

DRISCOLL SCHOOL – Brookline, MA

BUILDING COMMISSION MEETING

Tuesday, February 9, 2021

Agenda

1. Mechanical System Design Comparison
 - Both designs are Fossil Fuel Free:
 - Base Design: Water Source Pumps
 - Add Alternate: Geothermal Wells
2. Schedule
3. Gilbane Procurement Update
4. Filed Sub Bid Procurement Update
5. Project Approvals
 - GILBANE Amendment No. 3
 - JLA / LEFTFIELD / Gilbane Invoices for Approval
6. Upcoming Milestones
 - 2/15/21 – 100% CD Documents Out to Bid
 - 2/25/21 @ 7:30 AM – School Building Advisory Committee Meeting

BROOKLINE
NEW DRISCOLL SCHOOL

HVAC Systems Comparison

2/9/21



Agenda

- Overview of Fossil Fuel Free HVAC Systems
- Review of HVAC Plant Equipment
- Systems Cost Comparison

Alternative Driscoll HVAC Systems Both All Electric (Fossil Fuel Free)

Base Bid: Water Source Heat Pump Heating & Cooling Displacement VAV System with Energy Recovery and Radiant Heating Panels. High efficiency water source heat pump chillers with Fluid Cooler and Supplemental Electric Hot Water Boiler.

Add Alt: Ground Source Version of Base Bid Displacement System - Geothermal wells are used instead of Dry Coolers and Electric Boilers would be provided only for Back-up heating. Hot water Heating and Chilled water provided by High Efficiency Ground-source Heat Recovery Heat Pumps.

HVAC Displacement Distribution Systems are effectively identical for both systems (and Non-Fossil Fuel Free Systems)

Life Cycle Cost Analysis - Summary

- Base Bid: Water Source Heat Pump Displacement VAV System:
 - Lower First Cost
 - Maintains Benefit of Displacement Ventilation System
 - Second Lowest EUI (Energy Use Intensity) of all systems considered
- Add Alt: – Ground Source Heat Pump Displacement System:
 - Benefits of Displacement Air Ventilation
 - High Efficiency of Ground Source Plant
 - Lower Maintenance Costs
 - Lowest EUI HVAC
- Differences: Base Bid uses Cooling Tower (Dry Cooler) and Supplemental Boiler Plant for Heat Rejection & Absorption as opposed to Ground Source Wells. Electric Boilers for Ground Source would only be for Emergency Back up use.

Ground Source - Closed Loop Well Field



Vertical closed loop wells are used to provide ground source condenser water to heat recovery heat pump chiller plant, which is used to provide hot water heating and chilled water cooling

Pros:

- Lower maintenance costs
- High energy efficiency & Lower operating costs
- Lower replacement costs as pumps located within building and no Cooling Tower or Dry Cooler is required

Cons:

- Test wells required
- Increased permitting
- Higher first cost

Non-Ground Source Option Utilizes Dry Cooler and Supplemental Electric Boilers for Heat Pump Chiller Plant



Closed Cell Dry Coolers (Base Bid)

- Higher Efficiency than Open Loop Cooling Tower
- Lower Maintenance than Open Tower
- Lower Make-Up Water and Chemical Treatment Requirements

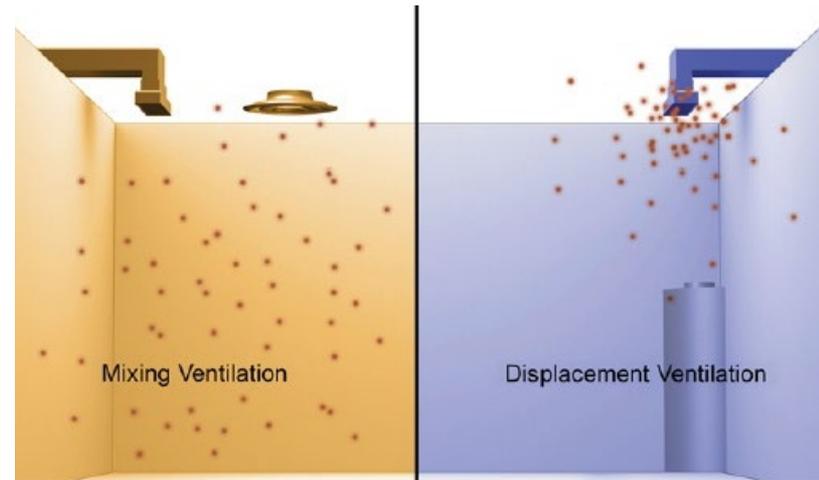


Supplemental Electric Boilers (Both Options)

- Boiler temperature reset controls
- Variable speed pumps with VFD's
- Maintain Condenser Water Loop Temperature in Winter Heating Season
- Increased Boiler use in Base. Boilers for Backup only for Ground Source.

Displacement System (Both Systems)

- Ventilation air is provided from air handling units and supply air is delivered at low velocity and at low levels within the space
- The system uses naturally occurring buoyant forces within the space to create a vertical rise of the air throughout the space.
- Supply air rises when heat source is contacted which displaces room air upward causing pollutants to be exhausted at ceiling returns.



Mixed Systems

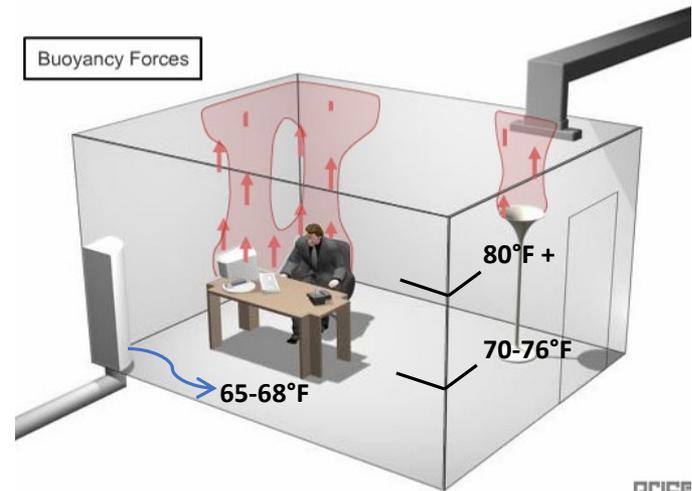
$$E_c = 0.8$$

DV Systems

$$E_c = 1.2 - 1.4$$

Pros:

- **Excellent pollution removal**
- **Low Velocity & Low Noise**
- **Reduced cooling loads**
- **High ventilation effectiveness**
- **Excellent Thermal Comfort**



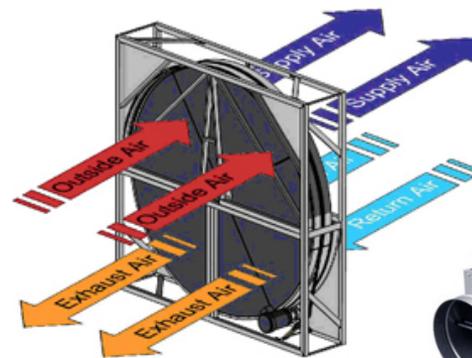
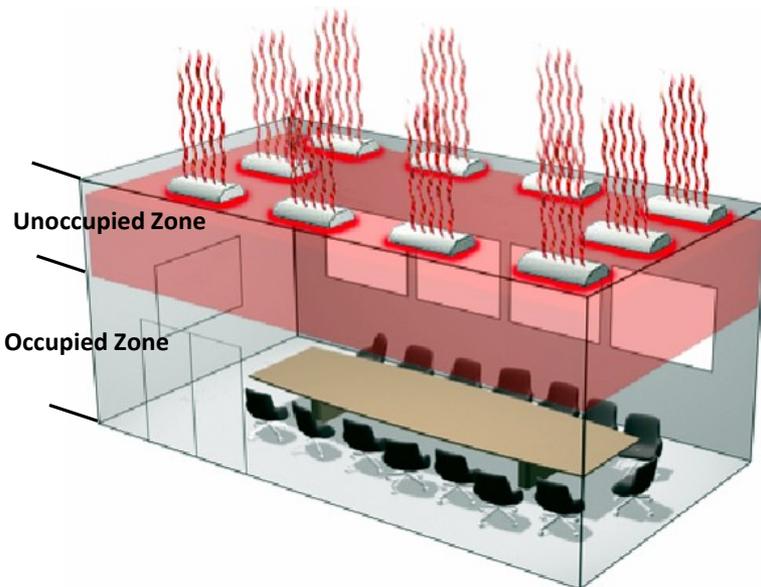
Displacement System – Energy Conservation

Load Calculation Reductions

- Conventional System: All heat generated in room is included in air flow calculation since all airflow is mixed.
- Displacement System: Only loads which occur in the Occupied Zone are factored
- Results in: Smaller equipment & systems and lower installed and operating costs for Displacement Systems

Additional Energy Efficiency Measures

- Energy Recovery: Transfers energy from the return air stream to the supply air stream to pre-heat or pre-cool the outside air.
- Variable Air Volume w/ CO2 Demand Control Ventilation: Modulates the airflow to large single zone areas in accordance to space mounted thermostat and CO2 sensors reducing energy consumption due to reduced air changes.
- Perimeter Radiation Heating – Allows use of Hot Water Heating system for Night Setback and Supplemental Heating



Lifecycle Cost Analysis

Both systems all electric (Fossil Fuel Free)

Base Bid All Electric HVAC System vs Ground Source Add Alt
 90% CD with Bid Input - 1/21/21

Using 2020 Energy Rates	Construction Cost	Elec Cost / Year	Maintenance Cost/Year	Capital Replacement Cost / Year	Combined Annual Expenses	Ground Source Payback Period- Years*
Base Bid	\$9,950,000	\$261,000	\$66,000	\$39,000	\$366,000	
Ground Source	\$12,667,000	\$170,000	\$63,000	\$13,000	\$246,000	22 Years
Delta	\$2,717,000	-\$91,000	-\$3,000	-\$26,000	-\$120,000	

Using 100% Renewable Energy Rates	Construction Cost	Elec Cost / Year	Maintenance Cost/Year	Capital Replacement Cost / Year	Combined Annual Expenses	Ground Source Payback Period- Years*
Base Bid	\$9,950,000	\$317,000	\$66,000	\$39,000	\$422,000	
Ground Source	\$12,667,000	\$211,000	\$63,000	\$13,000	\$287,000	21 Years
Delta	\$2,717,000	-\$106,000	-\$3,000	-\$26,000	-\$135,000	

*Payback period was calculated using Dept of Energy industry standards (BLCC v5.3-18) and includes future worth of each option using the DOE rates for discount (3.4%), escalation, inflation (2.0%), and interest (2.0%).

Energy Use Intensity (EUI - Lower is better)

Ridley School	28
Base Bid	27
Ground Source	21

Both Driscoll system alternatives result in a more efficient building than Brookline's most recent K-8 project

MEMORANDUM

To: Brookline Building Commission
 From: Lynn Stapleton, LeftField, LLC
 Date: February 9, 2021
 Re: Michael Driscoll School – January 2021 Invoice Summary
 Cc: Jim Rogers, Jennifer Carlson, LeftField, LLC

Enclosed for approval and processing, please find the following invoices:

INVOICES					
Invoice Date	Vendor	Invoice #	Budget Category	Description of Services	Invoice \$
1/31/2021	LeftField, LLC	11	OPM – Construction Documents	OPM Services Design Development: January 1 – January 31, 2021	\$60,879.00
1/29/2021	Jonathan Levi Architects	1823-00-16	A/E – Construction Documents	A/E Services for Construction Documents: January 1 – January 31, 2021	\$254,067.20
1/29/2021	Jonathan Levi Architects	1823-00-16	A/E – Geotech/Geo-environ	Geotechnical/Geo-Environmental - McPhail (Amendment #7)	\$2,805.00
1/29/2021	Jonathan Levi Architects	1823-00-16	A/E – Geotech/Geo-environ	Geo-Environmental - McPhail (Amendment #10)	\$990.00
				Jonathan Levi Architects Invoice No. 1823-00-16 Total (For Reference):	\$257,862.20
1/19/21	BR+A	1067098	Commissioning	Commissioning Services November 29 – December 31, 2020	\$5,400.00
12/31/2020	Gilbane Building Co.	PC-10	CM Preconstruction Services	Preconstruction Services: January 1 – January 31, 2021	\$22,500.00
TOTAL:					\$346,641.20

The invoices listed above are consistent with the approved Total Project Budget. LeftField, LLC recommends that the invoices be approved and paid. All invoices above are included in the January 2021 Project Budget Report.

If you have any questions, please feel free to contact the Lynn Stapleton, Owner's Project Manager, LeftField, LLC.



February 9, 2021

Mr. Tony Guigli
Project Manager
Building Department
333 Washington Street
Brookline, MA 02445

Re: Michael Driscoll School Project
Construction Management Contract Amendment No. 3

Dear Mr. Guigli,

LeftField has reviewed the Construction Management (CM) Contract Amendment No. 3 presented by Gilbane Building Company for extended preconstruction services. As indicated in the CM Contract, Exhibit GC – Price Proposal, Gilbane’s actual preconstruction monthly costs are \$46,684.00. In the CM Contract, Gilbane discounted the monthly costs to \$22,500 for a specified timeframe of 8 months. In the previous extension of the Preconstruction Phase, Gilbane honored the discounted preconstruction monthly rate. However, with bidding in progress and staff transitioning to full-time in preparation of the previous March construction start, Gilbane is requesting their actual preconstruction costs for the extended time to construction start in May. The total fee for extended Preconstruction Services is \$140,000.00 for the three-month timeframe. To cover these costs, the remaining uncommitted Preconstruction Services Budget of \$31,658 can be committed and a transfer of \$108,342.00 from the Construction Budget can cover the additional Preconstruction Services fee.

Given the request by the Building Commission to delay the start of construction until bidding is complete, Gilbane is entitled by Contract for their actual costs for extended Preconstruction Services. Therefore, Leftfield recommends approval of Construction Management Contract Amendment No. 3.

Should you have any questions regarding this recommendation of approval, please contact me.

Sincerely,

Lynn Stapleton, AIA, LEED AP B D + C

Cc: Jim Rogers, LeftField, LLC
Jennifer Carlson, LeftField, LLC
Philip Gray, Jonathan Levi Architects
Walter Kincaid, Gilbane Building Company

**CONSTRUCTION CONTRACT FOR CONSTRUCTION MANAGER AT RISK SERVICES
AMENDMENT No. 3**

WHEREAS, the Town of Brookline (“Owner”) represented by Owner’s Project Manager, LeftField, LLC, entered into a contract (“Contract”) with Gilbane Company, Inc. (the “CM at Risk”) (collectively the “Parties”) for construction manager services in association with the design and construction of the Michael Driscoll School Project (the “Project”) on May 8, 2020; and

WHEREAS, the scope of this work is summarized in the attached Gilbane letter proposal, dated February 2, 2021 for extended preconstruction services due to delay in start of construction; and

WHEREAS, Contract amendment No. 1 was approved by the Town of Brookline on November 10, 2020; and

WHEREAS, Contract amendment No. 2 was approved by the Town of Brookline on January 12, 2021; and

WHEREAS effective as of February 9, 2021, the Parties wish to amend the Contract;

NOW, THEREFORE, in consideration of the promises and the mutual covenants contained in this Amendment, and other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, hereby agree as follows:

1. The Owner hereby authorizes this Amendment No. 3 with a total value of \$140,000.00. This Amendment is based upon approval of the Construction Manager’s additional Preconstruction Services proposal. The Contract Price in accordance with Articles 6 and 7 of the Owner-Construction Manager Agreement shall be amended as follows:

	<u>Original Contract</u>	<u>Previous Amendments</u>	<u>Amount of This Amendment</u>	<u>After This Amendment</u>
<u>Fee for Basic Services</u>				
Pre-Construction Services	<u>\$ 180,000.00</u>	<u>\$ 108,030.00</u>	<u>\$ 140,000.00</u>	<u>\$ 428,030.00</u>
Total Fee	<u>\$ 180,000.00</u>	<u>\$ 108,030.00</u>	<u>\$ 140,000.00</u>	<u>\$ 428,030.00</u>

2. The Project Schedule shall be as follows:

Original Schedule for Substantial Completion:	(Building)	<u>May 26, 2023</u>
	(Site)	<u>May 17, 2024</u>

Amended Schedule for Substantial Completion:	(Building)	<u>No Change</u>
	(Site)	<u>No Change</u>

3. The Construction Budget shall be as follows:

Original Budget:	<u>\$ 92,791,890.00</u>
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Amended Budget:	<u>\$ 92,683,548.00</u>
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Michael Driscoll School Project

This Amendment contains all of the terms and conditions agreed upon by the Parties as amendments to the original Contract. No other understandings or representations, oral or otherwise, regarding amendments to the original Contract shall be deemed to exist or bind the Parties, and all other terms and conditions of the Contract remain in full force and effect.

IN WITNESS WHEREOF, the Parties have caused this amendment to be executed by their respective authorized officers.

**OWNER:
TOWN OF BROOKLINE**

By executing this Agreement, the undersigned authorized signatory of Owner, who incurs no personal liability by reason of the execution hereof or anything herein contained, hereby certifies under penalties of perjury that this Contract is executed in accordance with a prior approval of the Town of Brookline.

By: See Attached Signature Page for Town **Date:** February 9, 2021

Name: _____

Title: _____

**CM at RISK:
GILBANE BUILDING COMPANY, INC.**

By: Walter J.G. Kincaid **Date:** February 9, 2021
Digitally signed by Walter J.G. Kincaid
DN: C=US, E=Wkincaid@gilbaneco.com,
CN=Walter J.G. Kincaid
Date: 2021.02.04 11:50:20-0500'

Name: Walter Kincaid

Title: Senior Project Executive

APPROVED AS TO FORM:

By: _____ **Date:** February 9, 2021

Name: _____

Title: _____

FORM C
SCHEDULE OF CONSTRUCTION MANAGEMENT COSTS
PRE-CONSTRUCTION PHASE

	Hourly Rate	Hours per Month	Number of Months	Total Cost
List of Staff with Titles				
Sr. Project Executive - Walt Kincaid	\$ 185.97	20	7	\$ 25,400
Pre Construction Manager - Kevin Cooke	\$ 267.61	35	8	\$ 74,930
Advanced Planning & Scheduling - Katie Strumolo	\$ 172.00	5	8	\$ 6,880
Chief Estimator	\$ 246.76	17	8	\$ 33,560
Arch / Civil / Structural Estimator	\$ 162.08	39	8	\$ 50,570
Electrical Estimator	\$ 171.43	14	8	\$ 19,200
Mechanical Estimator	\$ 201.25	14	8	\$ 22,540
Plumbing Estimator	\$ 180.45	14	8	\$ 20,210
Purchasing Agent	\$ 185.50	10	8	\$ 14,840
Cost Control	\$ 151.67	3	8	\$ 3,640
Project Manager - Lynda Callahan	\$ 115.83	9	7	\$ 6,950
General Superintendent - Bob Braga	\$ 126.54	15	7	\$ 13,160
IDC Engineer	\$ 122.04	63	8	\$ 61,020
Environmental Specialist - Mark Winslow	\$ 173.13	2	8	\$ 2,770
VDC Director - John Myers	\$ 111.25	20	8	\$ 17,800
			Total Cost	\$ 373,470
			Total Staff Cost/Month	\$ 46,684

List of Pre-Construction Consultant Costs				
			Total Cost	\$ -
			Total Costs/Month	

List of "other" Pre-Construction Costs				
Travel Expense				\$ 3,200
Blueprints, Copies, Postage, Telephone				\$ 3,840
Preconstruction DISCOUNT				\$ (200,510)
			Total Cost	\$ (193,470)
			Total Costs/Month	\$ (24,184)

TOTAL PRE-CONSTRUCTION COSTS PER MONTH				\$ 22,500
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Confidential and proprietary information.



February 4, 2021

Lynn Stapleton
Project Executive
LeftField
225 Franklin Street, 26th Floor, Boston, MA 02110

Re: Michael Driscoll School- Construction Management No. 3

Gilbane Building Co. request fee for the extension of Preconstruction Services the amount of:
\$ 140,000.00

The details to the costs are included in the attached supporting documentation.

GBC Preconstruction Services February 2021 through April 2021

3 Months X \$46,667/month = \$140,000.00

Preconstruction Services per the CM Contract were extended in amendment No.2 through January. The construction start target is now May 1, 2021.

The fee is to partially cover construction services associated with procurement and to continue to support the project until construction starts.

It is understood the source of these funds is from the construction services general conditions outlined by the original RFP proposal and CM agreement.

Should you have any questions regarding this proposal, please feel free to contact me at 617-478-3371

Sincerely,

Walter J.G. Kincaid

A blue digital signature stamp with a stylized 'W' and 'K' logo. The text inside the stamp reads: "Digitally signed by Walter J.G. Kincaid, DN: C=US, E=Wkincaid@gilbaneco.com, CN=Walter J.G. Kincaid, Date=2021.02.04 12:33:42-05'00'".

Digitally signed by Walter J.G. Kincaid
DN: C=US,
E=Wkincaid@gilbaneco.com,
CN=Walter J.G. Kincaid
Date=2021.02.04 12:33:42-05'00'

Walter J.G. Kincaid
GILBANE BUILDING COMPANY
Senior Project Executive

Trade Contractors

Michael Driscoll School - Brookline, MA

MASONRY \$ 1,900,000

Name of Company

Acranom Masonry, Inc.	
Capasso Enterprises, Inc.	
Commercial Masonry Corp	
Costa Brothers Masonry, Inc.	
Empire Masonry Corp	
Fernandes Masonry, Inc.	
Fred Salvucci Corporation	
Lighthouse Masonry, Inc.	
Marmelo Bros. Construction Co., Inc.	

MISCELLANEOUS METALS \$ 1,350,000

Name of Company

Capone Iron Corporation	
L&L Contracting, Inc.	
Quinn Bros. of Essex, Inc.	
Roman Iron Works, Inc.	
SMJ Metal Company, Inc.	
The Berlin Steel Construction Company	
United Steel, Inc.	
V & G Iron Works, Inc.	

WATERPROOFING \$ 650,000

Name of Company

Acme Waterproofing Co., Inc.	
Acranom Masonry, Inc.	
Armani Restoration, Inc.	
Beacon Waterproofing & Restoration, Inc.	
Chapman Waterproofing Company	
Folan Waterproofing & Construction Company, Inc.	
Grande Masonry, LLC	
Heritage Restoration, LLC	
P.J. Spillane Company, inc.	
The Waterproofing Company	

ROOFING AND FLASHING \$ 1,300,000

Name of Company

Capeway Roofing Systems, Inc.	
Gibson Roofs, Inc.	
Greenwood Industries, Inc.	
J.D. Rivet & Co., Inc.	
Rockwell Roofing, Inc.	
Silktown Roofing, Inc.	
Stanley Roofing Company, Inc.	
Titan Roofing, Inc.	

GLASS AND GLAZING \$ 550,000

Name of Company

A&A Window Products, Inc.	
Aluminum & Glass Concepts, Inc.	
Chandler Architectural Products, Inc.	
G.V.W., Inc.	
Kapiloff's Glass, Inc.	
Lizotte Glass, Inc.	
Lockheed Window Corp.	
Modern Glass & Aluminum, Inc.	
R&R Window Contractors, Inc.	
The Cheviot Corporation	

Trade Contractors

Michael Driscoll School - Brookline, MA

TILE \$ 250,000

Name of Company

Capital Carpet and Flooring Specialists, Inc.	
High Point Interiors, Inc.	
Joseph Cohn & Son Tile & Terrazzo, LLC	
Pavilion Floors, Inc.	

TERRAZZO \$ 200,000

Name of Company

DePaoli Mosaic Company	
Joseph Cohn & Son Tile & Terrazzo, LLC	
Roman Mosaic and Tile Company	

ACOUSTICAL TILE \$ 1,800,000

Name of Company

Central Ceilings, Inc.	
Conn Acoustics, Inc.	
H. Carr & Sons, Inc.	
K&K Acoustical Ceilings, Inc.	
The Cheviot Corporation	

RESILIENT FLOORS \$ 1,200,000

Name of Company

Capital Carpet and Flooring Specialists, Inc.	
CJM Services, Inc.	
Pavilion Floors, Inc.	

PAINTING \$ 500,000

Name of Company

Bello Painting Co., Inc.	
Color Concepts, Inc.	
Dandis Contracting	
Homer Contracting, Inc.	
John W. Egan Co., Inc.	
King Painting, Inc.	
M.L. McDonald Sales Co., Inc.	
New Generation Painting, Inc.	
O'Byrne Painting & Contracting, Inc.	
Select Paint and Finishes, LLC	

FIRE PROTECTION \$ 1,050,000

Aero Mechanical, Inc.	
Carlisle Engineering, Inc.	
Cogswell Sprinkler Co., Inc.	
Covenant Fire Protection, Inc.	
Delta Mechanical Contractors, LLC	
Johnson Controls Fire Protection LP	
Rustic Fire Protection, Inc.	
William M. Collins Co., Inc.	
Xcel Fire Protection, Inc.	

Trade Contractors

Michael Driscoll School - Brookline, MA

PLUMBING \$ 2,300,000

Name of Company

Araujo Bros. Plumbing & Heating	
Commonwealth Plumbing Corp.	
E. Amanti & Sons, Inc.	
Grasseschi Plumbing and Heating, Inc.	
Harold Brothers Mechanical Contractors, Inc.	
N.B. Kenney Company, Inc.	
P.J. Dionne Company, Inc.	
Patrick J Kennedy & Sons, Inc.	

HVAC \$ 10,500,000

Name of Company

E. Amanti & Sons, Inc.	
Enterprise Equipment Co., Inc.	
General Mechanical Contractors, Inc.	
Harold Brothers Mechanical Contractors, Inc.	
J.F. White Contracting Company	
N.B. Kenney Company, Inc.	
Patrick J Kennedy & Sons, Inc.	
William F. Lynch Co., Inc.	

ELECTRICAL \$ 7,000,000

Name of Company

Annese Electrical Services, Inc.	
LeVangie Electric Co., Inc.	
Lynnwell Associates, Inc.	
Ostrow Electric Company	
Systems Contracting, Inc.	
Wayne J. Griffin Electric, Inc.	