using the existing chilled water lines in some configuration. We also believe that the new unit will require a new electric service, design and engineering, new pumps for the Doctor's Office Building, and commissioning and testing. We assume that the new chiller will carry the Preston Building, from the Doctor's Office Building due to the current piping configuration.

Additionally, Buildings Q and H are monitored via the power plant command center located on the Boston Medical Center Campus. As such, the graphics would need to be upgraded to display the new air conditioning system for the Doctor's Office Building and Preston Building. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Doctor's Office and Preston Buildings:

1. We have not assessed the building and do not know the facility layout
2. We have not reviewed drawings for the facility
3. We do not know the electrical switchgear location and capacity

4. We do not know the structural loading of the roof or floors
5. A mechanical designer may choose a different approach to solve the issue

Our opinion of cost for this decoupling exercise is $1,316,250 in 2017 dollars.

Table 1.1.2 – Decoupling Costs (Decouple Doctor's Office Building AND Preston Building from Q HVAC)

Item	Cost	Contingency	Total Cost
Design and Engineering	$40,000	$12,000	$52,000
Permits	$10,000	$3,000	$13,000
Install New Air Cooled Chiller (estimated at 500 Tons)	$637,500	$191,250	$828,750
Install New Chilled Water Pump/Piping to existing System	$100,000	$30,000	$130,000
Chiller Base and Infrastructure	$50,000	$15,000	$65,000
New Electric Service to Chiller	$60,000	$18,000	$78,000
Commissioning System	$50,000	$15,000	$65,000
Remove Old Pipes from Q Building	$60,000	$18,000	$78,000
Upgrade Graphics in Main Control Room	$5,000	$1,500	$6,500
Total Cost			**$1,316,250**

1.2 Electrical Systems

1.2.1 Current Configuration

The Q Building is fed from the NSTAR utility vault located in the Evans Building. The electrical drawings detail a series of protective relays, with the primary voltage fed to the Q Building main switchgear from the Evans vault underground. The Q Building primary electric then feeds the H Building and the Doctor's Office Building.

1.2.2 Decouple Q Building Electrical from Evans Building Electrical Power

Based on the drawing from J.G. Electric, which is a one-line drawing posted in the electric room dated 02/98, the 13.8-kV utilities that feed the Evans Building come into a NSTAR vault located within the Evans Building. The 13.8 kV system passes through a series of reclosing protective relays within the entry vault. The utilities then pass through another series of overcurrent protective relays. The utilities are then metered, and configured to the individual facilities. There are 4 feeders in the vault, Feeder 1 and 2 which serve buildings K, L, R, New Research, B, C, D, V and G on the Boston Medical Center main campus. Feeders 3 and 4 serve buildings E, Q, Doctor's Office and H building. *We have not spoken with the utility provider to determine*

their approach to the decoupling, and hence any assumptions could be modified by either the utility company or by a design engineer during the renovation process.

The 13.8Kv utilities that feeds Q and H Buildings appear to be tied only to the protective relays, meaning there is no disconnect between utility feed and the Q switchgear. The least intrusive method to decouple the Q Building from the Evans Building is to install a separate utility meter on the feeder line as it leaves the protective relays. This would allow the creation of a separate utility account for the Evans Building without a large-scale decoupling project.

If decoupling is essential, adding another set of overcurrent protective relays in the existing vault would allow the feeders to be tied directly to the main NSTAR switchgear. Without an in-depth review by the utility provider, we are unable to determine if there is enough space within the main distribution room to add additional overcurrent panels.

We based our pricing on the assumption that a new vault would be built tied into the existing NSTAR vault, and that two new overcurrent relay panels would be added, with a new utility meter to Q Building. We have assumed for the pricing exercise that a new vault would be built on the back of the existing vault, and new feeders would be routed to new switchgear in the vault, with new feeders passing under the East Newton Street (may be able to use old ones), directly to the Q Building basement sub-station. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Our opinion of cost for this decoupling exercise is $1,137,500 in 2017 dollars.

Table 1.2.2 – Decoupling Costs (Decouple Q Building Electrical from Evans Building Electrical Power)

Item	Cost	Contingency	Total Cost
Design and Engineering	$80,000	$24,000	$104,000
Utility Review	$35,000	$10,500	$45,500
Permits	$10,000	$3,000	$13,000
Install New Feeds from Edison Station	$150,000	$45,000	$195,000
Install New 14.4 KV Bus Switchgear	$300,000	$90,000	$390,000
Tie in New 14.4 to existing Switchgear	$125,000	$37,500	$162,500
Coordination Study	$35,000	$10,500	$45,500
Arc Flash Study	$30,000	$9,000	$39,000
Commissioning System	$50,000	$15,000	$65,000
Remove Feeders from Evans Building	$60,000	$18,000	$78,000
Total Cost			**$1,137,500**

1.2.3 Decouple Doctor's Office Building from Q Electrical Power

The Doctor's Office Building is currently tied into the Q Building, Building B switchgear located in the basement mechanical room. To decouple the buildings, the power would need to be terminated at the Q Building sub-station and new power fed from the existing NSTAR vault in the Evans Building. *We have not spoken with the utility provider to determine their approach to the decoupling, and hence any assumptions could be modified by either the utility company or by a design engineer during the renovation process.*

We based our pricing that the feeders for the Doctor's Office Building would be tied into the existing NSTAR vault through the overcurrent relays that would be reduced in current by the move to the new feeders for Q Building. We have assumed for the pricing exercise that new feeders would be routed to the existing NSTAR switchgear in the vault, with new feeders passing under the East Newton Street directly to the Doctor's Office Building. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Q Building from the Evans Building and the Doctor's Office Building from Q Building Electrical Power are below:

1. We have not met with utility provider and they will have final say in utility relocation
2. We do not know the feasibility of work between the buildings
3. We do not have an underground survey to determine a clear path from the Doctor's Office to Q Building
4. We have not reviewed drawings for Doctor's Office Building

Our opinion of cost for this decoupling exercise is $806,000 in 2017 dollars.

Table 1.2.3 – Decoupling Costs (Decouple Doctor's Office Building from Q Electrical Power)

Item	Cost	Contingency	Total Cost
Design and Engineering	$80,000	$24,000	$104,000
Utility Review	$35,000	$10,500	$45,500
Permits	$10,000	$3,000	$13,000
Install New Feeds from Edison Station	$150,000	$45,000	$195,000
Install New 14.4 KV Bus Switchgear	$125,000	$37,500	$162,500
Tie in New 14.4 to existing Switchgear	$80,000	$24,000	$104,000
Coordination Study	$30,000	$9,000	$39,000
Arc Flash Study	$15,000	$4,500	$19,500
Commissioning System	$30,000	$9,000	$39,000
Remove Feeders from Q Building	$60,000	$18,000	$78,000
Upgrade Graphics in Main Control Room	$5,000	$1,500	$6,500
Total Cost			**$806,000**

1.2.4 Decouple Doctor's Office Building Emergency Power from Q Emergency Electrical Power

The Doctor's Office Building is currently tied into the Q Building Emergency Transfer Switch Bus located on the 4th floor of the Q Building. The transfer switch feeds an Electrical Distribution Panel labeled EDP 4 in the Doctor's Office Building. To decouple the Doctor's Office Building, the feed from the transfer switch would need to be opened and wires terminated. A new generator, base, fuel tank and wiring to tie into existing EDP-4 transfer switch would need to be installed in the Doctor's Office Building to provide emergency power to the building.

We based our pricing on the assumption that the Doctor's Office Building would require to be left in a state of operation with the installation of a new generator and fuel system. We further based our assumption that the generator would require new infrastructure supports on the roofing system. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Doctor's Office Building Emergency Power from the Q Building Electrical Power include:

1. We have not reviewed drawings for the Doctor's Office Building
2. We do not know the final location of where the generator would be placed
3. We do not know the structural integrity of the roof

Our opinion of cost for this decoupling exercise is $650,000 in 2017 dollars.

Table 1.2.4 – Decoupling Costs
(Decouple Doctor's Office Building Emergency Power from Q Emergency Electrical Power)

Item	Cost	Contingency	Total Cost
Design and Engineering	$80,000	$24,000	$104,000
Permits	$10,000	$3,000	$13,000
Install New Generator (estimated to be 500 kw)	$175,000	$52,500	$227,500
Generator Base and Infrastructure	$50,000	$15,000	$65,000
Diesel Fuel Tank & Piping	$35,000	$10,500	$45,500
Tie into existing EDP-4 Transfer Switch	$80,000	$24,000	$104,000
Arc Flash Study	$5,000	$1,500	$6,500
Commissioning System	$30,000	$9,000	$39,000
Remove Feeders from Q Building	$30,000	$9,000	$39,000

Upgrade Graphics in Main Control Room	$5,000	$1,500	$6,500
Total Cost			**$650,000**

1.2.5 Decouple Evans Building Emergency Power from Q Emergency Electrical Power

The Evans Building is currently tied into the Q Building Emergency Transfer Switch Bus located on the 4th floor of the Q Building. The transfer switch feeds an emergency transfer switch labeled ATS in the Evans Building. To decouple the Evans Building, the feed from the Q Building transfer switch would need to be opened and wires terminated. A new generator, base, fuel tank and wiring to tie into existing ATS transfer switch would need to be installed in the Evans Building to provide emergency power to the building.

We based our pricing under the assumption that the Evans Building would require to be left in a state of operation with the installation of a new generator and fuel system. We further based our assumption that the generator would require new infrastructure supports on the roofing system. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Evans Building Emergency Power from the Q Building Emergency Electrical Power include:

1. We have not reviewed drawings for the Evans Building
2. We do not know the final location of where the generator would be placed
3. We do not know the structural integrity of the roof

Our opinion of cost for this decoupling exercise is $604,500 in 2017 dollars.

Table 1.2.5 – Decoupling Costs
(Decouple Evans Building Emergency Power from Q Emergency Electrical Power)

Item	Cost	Contingency	Total Cost
Design and Engineering	$80,000	$24,000	$104,000
Permits	$10,000	$3,000	$13,000
Install New Generator (estimated to be 400 kw)	$145,000	$43,500	$188,500
Generator Base and Infrastructure	$50,000	$15,000	$65,000
Diesel Fuel Tank & Piping	$30,000	$9,000	$39,000
Tie into existing Automatic Transfer Switch	$80,000	$24,000	$104,000
Arc Flash Study	$5,000	$1,500	$6,500
Commissioning System	$30,000	$9,000	$39,000

Remove Feeders from Q Building	$30,000	$9,000	$39,000
Upgrade Graphics in Main Control Room	$5,000	$1,500	$6,500
Total Cost			**$604,500**

1.2.6 Decouple Preston Building Emergency Power from Q Building Emergency Electrical Power

The Preston Building is currently tied into the Q Building Emergency Transfer Switch Bus located on the 4th floor of the Q Building. The transfer switch feeds an emergency transfer switch labeled ATS in the Preston Building. To decouple the Preston Building, the feed from the Q Building transfer switch would need to be opened and wires terminated. A new generator, base, fuel tank and wiring to tie into existing ATS transfer switch would need to be installed in the Preston Building to provide emergency power to the building.

We based our pricing under the assumption that the Preston Building would require to be left in a state of operation with the installation of a new generator and fuel system. We further based our assumption that the generator would require new infrastructure supports on the roofing system. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Preston Building Emergency Power from the Q Building Emergency Electrical Power include:

1. We have not reviewed drawings for the Preston Building
2. We do not know the final location of where the generator would be placed
3. We do not know the structural integrity of the roof

Our opinion of cost for this decoupling exercise is $513,500 in 2017 dollars.

Table 1.2.6 – Decoupling Costs
(Decouple Preston Building Emergency Power from Q Building Emergency Electrical Power)

Item	Cost	Contingency	Total Cost
Design and Engineering	$80,000	$24,000	$104,000
Permits	$10,000	$3,000	$13,000
Install New Generator (estimated to be 400 kw)	$80,000	$24,000	$104,000
Generator Base and Infrastructure	$50,000	$15,000	$65,000
Diesel Fuel Tank & Piping	$25,000	$7,500	$32,500
Tie into existing Automatic Transfer Switch	$80,000	$24,000	$104,000
Arc Flash Study	$5,000	$1,500	$6,500

Item	Cost	Contingency	Total Cost
Commissioning System	$30,000	$9,000	$39,000
Remove Feeders from Q Building	$30,000	$9,000	$39,000
Upgrade Graphics in Main Control Room	$5,000	$1,500	$6,500
Total Cost			**$513,500**

1.3 Plumbing Systems

1.3.1 Current Configuration

The Q Building is fed from the O_2 tank located in the Evans Building. The plumbing drawings detail a series of a 2" line which passes through the Evans Building/Q Building basement tunnel. The natural gas line enters the Q Building in the basement mechanical room, and a 4" gas line extends to the Evans Building. The domestic water enters the Q Building in the basement mechanical room, and a 2" domestic water line extends from the Q Building water line to the Evans Building.

1.3.1 Decouple Q Building O_2 from Evans Building O_2 tank

We believe the O_2 system piping can be used with a new O_2 tank installed at the loading dock. The new O_2 tank can be tied into the existing piping in the basement, and the system restored to the building without major changes to the piping. We based our pricing under the assumption that a new O_2 tank would be placed at the loading dock. We also believe that the pipes currently tied into the Evans Building will need to be capped. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Q Building O_2 from the Evans Building O_2 include:

1. We do not know the final location of where the O2 tank would be placed
2. We do not know the structural integrity of the loading dock area (or alternative area)

Our opinion of cost for this decoupling exercise is $403,000 in 2017 dollars.

Table 1.3.1 – Decoupling Costs (Decouple Q Building O_2 from Evans Building O_2 tank)

Item	Cost	Contingency	Total Cost
Design and Engineering	$20,000	$6,000	$26,000
Permits	$5,000	$1,500	$6,500
Install New O_2 tank at Loading Dock	$125,000	$37,500	$162,500
Piping from tank to existing System	$60,000	$18,000	$78,000

Item	Cost	Contingency	Total Cost
New Alarm System to Tank	$25,000	$7,500	$32,500
Decontamination of New System	$5,000	$1,500	$6,500
Commissioning System	$10,000	$3,000	$13,000
Remove Old Pipes from Evans Building	$60,000	$18,000	$78,000
Total Cost			**$403,000**

1.3.2 Decouple Evans Building Natural Gas from Q Building Natural Gas Line

The Q Building receives natural gas from the Albany Street via a 3" line into the basement mechanical room, to which a 4" natural gas line is then fed to the Evans Building. We believe the natural gas piping system piping will need to have a new gas supply line run from Albany Street to the Evans Building.

We based our pricing on the assumption that a new gas line would be fed from the same point on the Albany Street as the Q Building gas tap. We also believe that the 4" pipe currently tied into the Q Building will need to be capped. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Evans Building natural gas line from the Q Building natural gas line include:

1. We have not discussed the process with the gas utility
2. We do not know the complexity of tying a new gas line into the Albany gas main

Our opinion of cost for this decoupling exercise is $175,500 in 2017 dollars.

Table 1.3.2 – Decoupling Costs (Decouple Evans Building Natural Gas from Q Building Natural Gas Line)

Item	Cost	Contingency	Total Cost
Design and Engineering	$20,000	$6,000	$26,000
Permits	$5,000	$1,500	$6,500
Install New Gas service to Albany Street	$90,000	$27,000	$117,000
Remove Old Pipes from Evans Building	$20,000	$6,000	$26,000
Total Cost			**$175,500**

1.3.3 Decouple Evans Building Domestic Water from Q Building Domestic Water

The Q Building receives domestic water from Newton Street via an 8" line into the basement mechanical room, to which a 2" domestic water line is then fed to the Evans Building via the Evans Building tunnel. We

believe the domestic water piping system piping will need to have a new domestic water supply line run from Newton Street to the Evans Building.

We based our pricing on the assumption that a new domestic water line would be fed from the same point on Newton Street as the Q Building domestic water tap. We also believe that the 2" pipe currently tied into the Q Building will need to be capped. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Evans Building domestic water line from the Q Building domestic water line include:

1. We have not discussed the process with the water utility company
2. We do not know the complexity of tying a new water line into the Newton water main

Our opinion of cost for this decoupling exercise is $323,050 in 2017 dollars.

Table 1.3.3 – Decoupling Costs
(Decouple Evans Building Domestic Water from Q Building Domestic Water Line)

Item	Cost	Contingency	Total Cost
Design and Engineering	$20,000	$6,000	$26,000
Permits	$5,000	$1,500	$6,500
Install New Water Line to East Newton Street	$175,000	$52,500	$227,500
Install New Domestic Water Booster Pump	$35,000	$10,500	$45,500
Decontamination of New Piping System	$5,000	$1,500	$6,500
Remove Old Pipes from Q Building	$5,000	$1,500	$6,500
Upgrade Graphics in Main Control Room	$3,500	$1,050	$4,550
Total Cost			**$323,050**

1.4 Fire Life Safety Systems

1.4.1 Current Configuration

The Q Building is fed from a fire pump located in the basement. A 6" sprinkler line leaves the Q Building mechanical room to the Evans Building via the Evans Building tunnel.

1.4.1.1 Decouple Evans Building Sprinkler from Q Building Sprinkler

We believe the Evans Building sprinkler system piping will require a new jockey and fire pump in order to be operational after decoupling. We also believe the fire pump will need to be tied into emergency power, and

a new transfer switch will be required along with an electrical feed. A new water line will need to be fed from Newton Street.

We based our pricing on the assumption that a new fire suppression system would be placed at the basement mechanical room in the Evans Building. We also believe that the pipes currently tied into the Q Building will need to be capped. The cost estimate below carries a contingency factor since the building has not been assessed by Faithful+Gould. Risks associated with our assumptions and decoupling the Evans Building sprinkler from the Q Building sprinkler are:

1. We do not know the final location of where the fire pump would be placed
2. We have not met with the authority having jurisdiction
3. We do not know the final installation location for the fire pump
4. We assume the mechanical room on the basement level of the Evans Building would be closest place
5. We have not met with the water service provider

Our opinion of cost for this decoupling exercise is $416,000 in 2017 dollars.

Table 1.4.1.1 – Decoupling Costs (Decouple Evans Building Sprinkler from Q Building Sprinkler)

Item	Cost	Contingency	Total Cost
Design and Engineering	$40,000	$12,000	$52,000
Permits	$10,000	$3,000	$13,000
Install New Fire System Water Line to East Newton Street	$175,000	$52,500	$227,500
Install New Fire Sprinkler Pump and Jockey Pump	$40,000	$12,000	$52,000
Install Electric Service to Fire Pump	$15,000	$4,500	$19,500
Install New Fire Pump Transfer Switch	$35,000	$10,500	$45,500
Remove Old Pipes from Q Building	$5,000	$1,500	$6,500
Total Cost			**$416,000**

1.5 Interior Areas

1.5.1 Current Configuration

The H Building is linked by an enclosed walkway above East Newton Street at Levels 2, 3 and 4 which links the H Building to the offsite Evans Building. The H Building is linked by a below-ground basement tunnel which runs beneath East Newton Street and links the H Building to the Evans Building. The H Building is linked to the Preston Building at the northwest of the site via an enclosed walkway at Level of the H Building which ramps up internally to meet the differing floor levels of the Preston and H Buildings.

1.5.1.1 Allowance for Closing-Off/Separation of Tunnel and Walkways Above Ground

We believe the Evans Building sprinkler system piping will require a new jockey and fire pump in order to be operational after decoupling. We also believe the fire pump will need to be tied into emergency power, and a new transfer switch will be required along with an electrical feed. A new water line will need to be fed from Newton Street.

We based our pricing on the assumption that the work will involve removal of the double doors and frames at each corridor end, blocking up of the former openings with either gypsum wall board or concrete masonry unit partitions and making good interior finishes to each local area. Additionally, MEP services which feed bi-directionally would need to be relocated and terminated prior to or in the tunnels.

We have included an allowance for the decoupling exercise of $75,000 in 2017 dollars for closing-off and separation of tunnel and walkways above ground.

SECTION 3 – PROPERTY CONDITION ASSESMENT

PLANNING & ZONING REVIEW

The H Building was constructed in 1971 and the Q Building constructed in 1985 and both buildings (the combined 'Newton Pavilion' facility) have been subject to on-going interior reconfigurations and component replacement since occupancy.

Building Codes

On July 3, 2017, Faithful+Gould submitted a Public Records Request under the Freedom of Information Act (FOIA) to the Inspectional Services Department at City of Boston. The request asked that an authorized representative of the City state whether there are any issues pertaining to the Property that may negatively impact it. Specifically, we requested details of the following:

1. Are there any existing or pending building code issues that may require the Property to be upgraded?
2. Does the Property's file indicate any open or revoked permits?
3. What was the date of issuance of the Property's shell and core Building Permit?
4. If issued, what was the date of issuance of the Property's shell and core Certificate of Occupancy?
5. What was the date of the Property's last evaluation in regards to building code compliance?

We received no responses to our questions above by mail, phone call or email. Should any pertinent information be received, we will forward this on to the necessary parties.

Faithful+Gould was able to access the DynamicPORTAL facility through the City of Boston website, where we were able to establish that there is a total of 45 Building Code permits associated with the Property, 26 of which were not marked as completed or closed. The 26 permits that were not marked as completed or closed should be investigated to determine their status. A copy of the permit search is included within Appendix C of this report.

Certificate of Occupancy

Faithful+Gould has not been provided with the Certificates of Occupancy for the Property. We recommend that the Certificate of Occupancy be obtained from the current ownership prior to closing.

Fire Code

On July 3, 2017, Faithful+Gould submitted a Public Records Request for information under the FOIA to the City of Boston Fire Department. The request asked that an authorized representative state whether there are any fire or life safety code issues at the Property that may negatively impact it. Specifically, we requested details of the following:

1. What was the date of the last evaluation of the Property by the Fire Department?
2. Does the Property's file indicate any outstanding or uncorrected fire code violations?
3. Are there any known conditions that may negatively impact the Property (limited fire truck access, insufficient hydrant water pressure, fire egress limitations)?

4. Are there any existing or pending fire or life safety code issues within the municipality that may require the Property to be upgraded?

We have not received a response to this request. We recommend that a copy of the most recent inspection report be reviewed prior to closing.

Zoning Issues

By viewing zoning maps on the Boston Planning and Development Agency, we understand that the Property is contained within an IS (Institutional) sub-district within the South End Neighborhood area. The Property is also situated next to several areas of land classed as Economic Development Areas, but is not subject to the requirements of these specialist areas. A copy of the zoning map is included in Appendix C. The requirements of Institutional sub-district are compared against the as-built conditions in Table PZ-1.

Table PZ-1 - Summary of Required Vs As-Built Conditions

Zoning Regulation	Institutional (IS) Requirements	Actual Conditions	Compliant
Maximum Floor Area Ratio	4.0	3.6 [1]	**Yes**
Maximum Building Height	120 Feet	Approx. 100 feet	**Yes**
Minimum Rear Yard	20 Feet	15 Feet +/-	**No** [2]
Minimum Off-Street Parking	None [3]	0	**Yes**

1 Figure calculated by dividing total floor area (422,745 SF) by total site area (116,516 SF). Total site area figure is provided off ALTA plan (see Appendix C for a copy of the ALTA plan).

2 Rear Yard classed as alley road. The Property was built prior to 2012 implementation of the current zoning ordinance. We therefore anticipate that it is considered legal-non-conforming.

3 There is no requirement for off-street parking in the Institutional sub-district classification, however should changes be proposed, details need to be submitted as part of a Full Plans Review in compliance with Master Planning and other legislation. Where off-street parking is installed, it is also subject to Screening and Buffering Requirements. Loading Bay requirements will also be determined as part of the Full Plans Review.

On July 3, 2017, Faithful+Gould submitted a Public Records Request under the Freedom of Information Act (FOIA) to Marc Joseph (Plans Examiner) at the Planning and Zoning department within the Inspection Services division at Boston City for confirmation of compliance with all applicable zoning codes. The FOIA requested that a representative of Boston City confirm the following relative to the subject Property:

1. In what zoning district is the Property located?
2. Does the Property's designated zoning district allow current uses?
3. Are the existing improvements in compliance with the Zoning Ordinances in effect at the time of construction?

4. Are the existing improvements in compliance with the current Zoning Ordinances?

As of the date of this report, we have not received a response to this request. When such a response is received, all pertinent information will be forwarded.

Flood Zone Information

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Map Number 25025C0079J dated March 16, 2016, the Property is located a zone marked as 'Other Flood Areas' which consists of Zone X and Zone D. Zone X is defined as 'Areas determined to be outside the 0.2% annual chance floodplain', while Zone D is defined as 'Areas in which flood hazards are undetermined, but possible'. A copy of the FIRM map is included within Appendix C.

Easements

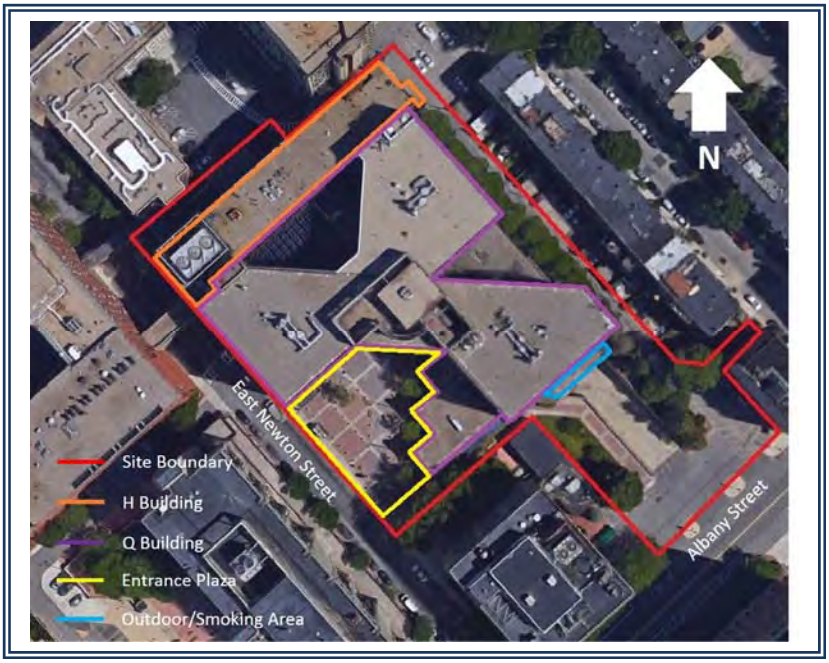
An ALTA Land Title Survey was provided for the Property which details a number of easements on the Property. The easement details are listed on the ALTA/ASCM Land Title Survey drawing prepared by Feldman Land Surveyors dated December 17, 2014 which is provided in Appendix C of this document.

SITE FEATURES

1.0 SITE SYSTEMS

Site systems at the Property consist of the plaza system over the Q Building basement and loading dock, cast-in-place concrete sidewalks, cast-in-place concrete pavement/apron areas, precast concrete pavers, asphalt pavements, two flag poles, site lighting, site drainage, cast-in-place concrete steps, access ramp, planters and site planting/landscaping (reference Photographs S-01 through S-12 in Appendix A). Plan 1-1 provides an overview of the site boundary and the Q and H Buildings.

Plan 1-1 – Site and Building Plan



1.1 Description

1.1.1 Site Concrete

The Property is situated tightly within the site boundaries with the edges facing directly onto public sidewalks and roads, or enclosed by other hospital and office buildings around the site. The construction of the Property creates an entrance plaza, enclosed at the northeast and northwest sides by the Q Building structure and open at the remaining sides. The entrance plaza creates a space which is used for pedestrian access to the Property, as well as an area for vehicles to drop-off and collect patients and visitors from East Newton Street. The plaza is not installed on grade, but is instead a supported deck which forms part of the building structure. Below the plaza is the basement of the Q Building which is used for ancillary support services including the main hospital kitchen and MEP plant room. In addition, within the basement area of the interconnected H

Building, a pedestrian link tunnel connects the Property to the adjacent 'Evans Building' at the northwest of the site.

Within the entrance plaza area, bands of cast-in-place concrete paving which is 3' wide create a grid which is infilled with 1' square precast concrete pavers. A band of pavers are installed on the inside edge of the concrete band with the remaining pavers installed at a 45-degree angle and alternating between red and dark gray to provide visual variation across the drop-off space. Across the drop-off at several locations, areas of the 1' pavers have been removed and filled with asphalt, presumably where pavers have failed or been removed from previous repair works.

Across the entrance plaza, cast-in-place circular concrete bollards have been installed to demarcate vehicle and pedestrian areas and guide vehicles onto and off the site from East Newton Street. The majority of the bollards have recessed site-lighting installed which lights up the area directly in front of the bollard, while some of the bollards are simply constructed from cast-in-place concrete in a cylindrical form and contain no lighting. Cast-in-place concrete planters are installed in the drop-off, along with two 30-foot high aluminum flagpoles set within a cylindrical cast-in-place concrete foundation, metal trash receptacles with a factory-applied paint finish and metal and wood benches. At the south of the plaza, a triangular air intake stack (serving mechanical equipment installed within the building) is formed from pre-cast concrete sections with an anodized aluminum grill at the top of the stack.

At the south of the site, the bands of cast-in-place concrete pavement and pre-cast concrete pavers continue to form an access route around the building. The concrete strips run along the edge of the building-facing side, while a painted steel edging trim holds the path in place on the opposite side of the path. Adjacent to the steel band, the site drops slightly and the area is planted with trees and shrubs with the beds finished with bark mulch and enclosed with precast concrete split-face concrete masonry units with precast concrete coping stones. Continuing down the path leads to an outdoor/smoking area which is also finished with the 1' pavers with central drainage outlets. Precast reinforced concrete panels which are approximately 4' high and 2' thick enclose the outdoor/smoking area which is situated over a loading bay and access ramp which lead into the basement. Access to the drop-off and sidewalk around the Property is also provided by cast-in-place concrete steps which are installed with painted metal handrails.

At the southeast of the site, a concrete ramp provides access to the basement level loading dock of Q Building. The ramp is 36' wide and 112' long and is formed from cast-in-place concrete which is laid in sections measuring 12' x 12' with movement joints between the slabs and painted yellow surface line-markings. Walls to the ramp consist of precast reinforced concrete units which are fitted with site lighting and painted metal railings to prevent impact damage to the retaining walls by reversing trucks and vehicles. At the top of the ramp, galvanized metal gates are installed which at the time of the assessment were fixed back in an open position to the concrete ramp retaining walls.

Along the eastern edge of the site, a shared alleyway provides access to housing and a small parking lot at the north (both of which are outside the Newton Pavilion site boundary). Along hospital-side edge of the alleyway, a planter constructed from reinforced pre-cast concrete units which is

approximately 8' high provides a boundary line between the hospital building and the alleyway. The planter is filled with earth and is planted with trees, shrubs and weeds. To the top of the wall, lamp poles are installed which consist of circular poles with a black factory applied paint finish and LED lamp heads. Where the planter ends, cast-in-place concrete steps with metal tread inserts and painted metal handrails are installed to provide access into the building.

At the north elevation and northwest elevation, the building is constructed right up to the site boundaries and the structure faces directly onto sidewalks or roads at these locations.

1.1.2 Site Waterproofing

Although not visible during our assessment, we expect that there will be several waterproofing membranes installed at the Property, namely:

- Full area under the entrance plaza
- Area under the outdoor/smoking area
- On the inside face of the two concrete walls which form the edges of the loading dock ramp
- Within the four sides of the inside face of the planter on the eastern boundary

Given their location, these membranes were not visible during our assessment, other than a small area of membrane visible within the planter on the eastern boundary.

1.2 Condition

1.2.1 Site Concrete

Across the site, the condition of the cast-in-place concrete ranged from fair to poor. In many areas, the concrete bands had degraded from salt spreading in winter along with general weathering, traffic and freeze-thaw damage resulting in areas of cracked, broken and loose concrete. If left, these areas will continue to degrade and in their current state represent a trip hazard. We recommend that the defective concrete is replaced in the near-term, and that an annual allowance be budgeted for replacement of failed concrete throughout the study period.

Several of the bollards in the drop-off area have failed and are in a poor condition, with areas of cracked and loose concrete visible. The remainder of the bollards are in a fair condition, but are starting to degrade. We anticipate that all bollards will fail over the course of the 10-year study period. We therefore recommend that the bollards in poor condition are replaced in the near-term, the degrading bollards replaced in the mid-term and the remainder of the bollards replaced in the late-term.

The concrete steps at the northeast facing elevation are in poor condition and require remedial works in the near-term. At this location, the concrete has degraded badly, most likely as a result of salt-spreading in the winter months attacking the steel reinforcement and repeated freeze-thaw weathering which has broken off several areas of concrete across the steps. The handrails are in

poor condition, with the metal handrails bent in places and in poor decorative condition and these should also be broken out and renewed when works to the steps is undertaken. In addition, it was noted during our assessment, that while other steps further towards the main drop-off area were in fair condition, the handrails were in poor decorative order and were poorly fitting; however, given the value of rectifying this, repairs to this item are considered an operational maintenance expense.

The concrete loading ramp into the basement area was in fair to poor condition and areas of cracked, loose and missing concrete were noted particularly at the top of the ramp. The concrete has degraded naturally through salt spreading, freeze-thaw weathering and damage from trucks which reverse up and down the ramp several times daily. We recommend that concrete to the top of the ramp is broken out and replaced in the near-term, with a cycle also completed in the mid-term to replace the mid-section of the ramp. Given that this ramp is used frequently for deliveries, consideration should be given in regards to programing of the works to verify that the concrete can be laid and given time to set sufficiently, without compromising the operation of the hospital.

Paving to the outdoor/smoking-area was in a fair condition generally, with no major defects although some areas of perimeter cast-in-place concrete had degraded and have been included within the areas for replacement within the capital expenditure forecast.

The concrete retaining walls on either side of the loading ramp were generally in fair condition, however several areas of concrete had spalled and areas of corroded reinforcement bar were visible were the concrete surface had failed. In addition, the wall had several areas of fissures/small surface cracks, mineral deposits, damp sections and rusting metal signs indicating that the retaining walls were damp. We believe that this damage is a result of a failure of the waterproofing membrane behind the walls (see following section).

The concrete planter at the southeast of the site was in a fair condition, however the external face of the concrete was exhibiting the same defects as the ramp retaining walls as described above and the issues with the waterproofing membranes are described also in the following section.

1.2.2 Site Waterproofing

Water staining and mineral deposits were noted on a column and area of the soffit of the ceiling in the basement area, however these were believed to be from a historic leak from a drainage outlet in the plaza area above. No further water ingress from the ceiling/above was noted during the assessment; however, we anticipate that the waterproofing membrane to the entrance plaza area above will be original to the age of the building and has exceeded its estimated useful life of 30 years. Waterproof membranes fail over time due to the compounds within the membrane breaking down. We therefore recommend that this membrane is replaced in the late-term to maintain a water-tight structure and have included a cost within the capital expenditure period to cover this item. Replacement of this membrane will involve breaking out the entire plaza area at the front of the building; although we have included costs for replacement of the membrane, the associated new paving and landscaping works to the drop-off area have not been included within our cost-study.

At the outdoor/smoking area, during our assessment it was also noted that staining and debris on the surface of the pavers indicates that water is collecting in the vicinity during downpours and is not draining effectively. In addition, the soffit to the loading dock directly below the paving had several areas of damage caused by leaks which are expected to be from leaking water from the deck above. As with the entrance plaza area at the front of the Property, we expect that the waterproofing membrane will have exceeded its useful life and has failed given the water damage to the loading dock area below. We have consequently included for replacement of the waterproofing membrane at this area and within the costs, we have allowed for making good works and reinstatement of the existing concrete paver finishes at this area.

At the link tunnel between the Property and the Evans Building, although no major areas of water ingress were visible during the assessment, there were small areas of dampness and damage to plaster surfaces noted and as with the other areas, we anticipate that the waterproofing membrane has exceeded its useful life. We have made an allowance to replace this in the far-term.

At the walls to the concrete ramp, we believe that given the defects descried in the Site Concrete section above, the waterproofing membrane behind the walls at both sides (if installed) has failed and water is penetrating through from the ground behind the walls. To avoid further deterioration to the concrete retaining walls, the ground behind the walls should be excavated, the existing membrane removed (if installed) and a new waterproof membrane installed in the mid-term. Extensive excavations will be required given the depth of the ramp and careful construction and planning will need to be undertaken to verify that the new membrane can be applied effectively and safely.

The planter is exhibiting the same defects as the walls to the ramp and we believe that the membrane at this location has also failed, water is penetrating from the earth in the planter behind and causing dampness and the associated issues in the concrete. To avoid further deterioration to the concrete, the earth should be removed and the waterproof membrane across all perimeters of the planter renewed in the mid-term. Upon completion and installation of the waterproof membrane, the earth and plants can be reinstated.

1.3 Projected Capital Expenditures

Required:

1. We recommend budgeting for replacement of the failed concrete site elements in 2019. Our opinion of cost for this work is $13,356.

2. We recommend budgeting for replacement of the failed concrete site elements, as a 10% annual allowance per year from 2019 through 2028. Our opinion of cost for this work is $1,330 per year for a total cost of $13,300 over the study period.

3. We recommend budgeting for the currently failed bollards at the entrance plaza in 2019. Our opinion of cost for this work is $10,500.

4. We recommend budgeting for the future failed bollards (mid-term) at the entrance plaza in 2023. Our opinion of cost for this work is $23,100.

5. We recommend budgeting for the future failed bollards (late-term) at the entrance plaza in 2028. Our opinion of cost for this work is $13,300.

6. We recommend budgeting for replacement of the failed concrete steps at the northeast facing elevation in 2019. Our opinion of cost for this work is $4,410.

7. We recommend budgeting for replacement of the concrete to the top section of the loading-dock ramp in 2019. Our opinion of cost for this work is $4,536.

8. We recommend budgeting for replacement of the concrete to the central section of the loading-dock ramp in 2023. Our opinion of cost for this work is $7,776.

9. We recommend budgeting for replacement of the waterproofing membrane over the loading dock in 2023. Our opinion of cost for this work is $504,000.

10. We recommend budgeting for replacement of the waterproofing membrane to the entrance plaza in 2028. Our opinion of cost for this work is $4,807,575.

11. We recommend budgeting for replacement of the waterproofing membrane at the connecting tunnel to the Evans Building in 2028. Our opinion of cost for this work is $450,000.

12. We recommend budgeting for replacement of the waterproofing membrane at the loading dock ramp replacement walls in 2023. Our opinion of cost for this work is $439,040.

13. We recommend budgeting for replacement of the waterproofing membrane at alley-side planters in 2023. Our opinion of cost for this work is $234,610.

BUILDING ELEMENTS

2.0 STRUCTURAL SYSTEMS

The description of the respective structural systems is based upon our review of the architectural and structural drawings provided and our observation of exposed portions of the Q and H Buildings (reference Photographs ST-01 through ST-08 in Appendix A).

2.1 Description

Within the Q Building the structural systems at the hospital consist of a steel-framed superstructure supported by cast-in-place steel reinforced concrete foundations. The lowest floor consists of cast-in-place concrete slab-on-grade slab, and upper floors and roof deck consist of composite concrete slabs on metal decks bearing onto steel beams and columns. The original drawings supplied by the client indicated that the building was constructed in accordance with the Massachusetts Building Code, 1980 (fourth edition).

Within the H Building, structural systems comprise a cast-in-place reinforced concrete framed superstructure, presumed to be installed on reinforced cast-in-place concrete foundations. The lowest floor consists of cast-in-place concrete slab-on-grade slabs, and upper floors and roof deck consist of cast-in-place reinforced concrete slabs, cast into the concrete frame.

2.1.1 Loadings and Lateral Design

The original structural drawings provided by the client for the Q Building indicate that the building has been designed to have the following live loads detailed in pounds per square foot (PSF):

- Basement – 100 PSF
- Ground Floor – 100 PSF
- Radiology Floor – 450 PSF
- Pharmacy and Coffee Shop – 100 PSF
- Mechanical Rooms (4th Floor) – 150 PSF
- Fifth Floor – 100 PSF
- Second, Third & Sixth Floor – 80PSF
- Roof (Future Floor) – 80PSF

The original building drawings also noted that the Q Building was designed for future expansion up to 10th floor level and in 2008 an additional floor on the 8th Floor was added as an extension to the Intensive Care Unit (ICU) department. The original building drawings indicated that the building was designed to snow load in coordination with Massachusetts Building Code Zone 2 (i.e. 30 PSF minimum).

No structural drawings were provided for the H Building, other than demolition plans which only indicated small areas of demolition, prior to the adjoining Q Building being constructed and linked.

2.1.2 Concrete Strength

The original structural drawings for the Q Building indicate that the concrete was specified to be constructed with sand and gravel aggregate with Type I Portland Cement, with a compressive strength (f 'c) of 4,000 PSI for columns, beams, slabs, pile caps, grade beams and foundation walls and 3,000 PSI for floor slabs. The grout under column base plates was specified as having a compressive strength of 7,000 PSI.

No information on concrete strength for the H Building was provided.

2.1.3 Wind Load

Based on the drawings provided, we could not determine the specified wind load, however we expect this to be in accordance with the Massachusetts Building Code, 1980 (fourth edition) which was in use at the time of construction for the Q Building, and the relevant standard for the older H Building which was constructed in 1971.

2.1.4 Foundations

For the Q Building, dead and live loads at the building are transferred through the steel frame of the building to the concrete foundations. The structural drawings provided indicate that the building is set on pile foundations with pile caps and infill reinforced strip footings to support walls above. In addition, areas of traditional strip footings and steel-reinforced cast-in-place concrete foundations are also installed at basement and loading dock areas. At the loading dock ramp, stepped cast-in-place reinforced footings provide a base for the pre-cast concrete walls. All footings and pile caps are specified in the construction drawings as poured concrete monolithic with concrete mat.

For the H Building, dead and live loads at the building are transferred through the reinforced concrete frame of the building to the concrete foundations, although no structural drawings were provided.

2.1.5 Lowest Floor Level

In the Q Building, the lowest floor level consists of a cast-in-place concrete slab-on-grade with vapor-control membrane and steel reinforcement. The concrete slab has saw cut joints and diamond shaped joints around where the steel beams are set in the concrete slab to allow differential movement between the frame and floor slab. The original construction drawings specify that reinforcement is by billet steel to A615 grade 60 and 40 and welded wire fabric to ASTM 185.

In the H Building, the lowest floor level consists of a cast-in-place reinforced concrete slab with reinforced columns set into the slab.

2.1.6 Floor Slabs and Superstructure System

In the Q Building, upper floors and roof consist of composite floors consisting of profiled steel decks with cast-in-place concrete and steel reinforcement. The underside of the steel deck is left exposed, sprayed with fireproofing coating, or covered with rigid fiber or rubberized insulation in MEP rooms. The structural drawings specify that the steel deck is to have painted soffit and uncoated surface to the concrete deck-side, with the depth of the deck 3" minimum and with minimum width to depth ratio of 2.0 or greater. The plate thickness of the deck was specified with a minimum thickness of 3/8" of the deck with minimum bolt diameters of ¾". All steel beams including baseplates were specified to ASTM A-36, all bolts for steel members to ASTM A-325 and all other anchor bolts to ASTM A-307.

In the H Building, upper floors and the roof consist of reinforced cast-in-place concrete slabs. No structural information or drawings were provided for this building, however we assume that the building was constructed with the applicable codes at the time of construction.

2.1.7 Stairs

Stairs within the Q Building consisted of pre-fabricated steel stairs with cast-in-place concrete treads. Stairs within the H Building consisted of precast concrete steps with non-slip metal nosings. Metal grill gantry steps and walkways are installed in MEP rooms and stairs throughout all buildings contained painted metal handrails fixed to the stair structure.

2.1.8 Interior Walls

Interior walls to both buildings consist of non-loadbearing concrete masonry unit (CMU) blockwork walls and gypsum wall board partitions. Within MEP rooms, intumescent sealant around penetrations through the walls and ceilings is installed.

2.1.9 Ceilings

In both buildings, hallways and circulation areas are fitted with suspended acoustical ceiling tiles placed within pre-finished metal grids or older painted fiber ceiling tiles in some areas which conceal the structural soffit of the floor and roof decks above. To external canopies and within the open entrance atrium area at the front, painted fiber-cement panels with a painted stucco finish are installed to conceal the structure above. A structural metal spaceframe supported off the building provides support for a skylight system fitting with insulated glazed units in anodized aluminum frames at the junction of the Q and H Buildings.

2.1.10 Exterior Walls

The primary exterior wall system at the Q Building consists of pre-cast concrete panels with an exposed aggregate finish concealing the steel frame beneath, while the exterior wall system to the H Building consists of panelized pre-cast concrete units with a smooth face.

2.2 Condition

Faithful+Gould observed the building generally along with visual assessments of exposed portions of the building structure where visible (i.e. within store rooms, service risers, etc.). The structure to both buildings was generally in a fair condition throughout, with the exception of an area of the Q Building basement.

Within the Mechanical, Electrical and Plumbing (MEP) room in the basement area of Q Building, it was noted that water was leaking into the building along with areas of dampness to CMU blockwork on interior partition walls separating the MEP room and the kitchen. A visible trickle of water was seen running on the soffit of the cast-in-place concrete floor slab and concrete shear walls (which protrude slightly past the face of the CMU walls below), under the main door into the MEP room. An attempt to channel the water has previously been made and a galvanized metal tray has been installed on the underside of the concrete shear wall to collect the water, which directs water into a galvanized metal pan and then into copper piping, where it runs into a floor drain. There is a significant amount of water entering the building at this location and the areas of dampness to the CMU blockwork indicates further water ingress/damp issues. Left unaddressed, this has the potential to cause serious damage to the building structure as well as damage to the internal MEP services and equipment installed in the room. As a result, we recommend that an investigation is undertaken into the leaking water urgently. Given that the water could be from a number of sources, the remedy and associated costs will be dependent on the recommendations received from the specialist report.

2.3 Projected Capital Expenditures

Required:

1. We recommend budgeting for investigating the leak in the basement MEP room in 2019. Our opinion of cost for this work is $20,000.

2. We recommend budgeting for rectifying the leak, making good and decoration as required in 2019. We have left a placeholder of $1,000,000 for completing these works, with the actual figure dependent on the findings of the detailed investigation.

3.0 ROOFING COMPONENTS

Roofing components at the Property consist of 11 low-slope ethylene propylene diene monomer (EPDM) roof coverings which are installed with stone ballast (to protect against UV degradation) to the H Building and Q Building, with an additional two roofs to the link walkway to the Evans Building and built-out area at the north of the H Building. An additional roof on the ICU extension at the north of the Q Building is fitted with a built-up roofing (BUR) covering, which is also installed with a gravel surface (reference Photographs R-01 through R-08 in Appendix A).

3.1 Description

The roofing systems at the Property are installed on a reinforced cast-in-place concrete roof deck on the H Building and profiled metal roof decks fixed to and supported off the steel transfer beams and columns of the main building structure on the Q Building. Drainage across all roofs is provided by 4" leaders with metal strainers which drain through internal downspouts which run internally in the building. Mechanical equipment, vents, pipes, exhausts and mounting points for roof access equipment are also installed across all roofs. Anodized aluminum hoppers and downspouts are provided where stairwells are built higher than the main roof level on the Q Building and drain directly onto the ballast material of the main Q Building roofs below.

Roofs have been broken down into EPDM Roofs, BUR Roofs and Skylights within the following section.

3.1.1 EDPM Roofs

Across all buildings (with the exception of the 8th Floor ICU Extension on the Q Building), roofs are covered by a 45-mil ethylene propylene diene monomer (EPDM) roof covering with a stone ballast covering laid on filter fabric to protect the membrane from solar degradation. The EPDM covering installed was both mechanically fixed and part of a Protected Membrane Assembly (PMA), dependent on location. At certain areas of the roof, in particular around roof leaders on the lower roofs, areas of the EPDM covering had been cut back and removed (but not reinstated) and we assume this is as a result of a previous leak around the roof leaders, or for maintenance work which was not fully completed. At these locations, rigid polyisocyanurate insulation was visible which was measured on site at 3" thick and tapered towards roof drainage. During the assessment, ballast was removed in several areas to assess the roof membrane below and at one location on the H Building, a date/specification stamp was visible which indicated that the covering was 45-mil and manufactured in 1993, but no other information or manufacturer details were visible.

The roof to the walkway above East Newton street linking the H Building to the Evans Building was not accessed, but when viewed from floors above, appeared to be the same as the remainder of the H Building (i.e. EPDM with UV ballast). The roofs to the other walkway linking the H Building to the Preston Building to the north and the built-out section (both on the rear, north elevation of the H Building) were not accessible or clearly visible during the assessment. We have assumed that these roofs are a similar age and construction as the remainder of the H Building.

Given the conditions of the roof coverings as viewed on site, we anticipate that all EPDM roofs were renewed in 1993 to both the Q and H Buildings, with the exception of the cafeteria roof which is expected to be original to the 1989 extension.

To both the Q and H Building roofs, perimeter walls enclose the roofs and are constructed as an extension of the precast concrete wall panels of the building exteriors. At perimeters, the roof membranes extend over a cant strip to give a 45-degree angle before travelling vertically up the parapet. On the H Building the membrane terminates under the precast concrete parapet capping and on the Q Building it terminates under a metal flashing. At perimeter areas and at pathways across sections of the roof, 2' paving slabs are also installed to provide a designated walkway across the roof.

3.1.2 Built Up Roofs

At the ICU extension on the north roof of the Q Building, the roof consists of a Built-Up Roof (BUR) membrane with a gravel ballast covering installed in 2008 when the roof extension was added. Although drawings were provided, we were not able to establish the build-up of the roof, but have assumed that the deck will be a profiled steel deck with 3" insulation laid under the BUR and ballast covering. Walls to the extension consist of aluminum insulated panels which form a parapet at the roof perimeter and are finished with an aluminum capping. At these areas, the roof covering laps vertically up the internal face of the parapet wall and terminates under the aluminum capping.

3.1.3 Skylights

At the triangular section between the H and Q Buildings, a large glazed skylight system provides light into the atrium area below. The structure consists of a painted metal space-frame which supports rows of pitched, fixed insulated glazed units above supported in anodized aluminum frames. Between rows of the skylights pitched windows, horizontal anodized aluminum gutters with painted metal grills prevent leaves and debris getting into the rainwater gutters. The gutters link together at the end of the skylight system and discharge into vertical square anodized aluminum downspouts. These then connect into the roof leaders of the lower roof using flexible white vinyl connectors.

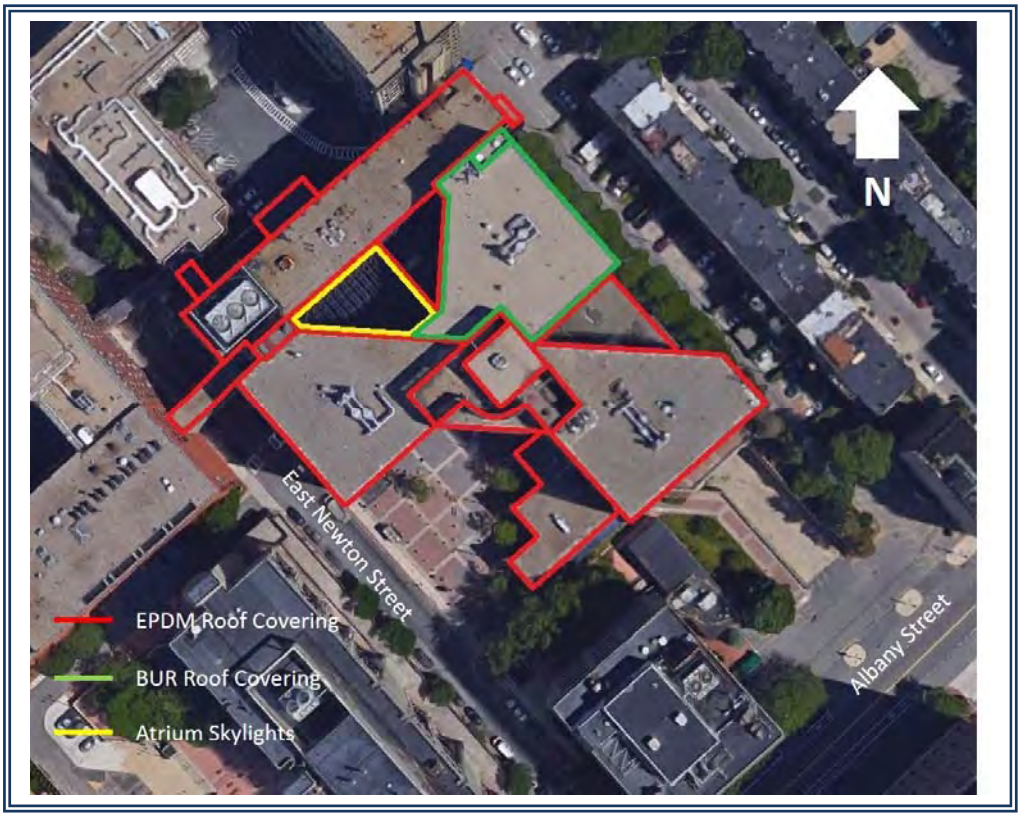
Table 3-1 and Plan 3-1 below summarize the construction of the roof areas.

Table 3-1 Summary of Roof Construction

Roof Component	H Building	Q Building	Q Building (ICU Extension)
Installation Date	1993	1986	2008
Roof Area SF (total/approx.)	12,556 Sq. Ft	33, 540 Sq. Ft	9,975 Sq. Ft

Roof Component	H Building	Q Building	Q Building (ICU Extension)
Application/ Membrane	45-mil Ethylene Propylene Diene Monomer (EPDM) Membrane with UV Protective Stone Ballast	45-mil Ethylene Propylene Diene Monomer (EPDM) Membrane with UV Protective Stone Ballast	Built-Up Roof Covering (BUR) with UV Protective Stone Ballast
Manufacturer/ Model	Unknown	Unknown	Unknown
Deck Type	Cast-In-Place Reinforced Concrete	Profiled Steel	Unknown – Presumed Profiled Steel
Insulation	3” Rigid Foam (Presumed Based on Exposed Areas of Q Building Roof)	3” Rigid Foam	Unknown – Presumed 3” Rigid Foam
Cover Board	Unknown	Unknown	Unknown
Drainage	4” Circular Roof Leaders with Metal Strainers	4” Circular Roof Leaders with Metal Strainers, Anodized Aluminum Hoppers and Downspouts to Stairwells (at Stairwell Extrusions)	4” Circular Roof Leaders with Metal Strainers
Overflow Scuppers	No	No	No
Base Flashings	Extension of Field Membrane	Extension of Field Membrane	Extension of Field Membrane
Cap Flashings	Precast Concrete	Precast Concrete	Aluminum Capping
Perimeter Enclosure	Raised Edge Flashes and Parapet Walls/ Insulated Metal Wall Panels	Raised Edge Flashes and Parapet Walls	Raised Edge Flashes and Parapet Walls
Warranty (Contractor)	Unknown	Unknown	Unknown
Warranty (Manufacturer)	Unknown	Unknown	Unknown

Plan 3-1 – Roof Plan



3.2 Condition

Faithful+Gould walked and assessed each roof and removed ballast, filter fabric (to EPDM roofs) and insulation at representative locations in order to establish the condition of the underlying membrane. The condition of the roofs is broken down in the following sections.

3.2.1 EPDM Roofs

Based upon these observations, the EPDM roofs at both buildings were in fair condition with two areas of concern noted.

The first area of concern relates to the condition of the base flashings. Base flashing (i.e. those flashings that turn up the parapet walls) were noted to have pulled away (bridged) from the parapet wall at their horizontal to vertical transition. At EPDM roofs, this indicates that the compounds in the membrane are breaking down, the covering is becoming less elastic/flexible and ultimately that the roof is approaching the end of its effective life. The second area of concern consists of numerous areas of deferred maintenance. This consisted of vegetation growth through the protected membrane assembly, poor gravel distribution, breakdown of the gravel ballast, displaced insulation boards, debris and ponded water.

Based upon these factors coupled with the age of the roofs (24 and 31 years against a useful life of 15 to 20 years), and the lack of tolerance towards leaks, we recommend budgeting for replacement of the EPDM roofs within the next five years.

3.2.2 Built Up Roofs

The built-up roof system appeared to be in good condition, with no major defects noted during the assessment. Given the more recent date of installation, we expect that the roof will last for the 10-year study period, however we have allowed in our costs to re-apply the aluminized coating to the base flashings which will provide additional protection to the exposed areas and extend the life of the roof. These works are planned for the near and late-term.

3.2.3 Skylights

The atrium skylight system was in a fair condition generally, although could not be closely inspected due to limited access. The skylight system is original to the age of the Q Building and we anticipate that a full refurbishment will be required in the mid-term.

3.3 Projected Capital Expenditures

Required:

Q Building

1. We recommend budgeting for replacement of the EPDM roof in 2022. Our opinion of cost for this work is $737,880.

2. We recommend budgeting for re-applying the aluminized coating at the BUR roof base flashings in 2019 and 2027. Our opinion of cost for this work is $7,343 per cycle for a total $14,685 over the study period.

3. We recommend budgeting for refurbishment of the atrium skylight system in 2023. Our opinion of cost for this work is $150,000.

H Building

4. We recommend budgeting for replacement of the EPDM roof in 2022. Our opinion of cost for this work $276,232.

4.0 BUILDING EXTERIORS

The exterior elements consist of anodized aluminum framed curtain walling and windows, structural glazed curtain walling, painted hollow core metal, anodized aluminum and roll-up electric overhead doors, precast concrete cladding panels with exposed aggregate and smooth concrete finishes, insulated metal wall panels and hexagonal profile CMU infill blocks (reference Photographs EXT-01 through EXT-10 in Appendix A).

4.1 Description

For clarity, Exteriors have been commented on in separate sections for both the Q and H Building.

4.1.1 Curtain Walling and Window Systems – Q Building

Fenestration to the Q Building is provided by curtain walling and punched windows across all elevations. On the front elevation, a large section of unitized curtain walling with anodized aluminum frames and insulated glazed units with a reflective coating is installed on the two wings of the main elevation, with a cylindrical section rising above the building at roof level as an architectural feature. At the southeast facing façade, the unitized system meets an area of 4-sided structural silicone glazed curtain walling with structural silicon sealant joints and chromed fixings which tie back the curtain wall to the steel structure. Internally, the steel frame is encased in precast concrete panels with an exposed aggregate finish, to match the façade.

Floor levels four and five contain MEP equipment only. At these locations louvers or larger expanses of precast concrete panels are installed on the external elevations. To rooms above this at levels six, seven and eight, individual punched windows are installed which consist of anodized aluminum frames with insulated glazed units, with individual units separated by the precast concrete units. At the upper floors at the location between the southeast and southwest elevations, precast concrete façade panels are installed at high level at 45-degrees and within these panels at levels six, seven and eight, ribbon windows are instead installed and also consist of anodized aluminum frames with insulated glazed units.

To the southeast and northeast facing elevations, areas of curtain walling with a lean-to roof are installed which provide light into the seating areas of the cafeteria on Level Two. Curtain walling at this location consists of an anodized aluminum framed curtain walling system, with insulated glazed units. The lean-to roof of the curtain walling system is also fitted with insulated glazed units allowing further light into the building and is also installed with a one-way reflective coating to provide privacy externally and reflect sunlight. The same curtain walling system is installed above the atrium skylight system on the south-facing elevation of the H Building, where the H and Q Buildings join.

Fenestration across the remainder of the building is the same as already described, with a combination of individual window units, ribbon windows and unitized curtain walling. To the perimeter of curtain walling and window units, elastomeric sealant is installed which is colored red to match the window frames.

4.1.2 Curtain Walling and Window Systems – H Building

To the H Building, fenestration at either gable end of the building provides light into the access stairwells and consists of large areas of single glazing installed in steel frames and secured with screw fixings and putty. Windows to the north elevation consist of the original painted steel-frame windows with single glazing units fitted again with screw fittings and putty. These windows are divided into smaller sections with steel transoms, either dividing each unit into two, or eight sections dependent on location. Windows to the high-level walkway connecting the H Building to the Evans Building are original single glazed windows and consist of single-glazed Georgian-wired glazing units installed in steel frames secured with screw fixings and putty.

All windows to the H Building are original and have not been altered (other than general painting/maintenance items), with the exception of the curtain wall section on the south-facing elevation which is expected to have been installed when the neighboring Q Building was constructed in 1984/85.

4.1.3 Doors & Entrances – Q Building

At the main entrance into the atrium reception area of the Property, a red anodized aluminum door canopy is installed which contains a double-leaf glass door in the center with electronic opener and two revolving glass doors to either side. To the remainder of the building, anodized aluminum framed doors are set within sections of curtain walling along with painted hollow core metal doors at entrance areas which are not on main elevations. Within the basement area at loading dock areas, roll-up overhead electric doors are installed.

Within the basement MEP room a single hollow core metal door exits into an underground vault, where steam from MEP equipment exits into a chamber constructed from reinforced concrete shear walls. The vault is covered at sidewalk level with a galvanized metal grill which allows steam to vent into the open air above.

4.1.4 Doors & Entrances – H Building

The H Building is linked and abuts the newer Q Building and consequently contains less entrances. Where doors and entrances are provided, these consist of painted hollow core metal doors with and without glazing panels and a double sliding electronic door.

4.1.5 Exterior Walls – Q Building

Exterior walls to the Q Building consist of a precast concrete panelized wall system with an exposed aggregate finish. Panels are attached the building structure and contain unfilled and filled joints. Where joints are filled, they are so with an elastomeric sealant, colored red to match the panels. At high locations around stairwell areas on the roof, red insulated metal panels are installed in place of the precast concrete panels. At the more modern ICU extension at Level 8, insulated panels with a gray aluminum metal finish are installed.

4.1.6 Exterior Walls – H Building

Exterior walls to the H Building consist of a precast concrete panelized wall system with a smooth finish. Joints between the panels are left exposed and circular fixings used to attach the panels to the structure are half-filled with cement grout. On the north-facing elevation, at some areas, rather than the smooth concrete panels, concrete masonry unit blocks are installed with blocks consisting of half-hexagon profiled units installed. The units are fitted with cement mortar joints between blocks and gray elastomeric sealant movement joints at vertical edges where the blocks meet the adjacent concrete panels. At high level on the north elevation, the concrete panels are covered with insulated metal panels which are gray in color.

4.2 Condition

Both Q and H buildings require works completing to the building exteriors. In addition, it is a requirement of the City of Boston that 5-year façade inspections are undertaken to check for defects and issues. In order to achieve the greatest cost savings, we recommend that exterior restoration projects are completed to each building, which are sub-divided into three separation stages: 'Pre-Exterior Restoration', 'Exterior Restoration - Mobilization and Professional Fees' and 'Restoration Activities'. An explanation of these phases is described in more detail as follows:

- Pre-Exterior Restoration – complete 5-year façade inspections, façade and concrete repairs which require immediate attention, replacement of failed glazed units (near-term)
- Exterior Restoration – Mobilization and Professional Fees – set aside allowance for professional fees, install and commission swing stage in advance of refurbishment project (mid-term)
- Restoration Activates – completion of various exterior works (mid-term)

A detailed description of the condition and works required to both the Q and H buildings is provided in the sections below.

4.2.1 Curtain Walling and Window Systems – Q Building

To the Q Building, curtain walling and glazing systems generally were in fair condition. However, the elastomeric sealant (at sections where curtain walling and precast concrete façade panels meet and around the perimeter of windows/curtain walling) has deteriorated and is showing signs of adhesive and cohesive failure as a result of age and weather-related degradation. To maintain weathertightness, these sealants should be removed and renewed within the mid-term.

During our assessment of the curtain walling systems and windows, glazed units were generally in fair condition, however to some units, gaskets around the edges of the windows were loose, shrinking and become dislodged in places as a result of natural aging and UV degradation. Failure was only limited to certain units during the assessment. We recommend an allowance is made to wet-seal the window gaskets to 20% of the units across the building which will involve removing the failed seals and installing new wet-applied gasket seals.

We noted some insulated glazed units had failed and condensation was visible between the glass panes. In addition, a window unit on the lean-to roof at the cafeteria had smashed (only the outer pane). We have therefore allowed within our costings for replacement of 20 insulated glazed units across the building during the study period. Other minor defects were noted on the day of the assessment, including a missing cap piece to a high-level windowsill on the southwest facing elevation. However, given the value of replacing this item, we consider this item to be an operational maintenance expense which should be addressed separately, or when the main exterior refurbishment works are completed.

4.2.2 Curtain Walling and Window Systems – H Building

To the H Building, fenestration on the gable walls was in poor condition. The single glazed windows were cracked in places, metal surrounds corroded, fixings missing and the perimeter putty perished and missing in places. Windows to the north-facing elevation were in slightly better condition, but still exhibited areas of corrosion to the frames, condensation on the interior face of the pane and general age-related wear and tear. We anticipate that general maintenance including replacement of the failed perimeter putty sealants and missing screw fixings and re-painting will allow some more years out of the windows, but they will need to be fully replaced in the mid-term.

4.2.3 Doors & Entrances – Q Building

Doors and entrances were in fair condition with no defects noted during the assessment. Some of the hollow core metal doors were in poor decorative order and should be repainted as a maintenance item. The anodized aluminum entrance was dirty and doors were generally dirty. As noted in the summary above, we recommend cleaning once the external refurbishment projects have been completed and doors and entrances should be included within this clean.

Within the vault area of the basement MEP room of the Q Building, several areas of the concrete perimeter at high level and shear walls were damaged, with areas of cracking and exposed, rusting reinforcement bar visible. We believe this is as a result of the hot, humid steam from the MEP room condensing on the cool concrete walls. Within the capital expenditure study period, we have allowed for concrete repairs in the near-term to address this item.

4.2.4 Doors & Entrances – H Building

As at the Q Building, doors and entrances were in fair condition with no defects noted during the assessment. Some of the hollow core metal doors were also in poor decorative order and should be repainted as a maintenance item. The electric double sliding door was in fair condition and appeared to be operating satisfactorily during our assessment.

As above, we recommend cleaning of the doors and entrances to the H Building once the external refurbishment projects have been completed.

4.2.5 Exterior Walls – Q Building

To the Q Building, wall panels were in a good condition with no defects noted. The elastomeric sealant between panels and at movement joints was beginning to deteriorate and showing signs of adhesive and cohesive failure. We therefore recommend that the sealant is removed and new sealant installed in the mid-term. In addition, at the junction between the Q and H Building, the rubber expansion joint system is aging, the rubber is beginning to perish and the rubber joint has dropped out of one section. We have therefore allowed for replacement of this, at the same time as the other exterior works.

The exterior panels were also dirty and would benefit from cleaning and we have recommended that exterior walls are cleaned on completion of the exterior refurbishment projects.

We would note that it is a requirement of the City of Boston that annual façade inspections are carried out to any exterior walls with a height of over 70' every 5 years, along with a fee which is to be paid to the City of Boston. We recommend that the inspections are completed in compliance with this in the near-term, with a further allowance for a repeat visit in 5 years. We have included a line item within the capital expenditure costs to cover the cost of completing the inspection, along with an allowance for repairs.

4.2.6 Exterior Walls – H Building

Pre-cast units to the H Building were generally in fair condition, although there were some areas of damage to units where concrete had spalled and areas of steel reinforcing bars were visible. We believe that this is as a result of the reinforcement bar being placed too close to the surface of the concrete during the manufacturing process, which has allowed water penetration to corrode the reinforcement and has caused spalling of the concrete surface above. To the H Building we therefore an allowance for completing concrete repairs to prevent further deterioration. This will involve removal of failed and un-sound concrete, replacement of steel reinforcement (where sectional loss of the steel is greater than 7.5%) and replacement of the concrete surface covering to match the surround areas of concrete.

As noted in the Q Building, elastomeric sealants are in poor condition to the H Building also and we have allowed for replacement of this item in the capital expenditure forecast. The statements in relation to the dirty exterior walls and façade inspections are also equally relevant to the H Building and these costs have also been allowed for in our capital expenditure forecast.

4.3 Projected Capital Expenditures

Required:

Q Building

1. We recommend budgeting for completion of 5-year façade inspections and isolated repair costs in 2019 and 2024. Our opinion of cost for this work is $16,000 ($8,000 per cycle).

2. We recommend budgeting for replacement of failed concrete to the steam vault in 2019. Our opinion of cost for this work is $20,000.

3. We recommend budgeting for replacement of failed glazing units in 2019. Our opinion of cost for this work is $16,000.

4. We recommend budgeting for professional fees for the exterior refurbishment project in 2022. Our opinion of cost for this work is $35,967.

5. We recommend budgeting for installing and commissioning a swing-stage prior to the exterior works starting in 2022. Our opinion of cost for this work is $33,600.

6. We recommend budgeting for replacement of the window and door perimeter sealants in 2022. Our opinion of cost for this work is $198,240.

7. We recommend budgeting for replacement of the sealants at control joints and precast to precast panels in 2022. Our opinion of cost for this work is $109,326.

8. We recommend budgeting for wet sealing the curtain wall and window gaskets (20% allowance) in 2022. Our opinion of cost for this work is $60,025.

9. We recommend budgeting for cleaning of the windows, doors and curtain walls in 2022. Our opinion of cost for this work is $82,000.

H Building

1. We recommend budgeting for completion of concrete repairs to the building façade in year 2019. Our opinion of cost for this work is $18,400.

2. We recommend budgeting for completion of 5-year façade inspections and isolated repair costs in 2019 and 2024. Our opinion of cost for this work is $16,000 ($8,000 per cycle).

3. We recommend budgeting for professional fees for the exterior refurbishment project in 2022. Our opinion of cost for this work is $23,767.

4. We recommend budgeting for installing and commissioning a swing-stage prior to the exterior works starting in 2022. Our opinion of cost for this work is $16,800.

5. We recommend budgeting for replacement of the windows in 2022. Our opinion of cost for this work is $259,200.

6. We recommend budgeting for replacement of the sealants at control joints and precast to precast panels in 2022. Our opinion of cost for this work is $24,840.

7. We recommend budgeting for replacement the expansion joint system between the Q and H Buildings in 2022. Our opinion of cost for this work is $13,050.

BUILDING SYSTEMS

5.0 MECHANICAL SYSTEMS

The following information was obtained through our visual observations of the building systems and review of available documentation. The Q and H Buildings contain HVAC equipment for occupant comfort, with mechanical systems consisting of air handler units, fan coil units, water cooled chillers, cooling towers, exhaust fans, pneumatic controls and a limited building automation system (reference Photographs M-01 through M-01 through M-05 in Appendix A).

5.1 Heating and Cooling Systems – Q Building

5.1.1 Description

5.1.1.1 Heating Systems

The spaces within the building are heated by 1) steam preheat coils in the air handler units located in the penthouse and 2) hot water reheat coils located in the variable air volume and constant volume boxes throughout the building. Hot water fin tube radiation heaters are used for perimeter heating of the building.

The steam is supplied via Veolia Energy to the air handler preheat coils as well as to steam to water heat exchangers for fin tube radiation and reheat. Pumps 1 and 2 serve the hot water coils and pumps 3 and 4 serve the fin tube radiators.

5.1.1.2 Cooling Systems

The air handler units in the building utilize chilled water pumped from the main chiller. Chilled water in the cooling coils removes heat from the return air and/or outside air. Chilled water for the air handler units is supplied via three York centrifugal chillers rated at approximately 900 tons with a manufacturer date of in circa 2010. Chilled water is sent out to the building via three primary circulating pumps located in the basement mechanical room. The pumps are labeled CHWP 1 through 3. The cooling towers are stainless steel and manufactured by Marley in circa 2010. The towers are reportedly rated at 900 tons each. Condenser water is pumped from the basement mechanical room up to the roof via three condenser water pumps labeled CTWP 1 through 3.

5.1.2 Condition

5.1.2.1 Heating Systems

The steam heat exchangers were insulated and therefore we were unable to determine the overall condition. Heat exchangers can last well beyond 30 years if proper water treatment and steam line treatment is used. There were no indications that these units have issues at the current time. The pumps appear to be in good condition and can be maintained as part of on-going operations.

5.1.2.2 Cooling Systems

The chiller is in relatively good condition and maintained by Johnson Controls (York) on an annual basis. We were not able to review maintenance logs and are unsure if the chiller has had an eddy current test. We recommend installing a water-to-water heat exchanger to reduce the electric consumption during the winter months and reduce the overall operating cost of the building.

5.1.3 System Capacity

5.1.3.1 Heating Systems

We are unable to calculate the total heating capacity versus the needed capacity of the building due to lack of complete drawings.

5.1.3.2 Cooling Systems

Based upon our review of the equipment and documentation, the chilled water systems are adequate for the building cooling needs.

5.1.4 Projected Expenditures

5.1.4.1 Heating Systems

No required capital expenditures are anticipated at this time.

5.1.4.2 Cooling Systems

Required:

1. We recommend budgeting for a manufacture recommended ten-year internal inspection on the chillers in 2019. Our opinion of the allowance for this work is $45,000.

2. We recommend budgeting for an eddy current inspection on the chillers in 2019 with a repeat inspection in 2024. Our opinion of the allowance for this work is $51,000 (two cycles at $25,500 each).

3. We recommend budgeting for a water-to-water heat exchanger in 2019. Our opinion of the allowance for this work is $200,000.

5.2 Heating and Cooling Systems – H Building

5.2.1 Description

5.2.1.1 Heating Description

The spaces within the H Building are heated by 1) steam preheat coils in the air handler units located in the penthouse and 2) hot water reheat coils located in the air handlers as a hot deck distribution system.

The steam is supplied via Veolia Energy to the air handler preheat coils as well as to steam to water heat exchangers for fin tube radiation and reheat. Pumps 1 and 2 serve the hot water coils and pumps 3 and 4 serve the fin tube radiators.

5.2.1.2 Cooling Description

The air handler units in the building utilize chilled water pumped from the main chillers located in the basement. Chilled water in the cooling coils removes heat from the return air and/or outside air and sends the heated water back to the chiller for cooling process. Chilled water for the air handler units is supplied via three York centrifugal chillers rated at approximately 900 tons, located in the Q Building, with a manufacturer date of in circa 2010. These units are variable speed drive, water cooled chillers with water/refrigerant heat exchangers to complete a refrigeration cycle. Chilled water is sent out to the building via three primary circulating pumps located in the basement mechanical room of the Q Building. The pumps are labeled CHWP 1 through 3. Condenser water absorbs the heat from the refrigerant and sends the warm water to the cooling tower. The cooling towers are stainless steel and manufactured by Marley in circa 2010, located on the H Building roof. The towers are reportedly rated at 900 tons each. Condenser water is pumped from the basement mechanical room up to the roof via three condenser water pumps labeled CTWP 1 through 3. We understand that at least one chiller operates on a year-round basis. In the winter months, the outside temperature is low enough to provide “free cooling” via a water-to-water heat exchanger and the cooling tower.

5.2.2 Condition

5.2.2.1 Heating Systems

The heating coils, pumps and piping systems for heating appeared to be in good condition. The pumps can be maintained as part of routine maintenance.

5.2.2.2 Cooling Systems

The cooling coils, pumps and piping systems for cooling appeared to be in good condition. The pumps can be maintained as part of routine maintenance.

5.2.3 System Capacity

5.2.3.1 Heating Systems

We are unable to calculate the total heating capacity versus the needed capacity of the building due to lack of complete drawings.

5.2.3.2 Cooling Systems

Based upon our review of the equipment and documentation, the chilled water systems are adequate for the building cooling needs.

5.2.4 Projected Expenditures

5.2.4.1 Heating Systems

No required capital expenditures are anticipated at this time.

5.2.4.2 Cooling Systems

No required capital expenditures are anticipated at this time.

5.3 Air Distribution Systems – Q Building

5.3.1 Description

Conditioned air for the building is provided by seventeen air handling units that are designated as air handler unit 1 through 15, S.I.C.U 16 and a supply fan designated SF 3. The air handler units have several different HVAC operations depending on the unit. Most of the units have steam preheat coils, chilled water cooling coils, outside air make-up, steam humidifiers and return air. Air Handler Unit number 9 appears to be heating only and used for supply air. A detailed diagram was not available to determine the specific locations served by each air handler unit. The air handler units supply air to constant volume boxes and variable volume boxes. Some boxes are located in the 4th floor mechanical room and some are located within the spaces in the building. We were unable to obtain a total count of the CAV and VAV boxes.

5.3.2 Condition

Except for S.I.C.U 16, the remaining air handling units appeared to be in fair to good condition for having been installed in circa 1986. The insulation is worn on much of the units piping systems, the chilled water coils that were observed had corrosion at the condensate pans, and the interior pans looked worn and dated, some motors appear to be older and less efficient. S.I.C.U. 16 appears to be installed in 2010. The useful life expectancy of these types of units (dated in circa 1986) is 20-25 years and longer if well maintained. We recommend budgeting for the refurbishment of the condensate pans, dampers and insulation in the near-term. The air handler electronic valves appear

to be in fair to good condition overall. The motorized valves will begin to wear out and become a maintenance nuisance as they age. We recommend replacing the valves in the near-term as part of the air handler refurbishment project. Some of the units may need less work, and some more work, as we were not able to observe the interiors of each unit. The CAV and VAV boxes appeared to be in good working condition. We did note one unit on the 4th floor, which was not connected to controls or reheat piping. We did not notice HEPA filtration or Ultra Violet purification systems on the air handler units which is common in hospital arenas to reduce germs and bacteria from entering the air stream.

5.3.3 System Capacity

Based upon our review of the equipment and documentation, the air handling systems appeared to have the capacity to maintain comfort conditions throughout the building based on the current use and occupancy levels.

5.3.4 Projected Capital Expenditures

Required:

4. We recommend budgeting for an allowance to refurbish the air handler units with new damper gaskets, insulation, motors and condensate pan coatings in 2019. Our opinion of cost for this work is $525,000.

5.4 Air Distribution Systems – H Building

5.4.1 Description

Conditioned air for the building is provided by fourteen air handling units that are designated as air handler unit 1H through 14 OR 4 AHU. The air handler units have steam preheat coils, cooling coils, and discharge heating water and cooling coils for a dual deck air delivery system. Based on the graphics in the central monitoring shop, the air handler units appear to be 100% outside air. A detailed diagram was not available to determine the specific locations served by each air handler unit.

5.4.2 Condition

The air handling units appeared to be in fair to good condition for having been installed in circa 1971. The insulation was deteriorated, condensate pans rusted and the units look worn and dated. The gaskets are allowing air to blow from the doors and transition ducts. The useful life expectancy of these types of units (dated in circa 1971) is 20-25 years, and longer if well maintained. We recommend budgeting for the refurbishment of the condensate pans, dampers and insulation in the near-term. The air handler electronic valves appear to be in fair to good condition overall. The motorized valves will begin to wear out and become a maintenance nuisance as they age. We recommend replacing the valves in the near-term as part of the air handler refurbishment project.

Some of the units may need less work, and some more work, as we were not able to inspect the interiors of each unit.

5.4.3 System Capacity

Based upon our review of the equipment and documentation, the air handling systems appeared to have the capacity to maintain comfort conditions throughout the building based on the current use and occupancy levels.

5.4.4 Projected Capital Expenditures

Required:

1. We recommend budgeting for an allowance to refurbish the air handler units with new damper gaskets, insulation, motors and condensate pan coatings in 2019. Our opinion of cost for this work is $175,000.

5.5 Ventilation and Exhaust Systems – Q Building

5.5.1 Description

5.5.1.1 Ventilation Air

Outside air for ventilation is supplied to the air handling units via duct work from the mechanical room level vents.

5.5.1.2 Exhaust Systems

Building exhaust systems include laboratory exhaust fans, exhaust fans for the restrooms (EX-4) and service rooms, and general exhaust (EX-1). Fans are generally located on the roof.

5.5.1.3 Pressurization and Smoke Venting Systems

The building fire alarm system shows three stairway pressurization fans, one for each stairwell. We were able to locate SF-1 on the roof, but we were unable to locate the two fans. We believe they are tucked away in the ceiling of the 4th floor mechanical room.

5.5.2 System Capacity

In general, the ventilation and exhaust systems for the building appeared to be appropriate for the applications and installed according to the applicable codes at the time of construction.

5.5.3 Condition

The building ventilation and exhaust systems appeared to be in good condition. The Strobic Laboratory Exhaust Fans on the roof could use some paint to reduce the surface rust and expend the life of the metal. Any repairs would likely be on an as-needed basis and resolved as part of routine operations. We were unable to validate the condition of the stairwell evacuation fans.

5.5.4 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

5.6 Ventilation and Exhaust Systems – H Building

5.6.1 Description

5.6.1.1 Ventilation Air

Outside air for ventilation is supplied to the air handling units via duct work from the mechanical room level vents.

5.6.1.2 Exhaust Systems

Building exhaust systems include laboratory exhaust fans, exhaust fans for the restrooms and service rooms, and mechanical rooms. Fans are generally located on the roof.

5.6.1.3 Pressurization and Smoke Venting Systems

The building fire alarm system shows stairway pressurization fans PF-1 through 3 and SF-1 and SF-2 as stairwell make-up and pressurization fans. We were able to locate SF-1 on the roof, but we were unable to locate the other fans. The drawings show exhaust fans EX-20, EX-21, EX-22, EX-24, as smoke evacuation fans.

5.6.2 System Capacity

In general, the ventilation and exhaust systems for the building that we found appeared to be appropriate for the applications and installed according to the applicable codes at the time of construction.

5.6.3 Condition

The building ventilation and exhaust systems appeared to be in good condition. Any repairs would likely be on an as-needed basis and resolved as part of routine operations.

5.6.4 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

5.7 Temperature Control Systems

5.7.1 Description

At both the H and Q Buildings, controls for the HVAC systems start/stop and sensor functions utilize a low voltage system based on the Siemen's Apogee system. Each mechanical space appears to have one or more control boxes, with some control boxes appearing to support one piece of equipment. The low voltage system can monitor and control the chiller, pumps, air handling units and various building fans. Operation of older variable volume dampers and valves, and large valves and damper actuators in the HVAC systems is accomplished using pneumatic actuated motors. Operation of the newer variable volume boxes and controls is accomplished via the DDC system. The system is capable of either a networked configuration or individual stand-alone operation. Control points are monitored from a central command room in the power plant.

5.7.2 System Capacity

The control system is considered generally adequate although the current operation is not utilizing the controls.

5.7.3 Condition

The HVAC control system is in good condition. The pneumatics systems appear to be maintained as needed. The DDC system provides reasonable control over the building systems and allows centralized control. A front-end operator interface system is not connected at the Q or H Building.

5.7.4 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

6.0 ELECTRICAL SYSTEMS

The following information was obtained through our visual observations of the building system and limited electrical drawings. The electrical systems include the incoming electrical service, service switchgear and electrical distribution equipment, lighting systems, communications systems and security systems (reference Photographs E-01 through E-03 in Appendix A).

6.1 Electrical Service and Distribution Equipment – Q Building

6.1.1 Description

6.1.1.1 Electrical Service Equipment

Primary electrical service from NSTAR is routed underground to the Evans Building substation at 13.8 kV. Service from the Evans vault is sent to the Q Building Westinghouse main 13.8 kV sub-station rated at 600-amp via feeder 3 and 4 which are located in the basement electrical switchgear room. According to the one-line diagram labeled 3-C Electrical 02/11/95, the power is then fed to the Q Building and the H Building via a 250-amp 13.8 set of feeders. The 13.9 power comes into the main electric room into a 2,000 KVA transformer which steps down the 13.8 power to 277/480 volts. The power is then routed to two 4,000 amp main-tie-main switchgear panels labeled sub-station North and sub-station South respectively. The sub-stations then feed lighting panels, DPCS Emergency and Distribution panels. A second 13.8 kV switchgear system is located on the 4th floor mechanical room which serves motor control centers, elevator switchboards and other distribution switchboards. The substations were manufactured by Westinghouse in 1986 and are the Power-R-Gear model.

6.1.1.2 Voltages

Voltage in the building is 277/480 and 120/208 volts, with larger equipment utilizing 480-volts.

6.1.1.3 Wire and Conduit

Typical power distribution for feeders and branch circuits is accomplished using wire in conduit. Observed wiring consists of copper with thermoplastic insulation. Conduit types varied in the buildings based on area and usage. Rigid metal conduit is used in areas subject to constant moisture and physical damage. Electrical metallic tubing (EMT) is used in interior spaces. Limited amounts of flexible metal conduit and Type MC cable are used.

6.1.1.4 Panelboards

Several types of panelboards are used at the building. The first type is a high amperage distribution panel typically rated between 400-amps and 1,300-amps for large equipment. The second type of panelboard is the lighting and appliance panels used for branch circuit distribution with buss ratings typically rated at 225-amps. Most panels utilize circuit breakers for over current and short circuit protection of circuits. Most distribution panels appear to be main lug only.

6.1.1.5 Transformers

Transformers are the dry-type of various sizes from 9kVA to 500 kVA throughout the building.

6.1.1.6 Equipment Manufacturers

Primary switchgear and incoming service panels are primarily manufactured by Westinghouse. Distribution panels were manufactured by Eaton. Disconnect switches are manufactured by various manufacturers. Variable speed drives are manufactured primarily by ABB.

6.1.1.7 Motor Control Centers

Motor control is provided via motor control centers for the main mechanical rooms. Larger motors are driven by variable speed drives manufactured by ABB. Smaller motors are typically controlled by local combination motor starters near the equipment.

6.1.2 System Capacity

The building is equipped with an electrical service rated for 8,000-kVA (277/480 volts). Using a building area of 422,745 square feet (SF) yields a unit load factor of 18.92-VA/SF. Based on industry design standards and building utilization, the demand load factor this building should be on the order of 20 to 25-VA/SF. The building electrical capacity appears to be adequate for the anticipated needs of this building.

6.1.3 Condition

The major electrical equipment items appeared to be in good condition, although somewhat dated. There was no indication of damage from short circuit or overload conditions. The major components of the electrical systems receive routine preventative maintenance and recent thermal scans. The panels had an arc-flash sticker which is not an NFPA 71E approved labeling device. A warning sticker should display the amount of energy potential for the panel or switchgear.

Electrical distribution equipment of the type installed at the building is generally considered to have a service life of 30-years or more. Switchboards, panelboards and wiring are often serviceable beyond this time if properly maintained, and not subjected to repeated overload or short circuit conditions. With the continuance of a comprehensive preventative maintenance program, replacement of the electrical switchgear, switchboards, panels, bus duct and feeders should not be required within the study period.

We were unable to find evidence that the equipment undergoes the correct recommended level of maintenance. We recommend an electrical tighten-up every three years, to include an electrical infrared scan. We also recommend a coordination study be conducted to verify that the correct breakers are used, and that the breakers trip in the proper sequence. The coordination study only

needs to be performed once, unless major changes are made to the system after the study is completed.

6.1.4 Projected Capital Expenditures

Required:

1. We recommend budgeting for an electrical tighten-up and electrical scan every three years beginning in 2019. Our opinion of the allowance for this work is $9,000 per year for a total cost of $36,000 over the term.

2. We recommend budgeting for an Arc-Flash study on the electrical system in 2019. Our opinion of the allowance for this work is $25,000.

3. We recommend budgeting for a coordination study in 2019. Our opinion of the allowance for this work is $30,000.

4. We recommend budgeting for replacement of the variable speed drives in 2023. Our opinion of the allowance for this work is $27,500.

5. We recommend budgeting for the refurbishment of the motor control center buckets in 2019. Our opinion of the allowance for this work is $64,000.

6.2 Electrical Service and Distribution Equipment – H Building

6.2.1 Description

6.2.1.1 Electrical Service Equipment

Primary electrical service for the H Building is fed from the Q Building main switchgear room in the basement of the Q Building. According to the one-line diagram labeled 3-C Electrical February 11, 1995, the power is then fed to the Q Building and the H Building via a 250-amp 13.8 set of feeders. The 13.8 power comes into the 6th floor main electric room into a 1,500-kVA transformer, and a 500-kVA transformer which steps down the 13.8 power to 277/480 volts. The 500-kVA power is split into two separate feeds, and then routed to a 480-volt, 800-amp distribution board labeled North B-Board which serves life safety and critical systems from one feed. The second 480-volt feed is stepped down and routed to another panelboard labeled North A Board, which is 120/208 volts. The A Board serves multiple panelboards throughout the building. The 1,500-kVA feed is split also, with a 480-volt 1,200-amp line feeding panels and equipment labeled South A Board. The second line is stepped down to 120/208, and serves a South B panelboard which serves various panelboards.

6.2.1.2 Voltages

Voltage in the building is 277/480 and 120/208 volts, with larger equipment utilizing 480-volts.

6.2.1.3 Wire and Conduit

Typical power distribution for feeders and branch circuits is accomplished using wire in conduit. Observed wiring consists of copper with thermoplastic insulation. Conduit types varied in the buildings based on area and usage. Rigid metal conduit is used in areas subject to constant moisture and physical damage. Electrical metallic tubing (EMT) is used in interior spaces. Limited amounts of flexible metal conduit and Type MC cable are used.

6.2.1.4 Panelboards

Several types of panelboards are used at the building. The first type is a high amperage distribution panel typically rated between 400-amps and 1,300-amps for large equipment. The second type of panelboard is the lighting and appliance panels used for branch circuit distribution with buss ratings typically rated at 225-amps. Most panels utilize circuit breakers for over current and short circuit protection of circuits. Most distribution panels appear to be main lug only.

6.2.1.5 Transformers

Transformers are the dry-type of various sizes from 9-kVA to 500-kVA throughout the facility.

6.2.1.6 Equipment Manufacturers

Primary switchgear and incoming service panels are primarily manufactured by Westinghouse. Distribution panels were manufactured by Eaton. Disconnect switches are manufactured by various manufacturers. Variable speed drives are manufactured primarily by ABB.

6.2.1.7 Motor Control Centers

Larger motors are driven by variable speed drives manufactured by ABB. Smaller motors are typically controlled by local combination motor starters near the equipment.

6.2.2 System Capacity

The H Building is equipped with an electrical service rated for 8,000-kVA (277/480 volts). Using a building area of 422,745 square feet (SF) yields a unit load factor of 18.92-VA/SF (both buildings calculated together). Based on industry design standards and building utilization, the demand load factor this building should be on the order of 20 to 25-VA/SF. The building electrical capacity appears to be adequate for the anticipated needs of this building.

6.2.3 Condition

The major electrical equipment items appeared to be in good condition, although somewhat dated. There was no indication of damage from short circuit or overload conditions. The major components of the electrical systems receive routine preventative maintenance and recent thermal scans. The panels had an arc-flash sticker which is not an NFPA 71E approved labeling device. A warning sticker should display the amount of energy potential for the panel or switchgear.

Electrical distribution equipment of the type installed at the building is generally considered to have a service life of 30-years or more. Switchboards, panelboards and wiring are often serviceable beyond this time if properly maintained, and not subjected to repeated overload or short circuit conditions. With the continuance of a comprehensive preventative maintenance program, replacement of the electrical switchgear, switchboards, panels, bus duct and feeders should not be required within the study period.

We were unable to find evidence that the equipment undergoes the correct recommended level of maintenance. We recommend an electrical tighten-up every three years, to include an electrical infrared scan. We also recommend a coordination study be conducted to verify that the correct breakers are used, and that the breakers trip in the proper sequence. The coordination study only needs to be performed once, unless major changes are made to the system after the study is completed.

6.2.4 Projected Capital Expenditures

Required:

1. We recommend budgeting for an electrical tighten-up and electrical scan every three years beginning in 2019. Our opinion of the allowance for this work is $9,000 per year for a total cost of $36,000 over the term.

2. We recommend budgeting for an Arc-Flash study on the electrical system in 2019. Our opinion of the allowance for this work is $15,000.

3. We recommend budgeting for replacement of the variable speed drives in 2023. Our opinion of the allowance for this work is $27,500.

4. We recommend budgeting for refurbishment of the motor control center buckets in 2019. Our opinion of cost for this item is $64,000.

6.3 Emergency Power Generation and Distribution Equipment – Q and H Building

6.3.1 Description

Emergency power for life safety and essential loads for the Q and H Building is supplied by three Caterpillar 1250-kw/1563-kVA diesel engine-driven generators located in the 6th floor of the H

Building. Output characteristics are 480-volts, 3-phase, 4-wire. A Pryco day-tank is located next to each generator. Diesel fuel for the generator is stored in a reported two 8,000-gallon underground storage tanks locate under the drive way near a security booth and pumped to the day-tanks as needed. Oil transfer pumps are located outside the alley entrance to the H Building behind a roll-up door.

There is a single output 2,000-amp circuit breaker furnished with each generator. A feeder is routed from the generator to a controlling switchboard located in the generator room. The power is routed to automatic transfer switches which switch from normal power to emergency power in the event of a disruption of service. There are several automatic transfer switches rated at 600-amps up to 1,600-amps each and serve key system equipment such as the elevators and life safety equipment in the Q Building, H Building, Evans Building and the Doctor's Office Building. There is also a manual transfer switch labeled MCC 4C, which powers the motor control center 4C for the Q Building.

6.3.2 Condition

The emergency generator serving the life safety loads for the buildings appeared to be original to the buildings and in good condition. The generator is exercised on a regular basis for a short run period. Generators of this type often have a service life of 30 years or more driven by the availability of repair components from the manufacturer. We recommend, as part of on-going operations, conducting a generator load bank at least every three years to verify the generator remains capable of delivering the necessary power in an emergency. Additionally, we recommend that the fuel oil be scrubbed and filtered at least every three years to verify that microbial degradation does not cause issues with the fuel fouling. The transfer switches are also original, but appeared to be in good condition. ASCO is a reliable transfer switch and parts should remain available through the period.

6.3.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

6.4 Lighting Systems – Q and H Building

6.4.1 Description

At the Q and H Buildings, patient area and corridor area lighting consists of various types of fixtures depending on the floor, with nominal 2' x 4' and 2' x 2' lensed, lay-in fluorescent fixtures in the offices and recessed cans in the hallway areas. Stairway and mechanical space lighting consists of wall mounted 2' by 4' fixtures or 2' by 4' hanging fixtures. Emergency egress lighting is provided by fixtures powered by emergency power. Illuminated exit signs are installed at exit doors and along the path of egress.

6.4.2 Condition

Fixtures generally appeared to be in good condition and appropriate for the applications. Most of the fixtures are reported to have been upgraded to T-8's, with some compact fluorescent remaining. We anticipate that the lighting components will remain serviceable throughout the study period.

6.4.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

6.5 Communication and Data Systems – Q and H Building

6.5.1 Description

Communication and data plans were not available during the site visit. We believe that the Q and H Buildings utilize Fiber, Cat 5 and Cat 6 cabling, and has Comcast as the internet provider. The sixth floor of the H Building houses the main MDF for the campus PBX phone system. The buildings are going through a telephone and data decoupling process currently to remove campus external building communications from the main telecom room. There are cable raceways fed from the Q and H Buildings to the Preston and Evans Buildings through the walkways and tunnels. We were not able to determine ownership of the telecom equipment and servers, and as such we cannot determine the extent of the equipment to remain in the Q and H Buildings.

6.5.2 Condition

Based upon our discussions with facility personnel, the communication equipment located within the buildings currently appears to be in good condition.

6.5.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

6.6 Security Systems – Q and H Building

6.6.1 Description

The buildings are protected by electronic security cameras inside and outside. The system records to a DVR which was recently upgraded. We were not able to view the security backbone system.

6.6.2 Condition

Based on limited access to the system, the access control and security systems appeared to be in good condition.

6.6.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

7.0 PLUMBING SYSTEMS

The following information was obtained through our visual observations of the buildings. We were not able to determine the current configuration of the systems based on the available drawings. The plumbing systems include the domestic cold-water system, domestic hot water system, sanitary waste and vent system, and stormwater collection systems (reference Photographs P-01 through P-02 in Appendix A).

7.1 Domestic Water Systems – Q and H Buildings

7.1.1 Description

7.1.1.1 Domestic Cold Water

Domestic cold-water service, consisting of approximately 8" diameter water main feed from the East Newton Street side of the Property enters the Q Building in the basement mechanical room. The water is treated and filtered, and sent out to the Q and H Buildings. The domestic water pressure is boosted via a Syncroflo tri-plex booster pump skid. The buildings have potable and non-potable water.

7.1.1.2 Domestic Hot Water

Domestic hot water the Q Building is generated by three AJAX steam to hot water heaters. The units appear to be manufactured in 2008. The unit has a condensate tank system attached to collect the condensate from the hot water tanks. Two large storage tanks appear to be hot water storage for the building.

The H Building has two 75-gallon gas fired hot water heaters located in room H-601A. We were unable to determine what the hot water heaters serve.

7.1.1.3 Plumbing Fixtures

Each floor contains several men's and woman's restroom. Plumbing fixtures within the restrooms typically consist of floor mounted water closets with manual flush valves and vitreous china lavatories mounted within laminate counters with automatic nickel plated handles and faucets. Urinals provided within the men's restroom typically consist of wall mounted fixtures with manual flush valves.

7.1.1.4 System Evaluation

The capacity and configuration of the water service to and throughout the buildings appear to be appropriate. No problems were reported or noted concerning water distribution.

7.1.2 Condition

The domestic water service, domestic hot water storage tanks and plumbing fixtures generally appeared to be in good condition.

7.1.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

7.2 Sanitary Waste and Storm Drainage Systems – Q and H Building

7.2.1 Description

7.2.1.1 Sanitary Waste Systems

Sanitary waste is collected from a multiple riser stacks and routed to a 10" diameter line that exits the Q Building via gravity drain lines. Visible portions of the sanitary piping were of no-hub cast-iron construction. The basement level has multiple sump pumps to pump water to the sewer line. The main water meter room has a series of water treatment systems for incoming water and exiting laboratory waste water control systems (pH control).

7.2.1.2 Stormwater Systems

Storm drainage from the roofs and balcony areas is via roof drains and internal downspouts. Stormwater is drained via gravity lines to a 10" site line that discharges off the Property. Stormwater piping appeared to be black iron where visible.

7.2.1.3 System Evaluation

The capacity and configuration of the sanitary and stormwater collection systems for the buildings appear to be appropriate for the current occupancy.

7.2.2 Condition

The sanitary, storm drainage systems and process water systems appeared to be in good condition (where visible) with no significant leaks or other areas of deterioration noted or reported to us. We conducted a very limited pipe thickness test on several pipes, all of which appeared to be in good condition. We do not anticipate a requirement to complete significant repair or replacement of the either system during the study period. We noted during our observation that all the storm collection drains on the plaza level were stopped up with leaves and debris. These collection drains should be maintained to prevent water from flowing into unwanted areas.

7.2.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

8.0 FIRE AND LIFE SAFETY SYSTEMS

The following information was obtained through our visual observations of the building systems. Fire and life safety elements observed included structural fire protection, fire suppression systems, fire detection and alarm systems, handheld fire extinguishers and fire-rated means of egress.

8.1 Code References – Q and H Building

The H Building was constructed in 1971. Limited drawings or information was provided on the H Building, but we expect that the building was constructed to the relevant codes in use at the time. The Q Building was constructed in 1985 and from the original architectural drawings provided, we understand that this was constructed to the Massachusetts Building Code, 1980 (fourth edition).

8.2 Structural Fire Protection – Q and H Building

8.2.1 Description

The structure drawings were not available during the site visit. The Faithful+Gould team visually noted the fire ratings on the doors and stairwells. Fire rating labels at doors typically indicated 1½ hour ratings.

8.2.2 Condition

We noted the condition and adequacy of the structural fire protection systems at the mechanical, electrical corridors and exit stairs, and above select ceiling tiles. The structural fire protection appeared to be in good condition and generally installed in accordance with industry accepted practice and the codes enforced at the time of construction.

8.2.3 Projected Capital Expenditures

No capital expenditures are required at this time.

8.3 Means of Egress – Q Building

8.3.1 Description

Exit stairwells in the building are generally located on the corners of the building. A stairway on the southeast side of the building exits directly to the outside. A stairway on the west center side of the building exits directly to the outside and lobby corridor. Exit signs are provided at each exit and at appropriate locations along the path of egress. Emergency lighting serving the egress paths and the interior of exit stairs is provided by wall mounted fixtures.

8.3.2 Condition

Means of egress appeared to comply with codes enforced at the time of construction with regard to exit discharge, travel distances and other factors.

8.3.3 Projected Capital Expenditures

No capital expenditures are required at this time.

8.4 Means of Egress – H Building

8.4.1 Description

Exit stairwells in the building are generally located on the corners of the building. The northwest stairway exits directly to the outside of the building. The northeast stairway exits to an interior corridor, within close proximity to an emergency exit in the Q Building. The emergency exit has an interior stairwell that exits directly to the emergency corridor. Exit signs are provided at each exit and at appropriate locations along the path of egress. Emergency lighting serving the egress paths and the interior of exit stairs is provided by wall mounted fixtures.

8.4.2 Condition

Means of egress appeared comply with codes enforced at the time of construction with regard to exit discharge, travel distances and other factors.

8.4.3 Projected Capital Expenditures

No capital expenditures are required at this time.

8.5 Fire Suppression Systems – Q and H Building

8.5.1 Description

The Q and H Buildings are protected by an automatic fire sprinkler system consisting of a wet-pipe installed throughout the building, and dry-pipe system for the loading dock in the Q Building. Additionally, several dry-type fire suppression systems were noted for computer rooms and telephone rooms in the Q Building. Water service for fire suppression systems is supplied by a 10" dedicated line entering the building from the Albany street side into the Q Building. Combination standpipe/sprinkler risers are located in the stairwells with 2 ½" fire department connections.

Normal pressure is maintained in the system by a 2,500 GPM diesel driven fire pump located in room B223 in the Q Building. The fire pump has a 360-gallon fuel tank located within the room for diesel fuel.

8.5.2 Condition

The fire suppression systems and components appeared to be in good condition. The fire pump looks a bit worn, but with proper maintenance should continue to be reliable. The sprinkler system is inspected and tested on an annual basis and was last inspected in May of 2017. The system will require an internal inspection every five-years to comply with NFPA code. We recommend performing this work as on-going operational expense.

8.5.3 Projected Capital Expenditures

No required capital expenditures are anticipated at this time.

8.6 Fire Detection and Alarm Systems – Q and H Buildings

8.6.1 Description

The Q and H Buildings are primarily protected by a Simplex 4100U addressable fire alarm system with voice activation. The fire alarm control panel (FACP) for Q Building is located in the Fire Alarm Control Room on the first floor. The exact date of manufacture is unknown, but the Simplex 4100U as manufactured between 2002 and 2010. We believe the fire alarm panel most likely was installed prior to 2005. The main panel is networked to a series of transponder panels located throughout the building.

The fire alarm system monitors manual pull stations, smoke detectors, heat detectors and water-flow alarm switches throughout this building. Smoke detectors are located in elevator lobbies, elevator machine rooms, elevator hoistway, electrical rooms and telephone/data rooms. Duct detectors are provided in air handling units. Pull stations are provided at exits. The fire alarm system also supervises water flow in the fire suppression system. Alarm notification is provided by horn/strobe signals located throughout the buildings.

There are a number of City Fire Alarm cables that run between the H Building mechanical room to the Evans Building, Preston Building, Doctor's Office Building and the Old Evans Building. We do not have drawings to determine where the cables home destination is located. As such, we are unable to determine, without input from City Fire Code Officials, how to terminate these cables from the H Building mechanical room.

8.6.2 Condition

The fire alarm system appeared to be in good condition. The fire alarm system was last tested and inspected in 2017 with no major deficiencies noted. A fire alarm study was conducted by RDK Engineers in February 2012, in which RDK noted several deficiencies in relation to the size of the fire alarm control room and the visual annunciation units. They also noted a lack of coverage in the public restrooms. Due to the recommendations of the RDK report, the age of the fire alarm panels, and the likelihood of near-term renovation, we recommend replacing the fire alarm system.

8.6.3 Projected Capital Expenditures

Required:

Q Building:

1. We recommend budgeting for replacement of the fire alarm system in 2019. Our opinion of the allowance for this work is $2,497,397.

2. We recommend budgeting for the construction of a fire alarm control room in 2019. Our opinion of the allowance for this work is $25,000.

H Building:

1. We recommend budgeting for replacement of the fire alarm system in 2019. Our opinion of the allowance for this work is $609,778.

9.0 CONVEYANCE SYSTEMS

Conveyancing systems comprised a number of traction and hydraulic elevations and associated controls which were of a variety of ages and conditions (reference Photographs ELV-01 through ELV-08 in Appendix A).

9.1 Description

9.1.1 Q Building

9.1.1.1 Introduction

The Q Building contained ten elevators. These consisted of seven overhead geared traction units and three basement hydraulic units. Table 9-1 provides a summary of the elevator systems at the Q Building.

Table 9-1 - Summary of Elevators (Q Building)

Machine Room	Elevators	Area Served	Floor Levels Served	Capacity (LBS)	Speed (FPM [1])	Installation / Modernization Date
1	1	Passengers	B - 8	3,500	350	1986
	2	Passengers	B - 8	3,500	350	1986
	3	Passengers	B - 8	3,500	350	1986
	5	Patient / Staff	B – 8	4,500	350	2010
	6	Patient / Staff	B – 8	4,500	350	2010
	7	Patient / Staff	B – 8	4,500	350	2010
	8	Patient / Staff	B – 8	4,500	350	2010
2	9	Operating Room	1, 2	3,000	150	1986
3	10	Operating Room	1, 2	3,000	150	1986
4	11	Kitchen	B, 1, 2	3,000	150	1986

1. FPM indicates feet per minute

9.1.1.2 Elevators 1, 2, 3 (Passenger Cars)

Elevators 1, 2 and 3 consist of three overhead geared traction units that operate as a grouped system. The elevators were manufactured by the Dover Elevator Company and installed at the time of building construction in 1986. Each elevator contains an original relay logic controller with a central relay logic dispatcher provided for central car calling. The hoistway machines at each of the three elevators consist of geared AC units with adjacent motor–generator sets and are rated at 43.1 horsepower and a stroke of 17". Governors consist of fly ball type units. The elevators utilize direct drive selectors and hoistway switches to determine the elevator's speed and position. The controllers, hoistway machines and governors for the elevators are contained in a penthouse machine room that is also shared with cars 5, 6, 7 and 8. The machine room is air conditioned.

The elevators contain center opening stainless steel faced doors. Elevator cabs consist of a steel enclosure with steel panel walls, floors and ceilings. A car-operating panel is provided within each cab. Raised numbers and Braille tags are not provided at the operating panels. A hands-free communication system is provided within each cab. Hall call risers are provided at the main lobby serving the elevators.

9.1.1.3 Elevators 5, 6, 7, 8 (Patient / Staff Cars)

Elevators 5, 6, 7 and 8 consist of four overhead geared traction units that operate as a grouped system. The elevators are contained in the same machine room as Cars 1, 2 and 3 and were manufactured by the Dover Elevator Company in 1986 and modernized in 2010. Modernization consisted of refurbishment of the hoistway machines to include replacement of motors, and installation of replacement controllers, car top equipment and governors. Replacement controllers consist of solid state units manufactured by Motion Control Engineering (MCE). The hoistway machines at each of the four elevators consist of geared DC units rated at 43.1 horsepower and a stroke of 17". Governors consist of rope gripper types. The elevators contain center opening stainless steel faced doors. Elevator cabs consist of a steel enclosure with steel panel walls, floors and ceilings. A car-operating panel is provided within each cab. Raised numbers and Braille tags are provided at the operating panels. A hands-free communication system is provided within each cab. Hall call risers are provided at the main lobby serving the elevators.

9.1.1.4 Elevators 9, 10 and 11 (Operating Room and Kitchen Elevators)

Elevators 9 and 10 consist of the two operating room cars. Elevator 11 consists of the kitchen car. Cars 9 and 10 serve the first and second floors. Car 11 serves the basement through second floor. Each of the three cars have a separate machine room and each consist of basement level hydraulic units manufactured by the Dover Elevator Company at the time of building construction in 1986. Each elevator is controlled by an original relay logic controller which is attached to the exterior face of the hydraulic oil tank. Based on our review of drawings and the age of the elevators, the hydraulic cylinder consists of a single-wall in-ground unit.

The elevators contain center opening stainless steel faced doors. Elevator cabs consist of a steel enclosure with laminated wall panels, vinyl floor tiles and stainless steel plate ceiling. A car-operating panel is provided within each cab. Raised numbers and Braille tags are not provided at each operating panel. A hands-free communication system is provided within each cab. Hall call risers are provided at the main lobby serving the elevators.

9.1.2 H Building

9.1.2.1 Introduction

The H Building contained three overhead geared traction elevators. The elevators were contained in two banks and were labelled as Cars 1, 2 and 3. Cars 1 and 2 operated as a duplex pair and were contained in a single side by side bank at the west end of the building. Car 3 was contained at the east end of the building. Cars 1 and 2 serve the ground through sixth floor. Car 3 serves the basement through sixth floor. Table 9-2 provides a summary of the elevator systems at the H Building.

Table 9-2 - Summary of Elevators (H Building)

Machine Room	Elevator	Area Served	Floor Levels Served	Capacity (LBS)	Speed (FPM [1])	Installation / Modernization Date
1	1	West	B, 1 - 6	5,000	350	1971
	2	West	B, 1 - 6	5,000	350	1971
2	3	East	B, 1 - 6	5,000	350	1971 with Controller in 1995

1. FPM indicates feet per minute

Elevators 1 and 2 consist of overhead gearless traction units manufactured by the Haughton Elevator Company at the time of building construction in 1971. Elevators 1 and 2 are controlled by an original relay logic controller with a central relay logic dispatcher provided for central car calling. Elevator 3 was also manufactured by the Haughton Elevator Company at the time of building construction in 1971, although the controller was replaced in 1995. The replacement controller consists of a microflite solid state controller manufactured by Thompson.

The hoistway machines at each of the three elevators consist of geared AC units with adjacent motor–generator sets, and are rated at 43.1 horsepower and a stroke of 17”. Governors consist of fly ball type units. The elevators utilize direct drive selectors and hoistway switches to determine the elevator’s speed and position. The controllers, hoistway machines and governors for elevators 1 and 2 are contained in a penthouse machine room at the west of the building. Equipment for elevator 3 is contained in a penthouse machine room at the east of the building. Machine rooms are not air conditioned.

The elevators contain center opening stainless steel faced doors. Elevator cabs consist of a steel enclosure with steel panel walls, floors and ceilings. A car-operating panel is provided within each cab. Raised numbers and Braille tags are not provided at the operating panels. A hands-free communication system is provided within each cab. Hall call risers are provided at the main lobby serving the elevators.

9.2 Condition

9.2.1 Q Building

9.2.1.1 Elevators 1, 2, 3 (Passenger Cars)

Elevators 1, 2 and 3 were installed in 1986 and have not been subject to significant modification since that time. The elevators were in fair to poor condition with three areas of concern noted. Firstly, the elevators are poorly maintained with leaking oil noted at the hoistway machines and a build-up of carbon noted on the controllers. Secondly, the ride quality of the elevators was poor and the call times and responsiveness (i.e. number of calls that were cancelled) was high. These issues are most likely attributed to poor operation of the hoistway machines and controllers respectively.

Secondly, the system was installed 31 years ago by a manufacturer that ceased independent operations in 1999 and stopped manufacturing / supplying replacement parts for this system many years ago. As a result, when the system malfunctions due to the previously cited physical issues, obtaining or remanufacturing replacement parts takes an extended period of time and results in one or more cars being out of service for several days, weeks or even months. The third point links to this and is one of poor system reliability. Although the current ownership was not aware of system reliability issues, we anticipate that based upon points one and two above, the system will have significantly diminished reliability. The Certificate for Use for the elevators as issued by the Commonwealth of Massachusetts Department of Public Safety expired on May 31, 2017. The elevators should be re-inspected immediately.

Based upon the factors above, we recommend budgeting for modernization of the elevators within the next one to two years. Refer to the following Recommendations section for the recommended scope of this project.

9.2.1.2 Elevators 5, 6, 7, 8 (Patient / Staff Cars)

Elevators 5, 6, 7 and 8 were modernized in 2010. Modernization consisted of refurbishment of the hoistway machines to include replacement of motors, and installation of replacement controllers, car top equipment and governors. The modernized system appeared to be in good condition and assuming the completion of on-going maintenance and repair, should not require capital level modernization within the ten-year study period. The Certificate for Use for the elevators as issued by the Commonwealth of Massachusetts Department of Public Safety expired on May 31, 2017. The elevators should be re-inspected immediately.

9.2.1.3 Elevators 9, 10 and 11 (Operating Room and Kitchen Elevators)

The three hydraulic elevators were each of a similar condition having been installed in 1986 and not significantly modified since that time. The elevators were in fair condition with two areas of concern noted. The first concern again related to maintenance. At each of the elevators we noted oil leaks at the motor assemblies and hydraulic piping, and noted a generally poor level of care and maintenance. Secondly, the system was installed 31 years ago by a manufacturer that ceased independent operations in 1999 and stopped manufacturing / supplying replacement parts for this system many years ago. As a result, when the system malfunctions due to the previously cited physical issues, obtaining or remanufacturing replacement parts takes an extended period of time and results in one or more cars being out of service for several days, weeks or even months. The Certificate for Use for the elevators as issued by the Commonwealth of Massachusetts Department of Public Safety expired on May 31, 2017. The elevators should be re-inspected immediately.

Based upon the factors above, we recommend budgeting for modernization of the elevators within the next one to two years. Refer to the following Recommendations section for the recommended scope of this project.

9.2.2 H Building

Elevators 1, 2 and 3 were installed in 1971, were in fair to poor condition and contain three areas of concern. Firstly, from a physical standpoint the hoistway machines and controllers were in poor condition and poorly maintained with leaking gaskets and worn sheaves noted at the hoistway machines, and brittle, dirty and poorly connected / bundled wire noted at the controllers. Secondly, the system was installed 46 years ago by a manufacturer that ceased independent operations in 1979 and stopped manufacturing / supplying replacement parts for this system many years ago. As a result, when the system malfunctions due to the previously cited physical issues, obtaining or remanufacturing replacement parts takes an extended period of time and results in one or more cars being out of service for several days, weeks or even months. The third point links to this and is one of poor system reliability. Although the current ownership was not aware of system reliability issues, we anticipate that based upon points one and two above, the system will have significantly diminished reliability. The Certificate for Use for the elevators as issued by the Commonwealth of Massachusetts Department of Public Safety expired on May 31, 2017. The elevators should be re-inspected immediately.

Based upon the factors above, we recommend budgeting for modernization of the elevators within the next one to two years. Refer to the following Recommendations section for the recommended scope of this project.

9.3 Discussion

All elevators within the H and Q Buildings with the exception of Cars 5, 6, 7, 8 at the Q Building and the controller serving Car 3 at the H Building are original to 1971 (H) and 1986 (Q). The equipment is obsolete, poorly maintained, contains numerous physical defects, is subject to expired inspection

certificates, is unreliable, provides a poor level of service and is not suitable to meet the demands of a modern healthcare building. As a result, all cars with the exceptions of elevators 5, 6, 7 and 8 at the Q Building should be modernized within the next three years. Typically, an elevator modernization of this type will include the following scope of work:

Machine Room

- Replacement of controls with microprocessor controller and new VVVF AC Drive
- Refurbishment of existing geared machines or tank system
- Re-grooving of sheaves (traction elevators)
- New brake switch
- New travel cables and ropes (traction elevators)
- New governor with encoder and tail sheave
- Replacement of wiring
- Installation of air conditioning

Fixtures

- New main applied panel car station (passenger)
- New flush-mount hall stations
- New hall lantern inserts with LED lights and electronic gongs
- Reuse jamb Braille
- New lobby fire panel with required devices

Door Equipment

- Closed loop door operator
- Refurbish car door tracks and hanger assemblies
- Refurbish existing hoistway door equipment (replace rollers, gibbs, closers, interlocks as necessary)
- New hoistway door astragals as necessary

Hoistway Equipment

- New wiring throughout (traveling cable, hoistway wiring, etc.)
- New landing system (position transducer and limit switch package)
- New load weighing devices
- Replace existing car and counterweight guides
- New car-top exit switch
- Bevel ledges through hoistway

Pit Equipment

- New pit stop switch
- New pit ladder as necessary to meet code requirements

- Replace of hydraulic cylinders (hydraulic elevators)

9.3 Projected Capital Expenditures

Required:

Q Building

1. We recommend budgeting for the modernization of Cars 1, 2 and 3 in 2019. Our opinion of cost for this work is $750,000 ($250,000 per car).

2. We recommend budgeting for the modernization of Cars 9 and 10 in 2019. Our opinion of cost for this work is $350,000 ($175,000 per car).

3. We recommend budgeting for the modernization of Car 11 in 2019. Our opinion of cost for this work is $175,000.

H Building

1. We recommend budgeting for the modernization of Cars 1 and 2 in 2019. Our opinion of cost for this work is $600,000 ($300,000 per car).

2. We recommend budgeting for the modernization of Car 3 in 2019. Our opinion of cost for this work is $275,000.

BUILDING INTERIORS & FINISHES

10.0 INTERIOR FINISHES

The following information was obtained through our visual observations of the interior finishes across the building. Finishes ranged dependent on the area and use of the room (reference Photographs INT-01 through INT-10 in Appendix A).

10.1 Description

Drawings were provided to Faithful+Gould for review and upon review, it became apparent that the building had been subject to several alterations and works since construction, as detailed in Table INT-1.

Table INT-1 – Building Alterations and History

Year	Architect	Details
1983	Hoskins Scott Taylor and Partners Inc.	Original Design and Construction
1989	Hoskins Scott Taylor and Partners Inc.	Cafeteria Addition
1996	Rothman + Partners	General Internal Alterations
1998	New England Medical Design	Internal Renovation Works
2002	Levi + Wong Design Associates Inc.	Internal Renovation Works
2004	Martin Bett Architects	Operating Room Renovation
2005	Martin Bett Architects	Bathroom Upgrades
2006	Tsoi/Kobus & Associates	Cafeteria Renovations and Lobby Renovations
2007	Tsoi/Kobus & Associates	ICU 8th Floor Addition and Renovation Works
2007	2020 Engineers	Chiller Plant Renovation (Architectural Details to Support Roof-Based Plant)
2009	Martin Bett Architects	Operating Room Renovations
2011	Tsoi/Kobus & Associates	Simulation Center Upgrades

Table INT-2 on the following page provides a breakdown of the use of the floors per building.

Table INT-2 – Per Floor Summary

Floor	Use (Building Q)	Use (Building H)
Basement	Central Processing, Loading Dock, Food Services	Morgue
1	Radiology and Nuclear Medicine	Teaching Area
2	Anesthesia, Cafeteria, Conference, Chapel, Pharmacy	Cardiac Cath/EP Laboratories
3	Surgical Intensive Care Unit (SICU), Cardiac Cath/EP Laboratories, Post=Anesthesia Care Unit (PACU)/Pre & Post Op, Surgical Services	Clinical Laboratories
4	MEP	Clinical Laboratories, Blood Bank
5	MEP	MEP
6	Inpatient Unit	MEP
7	Inpatient Unit	N/A
8	Inpatient Unit, Including Intensive Care Unit (ICU)	N/A

Interior finishes have changed as areas of the Property have been upgraded and altered and also vary dependent on location. Given the use of the building, access was not possible to all areas during the assessment, however general finishes were noted under the headings below. In addition, on July 24, 2017 Faithful+Gould had a conference call with Payette (architects) who are working on an overall redevelopment project with the Boston Medical Center as detailed in the Executive Summary of this report.

As a result of the discussions with Payette, we do not envisage any capital expenditures in relation to interior finishes generally as the proposed refurbishment works will cover these items. However, within our capital expenditure forecast, we have made an allowance for physically blocking off and separating the walkways and the below-ground tunnel which separates the H Building from the Evans and Preston Buildings at the north of the site. We envisage that these works will involve removing doors into the walkways/corridors and blocking up with gypsum wallboard or concrete masonry unit partitions and making good finishes to ceilings, walls and floors in corridor facing areas. Service disconnections to allow complete separation of the Newton Pavilion facility (both Q and H Buildings) from the Evans and Preston Buildings is discussed in detail in the Executive Summary, Decoupling of Systems and Building Systems section of this report and costed in the Capital Expenditure forecast.

10.1.1 First-Floor Atrium Area

Finishes generally consist of metal space-frame with insulated glazed unit skylight system; fiber-cement panels with painted stucco finish; precast concrete panels with exposed aggregate finish around building columns and beams; carpet finishes with areas of exposed cast-in-place concrete flush with the carpet finish; 1'x1' beige vinyl floor tiles and staircases with brushed steel handrails and glass infill panels.

10.1.2 General Circulation Areas

Finishes generally consist of a mixture of acoustical ceiling tiles in 9" x 9" and 2' x 2' sizes with infill fluorescent lighting, painted gypsum wallboard walls, 1' x 1' beige vinyl floor tiles, gray perimeter trim; painted and stained wood doors and painted metal and vinyl handrails.

10.1.3 Stairwells

Finishes generally comprise of painted and exposed concrete soffits (of stairs); painted gypsum ceilings; painted gypsum wallboards; 1' x 1' beige vinyl floor tiles; painted and exposed concrete and steel stairs and painted metal handrails.

10.1.4 MEP Plant Room and Machine Rooms

Finishes generally consist of exposed roof and floor decks, with some soffits covered with fiber and rubberized insulation; acoustical ceiling tiles; exposed steelwork, steelwork covered in sprayed fireproof insulation and steelwork encased in cast-in-place concrete; cast-in-place concrete shear walls; exposed and painted CMU blockwork partition walls; exposed and painted concrete floors; painted hollow core metal doors and painted, and galvanized metal steps and handrails.

10.1.5 Restrooms

Restrooms have been refurbished at various stages since building completion, but finishes generally comprise of acoustical and wood fiber ceiling tiles; painted gypsum ceilings; painted gypsum wallboard partitions; tiled walls; tiled or vinyl sheet floors; white porcelain lavatories and water closets; brushed stainless steel handrails; marble door thresholds and painted or stained wood doors, some with electronic-assist openers. Accessories such as soap dispensers, hand dryers and mirrors are also installed.

10.1.6 Commercial Kitchen, Ingredient Storage & Offices

Finishes to the basement kitchen ancillary support rooms comprise 2' x 4' acoustical (moisture resistant) ceiling tiles with inset fluorescent lighting; painted CMU block walls, 6" x 6" quarry tile floor with quarry tile perimeter base trims; 1' x 1' beige vinyl floor tiles with gray vinyl trims; exposed power floated concrete floors; carpeted floors and painted metal door frames and painted hollow core metal doors. Varies pieces of stainless steel commercial-grade kitchen appliances and benches are installed in the kitchen, along with free-standing racking in equipment and ingredient stores.

10.1.7 Cafeteria

Finishes consist of acoustical ceiling tiles and painted gypsum ceilings; painted gypsum wallboards; 1' x 1' beige vinyl tiles with gray vinyl trim. Plastic coated particleboard point-of-sale benches, food servers and loose table and chairs for customers are installed.

10.1.8 Hospital Patient Rooms

Finishes consist of acoustical suspended and painted fiber tile ceilings; painted gypsum ceilings; painted gypsum wallboards; 1 'x 1' beige vinyl tiles with gray vinyl trim; plastic coated particleboard countertop and wall units; painted and stained wood doors; 6" x 6" ceramic tiled walls, 2" x 2" ceramic tiled floors white porcelain lavatory and water closet, brushed stainless steel grabrails and various accessories to the bathroom.

10.1.9 Public Waiting Areas

Finishes consist of acoustical suspended ceiling tiles; painted gypsum walls; wood paneling; wood trim; plastic coated particleboard windowsills; sheet carpeting and loose fitting furniture.

10.1.10 High Level Connection

Finishes consist of suspended ceilings fitted with painted ribbed metal panels; painted steel frame metal windows with painted pre-cast concrete panels beneath and 1' x 1' beige vinyl floor tiles with black vinyl perimeter trim.

10.2 Condition

10.2.1 First-Floor Atrium Area

Generally, finishes were in fair condition, although dated. The skylight system appeared in fair condition, but we were not able to view this in detail from the atrium or roof level. Given the age of the skylight system, we have therefore made an allowance within the cost study for repairs to this area.

Although some paint and carpet finishes in this area are tired, we understand that the atrium area is subject to a proposed refurbishment by Payette and consequently we do not anticipate any further capital expenditure costs over the course of the 10-year study period within this area.

10.2.2 General Circulation Areas

Finishes were generally in fair condition and again somewhat dated. We understand that the upcoming project by Payette will allow for renovation of corridor and common areas throughout the Q and H Buildings and have therefore not included any costs within our expenditures for refurbishment works to these areas.

10.2.3 Stairwells

Stairwells were in fair condition and we do not anticipate any capital expenditure costs over the course of the study period.

10.2.4 MEP Plant Room and Machine Rooms

The MEP plant room in the basement of the Q Building was in fair condition, but the room was well used and paint finishes to walls were in poor condition. In addition, significant areas of the paintwork to the walls were damaged from the water ingress issue in this room. We have not included an allowance for interior repainting to this room, as these costs should be included with the damp rectification works, once the cause of the dampness is fully determined and the appropriate remedial works are specified and completed. After speaking with Payette, we understand that future redecoration works are not proposed to the Basement area of the Q Building generally, but these areas will be refurbished as and when required out of Boston Medical Center's own budget.

The remainder of machine rooms to both buildings were in fair condition generally and we do not anticipate any capital expenditures over the study period. As above, we understand that these areas (where not picked up in the Payette refurbishment) will be redecorated on an as-need basis independently by Boston Medical Center.

10.2.5 Restrooms

Restrooms accessed were in a variety of conditions, but generally had been refurbished at different stages since both buildings were constructed. We understand that restrooms will be fully refurbished as part of the planned maintenance program completed by Payette. These works will include conversions to make them ADA-compliant as well as a full strip-out and renewal program which will include fittings and interior finishes.

10.2.6 Commercial Kitchen, Ingredient Storage & Offices

The downstairs kitchen, ingredient storage areas and offices in the Q Building were in fair condition and we understand that the upcoming planned refurbishment area allows for a full restoration of the basement of H Building. No works are proposed to the basement area of the Q Building within the Payette refurbishment plans, but as noted above, we understand that this area will be refurbished when required from Boston Medical Center's own budget and we have not included any costs for this item.

10.2.7 Cafeteria

Finishes to the cafeteria were in fair condition. We do not anticipate any works within the capital expenditure study period.

10.2.8 Hospital Patient Rooms

Due to the patient areas being in use during our assessment, we were only able to access two patient rooms, but these were in fair condition generally. We have not included any costs for refurbishment of these areas as following discussions with Payette, we understand that the proposed renovation and remodeling works within the Q and H Buildings will include changes to the patient rooms and subsequent interior refurbishment of these areas.

10.2.9 Public Waiting Areas

Public waiting areas in both buildings were in fair condition, but somewhat dated in the Q Building, where accessed. We have not included for renewal of finishes to these areas as we understand with the discussions with Payette that they will either be remodeled within the upcoming refurbishment project, or as needed by Boston Medical Center.

10.2.10 High Level Connection

Finishes in the high-level corridor areas were in a dated, but fair condition. Given the small areas and following discussions with Payette, we understand that these areas will be refurbished on an as-needed basis by Boston Medical Center and have therefore not included any costs for these works.

10.3 Projected Capital Expenditures

In accordance with our discussions with Payette, we have not included any recommendations for repair or replacement of interior finishes.

ACCESSIBILITY

11.0 ACCESSIBILITY ISSUES

A summary of the Accessibility Issues within the Property is detailed in the following section. As with the interior finishes, on July 24, 2017 Faithful+Gould had a conference call to discuss which works would be completed by Payette in the upcoming planned renovation project, to verify that issues would be addressed and costs appropriately apportioned (reference Photographs ADA-01 and ADA-02 in Appendix A).

11.1 The Guidelines

As a publicly accessible hospital building, the Property should seek compliance with the 2010 ADA Standards for Accessible Design (2010 Standards), made effective March 2012. These standards are revised standards for the ADA Accessibility Guidelines (ADAAG), issued in July 1991. This report section compares the requirements of the ADA with as-built conditions, and where applicable, recommends upgrades required to achieve compliance. Specifically, two areas of the ADA have significant effect on the physical aspects of the Property.

Title I deals with employment discrimination, and requires that employers not discriminate against a disabled person in hiring or employment. This can impact the configuration and features of buildings and those employers are expected to make "reasonable accommodation", including making facilities readily accessible to disabled employees.

Title III requires that public accommodation provide goods and services to disabled patrons on an equal basis with the non-disabled patrons. This title is the part of the ADA with perhaps the greatest impact on buildings, which provide public accommodations, hospitals, care centers, ambulatory treatment or diagnostics centers and professional offices of health care providers.

The ADA has provided a benchmark for measuring accessibility, primarily orientated towards new construction. It also provides guidance for modification of existing facilities to eliminate barriers to access. This benchmark is the 2010 ADA Standards for Accessible Design (2010 Standards). The stated purpose of the guidelines is to ensure that newly constructed facilities and altered portions of existing facilities covered by the ADA are readily accessible to disabled persons.

Regulatory implementation of the ADA includes the following priorities for barrier removal in existing facilities:

- **Accessible Entrances.** Providing access from public sidewalks, parking or public transportation that enables disabled individuals to enter the facility.
- **Access to Goods and Services.** Providing access to areas where goods and services are made available to the public.
- **Usability of Restrooms.** Providing access to restroom facilities.

- **Removal of Remaining Barriers.** Providing access to the goods, services, facilities, privileges, advantages or accommodations.

11.2 Applicability

The ADA, in its purest form, relates only to facilities occupied or significantly altered after March 13, 1991. Title III places hospitals as places of public accommodation which is covered by the ADAA. The hospital was designed and constructed in the 1970s and 1980s, with various alterations and upgrades completed since construction and occupation. Therefore, the building is not required to meet all the ADA requirements; though as the building is publicly accessible, it is advised that where possible the Property should comply with the standards as a matter of best practice.

11.3 Accessibility Considerations

11.3.1 Accessible Entrances

The first consideration relates to measures that will enable individuals with disabilities to physically approach and enter a place of public accommodation. The priority of "getting through the door" recognizes that providing actual physical access to a facility from public sidewalks, public transportation, or parking, is generally preferable to any alternative arrangement in terms of both business efficiency and the dignity of individuals with disabilities.

Persons traveling via car will arrive at the publicly accessible drop-off area at the front of the Property. No parking areas are provided at this building, for staff or visitors. Persons will travel from the public sidewalk via an access ramp which is provided at the northwest of the site or from the vehicle access point which provides level access into the building via an accessible entrance. Once through the entrance doors, access is unrestricted.

On the accessibility study previously completed by Division of Capital Asset Management & Maintenance (reference Document Review in Scope of Services & Document Review for details), it was noted that signage to the disabled access ramp at the entrance plaza was poor and external furniture is not accessible. We have therefore allowed a sum within our capital expenditure forecast to rectify these items in the near-term.

11.3.2 Accessible Drop-Off and Pick-Up Areas

If passenger drop-off areas are provided, they must be accessible and an accessible route must connect each accessible drop-off area with the accessible entrance(s). The drop off point is connected to the entrance plaza via level access paved, concrete and asphalt areas. In addition, an accessible ramp provides wheelchair access from the northwest of the site. We therefore do not anticipate that there will be any capital expenditure works within the study period. We would note, however that when the courtyard is renewed (outside of our study period), following on from renewal of the waterproofing membrane, the external plaza space should be redesigned and constructed to comply with the latest accessibility legislation.

11.3.3 Route of Travel

Disabled persons wishing to access the Property are able to gain suitable means of entry via the entrance provided at the front of the building. An access point and route is provided at the front of the Property. No other accessible entrances are provided.

We understand following on from discussions with Payette, that there are potential changes to entrances on the H Block planned in the future as part of the proposed refurbishment works. We have not included costs for this within our capital expenditure forecast, as we understand these works will be covered separately under the refurbishment project completed by Payette.

11.3.4 Doorways and Signage

Section 404 Doors, Doorways and Gates of the 2010 Standards, states that doorways and gates, including security entrance gates shall have a minimum clear opening of 32-inches. Where measured, the doorways generally met this requirement with a clear opening width exceeding 32-inches.

This section of the 2010 Standards also states that the threshold at doorways shall not exceed ½-inches in height. Where measured, the doorways at the Property were compliant with this requirement.

Section 309, Operable Parts of the 2010 Standards, states that Operable parts shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. Interior doors throughout the building were generally compliant with these requirements.

The 2010 Standards state that signs that identify permanent rooms and spaces such as those identifying restrooms and exits or providing room numbers must have Braille and raised letters or numbers to allow them to be read visually or tactilely. The 2010 Standards also state that signs must also meet specific requirements for mounting location, color contrast and non-glare surface. Signs that provide direction to or information about, functional spaces must only comply with requirements for character proportion, character height and finish, and with contrast between the characters and background.

Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10. The letters and numbers on signs shall be raised 1/32-inches minimum and shall be sans serif. The characters or symbols on signs shall be at least 5/8-inches high, but no higher than 2-inches. Symbols or pictographs on signs shall be raised 1/32-inches minimum. The 2010 Standards also require that doors to hazardous areas be equipped with tactile warnings.

Signs used to identify offices and other permanent rooms and spaces within the Property were old and generally not in compliance with these requirements. We have allowed a cost within our capital expenditure study to renew internal signage in the near-term across both the Q and H Buildings.

11.3.5 Space Allowance and Reach Ranges

Section 305, Clear Floor or Ground Space of the 2010 Standards, requires that a minimum clear width for single wheelchair passage shall be 32-inches, the minimum width for two wheelchairs to pass is 60-inches, the space required for a wheelchair to make a 180-degree turn is a clear space of 60-inches, and the minimum clear floor or ground space required to accommodate a single, stationary wheelchair occupant is 30-inches by 48-inches. The Property generally complied with these requirements.

11.3.6 Protruding Objects

Section 307, Protruding Objects of the 2010 Standards, requires that objects projecting from walls (e.g. drinking fountains) with their leading edges between 27-inches and 80-inches above the finished floor shall protrude no more than 4-inches into walks, halls, corridors, passageways, or aisles. Objects mounted with their leading edges at or below 27-inches above the finished floor may protrude any amount. Freestanding objects mounted on posts or pylons may overhang 12-inches maximum from 27-inches to 80-inches above the ground or finished floor. Protruding objects shall not reduce the clear width of an accessible route or maneuvering space.

The section also states that walks, halls, corridors, passageways, aisles or other circulation spaces shall have a minimum clear head room of 80-inches. If a vertical clearance of an area adjoining an accessible route is reduced to less than 80-inches (nominal dimension), a barrier to warn blind or visually-impaired persons shall be provided. No significant protruding objects were noted within the Property.

11.3.7 Ground and Floor Surfaces

Section 302, Floor and Ground Surfaces of the 2010 Standards, requires that ground and floor surfaces along accessible routes and in accessible rooms and spaces, including floors, walks, ramps, stairs, and curb ramps, be stable, firm and slip-resistant. Flooring within the Property generally complied with this requirement. Where new floor finishes are installed as part of the Payette refurbishment project, we expect that these new finishes will be in compliance.

The section also states that carpet or carpet tile used on a ground or floor surface be securely attached; have a firm cushion, pad, or backing or no cushion or pad; and have a level loop, textured loop, level cut pile or level cut/uncut pile texture. Where gratings are located on walking surfaces, then they shall have spaces no greater than ½-inches wide in one direction. The Property complied with this requirement.

11.3.8 Changes in Level and Ramps

Section 303, Changes in Level of the 2010 Standards, requires that changes in level between ¼-inches to ½-inches be beveled with a slope no greater than 1:2, and those changes in level greater than ½-inches be accomplished by means of a ramp. The Property generally did not contain any significant changes in level. The only internal ramp noted on the day of the assessment was at the

link walkway at the north which links the H Building to the Preston Building. The remainder of the Property did not contain any significant changes in level.

11.3.9 Usability of Restrooms

The third priority emphasizes those measures that will provide individuals with disabilities with access to restroom facilities, addressed in Chapter 6, Plumbing Elements and Facilities of the ADAAG.

Restrooms in general circulation areas have been refurbished. Where inspected and designated as accessible, these were found to be compliant, however had maintenance issues such as electronic door openers not working. We found that bathrooms in patient rooms were not ADA compliant, as also confirmed in the excerpt of the ADA study previously completed by the Division of Capital Asset Management & Maintenance. Despite these issues, we have not included any costs for rectification works as following on from discussions with Payette, we understand that these will works will be completed by Payette as part of the proposed refurbishment project.

11.3.10 Drinking Fountains

Drinking fountains are provided in the common corridor areas. Section 602, Drinking Fountains of the 2010 Standards, require the spout outlet be 36-inches maximum above the finish floor or ground. Where inspected, the drinking fountains in the building appeared compliant with requirements.

11.3.11 Usability of Examination Rooms

Examination rooms should have features for patients with mobility disabilities, including those who are in wheelchairs, to receive appropriate medical care. The features should include an accessible route to and through the room, adequate clear floor and turning space inside examination rooms, appropriate models and placement of accessible examination equipment, and adequate clear floor space inside the room for side transfers and use of lift equipment. Examination rooms were not assessed due to limited access during our assessment, however we understand that examination rooms in the H Building are subject to renovation works as part of the planned redevelopment program completed by Payette.

11.3.12 Parking

No parking is provided to the Property.

11.4 Summary

We have made allowances within our capital expenditure forecasts to improve exterior signage at the disabled access ramp, improve exterior furniture and replace all interior signage throughout the Property. It is understood that the remaining refurbishment works proposed by Payette will cover the remaining ADA issues which have been identified.

11.5 Projected Capital Expenditures

Required:

1. We recommend budgeting an allowance for improving exterior signage and exterior furniture in 2019. Our opinion of cost for this work is $5,000.

2. We recommend budgeting and allowance for replacement of interior signage throughout the Q and H Buildings to meet ADA requirements in 2019. Our opinion of cost for this work is $75,000.

Appendix A
Photographs

Photograph No. S-01

Entrance Plaza
Concrete, Bollards,
Pavers and Asphalt

Photograph No. S-02

Damaged Concrete at
Entrance Plaza

Photograph No. S-03

Column (Fair Condition) at Entrance Plaza

Photograph No. S-04

Column (Poor Condition) at Entrance Plaza

Photograph No. S-05

Damage to Cast-In-Place Concrete Steps and Handrails

Photograph No. S-06

Pavers Above Loading Dock Area

Photograph No. S-07

Damaged Concrete at Area Above Loading Dock

Photograph No. S-08

Damaged Cast-In-Place Concrete at Path (East of Site)

Photograph No. S-09

Loading Dock View
from Above

Photograph No. S-10

Damage to Soffit of
Loading Bay

Photograph No. S-11

Exposed Re-Bar at
Planter to East of Site

Photograph No. S-12

LED Lighting to Site at
Eastern Alleyway

Photograph No. ST-01

Exposed Aggregate and Smooth Concrete Panels (Junction of Q and H Buildings)

Photograph No. ST-02

Fire-Proofing Applied to Steel Frame (Q Building)

Photograph No. ST-03

Soffit of Floor Deck Above within Q Building

Photograph No. ST-04

Interior Stairwell (Q Building)

Photograph No. ST-05

Water Leak in Basement MEP Plant Room Collecting in Channel and Container

Photograph No. ST-06

Water Leak in Basement MEP Plant Room Collecting in Channel

Photograph No. ST-07

Damage to Floor Surface from Water Leak in Basement MEP Basement Plant Room

Photograph No. ST-08

Dampness to CMU Blockwork in MEP Basement Plant Room

Photograph No. R-01

Shrinkage of EPDM Roofing Membrane

Photograph No. R-02

Flashing Upstand and Detailing of Roof (Q Building)

Photograph No. R-03

Failure of Joints within EPDM Membrane

Photograph No. R-04

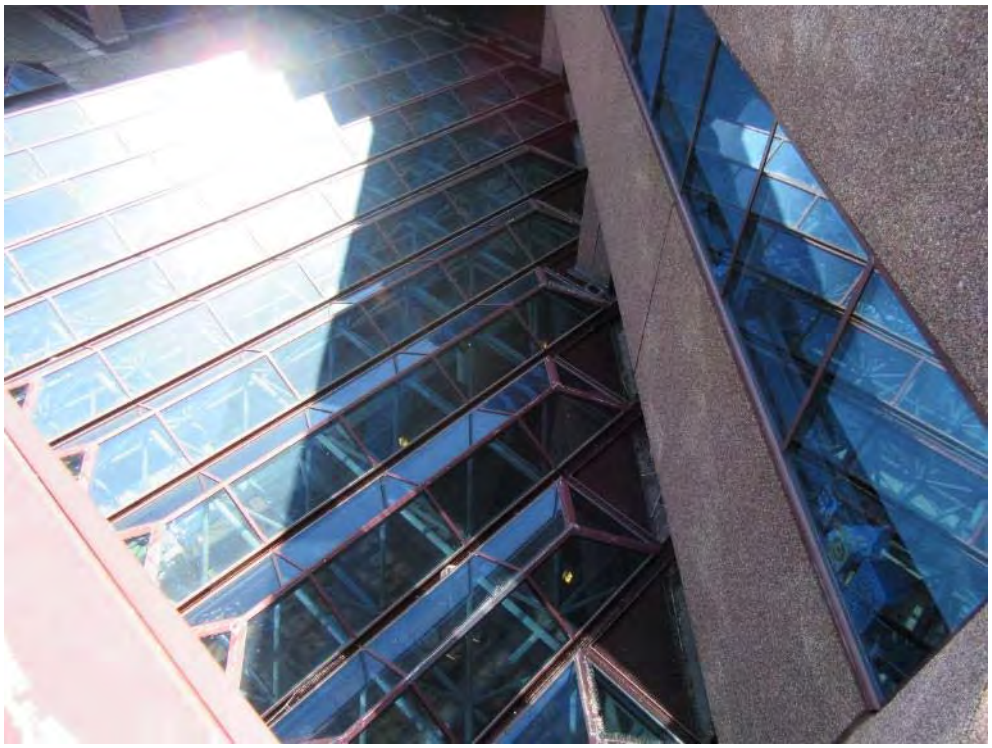
UV Ballast and Concrete Paver Walkway (Q Building)

Photograph No. R-05

Roof Membrane Upstand (BUR Roof to Q Building)

Photograph No. R-06

Areas of Exposed EPDM Membrane with Insulation, Filter Fabric and Ballast Removed



Photograph No. R-05

Skylight Atrium at Junction of Q and H Buildings

Photograph No. R-06

Missing Insulation, Filter Fabric and UV Ballast and Vegetation Growth

Photograph No. R-07

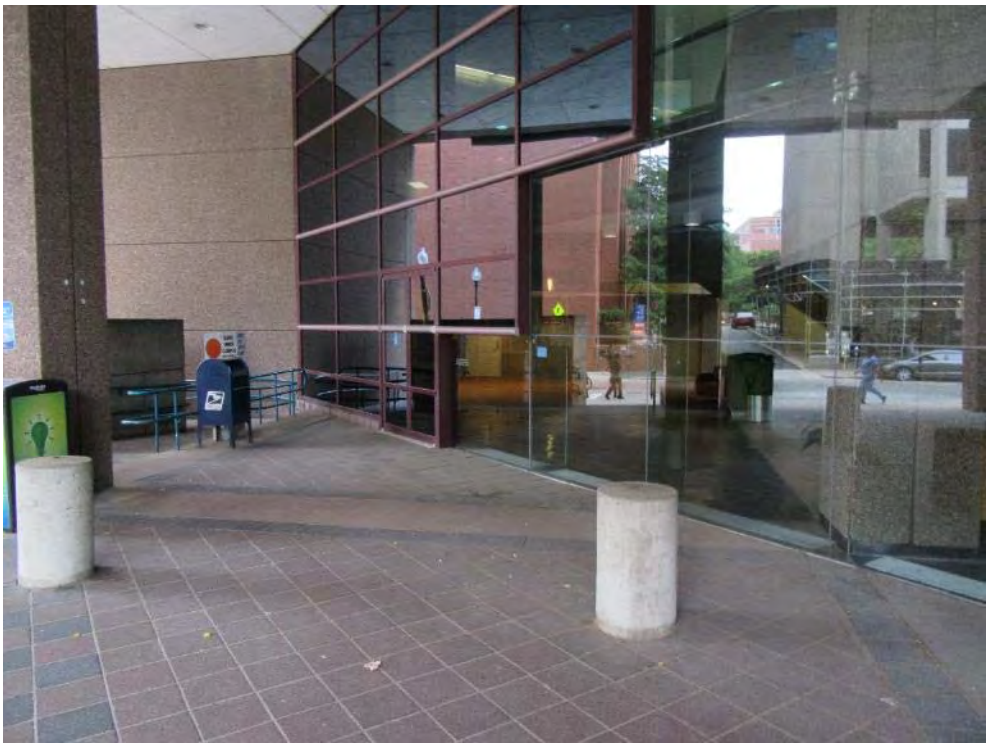
H Building Roof,
Viewed from Q Building
Roof

Photograph No. R-08

EPDM Upstand and
Anodized Aluminum
Capping to H Building

Photograph No. EXT-01

Front Elevation of Q Building Showing Exposed-Aggregate Panels, Curtain Walling, Ribbon and Punched Windows



Photograph No. EXT-02

Anodized Aluminum Windows and Structural Silicon Glazing

Photograph No. EXT-03

Adhesive and Cohesive Failure in Elastomeric Sealant at Junction Between Q and H Buildings

Photograph No. EXT-04

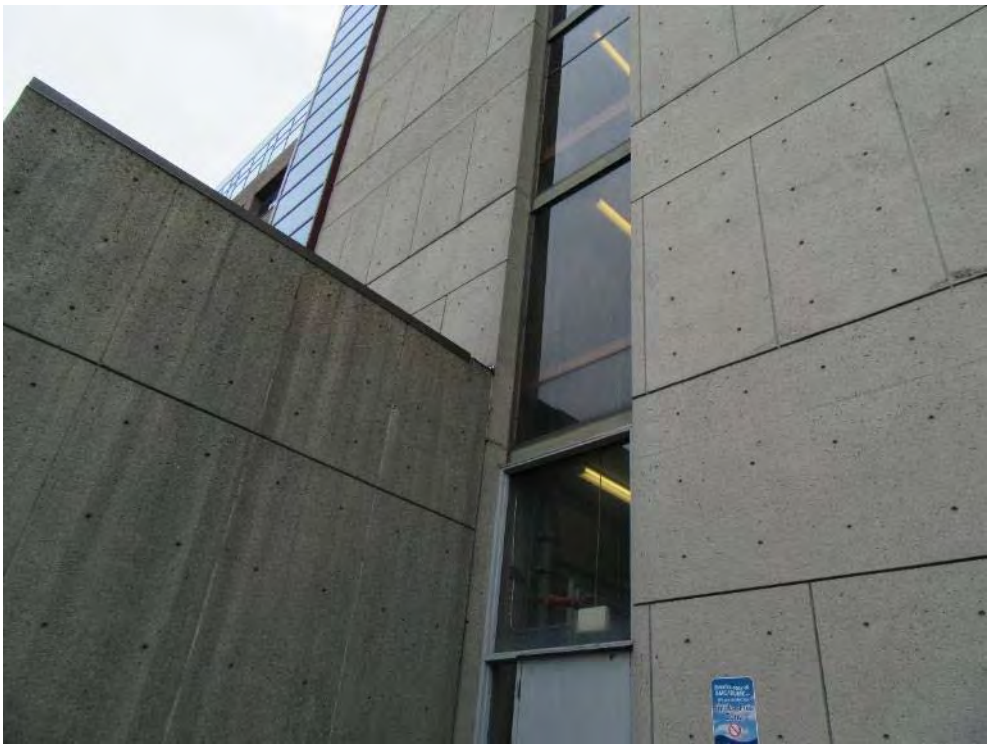
Start of Cohesive Failure in Elastomeric Sealant Between Pre-Panels at Roof Level

Photograph No. EXT-05

Displaced Rubber Movement Joint at H Building

Photograph No. EXT-06

Loose Screw and Perimeter Putty in Poor Condition (H Building Window)



Photograph No. EXT-07

Pre-Cast Concrete Panels at H Building

Photograph No. EXT-08

Infill CMU Blocks at H Building

Photograph No. EXT-09

Damaged Concrete in Basement Vault Area

Photograph No. EXT-10

Damaged Concrete in Basement Vault Area

Photograph No. M-01

Main Chillers

Photograph No. M-02

Chilled Water Pumps

Photograph No. M-03

Typical Air Handler Unit

Photograph No. M-04

Typical Control Box

Photograph No. M-05

Cooling Towers

Photograph No. E-01

Typical Sub-Station Gear

Photograph No. E-02

Typical Motor Control Center

Photograph No. E-03

Typical Distribution Panel

Photograph No. P-01

Domestic Water Heaters

Photograph No. P-02

Water Main

Photograph No. ELV-01

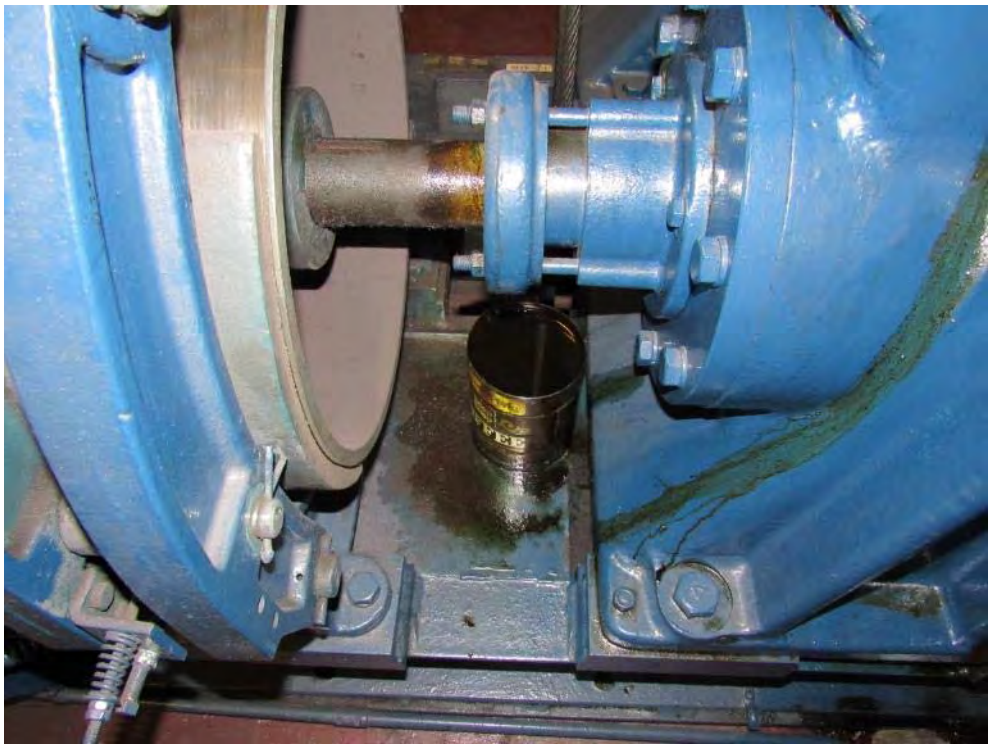
H Building – Geared Traction Machine

Photograph No. ELV-02

H Building – Older Controllers for Cars 1 and 2

Photograph No. ELV-03

H Building – Deteriorated Condition of Controller for Car 1



Photograph No. ELV-04

H Building – Oil Leakage at Hoistway Machine for Car 1

Photograph No. ELV-05

Q Building – Older Controller for Hydraulic Elevator

Photograph No. ELV-06

Q Building – Oil Leak and Bucket Placement at Hydraulic Elevator

Photograph No. ELV-07

Q Building – Overhead Hoistway Machine

Photograph No. ELV-08

Q Building – New Solid State Controller

Photograph No. INT-01

Typical Stairwell

Photograph No. INT-02

Typical Corridor Area

Photograph No. INT-03

Typical Corridor Area

Photograph No. INT-04

Basement MEP Room in Q Building

Photograph No. INT-05

Kitchen in Basement of Q Building

Photograph No. INT-06

Spaceframe Supporting Skylight System in Q Building Atrium

Photograph No. INT-07

Link Corridor Between H and Evans Building

Photograph No. INT-08

Corridor in H Building

Photograph No. INT-09

Teaching Area in H Building

Photograph No. INT-10

Waiting Area in H Building

Photograph No. ADA-01

Example of Exterior Furniture which is Not Accessible

Photograph No. ADA-02

Example of Non-Compliant General Information Signage in Q Building

Appendix B

10-Year Capital Expenditure Forecast

VERSION 3.5 - DRAFT

Ten Year Capital Expenditure Forecast
Newton Pavilion at Boston Medical Center
88 East Newton Street
Boston, Massachusetts 02118

FAITHFUL+GOULD

Component No.	Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Immediate	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Required
						Year	0	1	2	3	4	5	6	7	8	9	10	
Site Systems																		
Required																		
Site Concrete																		
1	Replace Failed Concrete Site Elements (Initial Works)	20	1	954	SF	$14.00		$13,356										$13,356
2	Replace Failed Concrete Site Elements (10% Annual Allowance)	1	1	95	SF	$14.00		$1,330	$1,330	$1,330	$1,330	$1,330	$1,330	$1,330	$1,330	$1,330	$1,330	$13,300
3	Replace Currently Failed Bollards at Entrance Plaza	20	1	15	EA	$700.00		$10,500										$10,500
4	Replace Future Failed Bollards at Entrance Plaza (Mid Term)	20	5	33	EA	$700.00						$23,100						$23,100
5	Replace Future Failed Bollards at Entrance Plaza (Late Term)	20	10	19	EA	$700.00											$13,300	$13,300
6	Replace Failed Concrete Steps at Northeast Facing Elevation	20	1	9	LF	$490.00		$4,410										$4,410
7	Replace Concrete to Loading Dock - Top Section of Ramp	20	1	252	SF	$18.00		$4,536										$4,536
8	Replace Concrete to Loading Dock - Central Section	20	5	432	SF	$18.00						$7,776						$7,776
Site Waterproofing Elements																		
9	Replace Waterproofing Membrane Over Loading Dock	30	5	2,240	SF	$225.00						$504,000						$504,000
10	Replace Plaza Waterproofing Membrane (Exc. over Loading Dock)	30	10	21,367	SF	$225.00											$4,807,575	$4,807,575
11	Replace Waterproofing Membrane at Connecting Tunnel to Evans Building	30	10	1	LS	$450,000.00											$450,000	$450,000
12	Replace Waterproofing Membrane at Loading Dock Ramp Retaining Walls	30	5	3,136	SF	$140.00						$439,040						$439,040
13	Replace Waterproofing Membrane at Alley-Side Planters	30	5	8,090	SF	$29.00						$234,610						$234,610
Structural Systems																		
Required																		
1	Investigation Into Leaking Water Within Basement MEP Room	40	1	1	ALLOW	$20,000.00		$20,000										$20,000
2	Allowance For Rectification of Leak, Making Good and Decoration Internally/Externally As Required *See Note 1).	20	1	1	ALLOW	$1,000,000.00		$1,000,000										$1,000,000
Roofing Systems																		
Required																		
Q Building																		
1	Replace EPDM Roof	20	4	33,540	SF	$22.00					$737,880							$737,880
2	Re-Apply Aluminized Coating at BUR Base Flashings	8	1	1,335	SF	$5.50		$7,343								$7,343		$14,685
3	Allowance for Refurbishment of Atrium Skylight System	20	5	1	ALLOW	$150,000.00						$150,000						$150,000
H Building																		
4	Replace EPDM Roof	20	4	12,556	SF	$22.00					$276,232							$276,232
Exterior Elements																		
Required																		
Q Building																		
Pre-Exterior Restoration																		
1	Undertake 5-Year Façade Inspection and Allowance for Isolated Repair Works	5	1	1	ALLOW	$8,000.00		$8,000					$8,000					$16,000
2	Replace Failed Concrete to Steam Vault	30	1	1	ALLOW	$20,000.00		$20,000										$20,000
3	Replace Failed Insulated Glazed Units	25	1	20	EA	$800.00		$16,000										$16,000

VERSION 3.5 - DRAFT

Ten Year Capital Expenditure Forecast
Newton Pavilion at Boston Medical Center
88 East Newton Street
Boston, Massachusetts 02118

FAITHFUL+GOULD

Component No.	Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Immediate	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Required
						Year	0	1	2	3	4	5	6	7	8	9	10	
Exterior Restoration																		
Mobilization & Professional Fees																		
4	Allowance for Professional Fees for Exterior Restoration Works	N/A	4	8	%	$449,591.00					$35,967							$35,967
5	Swing Stage for Repair Works	N/A	4	28	DAYS	$1,200.00					$33,600							$33,600
Restoration Activities																		
6	Replace Window & Door Perimeter Sealants	10	4	14,160	LF	$14.00					$198,240							$198,240
7	Replace Sealants at Control Joints and Precast to Precast Panels	10	4	7,809	LF	$14.00					$109,326							$109,326
8	Wet Seal Curtain Wall and Window Gaskets (20%)	20	4	343	Windows	$175.00					$60,025							$60,025
9	Clean Windows, Doors, Curtain Wall	10	4	1	ALLOW	$82,000.00					$82,000							$82,000
H Building																		
Pre-Exterior Restoration																		
1	Complete Concrete Repairs to Building Façade	30	1	80	SF	$230.00		$18,400										$18,400
2	Undertake 5-Year Façade Inspection and Allowance for Isolated Repair Works	5	1	1	ALLOW	$8,000.00		$8,000					$8,000					$16,000
Exterior Restoration																		
Mobilization & Professional Fees																		
3	Allowance for Professional Fees for Exterior Restoration Works	N/A	4	8	%	$297,090.00					$23,767							$23,767
4	Swing Stage for Repair Works	N/A	4	14	DAYS	$1,200.00					$16,800							$16,800
Restoration Activities																		
5	Replace Windows	30	4	81	EA	$3,200.00					$259,200							$259,200
6	Replace Sealants at Control Joints and Precast to Precast Panels	10	4	1,080	LF	$23.00					$24,840							$24,840
7	Replace Expansion Joint System at Connections Between Q and H Buildings	25	4	450	LF	$29.00					$13,050							$13,050
Mechanical Systems																		
Required																		
Q Building																		
1	10-Year Chiller Teardown and Inspection	10	1	3	EA	$15,000.00		$45,000										$45,000
2	Eddy Current Inspection on Chillers	5	1	3	EA	$8,500.00		$25,500					$25,500					$51,000
3	Install Water to Water Plate Frame Heat Exchanger	20	1	1	EA	$200,000.00		$200,000										$200,000
4	Refurbish Packaged Air Handler Units	20	1	15	EA	$35,000.00		$525,000										$525,000
H Building																		
1	Refurbish Packaged Air Handler Units	20	1	5	EA	$35,000.00		$175,000										$175,000
Electrical Systems																		
Required																		
Q Building																		
1	Electrical Tighten-up and Scan (3 Year Cycles)	3	1	1	EA	$9,000.00		$9,000			$9,000			$9,000			$9,000	$36,000
2	Conduct ARC Flash Study	20	1	1	EA	$25,000.00		$25,000										$25,000
3	Conduct Coordination Study	20	1	1	EA	$30,000.00		$30,000										$30,000

VERSION 3.5 - DRAFT

Ten Year Capital Expenditure Forecast
Newton Pavilion at Boston Medical Center
88 East Newton Street
Boston, Massachusetts 02118

FAITHFUL+GOULD

Component No.	Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Immediate	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Required
						Year	0	1	2	3	4	5	6	7	8	9	10	
4	Replace Variable Speed Drives	10	5	5	EA	$5,500.00						$27,500						$27,500
5	Refurbish Motor Control Center Buckets	10	1	20	EA	$3,200.00		$64,000										$64,000
H Building																		
1	Electrical Tighten-up and Scan (3 Year Cycles)	3	1	1	EA	$9,000.00		$9,000			$9,000			$9,000			$9,000	$36,000
2	Conduct ARC Flash Study	20	1	1	EA	$15,000.00		$15,000										$15,000
3	Replace Variable Speed Drives	10	5	5	EA	$5,500.00						$27,500						$27,500
4	Refurbish Motor Control Center Buckets	10	1	20	EA	$3,200.00		$64,000										$64,000
Plumbing																		
Required																		
Q Building																		
No Anticipated Capital Expenditures																		$0
H Building																		
No Anticipated Capital Expenditures																		$0
Fire & Life Safety																		
Required																		
Q Building																		
1	Replace Fire Alarm System	10	1	1	SF	$2,497,397.00		$2,497,397										$2,497,397
2	Building New Fire Alarm Control Room	10	1	1	EA	$25,000.00		$25,000										$25,000
H Building																		
1	Replace Fire Alarm System	10	1	1	SF	$609,778.00		$609,778										$609,778
Conveyance Systems																		
Required																		
Q Building																		
1	Modernize Passenger Elevators (Cars 1, 2, 3)	20	1	3	EA	$250,000.00		$750,000										$750,000
2	Modernize Operating Room Elevators (Cars 9 + 10)	20	1	2	EA	$175,000.00		$350,000										$350,000
3	Modernize Kitchen Elevator (Car 11)	20	1	1	EA	$175,000.00		$175,000										$175,000
H Building																		
1	Modernize Passenger Elevators (Cars 1 + 2)	20	1	2	EA	$300,000.00		$600,000										$600,000
2	Modernize Passenger Elevator (Car 3)	20	1	1	EA	$275,000.00		$275,000										$275,000
Interiors																		
Required																		
Q Building																		
No Anticipated Capital Expenditures																		$0
H Building																		
No Anticipated Capital Expenditures																		$0
Accessibility																		
Required																		
1	Allowance for Improvements to Exterior Signage and Exterior Furniture	10	1	1	ALLOW	$5,000.00		$5,000										$5,000
2	Replace Interior Signage Throughout Q and H Buildings to Meet ADA Requirements	10	1	1	LS	$75,000.00		$75,000										$75,000

VERSION 3.5 - DRAFT

Ten Year Capital Expenditure Forecast
Newton Pavilion at Boston Medical Center
88 East Newton Street
Boston, Massachusetts 02118

FAITHFUL+GOULD

Component No.	Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Immediate	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Required
						Year	0	1	2	3	4	5	6	7	8	9	10	
NOTES: 1). Inclusion Left at $1,000,000 as a Placeholder, Dependent on Outcomes of Investigative Works						Required Cost (Present Worth)	$0	$7,680,550	$1,330	$1,330	$1,890,257	$1,414,856	$42,830	$19,330	$1,330	$8,673	$5,290,205	$16,350,690
						Cost (Inflated @ 3% Per Yr.)	$0	$7,680,550	$1,370	$1,411	$2,065,535	$1,592,433	$49,652	$23,081	$1,636	$10,355	$6,902,518	$18,328,540
DRAFT V3.4		SF	422,745			Total Cost (2017 $/SF/Yr)	$0.00	$18.17	$0.00	$0.00	$4.47	$3.35	$0.10	$0.05	$0.00	$0.02	$12.51	$39

VERSION 3.5 - DRAFT

Building Decoupling Capital Expenditure Forecast
Newton Pavilion at Boston Medical Center
88 East Newton Street
Boston, Massachusetts 02118

FAITHFUL+GOULD

Component No.	Description	Estimated Useful Life or Replacement Cycle (Yrs)	Remaining Useful Life (Yrs)	Quantity	Unit of Measurement	Unit Cost	Immediate	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	Required
						Year	0	1	2	3	4	5	6	7	8	9	10	
Mechanical Systems																		
Required																		
Decoupling of Buildings																		
1	Decouple Doctor's Office Building from Q Building HVAC	10	1	1	SYS	$1,316,250.00		$1,316,250										$1,316,250
Electrical Systems																		
Required																		
Decoupling of Buildings																		
1	Decouple Q Building from Evans Building Electrical Power	10	1	1	EA	$1,137,500.00		$1,137,500										$1,137,500
2	Decouple Doctor's Office Building from Q Building Electrical Power	10	1	1	EA	$806,000.00		$806,000										$806,000
3	Decouple Doctor's Office Building Emergency Power from Q Building Emergency Electrical Power	10	1	1	EA	$650,000.00		$650,000										$650,000
4	Decouple Evans Building Emergency Power from Q Building Emergency Electrical Power	10	1	1	EA	$604,500.00		$604,500										$604,500
5	Decouple Preston Building Emergency Power from Q Building Emergency Electrical Power	10	1	1	EA	$513,500.00		$513,500										$513,500
Plumbing																		
Required																		
Decoupling of Buildings																		
1	Decouple Q Building O2 from Evans Building O2 Line	10	1	1	EA	$403,000.00		$403,000										$403,000
2	Decouple Evans Building Natural Gas from Q Building Natural Gas	10	1	1	EA	$175,500.00		$175,500										$175,500
3	Decouple Evans Building Domestic Water from Q Building Domestic Water	10	1	1	EA	$323,050.00		$323,050										$323,050
Fire & Life Safety																		
Required																		
Decoupling of Buildings																		
1	Decouple Evans Building from Q Building Fire Sprinkler Line	50	1	1	EA	$416,000.00		$416,000										$416,000
Interiors																		
Required																		
Decoupling of Buildings																		
1	Allowance for Closing-Off/Separation of Tunnel and Walkways Above Ground	10	1	1	ALLOW	$75,000.00		$75,000										$75,000
NOTES:						Required Cost (Present Worth)	$0	$6,420,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,420,300
						Cost (Inflated @ 3% Per Yr.)	$0	$6,420,300	$0	$0	$0	$0	$0	$0	$0	$0	$0	$6,420,300
DRAFT V3.4	SF 422,745					Total Cost (2017 $/SF/Yr)	$0.00	$15.19	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$15

Decouple Doctor's Office Building from Q Building (HVAC)

	Cost	Contingency	Total Cost
Design and Engineering	$ 40,000.00	$ 12,000.00	$ 52,000.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Air Cooled Chiller (estimated at 500 Tons)	$ 637,500.00	$ 191,250.00	$ 828,750.00
Install New Chilled Water Pump/Piping to existing System	$ 100,000.00	$ 30,000.00	$ 130,000.00
Chiller Base and Infrastructure	$ 50,000.00	$ 15,000.00	$ 65,000.00
New Electric Service to Chiller	$ 60,000.00	$ 18,000.00	$ 78,000.00
Commissioning System	$ 50,000.00	$ 15,000.00	$ 65,000.00
Remove Old Pipes from Q Building	$ 60,000.00	$ 18,000.00	$ 78,000.00
Upgrade Graphics in Main Control Room	$ 5,000.00	$ 1,500.00	$ 6,500.00
Total Cost		$ -	$ 1,316,250.00

Decouple Building Q Building from Evans Building

	Cost	Contingency	Total Cost
Design and Engineering	$ 80,000.00	$ 24,000.00	$ 104,000.00
Utility Review	$ 35,000.00	$ 10,500.00	$ 45,500.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Feeds from Edison Station	$ 150,000.00	$ 45,000.00	$ 195,000.00
Install New 14.4 KV Bus Switchgear	$ 300,000.00	$ 90,000.00	$ 390,000.00
Tie in New 14.4 to existing Switchgear	$ 125,000.00	$ 37,500.00	$ 162,500.00
Coordination Study	$ 35,000.00	$ 10,500.00	$ 45,500.00
Arc Flash Study	$ 30,000.00	$ 9,000.00	$ 39,000.00
Commissioning System	$ 50,000.00	$ 15,000.00	$ 65,000.00
Remove Feeders from Evans Building	$ 60,000.00	$ 18,000.00	$ 78,000.00
Total Cost		$ -	$ 1,137,500.00

Decouple Doctor's Office Building from Q Building

	Cost	Contingency	Total Cost
Design and Engineering	$ 80,000.00	$ 24,000.00	$ 104,000.00
Utility Review	$ 35,000.00	$ 10,500.00	$ 45,500.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Feeds from Edison Station	$ 150,000.00	$ 45,000.00	$ 195,000.00
Install New 14.4 KV Bus Switchgear	$ 125,000.00	$ 37,500.00	$ 162,500.00
Tie in New 14.4 to existing Switchgear	$ 80,000.00	$ 24,000.00	$ 104,000.00
Coordination Study	$ 30,000.00	$ 9,000.00	$ 39,000.00
Arc Flash Study	$ 15,000.00	$ 4,500.00	$ 19,500.00
Commissioning System	$ 30,000.00	$ 9,000.00	$ 39,000.00
Remove Feeders from Q Building	$ 60,000.00	$ 18,000.00	$ 78,000.00
Upgrade Graphics in Main Control Room	$ 5,000.00	$ 1,500.00	$ 6,500.00
Total Cost		$ -	$ 806,000.00

Decouple Doctor's Office Building Emergency Power from Q Building

	Cost	Contingency	Total Cost
Design and Engineering	$ 80,000.00	$ 24,000.00	$ 104,000.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Generator (estimated to be 500 kw)	$ 175,000.00	$ 52,500.00	$ 227,500.00
Generator Base and Infrastructure	$ 50,000.00	$ 15,000.00	$ 65,000.00
Diesel Fuel Tank & Piping	$ 35,000.00	$ 10,500.00	$ 45,500.00
Tie into existing EDP-4 Transfer Switch	$ 80,000.00	$ 24,000.00	$ 104,000.00
Arc Flash Study	$ 5,000.00	$ 1,500.00	$ 6,500.00
Commissioning System	$ 30,000.00	$ 9,000.00	$ 39,000.00
Remove Feeders from Q Building	$ 30,000.00	$ 9,000.00	$ 39,000.00
Upgrade Graphics in Main Control Room	$ 5,000.00	$ 1,500.00	$ 6,500.00
Total Cost		$ -	$ 650,000.00

Decouple Evans Building Emergency Power from Q Building

	Cost	Contingency	Total Cost
Design and Engineering	$ 80,000.00	$ 24,000.00	$ 104,000.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Generator (estimated to be 400 kw)	$ 145,000.00	$ 43,500.00	$ 188,500.00
Generator Base and Infrastructure	$ 50,000.00	$ 15,000.00	$ 65,000.00
Diesel Fuel Tank & Piping	$ 30,000.00	$ 9,000.00	$ 39,000.00
Tie into existing Automatic Transfer Switch	$ 80,000.00	$ 24,000.00	$ 104,000.00
Arc Flash Study	$ 5,000.00	$ 1,500.00	$ 6,500.00
Commissioning System	$ 30,000.00	$ 9,000.00	$ 39,000.00
Remove Feeders from Q Building	$ 30,000.00	$ 9,000.00	$ 39,000.00
Upgrade Graphics in Main Control Room	$ 5,000.00	$ 1,500.00	$ 6,500.00
Total Cost		$ -	$ 604,500.00

Decouple Evans Building Emergency Power from Q Building

	Cost	Contingency	Total Cost
Design and Engineering	$ 80,000.00	$ 24,000.00	$ 104,000.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Generator (estimated to be 200 kw)	$ 80,000.00	$ 24,000.00	$ 104,000.00
Generator Base and Infrastructure	$ 50,000.00	$ 15,000.00	$ 65,000.00
Diesel Fuel Tank & Piping	$ 25,000.00	$ 7,500.00	$ 32,500.00
Tie into existing Automatic Transfer Switch	$ 80,000.00	$ 24,000.00	$ 104,000.00
Arc Flash Study	$ 5,000.00	$ 1,500.00	$ 6,500.00
Commissioning System	$ 30,000.00	$ 9,000.00	$ 39,000.00
Remove Feeders from Q Building	$ 30,000.00	$ 9,000.00	$ 39,000.00
Upgrade Graphics in Main Control Room	$ 5,000.00	$ 1,500.00	$ 6,500.00
Total Cost		$ -	$ 513,500.00

Decouple Q Building from Evans Building O2 System

	Cost	Contingency	Total Cost
Design and Engineering	$ 20,000.00	$ 6,000.00	$ 26,000.00
Permits	$ 5,000.00	$ 1,500.00	$ 6,500.00
Install New O2 tank at Loading Dock	$ 125,000.00	$ 37,500.00	$ 162,500.00
Piping from tank to existing System	$ 60,000.00	$ 18,000.00	$ 78,000.00
New Alarm System to Tank	$ 25,000.00	$ 7,500.00	$ 32,500.00
Decontamination of New System	$ 5,000.00	$ 1,500.00	$ 6,500.00
Commissioning System	$ 10,000.00	$ 3,000.00	$ 13,000.00
Remove Old Pipes from Evans Building	$ 60,000.00	$ 18,000.00	$ 78,000.00
Total Cost		$ -	$ 403,000.00

Decouple Evans Building Natural Gas from Q Building

	Cost	Contingency	Total Cost
Design and Engineering	$ 20,000.00	$ 6,000.00	$ 26,000.00
Permits	$ 5,000.00	$ 1,500.00	$ 6,500.00
Install New Gas service to Albany Street	$ 90,000.00	$ 27,000.00	$ 117,000.00
Remove Old Pipes from Evans Building	$ 20,000.00	$ 6,000.00	$ 26,000.00
Total Cost		$ -	$ 175,500.00

Decouple Evans Building from Q Building Domestic Water

	Cost	Contingency	Total Cost
Design and Engineering	$ 20,000.00	$ 6,000.00	$ 26,000.00
Permits	$ 5,000.00	$ 1,500.00	$ 6,500.00
Install New Water Line to East Newton Street	$ 175,000.00	$ 52,500.00	$ 227,500.00
Install New Domestic Water Booster Pump	$ 35,000.00	$ 10,500.00	$ 45,500.00
Decontamination of New Piping System	$ 5,000.00	$ 1,500.00	$ 6,500.00
Remove Old Pipes from Q Building	$ 5,000.00	$ 1,500.00	$ 6,500.00
Upgrade Graphics in Main Control Room	$ 3,500.00	$ 1,050.00	$ 4,550.00
Total Cost		$ -	$ 323,050.00

Decouple Evans Building from Q Sprinkler System

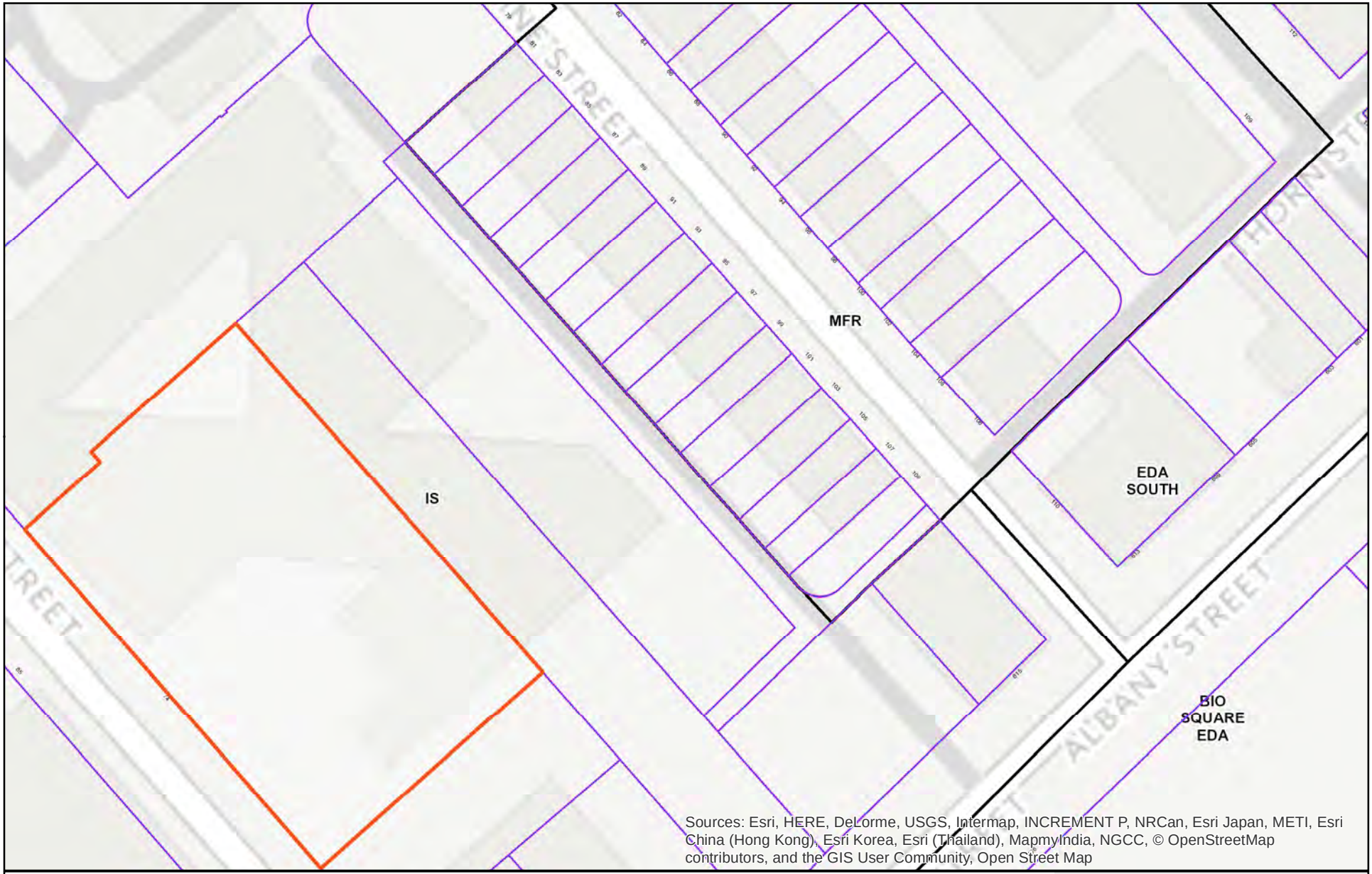
	Cost	Contingency	Total Cost
Design and Engineering	$ 40,000.00	$ 12,000.00	$ 52,000.00
Permits	$ 10,000.00	$ 3,000.00	$ 13,000.00
Install New Fire System Water Line to East Newton Street	$ 175,000.00	$ 52,500.00	$ 227,500.00
Install New Fire Sprinkler Pump and Jockey Pump	$ 40,000.00	$ 12,000.00	$ 52,000.00
Install Electric Service to Fire Pump	$ 15,000.00	$ 4,500.00	$ 19,500.00
Install New Fire Pump Transfer Switch	$ 35,000.00	$ 10,500.00	$ 45,500.00
Remove Old Pipes from Q Building	$ 5,000.00	$ 1,500.00	$ 6,500.00
Total Cost		$ -	$ 416,000.00

Allowance for Closing-Off/Separation of Tunnel and Walkways Above Ground

	Cost	Contingency	Total Cost
Allowance	$ 75,000.00	$ -	$ 75,000.00
Total Cost		$ -	$ 75,000.00

Appendix C

Planning, Zoning & Other Documentation



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community, Open Street Map

Zoning District

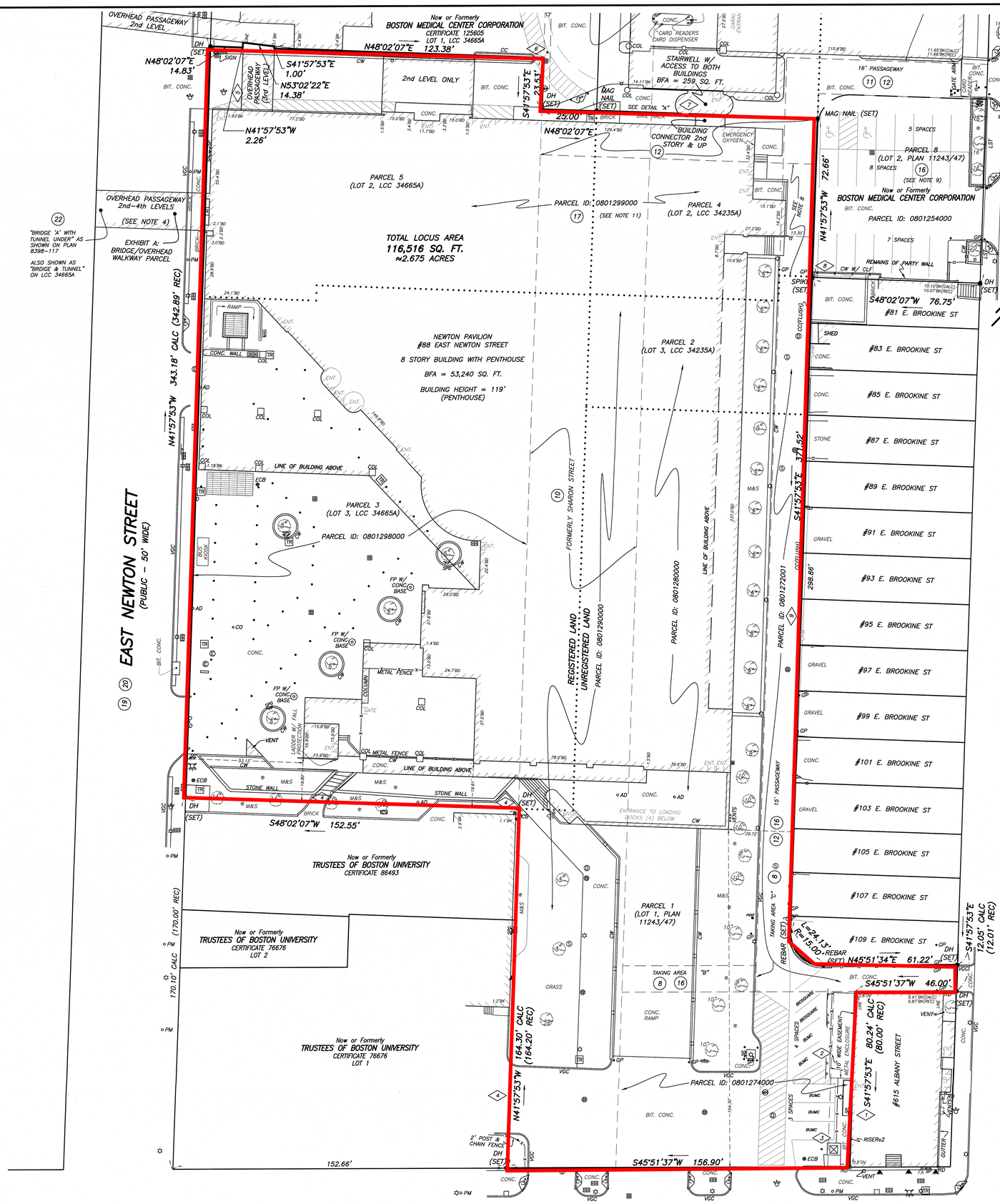
Zoning Subdistrict

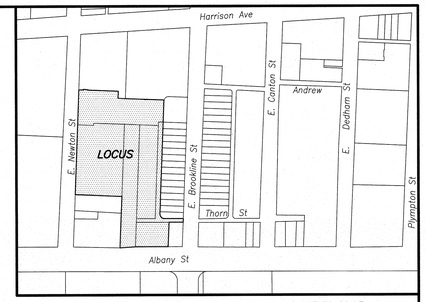
MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

The Zoning information reported here may not reflect the most current legislation adopted by the Boston Zoning Commission. The signed Code Maps, enacted by the Boston Zoning Commission and available at the BPDA, together with any amendments, remain the official Zoning documents. If discrepancies exist, the official signed Code Maps shall be considered correct.

0 45 90 180 Feet

October 31, 2016





VICINITY MAP NOT TO SCALE

<u>EXCEPTIONS FROM COVERAGE SCHEDULE B, SECTION 2, LISTED IN TITLE COMMITMENT FILE NO. 1421–0157 ISSUED BY CHICAGO TITLE INSURANCE COMPANY HAVING AN EFFECTIVE DATE OF OCTOBER 31, 2014 AT 8:00 AM.</u>

(8.) POSSIBLE PASSAGEWAY RIGHTS OF OTHERS TO TRAVEL IN AND TO HARRISON AVENUE AND EAST BROOKLINE STREET AS EXCEPTED IN EMINENT DOMAIN TAKING BY THE BRA DATED APRIL 4, 1968 RECORDED IN BOOK 8196, PAGE 606. (AS SHOWN HEREON)

(9.) INTENTIONALLY DELETED.

(10.) TERMS AND PROVISIONS, COVENANTS AND RESTRICTIONS, AS MAY STILL BE IN FORCE AND APPLICABLE, AS SET FORTH IN DEED FROM THE BOSTON REDEVELOPMENT AUTHORITY TO UNIVERSITY HOSPITAL, INC. DATED MARCH 8, 1969 AND RECORDED IN BOOK 8373, PAGE 849. (AS SHOWN HEREON)

(11.) TERMS AND PROVISIONS, COVENANTS AND RESTRICTIONS, AS MAY STILL BE IN FORCE AND APPLICABLE, AS SET FORTH IN DEED FROM THE BOSTON REDEVELOPMENT AUTHORITY TO UNIVERSITY HOSPITAL, INC. DATED JULY 30, 1969 RECORDED IN BOOK 8301, PAGE 508. (AS SHOWN HEREON)

(12.) TERMS AND PROVISIONS OF LAND DISPOSITION AGREEMENT BETWEEN THE BOSTON REDEVELOPMENT AUTHORITY AND UNIVERSITY HOSPITAL, INC. DATED JULY 30, 1969 RECORDED IN BOOK 8301, PAGE 514, AS AFFECTED BY AMENDMENT TO LAND DISPOSITION AGREEMENT DATED OCTOBER 9, 1970 RECORDED IN BOOK 8394, PAGE 601 (INSOMUCH AS SAID AGREEMENT, AS AMENDED, IMPACTS AN AREA DESCRIBED AS THE STRIP 15' WIDE AS AFFECTED BY AGREEMENT RECORDED IN BOOK 8397, PAGE 635), AS AFFECTED BY COOPERATION AGREEMENT DATED MARCH 18, 1967 RECORDED IN BOOK 8397, PAGE 637; AS AFFECTED BY CERTIFICATE OF COMPLETION DATED MARCH 12, 1973 RECORDED IN BOOK 8612, PAGE 635; AS AFFECTED BY AFFIDAVIT RECORDED OCTOBER 23, 1984 IN BOOK 11217, PAGE 209. (AS SHOWN HEREON)

(13.) INTENTIONALLY DELETED.

(14.) INTENTIONALLY DELETED.

(15.) INTENTIONALLY DELETED.

(16.) TERMS AND PROVISIONS, COVENANTS AND RESTRICTIONS, AS MAY STILL BE IN FORCE AND APPLICABLE, AS SET FORTH IN DEED FROM THE BOSTON REDEVELOPMENT AUTHORITY TO UNIVERSITY HOSPITAL, INC. DATED MAY 19, 1978 RECORDED IN BOOK 9067, PAGE 565. (AS SHOWN HEREON)

(17.) EASEMENT AGREEMENT BY AND BETWEEN MASSACHUSETTS HEALTH AND EDUCATIONAL FACILITIES AUTHORITY AND UNIVERSITY HOSPITAL, INC. DATED SEPTEMBER 4, 1984 RECORDED IN BOOK 11243, PAGE 57 AND FILED AS DOCUMENT NO. 385116. (AS SHOWN HEREON)

(18.) RECIPROCAL EASEMENT AGREEMENT DATED APRIL 1, 2000 BY AND BETWEEN BOSTON MEDICAL CENTER AND THE TRUSTEES OF BOSTON UNIVERSITY DATED APRIL 1, 2000 RECORDED IN BOOK 25040, PAGE 300; AS AFFECTED BY AMENDED AND RESTATED RECIPROCAL EASEMENT AGREEMENT DATED JUNE 23, 2008 RECORDED IN BOOK 43716, PAGE 186 AND FILED AS DOCUMENT NO. 753572. (BLANKET)

(19.) RIGHTS OF THE CITY OF BOSTON BY VIRTUE OF THE 1826 LAYOUT OF NEWTON STREET BETWEEN ALBANY STREET AND HARRISON AVENUE; AS AFFECTED BY THE 1868 DESIGNATION AND LAYOUT OF SAID STREET AS EAST NEWTON STREET BETWEEN HARRISON AVENUE AND ALBANY STREET. (AS SHOWN HEREON)

(20.) TITLE TO THE FEE IN EAST NEWTON STREET FROM THE EARLIEST DATE OF ITS LAYOUT IN 1826. (AS SHOWN HEREON)

(21.) ANY MATTERS PRIOR TO JUNE 9, 2000 THAT AFFECT 75 EAST NEWTON STREET, BUT DO NOT OTHERWISE AFFECT THE PROPERTY INSURED HEREIN. (NOT PLOTTABLE)

(22.) LACK OF RECORD TITLE OF THE CONVEYANCE OF THE BRIDGE & TUNNEL AS SHOWN ON THAT CERTAIN LAND COURT PLAN 34665–A AND LACK OF VERTICAL DISCONTINUANCES ABOVE EAST NEWTON STREET. (LOCATION OF BRIDGE AND TUNNEL SHOWN HEREON)

<u>BOUNDARY DESCRIPTION PER COMMITMENT FILE NO. 1421–0157 ISSUED BY CHICAGO TITLE INSURANCE COMPANY HAVING AN EFFECTIVE DATE OF OCTOBER 31, 2014 AT 8:00 AM</u>

EXHIBIT "A"

PARCEL 1

A CERTAIN PARCEL OF LAND, WITH THE IMPROVEMENTS THEREON, IN BOSTON, SUFFOLK COUNTY, COMMONWEALTH OF MASSACHUSETTS, BEING SHOWN AS LOT 1, COMPRISING 42,299.71 S.F. ACCORDING TO A PLAN ENTITLED "UNIVERSITY HOSPITAL, EAST NEWTON STREET, BOSTON, MASS., LAND PLAN," BY HIDELL–EYSTER ASSOCIATES, INC. DATED OCTOBER 19, 1984 AND RECORDED WITH THE SUFFOLK REGISTRY IN BOOK 11243, PAGE 47.

PARCEL 2

A CERTAIN PARCEL OF REGISTERED LAND, WITH THE IMPROVEMENTS THEREON, IN BOSTON, SUFFOLK COUNTY, COMMONWEALTH OF MASSACHUSETTS, BEING SHOWN AS LOT 3 ON LAND COURT PLAN 34235–A.

PARCEL 3

A CERTAIN PARCEL OF REGISTERED LAND, WITH THE IMPROVEMENTS THEREON, IN BOSTON, SUFFOLK COUNTY, COMMONWEALTH OF MASSACHUSETTS, BEING SHOWN AS LOT 3 ON LAND COURT PLAN 34665–A.

PARCEL 4

A CERTAIN PARCEL OF REGISTERED LAND, WITH THE IMPROVEMENTS THEREON, IN BOSTON, SUFFOLK COUNTY, COMMONWEALTH OF MASSACHUSETTS, BEING SHOWN AS LOT 2 ON LAND COURT PLAN 34235–A.

PARCEL 5

A CERTAIN PARCEL OF REGISTERED LAND, WITH THE IMPROVEMENTS THEREON, IN BOSTON, SUFFOLK COUNTY, COMMONWEALTH OF MASSACHUSETTS, BEING SHOWN AS LOT 2 ON LAND COURT PLAN 34665–A.

BRIDGE/OVERHEAD WALKWAY PARCEL

RIGHTS IN THAT CERTAIN BRIDGE AND TUNNEL FROM THAT CERTAIN BUILDING COMMONLY KNOWN AS H–BUILDING/NEWTON PAVILION, CROSSING OVER THE PUBLIC WAY COMMONLY KNOWN AS EAST NEWTON STREET, AND CONNECTING TO THAT CERTAIN BUILDING COMMONLY KNOWN AS NEW EVANS, WHICH BRIDGE AND TUNNEL IS SHOWN AS "BRIDGE & TUNNEL" ON THAT CERTAIN LAND COURT PLAN 34665–A.

a. TOGETHER WITH AND SUBJECT TO RIGHTS AND EASEMENTS CONTAINED IN RECIPROCAL EASEMENT AGREEMENT DATED APRIL 1, 2000 BY AND BETWEEN BOSTON MEDICAL CENTER AND THE TRUSTEES OF BOSTON UNIVERSITY DATED APRIL 1, 2000 RECORDED IN BOOK 25040, PAGE 300; AS AFFECTED BY AMENDED AND RESTATED RECIPROCAL EASEMENT AGREEMENT DATED JUNE 23, 2008 RECORDED IN BOOK 43716, PAGE 186 AND FILED AS DOCUMENT NO. 753572.

b. TOGETHER WITH AND SUBJECT TO RIGHTS AND EASEMENTS CONTAINED IN RECIPROCAL EASEMENT AGREEMENT BY AND BETWEEN BOSTON MEDICAL CENTER CORPORATION AND UNIVERSITY DEVELOPMENT FOUNDATION DATED JUNE 23, 2008 RECORDED IN BOOK 43714, PAGE 163 AND FILED AS DOCUMENT NO. 753546.

c. TOGETHER WITH AND SUBJECT TO RIGHTS AND EASEMENTS CONTAINED IN DECLARATION OF EASEMENT BY UNIVERSITY HOSPITAL, INC. DATED JANUARY 29, 1971 RECORDED IN BOOK 8419, PAGE 513.

<u>LIST OF ABUTTERS ON EAST BROOKLINE STREET</u>
(Now or Formerly)

#81 81 EAST BROOKLINE STREET CONDOMINIUM TRUST, BOOK 33100, PAGE 230
#83 WILLIAM P. NAGAYA, BOOK 21194, PAGE 114
#85 FOUR WORCESTER SQUARE CONDOMINIUM TRUST, BOOK 22826, PAGE 342
#87 87 EAST BROOKLINE STREET CONDOMINIUM TRUST, BOOK 35257, PAGE 117
#89 J.P.M. REALTY NOMINEE TRUST, BOOK 48877, PAGE 306
#91 J.P.M. REALTY NOMINEE TRUST, BOOK 48877, PAGE 304
#93 J.P.M. REALTY NOMINEE TRUST, BOOK 48877, PAGE 302
#95 J.P.M. REALTY NOMINEE TRUST, BOOK 48877, PAGE 300
#97 97 EAST BROOKLINE STREET CONDOMINIUM TRUST, BOOK 23962, PAGE 53
#99 SOUTH END HOMES CONDOMINIUM TRUST, BOOK 24115, PAGE 284
#101 PETER M. ATLAS AND TIMOTHY J. HENNIGAN, BOOK 21238, PAGE 302
#103 103 E. BROOKLINE STREET CONDOMINIUM TRUST, BOOK 25834, PAGE 52
#105 GULLWING REALTY, LLC, BOOK 47340, PAGE 153
#107 CINDA STONER, BOOK 17525, PAGE 108
#109 CINDA L. STONER, BOOK 17525, PAGE 108

#615 ALBANY STREET:
EAST CONCORD MEDICAL FOUNDATION, INC., BOOK 33597, PAGE 103

<u>LEGEND</u>

BD ..... BUILDING DIMENSION
BFA ..... BUILDING FOOTPRINT AREA
BIT ..... BITUMINOUS
BK ..... BACK
CALC ..... CALCULATED
CC ..... CONCRETE CURB
CLF ..... CHAIN LINK FENCE
CONC ..... CONCRETE
CW ..... CONCRETE WALL
ENT ..... ENTRANCE
LCC ..... LAND COURT CASE
LD ..... LOADING DOCK
LST ..... LANDSCAPE TIMBER
M&S ..... MULCH & SHRUBS
REC ..... RECORD
SQ. FT. ..... SQUARE FEET
STF ..... STOCKADE FENCE
VGC ..... VERTICAL GRANITE CURB
WIF ..... WROUGHT IRON FENCE
SMH ..... SEWER MANHOLE
DMH ..... DRAIN MANHOLE
EMH ..... ELECTRIC MANHOLE
MH ..... MANHOLE
HYD ..... HYDRANT
GS ..... GAS SHUT OFF/GAS GATE
CB ..... CATCH BASIN
RCB ..... ROUND CATCH BASIN
UP ..... UTILITY POLE
LP ..... LIGHT POLE
WL ..... WALK LIGHT
EHH ..... ELECTRIC HANDHOLE
BOL ..... BOLLARD
MB ..... MAIL BOX
SIGN ..... SIGN
PM ..... PARKING METER
FF ..... FUEL FILL
ECB ..... EMERGENCY CALL BOX
FA ..... FIRE ALARM
FDC ..... FIRE DRAIN/SIAMESE CONNECTION
RD ..... ROOF DRAIN
SC ..... SECURITY CAMERA
SP ..... SPIGOT
FL ..... FLOOD LIGHT
DT ..... DECIDUOUS TREE
SH ..... SHRUB
GP ..... GATE POST
ICV ..... IRRIGATION CONTROL VALVE
(X) ..... EXCEPTION NUMBER LISTED IN TITLE COMMITMENT
HC ..... HANDICAP RAMP
TF ..... TRANSFORMER
PARCEL BOUNDARY LINE
LINE OF REGISTRATION
LOCUS BOUNDARY LINE
DHW OVERHEAD WIRES

<u>NOTES:</u>

1) BY GRAPHIC PLOTTING ONLY, THE PARCEL SHOWN HEREON LIES WITHIN A ZONE "X" (UNSHADED), AN AREA OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A.) FLOOD INSURANCE RATE MAP (F.I.R.M.) FOR SUFFOLK COUNTY, MASSACHUSETTS, MAP NUMBER 25025C0097C, CITY OF BOSTON COMMUNITY NUMBER 250286, PANEL NUMBER 0079G, HAVING AN EFFECTIVE DATE OF SEPTEMBER 25, 2009.
2) AT THE TIME OF THE SURVEY, NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS WAS OBSERVED.
3) TO THE BEST OF OUR KNOWLEDGE THERE ARE NO PROPOSED CHANGES IN STREET RIGHT OF WAY LINES OR EVIDENCE OF RECENT STREET OR SIDEWALK REPAIRS.
4) THAT CERTAIN BRIDGE AND TUNNEL FROM THAT CERTAIN BUILDING COMMONLY KNOWN AS THE H–BUILDING/NEWTON PAVILION, CROSSING OVER AND UNDER THE PUBLIC WAY COMMONLY KNOWN AS EAST NEWTON STREET, AND CONNECTING TO THAT CERTAIN BUILDING COMMONLY KNOWN AS NEW EVANS, WHICH BRIDGE AND TUNNEL IS SHOWN AS "BRIDGE & TUNNEL" ON THAT CERTAIN LAND COURT PLAN 34665–A. (NOTE PROVIDED BY MORGAN, LEWIS & BOCKIUS LLP)
5) THE PROPERTY SHOWN HEREON IS THE SAME PROPERTY DESCRIBED IN THE TITLE COMMITMENT.
6) BUILDING FOOTPRINT IS MEASURED AT GROUND LEVEL.
7) THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FELDMAN LAND SURVEYORS ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO FELDMAN LAND SURVEYORS' SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT. FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID PROJECT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN CONSENT IS PROVIDED BY FELDMAN LAND SURVEYORS.
8) TERMS AND PROVISIONS, COVENANTS AND RESTRICTIONS, AS MAY STILL BE IN FORCE AND APPLICABLE, AS SET FORTH IN DEED FROM THE BOSTON REDEVELOPMENT AUTHORITY TO UNIVERSITY HOSPITAL, INC. DATED OCTOBER 9, 1970 RECORDED IN BOOK 8394, PAGE 605.
9) NO CERTAIN DIVISION OR PARTY WALLS WERE DESIGNATED BY THE CLIENT FOR TABLE A ITEM 10(A).
10) THIS SURVEY IS PREPARED FOR THE BENEFIT OF LEGGAT McCALL PROPERTIES LLC AND MARPEL/LMP NEWTON PAVILION LLC.
11) ASSESSOR'S PARCEL 0801299000 (KNOWN AS 74 EAST NEWTON STREET BY THE CITY OF BOSTON DEPARTMENT OF ASSESSING) IS COMPRISED OF PARCELS 4 AND 5, AS DESCRIBED IN EXHIBIT "A" AND REPRESENTS THE "AUTHORITY'S LAND", AS DESCRIBED IN BOOK 11243, PAGE 57. THE MORTGAGED PROPERTY REFERENCED IN THE MORTGAGE, BOOK 11243, PAGE 80, AND IS COMPRISED OF THE ABUTTING PARCELS 1, 2, AND 3, AS DESCRIBED IN EXHIBIT "A", PARCEL 6 AND 7, AS DESCRIBED IN TITLE COMMITMENT No. 1421–0283, AND LOT 1, AS SHOWN ON LAND COURT PLAN 34665A (WHICH ABUTS PARCEL 5).

<u>REFERENCES</u>

SUFFOLK COUNTY REGISTRY OF DEEDS
PLAN BOOK PAGE
2 190
11243 47

MASSACHUSETTS LAND COURT
LCC 328308
342354
34665A
351184
CERTIFICATE OF TITLE

CITY OF BOSTON ENGINEERING DEPARTMENT
FIELD BOOK PAGE
704 126–131
757 52–61

STREET LINE MAP
SOUTH END PROJECT R–56, SHEET S–23
L–9880

<u>VESTING DEEDS</u>

SUFFOLK COUNTY REGISTRY OF DEEDS
BOOK PAGE
7987 582
7987 588
7987 736
7977 749
7965 103
7807 397
7987 590
7987 586
8273 649
9067 565

MASSACHUSETTS LAND COURT
CERTIFICATE OF TITLE
125382
125605
92708

<u>LIST OF VISIBLE ENCROACHMENTS</u>

1. BUILDING #615 ALBANY STREET ENCROACHES UP TO 0.6' ONTO LOCUS.
2. CHAIN LINK FENCE AND METAL ENCLOSURE CROSS UP TO 0.7' OVER THE EASEMENT LINE.
3. CONCRETE PAD SUPPORTING TRANSFORMER CROSSES UP TO 0.5' OVER THE EASEMENT LINE.
4. ACCESS FROM LOCUS TO ABUTTING PARCEL.
5. OVERHEAD PASSAGEWAY PROVIDES INGRESS AND EGRESS TO ABUTTING BUILDING.
6. PARKING STRIPING CROSSES PROPERTY LINE.
7. BUILDING CROSSES PROPERTY LINE.
8. CHAIN LINE FENCE & WALL CROSS PROPERTY LINE.
9. VARIOUS FENCES, WALLS AND OVERHEAD WIRES CROSS PROPERTY LINE.

<u>PARKING SUMMARY</u>

7 STRIPED PARKING SPOTS

** SIGNAGE INDICATES 2 RESERVED FOR BIOSQUARE PARKING AND THE OTHERS FOR BUMC.

TO: CHICAGO TITLE INSURANCE COMPANY; LEGGAT McCALL PROPERTIES LLC; AND MEPT/LMP NEWTON PAVILION LLC

THIS IS TO CERTIFY THAT THIS PLAN AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 7(A), 7(B)(1), 7(C), 8, 9, 10(A), 11(A), 13, 14, 16, 17, AND 21 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 10, 2014.

FELDMAN LAND SURVEYORS

KARL A. McCARTHY, PLS (MA# 36714)
kam@feldmansurveyors.com

12-17-2014
DATE

COMMONWEALTH OF MASSACHUSETTS
KARL A. McCARTHY
NO. 36714
REGISTERED
PROFESSIONAL LAND SURVEYOR

12/17/2014	PLAN REVISED PER REVISED TITLE COMMITMENT, RECEIVED DECEMBER 15, 2014
12/10/2014	UPDATED FIELD INSPECTION
11/5/2014	UPDATED FIELD INSPECTION, MONUMENTS SET & BUILDING HEIGHTS MEASURED

ALTA/ACSM LAND TITLE SURVEY
88 EAST NEWTON STREET
BOSTON, MASS.

FELDMAN LAND SURVEYORS
112 SHAWMUT AVENUE
BOSTON, MASS. 02118

APRIL 28, 2014
PHONE: (617)357–9740
www.feldmansurveyors.com

FELDMAN LAND SURVEYORS

20 0 10 20 40 80
SCALE: 1"=20'

RESEARCH SCH	FIELD CHIEF CB	PROJ MGR KAM	APPROVED	SHEET NO. 1 OF 1	
CALC SCH	CADD SCH	FIELD CHECKED SCH	CRD FILE 14143	JOB NO. 14456	

FILENAME: S:\PROJECTS\14400's\14455\DWG\14455–ALTA.dwg

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

The AE Zone category has been divided by a **Limit of Moderate Wave Action (LIMWA)**. The LIMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between the VE Zone and the LIMWA (or between the shoreline and the LIMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Massachusetts State Plane Mainland Zone (FIPS zone 2001). The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM is derived from Massachusetts Geographic Information System (MassGIS) digital ortho-photography produced at 45 centimeter (2005) and 30 centimeter (2008) resolution. Aerial photography is dated Spring 2005 and Spring 2008.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on the map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

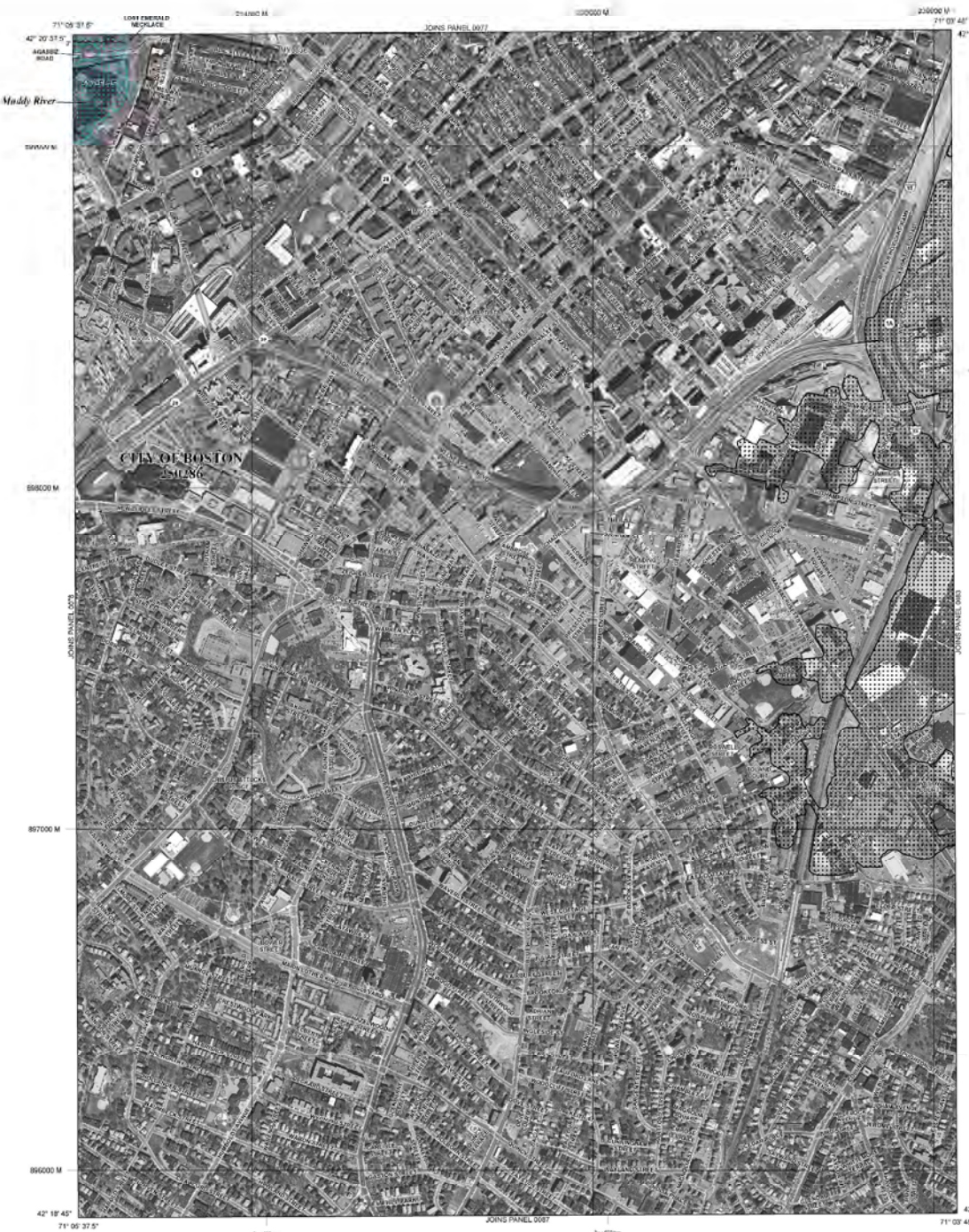
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.

Only coastal structures that are certified to provide protection from the 1-percent-annual chance flood are shown on this panel. However, all structures taken into consideration for the purpose of coastal flood hazard analysis and mapping are present in the DFIRM database in S_Gen_Struct.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway Boundary
Zone D Boundary
CBRS and OPA Boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

Limit of Moderate Wave Action

Limit of Moderate Wave Action coincident with Zone break

Base Flood Elevation line and value; elevation in feet*

Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

Cross section line

Transect line

Culvert

Bridge

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

1000-meter grid: Massachusetts State Plane Mainland Zone (FIPS Zone 2001), Lambert Conformal Conic projection

1000-meter Universal Transverse Mercator (UTM) values, zone 19N

Bench mark (see explanation in Notes to Users section of this FIRM panel)

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
September 25, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

March 16, 2016 - to change Base Flood Elevations and Special Flood Hazard Areas, to change zone designations, to update the effects of wave action, to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision and to revalidate Coastal Barrier Resource System units.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

PANEL 0079J

NFIP NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

SUFFOLK COUNTY, MASSACHUSETTS (ALL JURISDICTIONS)

PANEL 79 OF 176
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS

COMMUNITY	NUMBER	PANEL	SUFFIX
BOSTON, CITY OF	250286	0079	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
25025C0079J
MAP REVISED
MARCH 16, 2016

Federal Emergency Management Agency

Print | Close

DynamicPORTAL Search Result Report

Application #: ALT10551

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Douglas E Zorn
Issue Date:	1/15/2010
Declared Value:	$1,595,086.00
Legal Occupancy:	Mixed Use
Description of Work:	Install a new air handler unit on the 4th floor mechanical floor for the S.I.C.U. unit. two plans filed
Milestones:	ScheduleInspection

Application #: ALT111912

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Kent A Benoit
Issue Date:	1/5/2012
Declared Value:	$253,000.00
Legal Occupancy:	Mixed Use
Description of Work:	800 sf Interior renovation tothe 1st floor. Work to include: selective demo, plumbing, electrical, HVAC, relocate 6 sprinkler heads, FA and finishes. FAST TRACK.
Milestones:	ScheduleInspection

Application #: ALT125752

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	lawrence oconnell jr
Issue Date:	9/4/2012
Declared Value:	$285,000.00
Legal Occupancy:	Commercial
Description of Work:	renovation of existing lab space to create new stat lab on the 4th floor of the H building.
Milestones:	ScheduleInspection

Application #: ALT183535

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	David Finn
Issue Date:	10/26/2012
Declared Value:	$180,000.00
Legal Occupancy:	Commercial
Description of Work:	Install new fire sprinklers in lobby skylights. We will also be installing sprinklers in closets and other rooms that are currently missing protection. Installation will be per the Engineered plans submitted with this application.
Milestones:	ScheduleInspection

Application #: ALT19569

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Jeffrey Faucon
Declared Value:	$20,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	Installation of an Inergen Fire Suppression System floor 6 tele room
Milestones:	Abandon

Application #: ALT24298

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 W Newton ST 09 Roxbury MA 02118
Primary Applicant:	Stephen Martorano
Issue Date:	9/10/2010
Declared Value:	$16,000.00
Legal Occupancy:	Multi-Family
Description of Work:	Boston Housing Authorities "West Newton Street Development" Exterior site and drainage improvements. The scope of work includes the re-grading of the rear yard to direct stormwater surface flows away from the building, installation of underground drainage systems (including groundwater recharge systems), waterproofing the rear foundation wall, reconstruction of existing failed retaining walls, resurfacing existing parking areas, reconfiguring internal walkway systems, installation of new fencing and some additional landscape screening. Work @ bldg#88 West newton
Milestones:	ScheduleInspection

Application #: ALT302084

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	11/13/2013
Declared Value:	$234,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	Boston Medical Center : Build out of 4600 sq ft of training rooms on the 3rd floor of Boston Medical Center. Work to include; new walls, MEP's, sprinkler and FA modification and finishes.
Milestones:	Closed

Application #: ALT353808

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	4/24/2014
Declared Value:	$50,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	**Boston Medical Center - Newton Pavilion - 4th Floor** - Interior renovations : Work to include fitup of 2 Offices and a Conference room(800 sf). Work to include; select demo,MEP's, sprinkler and finishes. Per plan

Milestones:	Closed

Application #: ALT7817

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton St 08 ROBINSON Roxbury MA 02118
Primary Applicant:	James L Ham
Legal Occupancy:	Commercial
Description of Work:	Proposed Work: Remove existing escalators and replace with new monumental stair,construct new screen wall,construct information desk,construct new work stations,redo some new floor,wall and ceiling finishes. cost reflected on s/f #8603/2007, Last Action: Plans - Info Request
Milestones:	Abandon

Application #: ALT7940

Type:	Long Form/Alteration Permit/Change of Occupancy
Site Location:	88 E Newton St 08 ROBINSON Roxbury MA 02118
Legal Occupancy:	Commercial
Description of Work:	Proposed Work: Request approval for a specfic Boston Medical Center fire alarm voice message for 88 Ea. Newton St. as part of a new fire alarm system upgrade., Last Action: Fire - Info Request
Milestones:	Abandon

Application #: ASB103043

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	The Aulson Company. Inc.
Issue Date:	10/27/2011
Description of Work:	to remove asbestos from 88 East Newton Street
Milestones:	Complete

Application #: ASB120339

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	The Aulson Company. Inc.
Issue Date:	2/21/2012
Description of Work:	to remove asbestos
Milestones:	Complete

Application #: ASB402459

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SMI DEMOLITION INC
Issue Date:	8/28/2014
Milestones:	Complete

Application #: ASB44118

Type:	BFD – Asbestos Removal

Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Marcor Environmental LP
Issue Date:	9/24/2010
Description of Work:	to remove asbestos
Milestones:	Complete

Application #: ASB51785

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Marcor Environmental LP
Issue Date:	11/15/2010
Description of Work:	to remove asbestos
Milestones:	Complete

Application #: ASB74379

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	The Aulson Company. Inc.
Issue Date:	4/28/2011
Description of Work:	TO REMOVE ASBESTOS FROM 88 EAST NEWTON STREET
Milestones:	Complete

Application #: ASB83062

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	The Aulson Company. Inc.
Issue Date:	6/23/2011
Description of Work:	TO REMOVE ASBESTOS FROM 88 EAST NEWTON STREET
Milestones:	Complete

Application #: ASB98486

Type:	BFD – Asbestos Removal
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	The Aulson Company. Inc.
Issue Date:	9/30/2011
Description of Work:	TO REMOVE ASBESTOS FROM 88 EAST NEWTON STREET
Milestones:	Complete

Application #: BFDF106232

Type:	Fire Alarm Installation
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	C&W ELECTRICAL CONTRACTORS, INC
Issue Date:	12/20/2011
Description of Work:	INSTALL CO2 DETECTORS IN BASEMENT & 2ND FLOOR ~ **DOC# 20111233**
Milestones:	Complete

Application #: BFDF118806

Type:	Fire Alarm Installation
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	C&W ELECTRICAL CONTRACTORS, INC
Issue Date:	3/6/2012
Description of Work:	RELOCATE 1 SMOKE DETECTOR AND ADD A NEW ONE/SPRINKLERS WILL REMAIN ACTIVE DURING CONSTRUCTION*DOC20120164****
Milestones:	Complete

Application #: BFDF33533

Type:	Fire Alarm Installation
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	STALKER ELECTRIC
Issue Date:	7/13/2010
Description of Work:	INSTALL FIRE ALARM SYSTEM FOR FIRE SUPPRESSION SYSTEM FOR 6TH FLOOR, TELEPHONE ROOM FIRE ALARM TO BE DONE PER 780CMR, NFPA-72 ****DOC#20100351****
Milestones:	Complete

Application #: BFDF97268

Type:	Fire Alarm Installation
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	C&W ELECTRICAL CONTRACTORS, INC
Description of Work:	INSTALL CO2 DETECTORS PER BFD **DOC20111010********
Milestones:	Abandon

Application #: BSD115376

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT WOODWORKING & SUPPLY
Issue Date:	1/25/2012
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING CONSTRUCTION
Milestones:	Complete

Application #: BSD133201

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	O'CONNELL BUILDERS
Issue Date:	4/25/2012
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING RENOVATION WORK
Milestones:	Complete

Application #: BSD19332

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SUFFOLK CONSTRUCTION
Issue Date:	3/29/2010
Description of Work:	BAGGING OF SMOKE DETECTORS
Milestones:	Complete

Application #: BSD294083

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT DESIGN & CONSTRUCTION
Issue Date:	10/11/2013
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING RENOVATION WORK
Milestones:	Complete

Application #: BSD310164

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT DESIGN & CONSTRUCTION
Issue Date:	12/6/2013
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING RENOVATION WORK
Milestones:	Complete

Application #: BSD32820

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SUFFOLK CONSTRUCTION CO., INC
Issue Date:	7/9/2010
Description of Work:	BAGGING OF SMOKE DETECTORS WHILE WELDING ********** Paid Detail is required when in use with CBW32773******
Milestones:	Complete

Application #: BSD354225

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri Shawmut Design & Construction
Issue Date:	5/14/2014
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING CONSTRUCTION
Milestones:	Complete

Application #: BSD380623

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118

Primary Applicant:	SHAWMUT DESIGN & CONST.
Issue Date:	7/16/2014
Description of Work:	BAGGING OF SMOKE DETECTORS
Milestones:	Complete

Application #: BSD68175

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Middlesex Interiors
Issue Date:	3/18/2011
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING PATCHING AND PAINTING OF WALLS IN ROOM-23
Milestones:	Complete

Application #: BSD98620

Type:	BFD – Bag Smoke Detectors
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SUFFOLK CONSTRUCTION
Issue Date:	10/19/2011
Description of Work:	TEMPORARY BAGGING OF SMOKE DETECTORS FOR DUST CONTROL DURING CONSTRUCTION * DEMO PERMIT ISSUED UNDER 74 EAST NEWTON ** CONNECTING BUILDINGS
Milestones:	Complete

Application #: CBW116317

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	RYAN IRON WORKS INC
Issue Date:	2/7/2012
Description of Work:	CUTTING, BURNING & WELDING FOR INSTALLATION OF STRUCTURAL STEEL MEMBERS IN CEILING *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW13213

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	EMCOR SERVICES NORTHEAST INC
Issue Date:	2/25/2010
Description of Work:	BURNING & WELDING FOR INSTALLATION OF PIPES FOR NEW HVAC SYSTEM (DPL)*****PAID FIRE DETAIL REQUIRED WITH THIS PERMIT****** *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW143174

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton St 08 107 Roxbury MA 02118
Primary Applicant:	HUNTINGTON CONTROLS, INC.

Issue Date:	5/18/2012
Description of Work:	REPAIRING 8" STEAM MAIN *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW145157

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	AMERICAN IND. TRADERS
Issue Date:	6/5/2012
Description of Work:	CUTTING / BURNING FOR REMOVAL OF ABANDONED MECHANICAL EQUIPMENT TO INCLUDE (2) CHILLER UNITS AND (2) CONDENSOR UNITS AND ALL RELATED PIPING *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW15520

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	CORPORATE MECHANICAL, INC
Issue Date:	2/25/2010
Description of Work:	CUTTING & WELDING OF HOT WATER PIPING *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW166831

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	AMERICAN IND. TRADERS
Description of Work:	CUTTING / BURNING / WELDING FOR REMOVAL OF ABANDONED MECHANICAL EQUIPMENT TO INCLUDE (2) CHILLER UNITS AND (2) HEAT EXCHANGERS
Milestones:	Abandon

Application #: CBW32773

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	PHARMALUCENCE, INC.
Issue Date:	7/9/2010
Description of Work:	WELDING FOR INSTALLATION OF IRRADIATOR HARDENING (DPL) *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW474916

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	BEACON PIPING CO.
Issue Date:	6/1/2015
Description of Work:	

	CUTTING / BURNING / WELDING OF STAINLESS STEEL PIPING FOR REPAIR (DPL) *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW514707

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	EMCORE SERVICES
Issue Date:	9/9/2015
Description of Work:	BURNING/WELDING/CUTTING TO REPLACE AND OR REPLACE 4 INCH STEAM CONDENSATE PIPES AND FITTINGS ON HEATING SYSTEM DPL10/31/15 *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CBW89773

Type:	BFD – Cutting-Burning-Welding
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	MAC'S CONTRACTING INC.
Issue Date:	8/10/2011
Description of Work:	CUTTING / BURNING FOR REMOVAL OF (1) STERILIZER TANK *** BFD Paid Detail Required ***
Milestones:	Complete

Application #: CHM122750

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Bonaco, Inc.
Issue Date:	3/5/2012
Milestones:	Closed

Application #: CHM126989

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Shawmut Design & Construction
Issue Date:	3/23/2012
Milestones:	Closed

Application #: CHM131554

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Bay State Bldg Specialties
Issue Date:	4/12/2012
Milestones:	Closed

Application #: CHM307653

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118

Primary Applicant:	Shawmut Design & Construction
Issue Date:	1/10/2014
Milestones:	Closed

Application #: CHM315391

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Union Office Interiors
Issue Date:	12/24/2013
Milestones:	Closed

Application #: CHM318111

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT DESIGN & CONSTRUCTION
Issue Date:	1/10/2014
Milestones:	Closed

Application #: CHM364980

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	American Contractors Corp
Issue Date:	6/10/2014
Milestones:	Closed

Application #: CHM415671

Type:	BFD Chemist Certificate proces
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Office Depot
Issue Date:	11/10/2014
Milestones:	Closed

Application #: COO126184

Type:	Certificate of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	3/29/2012
Legal Occupancy:	Commercial
Description of Work:	Hospital C/O For: CT Suite-1st floor Permit#Alt111912-1/5/12
Milestones:	Complete

Application #: COO20124

Type:	Certificate of Occupancy

Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Tom Burns
Issue Date:	4/29/2010
Legal Occupancy:	Commercial
Description of Work:	
	Hospital
	C/O-For BMC Endovascular -Phase-2, Holding Area-3rd.fl. - Only
	permit# 02-1684, issued12/17/09
	Temporary certificate-expires -7/31/10-pending completion of permit
Milestones:	Complete

Application #: COO215013

Type:	Certificate of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	lawrence oconnell jr
Declared Value:	$285,000.00
Legal Occupancy:	Commercial
Description of Work:	Legal Occupancy: Hospital
	COO for the Lab on the 4th floor of the H building.
	ALT125752, Issued: 9/4/12
Milestones:	Inspection

Application #: COO31418

Type:	Certificate of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Tom c/o Suffolk Construction Burns
Issue Date:	7/19/2010
Description of Work:	Hospital,
	c/o for - Endovascular Recovery Un it-3rd.floor-Newton Pavillion.
	permit#1687-issued-12/17/09.
Milestones:	Complete

Application #: COO318063

Type:	Certificate of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	1/17/2014
Declared Value:	$234,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	Legal Occupancy: Hospital
	COO for Training Rooms Third Floor
	ALT302084, Issued: 11/13/2013

Milestones:	Complete

Application #: COO443059

Type:	Certificate of Occupancy
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	1/29/2015
Declared Value:	$50,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	**Legal Occuancy: Hospital** **Certificate of Occupancy for the 4th Floor (Boston Medical Center - Newton Pavilion)** **ALT353808, issued: 4/24/14**
Milestones:	Complete

Application #: E113586

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	1/19/2012
Declared Value:	$34,000.00
Legal Occupancy:	Commercial
Description of Work:	Install power for CT scan
Milestones:	Inspection

Application #: E143081

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	ANDREW CABRAL
Issue Date:	5/18/2012
Declared Value:	$7,500.00
Legal Occupancy:	Commercial
Description of Work:	Wire (3) 1hp Pumps
Milestones:	Inspection

Application #: E14476

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	JOSEPH MARCO
Issue Date:	2/18/2010
Declared Value:	$310.00
Legal Occupancy:	Commercial
Description of Work:	annual maintenance
Milestones:	Inspection

Application #: E14478

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	JOSEPH MARCO
Issue Date:	2/18/2010
Declared Value:	$2,000.00
Legal Occupancy:	Commercial
Description of Work:	rearranging lighting fixtures
Milestones:	Complete

Application #: E2654

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	ANDREW CABRAL
Issue Date:	1/6/2010
Declared Value:	$28,000.00
Legal Occupancy:	Commercial
Description of Work:	Wire new air handler
Milestones:	Complete

Application #: E517957

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	ANDREW CABRAL
Issue Date:	9/15/2015
Declared Value:	$15,000.00
Legal Occupancy:	Commercial
Description of Work:	Install power for Cath lab
Milestones:	Inspection

Application #: E92086

Type:	Electrical Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	8/23/2011
Declared Value:	$17,000.00
Legal Occupancy:	Commercial
Description of Work:	Install new U.P.S system for phone room
Milestones:	Inspection

Application #: EFA113593

Type:	Electrical Fire Alarms
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	1/19/2012
Declared Value:	$800.00

Legal Occupancy:	Commercial
Description of Work:	Install one smoke detector
Milestones:	Inspection

Application #: EFA14481

Type:	Electrical Fire Alarms
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	JOSEPH MARCO
Issue Date:	2/18/2010
Declared Value:	$2,500.00
Legal Occupancy:	Commercial
Description of Work:	install 3 smoke detectors
Milestones:	Inspection

Application #: EFA84481

Type:	Electrical Fire Alarms
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	7/6/2011
Declared Value:	$25,000.00
Legal Occupancy:	Commercial
Description of Work:	add strobes in public bathrooms and replace 250 speaker strobes.
Milestones:	Inspection

Application #: EFA96538

Type:	Electrical Fire Alarms
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	9/20/2011
Declared Value:	$3,000.00
Legal Occupancy:	Commercial
Description of Work:	Install CO2 detectors in the basement and Cafeteria
Milestones:	Inspection

Application #: ELV113590

Type:	Electrical Low Voltage
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	1/19/2012
Declared Value:	$24,000.00
Legal Occupancy:	Commercial
Description of Work:	Install nurse call and data devices
Milestones:	Inspection

Application #: ETS589580

Type:	Electrical Temporary Service

Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Edward Marcotti
Issue Date:	5/11/2016
Declared Value:	$500.00
Legal Occupancy:	Vacant Land
Description of Work:	Temp generator power for film production Set 5-14-16
Milestones:	Complete

Application #: EXCA-239686

Type:	Excavation Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	VERIZON
Issue Date:	5/2/2013
Description of Work:	CLEAR BLOCKED DUCT 3 X 3 RDWY # 1366909246921
Milestones:	Awaiting Contract Finalization

Application #: FDC115644

Type:	Construction, Demo, Reno
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT DESIGN & CONSTRUCTION
Issue Date:	1/25/2012
Description of Work:	RENOVATION WORK TO INCLUDE DRYWALL, CEILING, FLOORING AND FINISHES FOR UPGRADE
Milestones:	Complete

Application #: FDC133196

Type:	Construction, Demo, Reno
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	O'CONNELL BUILDERS
Issue Date:	4/25/2012
Description of Work:	INTERIOR RENOVATION WORK TO INCLUDE CONSTRUCTION OF NEW LAB INCLUDING WALLS, CEILINGS AND FLOORING
Milestones:	Complete

Application #: FDC294079

Type:	Construction, Demo, Reno
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT DESIGN & CONSTRUCTION
Issue Date:	10/10/2013
Description of Work:	RENOVATION / DEMOLITION OF LAB TO INCLUDE WALLS, CEILINGS AND FLOORS
Milestones:	Complete

Application #: FDC310159

Type:	Construction, Demo, Reno
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	SHAWMUT DESIGN & CONSTRUCTION

Issue Date:	12/6/2013
Description of Work:	MINOR DEMOLITION / RENOVATION WORK TO INCLUDE DOORS, FLOORS, CEILINGS
Milestones:	Complete

Application #: FDC354219

Type:	Construction, Demo, Reno
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri Shawmut Design & Construction
Issue Date:	4/24/2014
Description of Work:	CONSTRUCT OFFICES ON 4TH FLOOR, DEMO, FRAMING, DOORS, WALLS, CEILING AND FLOORING
Milestones:	Complete

Application #: OCCU-169637

Type:	Street Occupancy Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	UNITED RENTALS AERIAL EQUIPMENT
Issue Date:	8/6/2012
Milestones:	Expired

Application #: OCCU-522063

Type:	Street Occupancy Permit
Site Location:	88 E Newton St 08 107 Roxbury MA 02118
Primary Applicant:	BOND CANCELLED ELEMENT PRODUCTION
Issue Date:	9/24/2015
Description of Work:	STAND VEHICLES AT CURB FOR FILMING// 7AM-6PM
Milestones:	Expired

Application #: OCCU-522066

Type:	Street Occupancy Permit
Site Location:	88 E Newton St 08 107 Roxbury MA 02118
Primary Applicant:	BOND CANCELLED ELEMENT PRODUCTION
Issue Date:	9/24/2015
Description of Work:	STAND VEHICLES AT CURB FOR FILMING// ALL W ORK 7AM-6PM
Milestones:	Expired

Application #: OCCU-588612

Type:	Street Occupancy Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	STRONGER FILM PRODUCTIONS, LLC
Issue Date:	5/10/2016
Description of Work:	STAN VEHICLES AT CURB FOR FILMING// 8AM-11:59PM// POLICE DETAIL LT MEADE
Milestones:	Expired

Application #: PL103198

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Michael Petrilli
Issue Date:	11/2/2011
Declared Value:	$40,000.00
Legal Occupancy:	Commercial
Description of Work:	Plumbing and medical gas for hospital
Milestones:	Inspection

Application #: PL114158

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Paul Dionne
Issue Date:	1/18/2012
Declared Value:	$3,000.00
Legal Occupancy:	Commercial
Description of Work:	Install 1 lav on 1st floor
Milestones:	Complete

Application #: PL125536

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Michael Petrilli
Issue Date:	4/17/2012
Declared Value:	$30,000.00
Legal Occupancy:	Commercial
Description of Work:	Lab renovations
Milestones:	Inspection

Application #: PL135438

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Michael Petrilli
Issue Date:	5/16/2012
Declared Value:	$57,000.00
Legal Occupancy:	Commercial
Description of Work:	Bathroom renovations
Milestones:	Inspection

Application #: PL142342

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Michael Petrilli
Declared Value:	$85,000.00
Legal Occupancy:	Commercial

Description of Work:	Hospital waste treatment pump installation
Milestones:	Abandon

Application #: PL16209

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	MICHAEL KELLY
Issue Date:	3/1/2010
Declared Value:	$2,000.00
Legal Occupancy:	Commercial
Description of Work:	Plumbing upgrades for dyalysis ro system.
Milestones:	Complete

Application #: PL231624

Type:	Plumbing Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Michael Petrilli
Issue Date:	5/15/2013
Declared Value:	$90,000.00
Legal Occupancy:	Commercial
Description of Work:	Waste separation system
Milestones:	Complete

Application #: SF15636

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Michael J Mannion
Issue Date:	2/22/2010
Declared Value:	$25,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	demolition of drywall partitions, demolition of suspended ceilings, demolition of carpet & floor tile, demolition of electrical, cut opening in block wall for new door installation, paint walls & floor, revise HVAC, revise light fixtures, turn sprinkler heads up to concrete slab while under construction
Milestones:	Inspection

Application #: SF293726

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	10/9/2013
Declared Value:	$20,000.00
Legal Occupancy:	Other Occupancy
Description of Work:	Interior demolition to a portion of the 3rd floor medical lab at the Boston Medical Center. Work includes demo of plumbing, HVAC and finishes.
Milestones:	Inspection

Application #: SF310200

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Regina Olivieri
Issue Date:	12/4/2013
Declared Value:	$80,670.00
Legal Occupancy:	Other Occupancy
Description of Work:	Renovation to a portion of the basement at the Boston Medical Center. Work is to relocate the Bone Lab and includes; plumbing, electrical and millwork. No FA.
Milestones:	Complete

Application #: SF32076

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	THOMAS ROONEY
Issue Date:	6/30/2010
Declared Value:	$20,000.00
Legal Occupancy:	Commercial
Description of Work:	Removal of water damaged drywall and replacement. No exterior work
Milestones:	Inspection

Application #: SF653419

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	PAUL ROY
Issue Date:	11/2/2016
Declared Value:	$58,891.00
Legal Occupancy:	Other Occupancy
Description of Work:	new flooring, patch and paint, replace ACT ceiling, doors and hardware, new HVAC grills, Power, data and lights ,Relocate sinks and casework.
Milestones:	Inspection

Application #: SF684072

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Anna Beheshti
Issue Date:	3/16/2017
Declared Value:	$10,775.00
Legal Occupancy:	Other Occupancy
Description of Work:	Remove existing interior Bank of America ATM and associated signage on Second Floor of Newton Pavilion at Boston Medical Center. Modify wall opening to accept the new ATM and interior signage and then install the new ATM. NOTE: All work to be done within normal working hours. Data & alarm connects to be done by others. All work is interior and not visible from any public views.
Milestones:	Inspection

Application #: SF96650

Type:	Short Form Bldg Permit
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	Andrew Cabral
Issue Date:	9/21/2011
Declared Value:	$900.00
Legal Occupancy:	Commercial
Description of Work:	Install7 CO2 detetors per BFD request - basement & 2nd floor.
Milestones:	Inspection

Application #: SPRK105513

Type:	Sprinkler System
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	CARLYSLE ENGINEERING, INC
Issue Date:	11/16/2011
Description of Work:	Only one floor impaired at a time. Installation in Lobby and Atrium(off hours) Basement,1st, 2nd, 3rd Mezzanie, 6th 7th and 8th floor during regular hours, impairment during only during regular hours
Milestones:	Complete

Application #: SPRK118915

Type:	Sprinkler System
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	WILLIAM M COLLINS COMPANY
Issue Date:	2/10/2012
Description of Work:	RELOCATE 6 SPRINKLERS TO A NEW LOCATION
Milestones:	Complete

Application #: SPRK185124

Type:	Sprinkler System
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	AMERICAN PLUMBING & HEATING
Issue Date:	10/1/2012
Description of Work:	INSTALLATION OF NEW SPRINKLER SYSTEM FOR LOBBY SKYLIGHTS PLUS THE ADDITION OF NEW SPRINKLER HEAD IN CLOSETS, OFFICES AND PATIENT ROOMS CURRENTLY WITH OUT PROTECTION, WORK SHALL COMPLY WITH NFPA-13 AND MGL. WORK TO BE DONE PER NFPA STNDS ONE FLOOR ZONE AT. NO PATIENTS IN IMPAIRED ZONES.
Milestones:	Complete

Application #: SPRK297606

Type:	Sprinkler System
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	CARLYSLE ENGINE
Issue Date:	11/4/2013
Description of Work:	**Impairment shall be limited to one floor at a time... coordinate impairment with building managment**
Milestones:	Complete

Application #: SPRK371247

Type:	Sprinkler System
Site Location:	88 E Newton ST 08 Roxbury MA 02118
Primary Applicant:	CARLYSLE ENGINEERING
Issue Date:	6/25/2014
Description of Work:	RELOCATION OF (12) EXISTING SPRINKLER HEADS TO NEW LOCATION
Milestones:	Complete

Appendix D

Resumes of Assessment Team

Howard M. Day

Chief Facility Assessor

Mike is a senior facilities, construction and service management leader with a record of developing and supporting successful projects incorporating a wide range of applications and technologies. He is consistently recognized by peers and clients as an excellent resource to improve functionality and to provide project management expertise to the design and improvement of the physical plant maintenance and improvement projects. Mike's front line leadership along with a passion for learning and teaching has developed into a drive for aligning best practices and engineering infrastructure to improve quality and safety, realize cost savings, accelerate performance and provide a competitive advantage.

SELECTED PROJECT EXPERIENCE

GSA, Baltimore and Philadelphia BER; Baltimore, MD: Through our on-going work with the GSA, Faithful+Gould performed building engineering reports for the Veteran Administration Center and Powerhouse in Philadelphia, PA and the George Hyde Fallon Federal Building in Baltimore, MD.

GSA, Charlottesville and Portsmouth BER; Charlottesville, VA: Through our on-going work with the GSA, Faithful+Gould performed building engineering reports for the 3 buildings that comprise the Federal Executive Institute located in Charlottesville, Virginia and the Federal Building located in Portsmouth, Virginia.

GSA, Fisher Federal Building BER, SFC; Trenton, NJ: Faithful+Gould performed a level 4 building engineering report of the Clarkson S. Fisher Federal Building and U.S. Courthouse Annex located in Trenton, New Jersey. The courthouse is seven stories and consists of 178,057 square feet. The annex is seven stories and consists of 176,280 square feet.

Confidential Government Agency; Washington, DC: Faithful+Gould was selected by a confidential government agency under an IDIQ contract to complete condition assessment of its 17.4-million-square-foot portfolio in the District of Columbia and on outlying sites in Virginia and Maryland. Our Strategic Facility Consulting (SFC) team is helping the agency understand the portfolio condition, performance and capital requirements, and offering a consequential analysis, of its buildings and grounds.

Education

B.S., Management, University of Maryland University College, 2000

Years of Experience

35

FAITHFUL+GOULD

Archon Group, LP (Goldman Sachs), Comprehensive Property Conditions Assessments; Nationwide: Faithful+Gould Ben performed condition assessment of 700 buildings (approximately 20 million square feet) comprised of industrial, office, hotel and related buildings under acquisition.

Cold Spring Harbor Labs, Facility Assessment; Cold Spring Harbor, NY: Faithful+Gould provided a facility condition assessment that enabled the CSHL to be able to plan, manage, and analyze the condition information and resulting cost recommendations in order to develop strategic short, intermediate, and long-term capital improvement strategies and receive funding for such strategies.

Williamsburg-James City-County Public Schools; Williamsburg, VA: Faithful+Gould performed facility condition and educational adequacy assessments for Williamsburg-James City County Public Schools (WJCC) in Virginia. Our team assessed the condition of all school facilities, reviewed the maintenance and operations of the properties and provided an education adequacy assessment.

Williamsburg-James City-County, Municipal Buildings; Williamsburg, VA: After Faithful+Gould successful assessed the Williamsburg-James City-County schools, we were hired by the WJCC to perform facility condition assessments on the municipal buildings.

Agnes Irwin School; Bryn Mawr, PA: Mike led the facility condition assessment of this K-12 all-girls private school campus. The 18-acre campus includes a lower school with its own gym, dining room, library, and arts, science and music rooms. The middle school, upper school, arts and science center, libraries, and gym are interconnected buildings. Additionally, the campus has five tennis courts, three fields, three playgrounds and an outdoor dining area.

Federal Capital Partners, UBS Tower, SFC; Nashville, TN: Mike provided the MEP assessment of an abandoned building in Nashville, TN.

Benjamin Dutton, FFB, MCIOB, MRICS

Project Executive

Benjamin Dutton is the director of Faithful+Gould's facility condition assessment practice for North America. With more than 15 years of experience in facility assessments, Benjamin has worked in all sectors of the industry, from both municipal and federal governmental facilities to airports and resorts. Since 2005, Benjamin has grown Faithful+Gould's condition assessment practice and built strong relationships with clients such as the District of Columbia Department of Real Estate Services (DRES), District of Columbia Public Schools, Archon Group and the U.S. General Services Administration. Benjamin's driven nature and technical knowledge are assets as he spearheads Faithful+Gould's condition assessment service across the United States and provides strategic facility information creating value for our clients.

SELECTED PROJECT EXPERIENCE

Confidential Government Agency; Washington, DC: Faithful+Gould was selected by a confidential government agency under an IDIQ contract to complete condition assessment of its 17.4-million-square-foot portfolio in the District of Columbia and on outlying sites in Virginia and Maryland. Our Strategic Facility Consulting (SFC) team is helping the agency understand the portfolio condition, performance and capital requirements, and offering a consequential analysis, of its buildings and grounds.

Archon Group Portfolio; Nationwide: Partnered with Archon Group on the condition assessment of more than 20 million square feet of office, hotel and related buildings under acquisition.

BP, Technical Due Diligence Evaluation, Three Facilities; Houston, TX: Faithful+Gould provided technical due diligence evaluation services at three office facilities for BP. The facilities ranged in size from 78,000 square feet to 100,000 square feet.

BP, Ohio Due Diligence, SFC; Toledo, OH: Technical Due Diligence Evaluation of the three Properties located in Ohio. The assessment included industrial office buildings each of which was approximately 25,000-30,000 square feet.

JBG Rosenfeld, Various Properties; Washington Metropolitan Area: Faithful+Gould has performed facility condition assessments for JBGR on various commercial, mixed-use and office properties throughout Virginia, Maryland and Washington, DC.

Williamsburg-James City-County Public Schools; Williamsburg, VA: Faithful+Gould performed facility condition and educational adequacy assessments for Williamsburg-James City County Public

Education

B.S., Building Surveying, University of West England, 2000

Certifications

Member of Royal Institution of Chartered Surveyors (MRICS) - 1119461
Member, Chartered Institute of Building (MCIOB)
Fellow, Faculty of Building (FFB)
Member, Society for the Protection of Ancient Buildings
Certified Reserved Specialist

Professional Affiliations

Faculty of Building
CoreNet Global
RICS, Royal Institution of Chartered Surveyors, UK
The Society for the Protection of Ancient Buildings (SPAB)
Chartered Institute of Building (CIOB)

Years of Experience

17

FAITHFUL+GOULD

Schools (WJCC) in Virginia. Our team assessed the condition of all school facilities, reviewed the maintenance and operations of the properties and provided an education adequacy assessment.

Williamsburg-James City-County, Municipal Buildings; Williamsburg, VA: After Faithful+Gould successful assessed the Williamsburg-James City-County schools, we were hired by the WJCC to perform facility condition assessments on the municipal buildings.

School of the Art Institute of Chicago; Chicago, IL: As the project executive, Ben oversaw the team's assessment of nine facilities, spread over 1.1 million square feet, owned by the School of the Art Institute of Chicago to develop a 20 year capital expenditure forecast for high-rise residential, teaching facilities and the Roger Brown museum.

Loudoun County On-Call Condition Assessments; Loudoun County, VA: Under a three year Masters Services Agreement, Faithful+Gould is currently providing on-call facility condition assessment (FCA) services to Loudoun County. Currently, we have assessed a wide variety of properties to include fire stations, libraries and office buildings.

District of Columbia Department of General Services, City-wide Facility Assessment Portfolio; Washington, DC: Acted as project executive overseeing the comprehensive facility condition assessment of several different facility types for DRES such as office and administrative buildings, police stations, fire stations, the DC hospital, parks and recreation facilities, detentions facilities and much more.

Commonwealth of Virginia, Richmond, VA: For several years, Ben, as project manager, has provided facility condition assessment services to the Commonwealth of Virginia. Working with the Virginia Department of General Services (DGS), our product has been recognized within the DGS and externally as providing credible, defensible, consequential and understandable condition assessment.

U.S. General Services Administration Portfolio; Nationwide: Assessed the condition of various federal office buildings totalling more than five million square feet.

CIGNA Healthcare Portfolio Acquisitions (c/o CB Richard Ellis); Nationwide: Worked with CIGNA Healthcare on the condition assessment of more than five million square feet of office buildings under acquisition.

David Evans
Facility Assessor

David is an assessor with seven years of experience. He has worked on both the surveying and development sides of the industry. He is highly motivated and produces a high standard of reports. David is able to work closely with all levels of a client or owners organization. David has extensive experience working with government and municipal organizations but has also worked with private sector clients.

SELECTED PROJECT EXPERIENCE

General Services Administration; Nationwide: David is part of a team providing Building Evaluation Reports (BER) on various buildings for the General Services Administration (GSA). The scope of work performed at each site consisted of comprehensive facility condition assessment (including LEED), environmental analysis and deployment of data into the GSA utilized capital planning system. We record our findings in the GSA's WEB-BER application software to identify deficiencies and provide remedies, along with associated methods of implementation and cost estimates of the work. The BER is necessary for GSA to propose repair and alteration projects required to ensure the short-term operational continuity of the building, as well as plan for major capital reinvestment programs in the building for the long-term. Through our FCA services, we provide GSA with detailed building analysis, cost estimates, and key plans and photographs that will enable the Government pursue funding for the planning and budgeting of work required to maintain the building's operability.

Confidential Government Client; Washington, DC: Faithful+Gould was selected by a confidential government agency under an IDIQ contract to complete condition assessment of its 17.4-million-square-foot portfolio in the District of Columbia and on outlying sites in Virginia and Maryland. Our team is helping the agency understand the portfolio condition, performance and capital requirements, and offering a consequential analysis, of its buildings and grounds. Our services will also include linkage between the client's master plan; improvements plan; Americans with Disability Act barrier identification and mitigation; historic preservation; sustainability and energy management; and safety, fire, and environmental. Assessed facilities will include office buildings, police buildings, courthouses and visitors' center, central utility plant, gardens and grounds, making many of these buildings involve security clearances for access. Many of the buildings are on the National Register of Historic Places.

Livin Housing Limited (livin); County Durham, UK: David was involved in the £28m Development Program where he worked with a team building over 100 new build affordable houses. Under the supervision of the Development Manager he took the lead on the HCA's Empty Homes Program where I was responsible for

Education
B.Sc., Building Surveying, Northumbria University, 2010

Professional Affiliations
MRICS Chartered Surveyor – full member of RICS passing first attempt in Autumn 2014
RICS APC Mentor, helping candidates and providing guidance to student RICS members preparing for their APC
Pass in CITB Health & Safety Test and holder of CSCS Site Visitor card
Pass in HHSRS (Housing Health & Safety Rating System) training
Pass in Asbestos Awareness training
Pass in NCFE Level 2 Equality and Diversity
Completion of a four day management training programme as part of the 'livin leaders' scheme in my previous job
Awarded the livin 'Rising Star' award in 2012, demonstrating the potential to become a future leader

Years of Experience
7

surveying and assisting the company valuer in acquiring severely dilapidated housing stock and managing and coordinating full refurbishment works. Throughout the project he completed full refurbishment of 85 properties within tight time and budget constraints. Other related duties included measured surveys, completion of HQI and HHSRS assessments, identifying defects and recommending repairs based on building pathology knowledge and claiming of grant funding.

Appendix E

Scope of Services & Document Review

SCOPE OF SERVICES & DOCUMENT REVIEW

The primary purpose of the Property Condition Assessment was to identify visually apparent deficiencies in the building and site and to determine the general cost of separating the building from its adjacent buildings. The evaluation included site visits to observe the building and site systems, interviewing building management and maintenance personnel, and reviewing available maintenance systems, design and construction documents and plans, and public records.

We performed a visual non-destructive assessment of the interior, exterior and site components of the Property, including the following major components and systems:

- **Site Systems.** We visually observed the site systems for the removal of stormwater and evidence of poor drainage and/or erosion potential. We also reviewed (where applicable) the condition of pavements, site concrete, retaining walls, fencing, landscaping, site grading and stormwater drainage features.

- **Structural System.** We observed the structures for visible signs of distress and have reported our findings. We also reviewed available structural drawings for information regarding the design load criteria of the existing structures and the building codes to which the structures were designed. We did not complete a PML on the Property.

- **Roof System.** We visually evaluated the condition of accessible roof systems, accessories and details. In addition, where applicable we discussed existing roof warranties.

- **Building Exterior Elements.** We visually observed the exterior wall system, window and door systems for visible evidence of deficiencies, continuity of seals and other types of distress and have reported our findings. We reviewed available flashing and connection details for drainage design and observed the condition and placement of expansion joints. Our visual observations were based on those conditions that can be observed from ground level, lower roof levels and through the use of binoculars.

- **Mechanical/HVAC, Electrical, Plumbing (MEP) Systems**. We observed the age and condition of the MEP and related building systems and have commented on their condition and visible deficiencies.

- **Fire and Life Safety**. We observed the age and condition of the fire and life safety elements and have commented on their condition and any visible deficiencies. The elements surveyed included structural fire protection, means of egress, fire suppression systems, fire detection and alarm systems.

- **Conveyance Systems.** We completed a visual evaluation of the conveyance systems including a review of maintenance and service records.

- **Interior Finishes.** We visually observed the interior areas of the Property and have reported their general condition. We did not include for replacement of interior finishes.

- **Accessibility.** We reviewed the Property for conformance with applicable accessibility requirements and have reported our findings.

The scope of services under which the Property Condition Assessment was completed was visual in nature and not intended to be destructive to the Property, to gain access to hidden conditions. We did not perform any destructive testing or uncover/expose any system members. We have documented the type and extent of visually apparent defects in the systems in order to perform the condition assessment.

The scope of services under which the Property Condition Assessment was completed includes only those items specifically indicated. The evaluation does not include any environmental services such as (without limitation) sampling, testing, or evaluation of asbestos, lead-based paint, lead-in-water, indoor air quality, PCB's, radon, mold, or any other potentially hazardous materials, air-borne toxins or issues not outlined in the previous scope of services. In addition, the assessment does not include identification of underground soils, identification or quantification of underground contaminants.

Document Review

In addition to the completion of our visual evaluation, Faithful+Gould interviewed representatives from Boston Medical Center (reference Executive Summary) and were provided an electronic copy of the following documentation:

- ALTA/ACSM Land Title Survey 88 East Newton Street drawing prepared by Feldman Land Surveyors, dated December 17, 2014. Received July 3, 2017; reviewed July 3, 2017.

- Utility Summary document prepared by Engineered Solutions, Inc., dated July 30, 2014. Received July 3, 2017; reviewed July 3, 2017.

- Due Diligence Inspection Report prepared by Commercial Construction Consulting, Inc., dated November 11, 2014. Received July 3, 2017; reviewed July 3, 2017.

- Floor Plan Drawings prepared by Boston Medical Center, dated September 30, 2014. Received July 3, 2017; reviewed July 3, 2017.

- Site and Campus Plan prepared by Boston Medical Center, dated February 2015. Received July 3, 2017, reviewed July 3, 2017.

- Birds Eye Image prepared by unknown, dated unknown. Received July 3, 2017; reviewed July 3, 2017.

- Equipment Evaluation (Elevators), prepared by Van Deusen & Associates (VDA), dated November 13, 2014. Received July 3, 2017; reviewed July 3, 2017.

- Past ADA Audits/Study completed by Emmanuel Andrade, RA, NCARB, LEEP AP of Division of Capital Asset Management & Maintenance (email summary only provided). Received July 10, 2017; reviewed July 10, 2017.

- Feasibility study for proposed hospital refurbishment by Payette (confidential draft provided), dated June 28, 2017. Received July 10, 2017; reviewed July 10, 2017.

- Various construction, record and alteration drawings from architects and consultants, dated 1983-2012. Received July 3, 2017. Reviewed July 3-13, 2017.

Documents Requested for Review

Faithful+Gould requested various documents be provided to assist our review of the Property. The list of documents requested by Faithful+Gould includes the following (X = received).

X Original/As-built Drawings (including Civil, Architectural, Structural, Mechanical, Electrical, Plumbing and Fire Protection) – mixture of drawings from 1983-2012 provided via electronic portal

☐ Warranty/guaranty Information (Roofs, Caulking, HVAC, Elevators etc.)

X Past ADA Audits/Studies – excerpt of ADA study provided, see above for details

☐ Service Contracts (including HVAC, Electrical PM, Elevators, Fire & Life Safety Systems etc.)

☐ Past Condition Assessment Reports (including Roofs, Pavements, Exterior Curtain Walls and Caulking, HVAC, Electrical, Elevators, Fire & Life Safety systems etc.)

☐ Preventative Maintenance Logbooks (including HVAC, Electrical, Elevators etc.)

☐ Past Repair/Replacement Project Information (including Roof, Pavements, Caulking, Interior Renovations, HVAC, Elevators, Fire & Life Safety Systems etc.)

X ALTA Survey (including Legal Description of Property)

☐ Project Specifications/Project Manual