Public Facilities Committee Agenda

City of Newton
In City Council

Thursday, June 20, 2024

The Public Facilities Committee will hold this meeting as a hybrid meeting on Thursday, June 20, 2024, at 7:00 PM in Room 204. To view this meeting using Zoom use this link: https://newtonma-gov.zoom.us/j/87424950711 or call 1-646-558-8656 and use the following Meeting ID: 874 2495 0711

Item Scheduled for Discussion:

Public Hearing

#259-24 **Request for drain extensions in Edgefield Road**

ALEXANDER KOGAN, 56 Marcellus Drive, Newton petitioning for a drain extension in EDGEFIELD ROAD starting in York Road from a new drain manhole and extended 152 foot northeasterly for the purposes of providing an overflow connection for their on-site drainage system. (Ward 5)

PETITIONER TO PAY ENTIRE COST

Edgefield Road- Back up material

Public Hearing

#269-24 **5-58 for the Franklin School at 125 Derby Street**

DESIGN REVIEW COMMMITTEE petition, pursuant to 5-58, for schematic design and site plan approval at 125 Derby Street for the renovation and expanding to demolish and replace the existing Franklin School with a new school of approximately 71,000 SF to be located on the western side of the existing site at 125 Derby Street. The new school provides 18 general education classrooms with educational support spaces, cafetorium, and gymnasium to accommodate a design enrolment of 396 to 414 students.

Referred to Public Facilities and Finance Committees

#241-24 **Appropriate $72,608,506 for the construction of the Franklin School Project**

HER HONOR THE MAYOR requesting authorization to appropriate and expend the sum of seventy-two million six-hundred-eight thousand five-hundred-six dollars ($72,608,506) and authorize a general obligation borrowing of an equal amount for the construction of the Franklin School project and authorization to apply any premium received upon the sale of the bonds or notes, less the cost of preparing, issuing, and

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The location of this meeting is accessible and reasonable accommodations will be provided to persons with disabilities who require assistance. If you need a reasonable accommodation, please contact the city of Newton's ADA Coordinator, Jini Fairley, at least two business days in advance of the meeting: jfairley@newtonma.gov or (617) 796-1253. The city's TTY/TDD direct line is: 617-796-1089. For the Telecommunications Relay Service (TRS), please dial 711.

marketing them, and any accrued interest received upon the delivery of the bonds or notes to the costs of the project and to reduce the amount authorized to be borrowed for the project by like amount. The amount authorized to be borrowed by and under this order shall be reduced to the extent that any grants are received by the City from the Massachusetts School Building Authority (MSBA) for this project.

#250-24 **National Grid petition for a Grant of Location in Richardson Street**

NATIONAL GRID petition for a grant of location to install and maintain approximately 480 feet of 12- inch Coated Steel, main across the Centre St. bridge in Newton, MA over 1-90 (also known as Washington St.). National Grid has MA DOT, and MWRA, permits for the bridge. National Grid is requesting Grant of Location for Proposed new main tie-in to existing Regulator Station at 32 Richardson Street, Newton approximately 20' X 10' X 5'D and to tie-in to existing 12" Bare Steel Main at 371 Washington Street, Newton approximately 10' X 6' X5'D (Ward 1)

Richardson Street-Back-up Material

Public Facilities Held 8-0; Public Hearing Closed 8-0 on 06/05/24

#177-24 **Discussion with National Grid regarding plans to fix gas leaks in Newton**

Councilor Albright on behalf of the Public Facilities Committee requesting a discussion with National Grid about their plans, timetable, and methodology to correct gas leaks including the viability of repair vs. replacement of certain gas leaks.

#271-24 **President's Reappointment of Michael Gevelber to the Newton Citizen's Commission on Energy**

PRESIDENT LAREDO reappointing Michael Gevelber, 166 Melrose Street, Auburndale to Newton Citizen's Commission on Energy for a term of office to expire December 31, 2025. (60 days: 08/16/24)

Respectfully submitted,

Susan Albright, Chair

Design Review Committee
PUBLIC BUILDINGS DEPARTMENT
Ellen Light and Thomas Gloria, Co-Chairs
Joshua R. Morse, Commissioner
Telephone (617) 796-1600
FAX (617) 796-1601
TTY: (617) 796-1089
52 Elliot Street
Newton Highlands, MA 02461-1605

Ruthanne Fuller
Mayor

Honorable City Council
City of Newton
1000 Commonwealth Avenue
Newton Centre, MA 02459

16 May 2024

RE: Franklin Elementary School Project, 125 Derby Street

SUBJECT: Site Plan Review and Approval

Honorable City Council:

On Wednesday, May 15, 2024, the Design Review Committee, DRC, and the Franklin School Building Committee, FSBC met and discussed the proposed site plans, building floor plans, and architectural schematics dated April 17, 2024, as submitted by HMFH Architects on behalf of the Public Buildings Department and Newton School Department for the above referenced project.

The City of Newton is proposing to demolish and replace the existing Franklin School with a new school of approximately 71,000 SF to be located on the western side of the existing site at 125 Derby Street. The new school provides 18 general education classrooms with educational support spaces, cafetorium, and gymnasium to accommodate a design enrolment of 396 to 414 students as previously voted by the School Committee.

The building envelop design will comply with the newly adopted opt-in stretch code and specialized energy code. Materials will include masonry, metal and phenolic panels, and insulated glass, and will be selected to reduce the embodied carbon of the project. The building will be all-electric with a Ground Source Heat Pump (GSHP) mechanical system, making it the city's second geothermal project. The design will also allow for future photovoltaic panels to be installed on the roof and as solar canopies over the staff parking area.

The new structure is located on the western end of the site allowing for a universally accessible school. An enhanced storm water management, system utilizing infiltration systems and pervious pavement will handle storm water on site. A new bus loop separated from the traffic lanes will be located on Derby Street nearest to the new school's main entrance, and improvements will be made along Derby Street include traffic calming measures and crosswalks. Pedestrian access from Cherry Street will include a new crosswalk, flashing beacons and pathways to the fields and school. Pedestrian access will also be maintained from Russell Road Street. Staff parking and Van Drop-Off/Pick-Up is to be located on-site at the western side, and Blue Zone Drop-Off/Pickup is located on Derby Street. All three areas have access to the main school entry lobby. The site design features include a fully accessible playground, hard surface play areas and new field space. Landscape features include bio-retention areas, pollinator gardens, and previous pavement. Landscaping and trees will be planted throughout the site.

The Design Review Committee determined that the proposed site plan, building floor plans, and architectural schematics are appropriate. The Committee believes that the proposed circulation and placement of building and associated site functions are a good solution to a site that presents a challenging topographical landscape. The Committee voted unanimously to recommend that the project be presented for site plan approval, in accordance with Section 5-58 of the Revised Ordinances. This letter is to petition the City Council on behalf of the School Department for Site Plan Approval. The DRC identified the following areas of design which are to continue to be developed and evaluated. It is understood that the Public Buildings Department and HMFH Architects will continue to work with the DRC, FSBC, and city staff in the completion of the schematic design phase and all future design phases.

- The design team should continue to take an integrated design approach to the building's design through its mechanical systems, building envelope, floor to floor heights, ceiling heights including the height and extent of glass and glazing, methods of sun control, day lighting, electrical lighting, and sound control. All components should be designed to promote efficient building performance and reduce overall energy consumption, consistent with both its purpose and context. This process should include life cycle cost analysis in the vetting of building systems.
- In response to high costs and long lead times for glass and glazing systems, the design team will look at alternatives to curtainwall construction and evaluate carrying optional construction as an alternate in the bid documents.
- The design team should provide updated LCCA for GSHP + VRF option for verification, and continue to strive to meet, or exceed, our sustainability goals. This should include further study and evaluation of geothermal, on-site PV, and other methods of driving down our energy use intensity, as Newton strives to reduce its' carbon footprint and pushes towards net zero buildings. The building will be heated and cooled using no fossil fuels on site. The building design and specifications should be developed in a practical manner that facilitates conversion to higher efficiency systems coupled with LCCA to drive our energy intensity towards net zero.
- The project team should evaluate options for guardrails and bollards for pedestrian safety along bus loop and entry plaza.
- The team should develop a site photometric plan to confirm adequacy of exterior lighting, and to ensure that direct glare sources are appropriately cut off in response to the significant grade changes.
- The design team should continue to investigate site conditions to refine storm water management design options.
- The design team will continue to develop the playground design to provide fully accessible solutions to meet the design requirements similar to those at the Lincoln-Eliot and Countryside School playgrounds. The team will review with PR&C the potential for netting along the ball field foul lines, and outfield fencing along the pathways.
- All facades of the proposed building should be refined to address concerns regarding massing and buffering of the building from the abutting properties. The project team will work with the abutters to identify and provide appropriate fencing and plantings along abutting property lines.
- The project team should continue to work with NPS, DPW Traffic staff, and city Accessibility Coordinator to ensure that the plans work well with the site distribution and pedestrian and bicycle safety, as well as developing a Parking Management Plan. The project should evaluate options for additional drop-off on Cherry St.
- The project will work with the community and school to develop a remembrance or memorial feature as part of the final site design.

Sincerely,

Ellen Light, AIA, LEED AP BD+C

Thomas P. Gloria, Ph. D.

Design Review Committee, Co-Chairs

CC: Joshua R. Morse, Commissioner of Public Buildings
Jonathan Yeo, Chief Operations Officer
Maureen Lemieux, Chief Financial Officer
Dr. Anna Nolin, School Superintendent
Liam Hurly, Deputy Superintendent/Chief Administrative Officer

269-24

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Ruthanne Fuller
Mayor

City of Newton, Massachusetts
Department of Planning and Development
1000 Commonwealth Avenue Newton, Massachusetts 02459

Barney S. Heath
Director

INTER-OFFICE MEMORANDUM

DATE: May 30, 2024

TO: City of Newton City Council

FROM: Barney Heath, Director, Department of Planning and Development
Jennifer Caira, Deputy Director Department of Planning and Development
Katie Whewell, Chief Planner for Current Planning
Joe Iadonisi, Senior Planner

SUBJECT: Chapter 5 §5-58 of the City of Newton Ordinances, request for review for site and building construction at 125 Derby Street for the Franklin Elementary School

CC: Alejandro Valcarce, Public Buildings Department
Design Review Committee
Public Buildings Department

EXECUTIVE SUMMARY

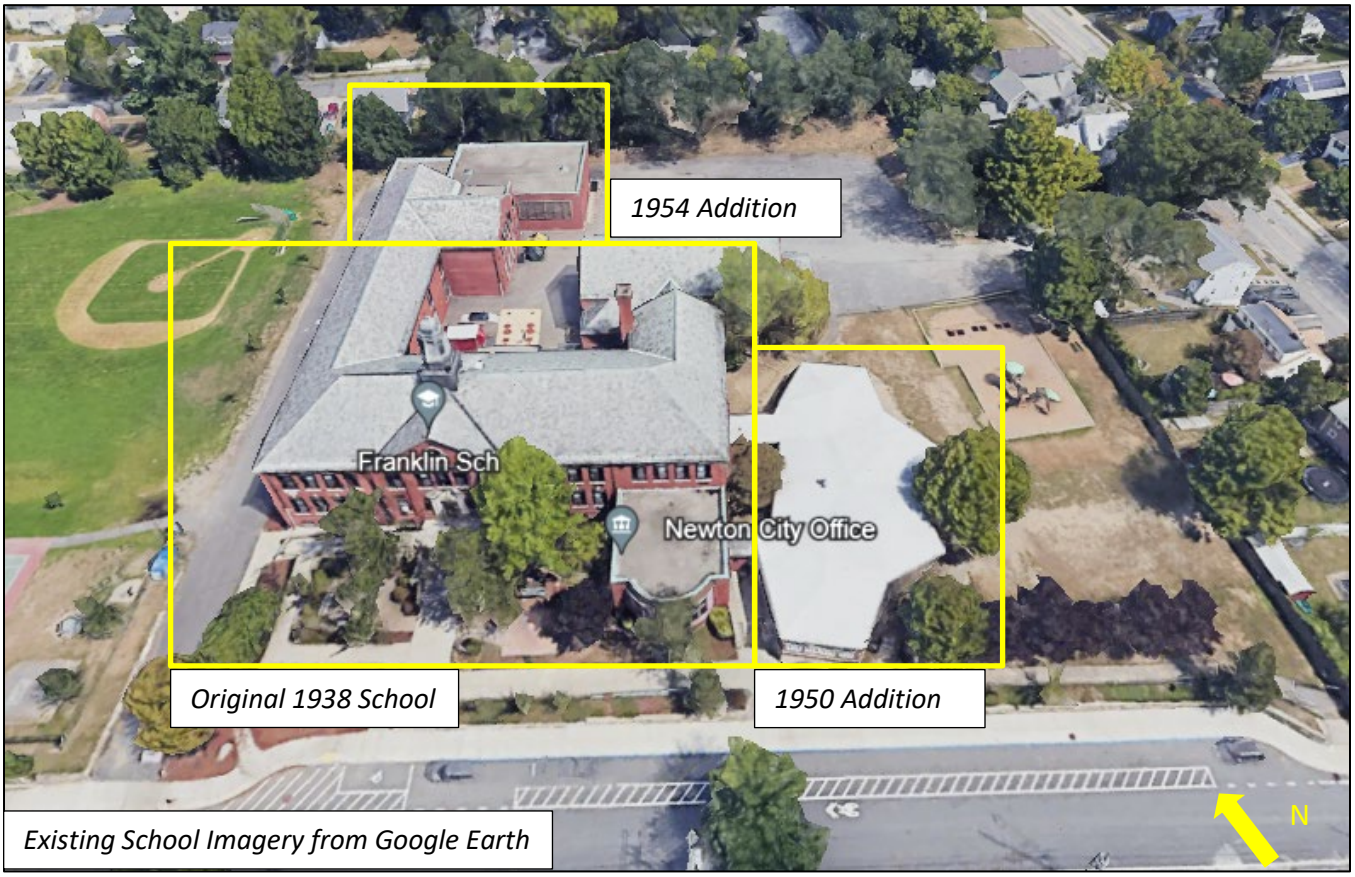
The Planning Department conducted a Section 5-58 review of the proposed new construction of the Franklin Elementary School at 125 Derby Street. The proposed project consists of a new three-story building with approximately 70,898 square feet. The plans show an increase of dedicated space for programs such as special education, fully electric utilities, and improvements to traffic, parking, and circulation. There is no anticipated increase in enrollment, but the proposed new school will support additional students than the current enrollment if needed.

Schematic Design of Proposed New Franklin Elementary School

Section 1. History and Existing Conditions

History and Past Renovations

Franklin Elementary School was constructed in 1938. Initial additions to the school included four classrooms in 1950 and in 1954, four more classrooms and a gymnasium were introduced to the site. In 1998 an elevator was added to improve accessibility. For the most part, since 1953 renovations on the site have been internal or limited to the maintenance of existing structures.



Existing School Imagery from Google Earth

Currently, the Franklin Elementary School is a two and a half story building totaling approximately 50,245 square feet. The school largely incorporates traditional design elements for an elementary school, such as a steeple, red brick façade, and large windows throughout the original u-shaped building. To the east/right of the front façade is the 1950 addition which incorporates a unique design with four attached pentagonal classrooms whereas the 1953 addition to the rear/north continues the design and scale of the original school.

The existing school has 22 classrooms, an auditorium/cafeteria, a gymnasium, and other administrative rooms and facilities. Current enrollment is approximately 349 students from kindergarten through fifth grade. While the number of classrooms is likely sufficient, there is a lack of specialized classrooms and spaces for group work, special education,

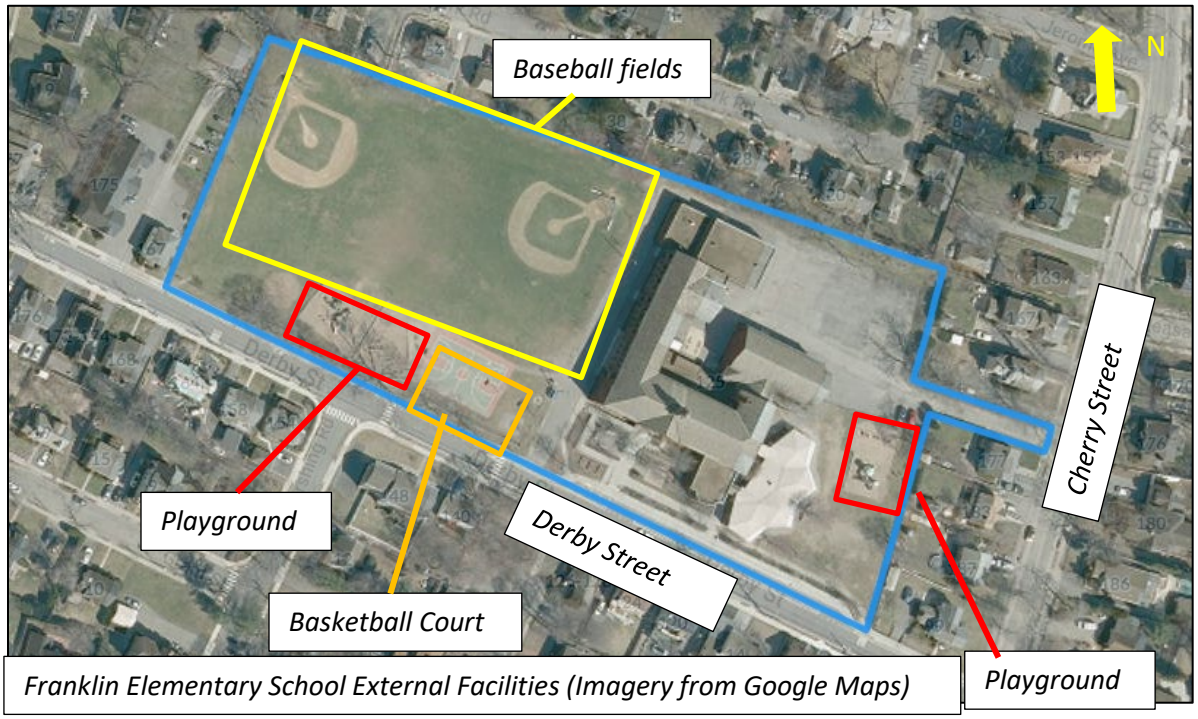
and other programs and administrative offices as the school has largely maintained its layout since the 1953 addition.

Existing Front Elevation per Google Maps Streetview

Site and External Facilities

The Franklin School is located on an approximately 237,611 square foot site bounded by Derby Street to the south, Cherry Street to the east, residential dwellings along Clark Street to the north, and a two-family dwelling at 167 Derby Street to the west.

Given the large size of the lot, Franklin Elementary School has ample room for recreation and recess space. The external facilities at 125 Derby Street feature two playgrounds, a basketball court, and two baseball fields. The area in between the baseball fields also serves as a multi-sport field for soccer and other activities.



Franklin Elementary School External Facilities (Imagery from Google Maps)

Section 2. Project Details

I. Site Plan Approval Process

Prior to construction at any municipal building, Section 5-58 of the Newton City Ordinance requires reviews of associated plans by the following:

- The Director of Planning and Development for consistency and compatibility with the Newton Comprehensive Plan and other applicable planning and analytical studies;
- The Design Review Committee for layout, construction, and relationship to surroundings;
- The Public Facilities Committee to provide a forum for public comments and discussion about proposed buildings and their locations, followed by City Council action.

Once the site plans are formally approved by these bodies, they become part of the final set of project plans and construction drawings and cannot be substantially altered without being resubmitted to the Design Review Committee and to the City Council. After the requirements of §5-58(a)(1) through (a)(6) have been satisfied, the City Council can appropriate funds for preparation of detailed construction drawings.

II. Site Design and Building Design

The proposed new school building will consist of approximately 70,898 square feet with 47,265 square feet dedicated to classes and programming with the remainder of the area including the gymnasium, cafeteria, offices, and other accessory spaces. This will support an enrollment of up to 396 students and staffing of 57 full-time and 13 part-time employees, which is more than sufficient for the current enrollment of 349 students. The L shaped building will have two wings; one wing will be oriented on a north-south axis and include the administrative and shared spaces. The other wing will be oriented on an east-west axis and contain classrooms. There are 18 classrooms proposed which will support kindergarten through fifth grade, as well as a gymnasium, cafeteria, and kitchen with a platform to serve as an auditorium, a music room, library, art room, and program/administrative offices. There will be dedicated rooms for English language learning, special education, speech therapy, occupational/physical therapy, groupwork spaces, a nurse's room, and dedicated rooms for staff. One major improvement is that the proposed building will be accessible with an elevator and entrances at ground level.

The overall site will be reconfigured with the surface parking relocated to the western portion of the lot into a more clearly marked and designed lot with handicapped stalls and screening. There will also be a dedicated bus lane and walking paths from the pedestrian access to the lot, play areas, and pick-up/drop-off areas. The outdoor recreational area as proposed consists of one baseball field, a multi-use field, a basketball court, and one larger

playground.

Proposed Site Plan

The new school will feature a modern design incorporating the traditional elements of large windows and red brick facades. The overall building height increases to three stories and 43 feet at the east wing from the existing building due to the need for additional classroom, administrative, and programmatic space. The north-south oriented wing maintains a height of two stories and 30 feet. Although there is an increase in the overall height, the building will be adequately set back and screened from the residential properties to the rear/north and significantly set back on all other sides by the parking, recreational areas, and street in between the adjacent properties and the school building. Additional height is contemplated by both stair access and rooftop mechanicals and screening, however, the area is

limited and mitigated by its location in the center of the building and site.

Proposed Front/South Perspective Rendering

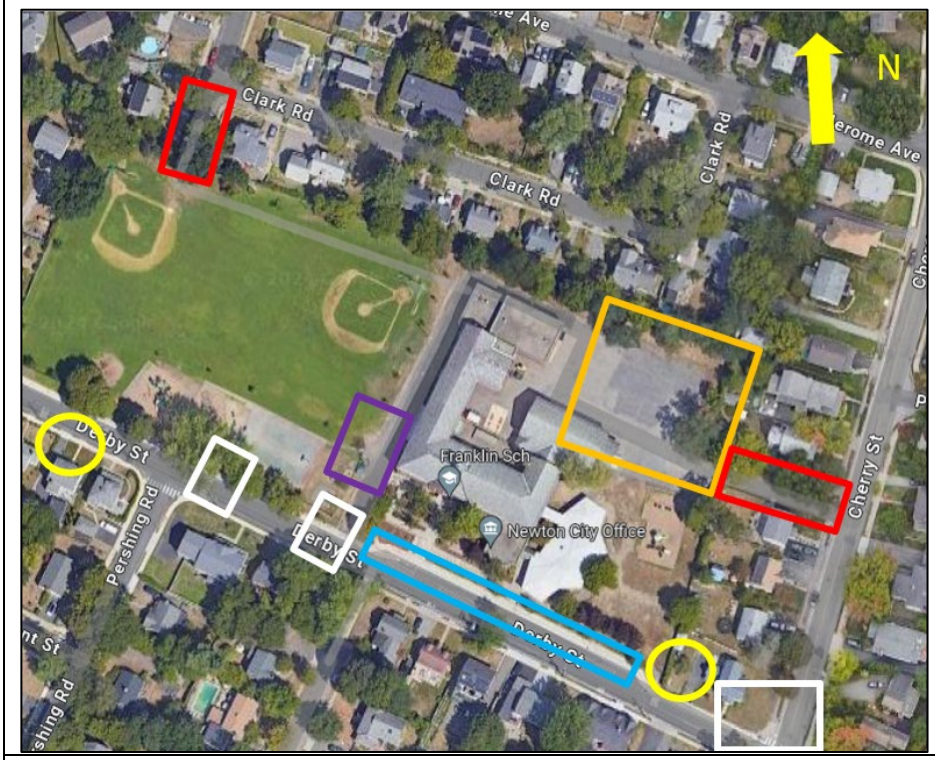
Proposed Right/East Perspective Rendering

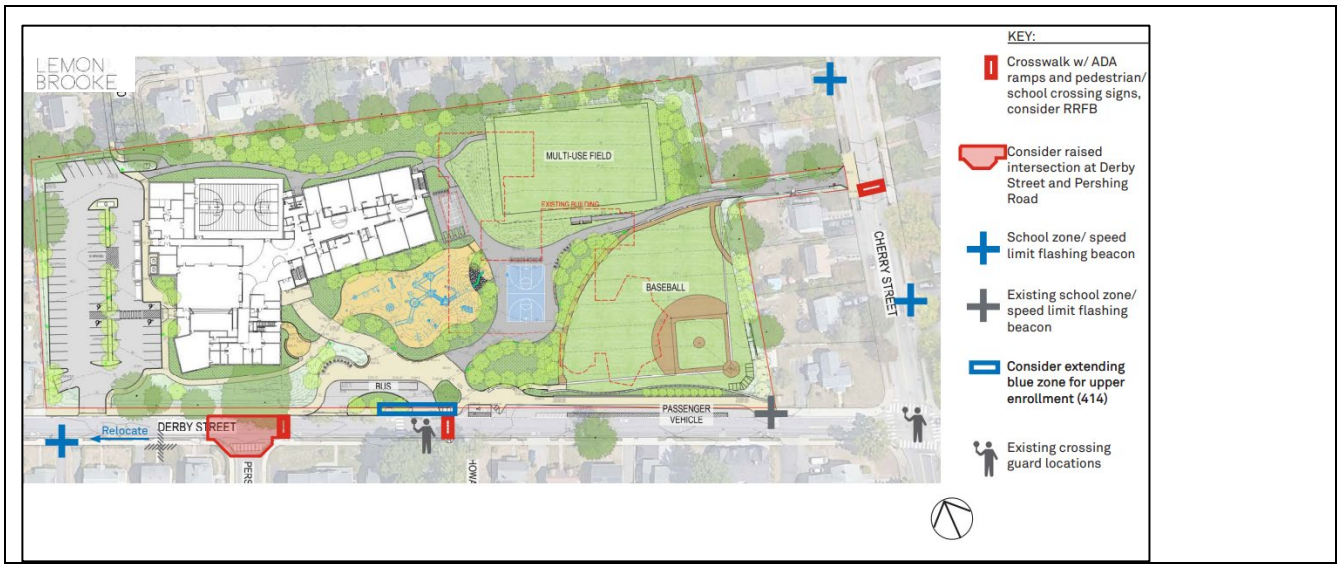
Proposed Rear/North Perspective Rendering

Proposed Left/West Perspective Rendering

Parking, Traffic, and Circulation

With the relocation of the school to the western portion of the lot, the parking, traffic, and circulation components of the site will change. Some elements of traffic design remain the same, such as the current protected "blue zone" for student pick-up/drop-off along Derby Street and pedestrian access along Derby Street, between 171 and 177 Cherry Street, and from the intersection of Russell Road and Clark Road. The plan adds a designated bus lane, removed from Derby Street and the pick-up/drop-off area. Additionally, the proposal recommends adding two flashing school zone beacons to Cherry Street, removing the existing beacon that is to the west of the Cherry Street and Derby Street intersection, and shifting the existing beacon near Pershing Road further to the west. The plan also proposes adding a crosswalk in between the proposed bus lane and pick-up/drop-off zone. With a staff of approximately 65 full-time and 25 part-time employees, there are only 16 marked parking stalls in the existing area with additional spots being unmarked. The proposal has 60 parking stalls, including two handicap-accessible stalls, ensuring better safety and convenience for staff and less need for staff to utilize street parking. Bike racks are currently available only in one location and will be available in three locations with the proposed plan. The proposed plans also state that they are considering raising the intersection at Derby Street and Pershing Road and extending the blue zone for pick-up/drop-off.

Existing Conditions	Existing Conditions Key
	Pedestrian Access: Parking: Pick-up/Drop-off Zone: School Zone Beacon: Cross-Walk: Bike Racks: *Imagery from Google Maps*
Proposed Conditions	



III. Technical Review of Site Plans Under Section 5-58

1. Location and Existing Site Conditions

The school is in the Public Use zone while the surrounding neighborhood is within the Single Residence 3 district and largely consists of single- and two-family dwellings. The school is located just over a half a mile to the north of the West Newton Village Center, but otherwise remains in a residential area.

The 237,611 square foot lot is largely level and has adequate area to accommodate full construction of the new school while the current school building is in use. The site is not located in any wetlands, floodplains, or other restricted that would inhibit development or the continued use of the lot.

2. Proposed Improvements

The proposed new school will increase the quality and total area of dedicated spaces for administrative offices and dedicated program space. Features such as groupwork space, English language learning and special education classrooms, and other programmatic space should help to ensure that all students have the resources that meet their particular needs. Additionally, the proposed bus loop, relocation of parking, and proposed traffic control improvements should serve for safer access to and from the school by all modes of transportation. The change of the school to full electric energy will improve indoor air quality, energy efficiency, and help reduce the City's climate impacts.

IV. Other Reviews

- **Newton Historical Commission.** On January 30, 2024, the Newton Historical Commission voted to find the Franklin Elementary School historically significant and imposed demolition delay until January 29, 2025. The report is available as Attachment A.
- **Associate City Engineer.** The Department of Public Works Engineering completed review of the Schematic Design prepared by Samiotes dated April 17, 2024. The review noted some items for consideration prior to the construction of the new school. Firstly, the proposed location of the transformer and generator should not be located over the existing City drain main as proposed. Next, a larger water main should be considered to accommodate for both fire suppression and water consumption. Lastly, prior to the completion of the project, an Operations and Maintenance plan and a Construction Management Plan

must be completed and the Final Plans must be stamped by a Professional Engineer.

- **City Transportation Engineer.** The City Transportation Engineer met with the design team during the Development Review Team meeting on March 20, 2024 and provided further analysis and input to the design team. The design team states that they plan to incorporate the City's and the Newton School Transportation Steering Group's feedback into the final plans.

- **Fire Department.** Newton Fire Prevention met with the design team on January 3, 2024 to review the plans. The plans will allow for emergency vehicles to access the south, east, and west sides of the building. The building will also be fully sprinklered.

V. Consistency with Newton Comprehensive Plan and Other Plans/Studies

While most of the Comprehensive Plan deals with non-public land and buildings, the Comprehensive Plan specifically addresses schools and municipal buildings in general with regards to environmental protection, energy conservation, and transportation. There are no significant concerns regarding environmental protection as the proposed school will remain on the same site and is currently fully improved. The site is not located in any protected areas such as wetlands, flood plains, or any other areas of environmental concern. Further, the proposed landscape plan has a greater number of trees, heavily features native species, and has a pollinator area. The school will be fully electric, which will improve indoor air quality and ensure energy conservation. The school will be LEED Gold certifiable, ensuring an improved level of energy conservation. Transportation, greater explained below, is improved per the proposal with additional traffic calming and pedestrian safety measures, a dedicated bus loop, and additional parking. These measures should improve safety and convenience for students, staff, guardians, and neighbors accessing the site by all means of transportation.

VI. Site Plan Review Criteria

In accordance with Section 5-58, the City has filed plans for Site Plan Approval. These are to be reviewed in accordance with the procedure outlined in Chapter 30: Article 6, Chapter 5, Section 5-58 of the Revised Ordinances. The following is a review of the submitted plans against the relevant criteria established in this section.

A. Convenience and safety of vehicular and pedestrian movement within the site and in relation to the adjacent streets, properties or improvements

The plan overall improves the convenience and safety of pedestrian and vehicular movement within and surrounding the site. The addition of a bus loop and more parking stalls should help to improve the convenience and safety of vehicular movement in and around the site by ensuring that buses and staff vehicles are not blocking the flow of traffic on Derby Street or Cherry Street. Pedestrian movement remains similar with access along Derby Street, Cherry Street, and Russell Road. Additional crosswalks, school zone beacons, and potential raised intersections will significantly improve the overall safety and convenience for pedestrians.

B. Adequacy of the methods for regulating surface water drainage

The proposal represents an improvement compared to the current very limited site stormwater drainage. However, the City Engineer memorandum, found in Attachment B, notes some areas for improvement to the site stormwater drainage prior to the completion of the project. The final plans should ensure that the proposed transformer and generator location is changed to avoid the transformer and generator. Additionally, a Construction Management Plan and Operations and Maintenance Plan should be provided to ensure proper site drainage during construction and during the long-term operation of the building.

C. Screening of parking areas and structures from adjoining premises. Location of parking between the street and existing or proposed structures shall be discouraged.

The proposed plan provides adequate screening of the parking area as a six-foot privacy fence screens the parking area to the west and north and the school screens the parking area to the east. To the south, where the entrance to the parking area from Derby Street is, there is some vegetation screening, but screening is appropriately limited to ensure adequate lines of sight from vehicles entering, exiting, and passing the parking area. The parking area is not located between the street and existing or proposed structures and is additionally appropriate as it is removed from the pedestrian paths and bus lane, minimizing the chance of students walking through the parking area.

D. Avoidance of topographic changes; tree and soil removal shall be minimized.

Given the site is relatively level, no major regrading will occur. Some soil and trees will be removed to accommodate the footprint of the new school building, utilities, and newly paved areas, however, these will be over the existing baseball fields which are level. The landscaping plan shows the removal of approximately 33 trees with 130 proposed to be planted. Caliper inches were not provided for the existing or proposed trees and because the land is owned by the City of Newton, the City Tree Ordinance is not applicable per Newton City Ordinance Chapter 21 Section 21-82.a.

E. Consideration of site design including relationship to nearby structures.

The proposed design proposes a similar size and scale to the existing school and while modern in appearance, much of the site design demonstrates thought to nearby structures. In keeping with the design of a neighborhood school, red brick is featured heavily in the design. There is significant screening and landscaping to ensure privacy for the abutting properties and for the school. Additionally, the site design improves traffic flow for the neighborhood by adding a dedicated bus pick-up/drop-off area that will improve student safety and improve area traffic flow.

VII. Construction Management

The project team anticipates site clearing and construction to last 20-22 months. Following demolition delay, which expires on January 29, 2025, and the bidding process, the construction will occur in two phases. The first phase will include the construction of the new school, parking lot, and other site improvements while the old school remains in use. The second phase will begin once the new school is constructed and will consist of the demolition of the old school and external work on the recreational and play areas.

Given the three-month bid contract has yet to occur, there is not yet sufficient information on construction management for this project. The contractor for the winning bid should submit a Construction Management Plan ("CMP") to the Director of Planning and Development, the City Engineer, the City Traffic Engineer, and the Commissioner of Inspectional Services for review and approval before any construction activities related to this project are commenced on the site.

This plan should identify hours of construction, further details on the expected phasing and length of construction, location of proposed on-site contractor parking, and material storage and staging areas. This plan should also incorporate preferences and input from neighbors, and the telephone number for the contractor's primary contact person. Copies of the final approved CMP should be submitted to the Executive Office and each of the Ward Councilors who represent the areas the school serves. Ultimately, the CMP should serve to demonstrate the project's plans to minimize any potential disruption to education.

VIII. Conclusion and Recommendations

The Director of Planning and Development has determined that the preliminary site and architectural plans for the proposed Franklin Elementary School are consistent with the *Newton Comprehensive Plan* and any other relevant plans and studies, including the site plan review criteria listed in Section 30-23. The proposed additions offer remedies or improvements to the issues with the current building that could not otherwise be offered through renovation. The new school should greatly benefit the surrounding neighborhood far beyond the impact of construction or any other potential inconveniences of the new building.

With that in mind, the Planning Department suggests the following items for consideration:

- Where raised intersections were proposed on Derby and Cherry Streets, consider speed bumps or other traffic calming measures if raised intersections are not feasible because of the cost or inhibition of emergency vehicles.
- Consider the installation of solar panels where feasible at construction to obtain a return on investment for fully electric utilities sooner. While this will increase the initial capital expense, it will pay off in a number of years and may cause disruptions to learning to add the panels later during the school year.
- Consider widening the path and changing landscaping to the north of the building to ensure emergency access.
- The baseball field appears to have dugouts on the same side. If the field is slightly shortened or rotated slightly clockwise and moved slightly northward, this may not be necessary.
- Construction management should strongly consider any impacts to learning and recreation as preparation of the site may be noisy and otherwise disruptive if conducted during the school year, especially during phase 1 of construction.

If the Council, Executive Office and School Committee choose to approve these plans, prior to applying for Building Permits the Public Buildings Department should submit:

- Attachment A: NHC Letter, January 30, 2024
- Attachment B: Engineering Review Memorandum, May 15, 2024

CITY OF NEWTON
Department of Public Works
ENGINEERING DIVISION

MEMORANDUM

To: Barney Heath, Director of Planning

From: John Daghlian, Associate City Engineer

Re: Administrative Site Plan Review – Franklin Elementary School

Date: May 15, 2024

CC: Lou Taverna, P.E., City Engineer
Carol Moore, City Clerk
Jennifer Ciara, Deputy Director of Planner
Katie Whewell, Chief Planner
Alyssa Sandoval, Deputy Chief Planner
Cat Kemmett, Planning Associate

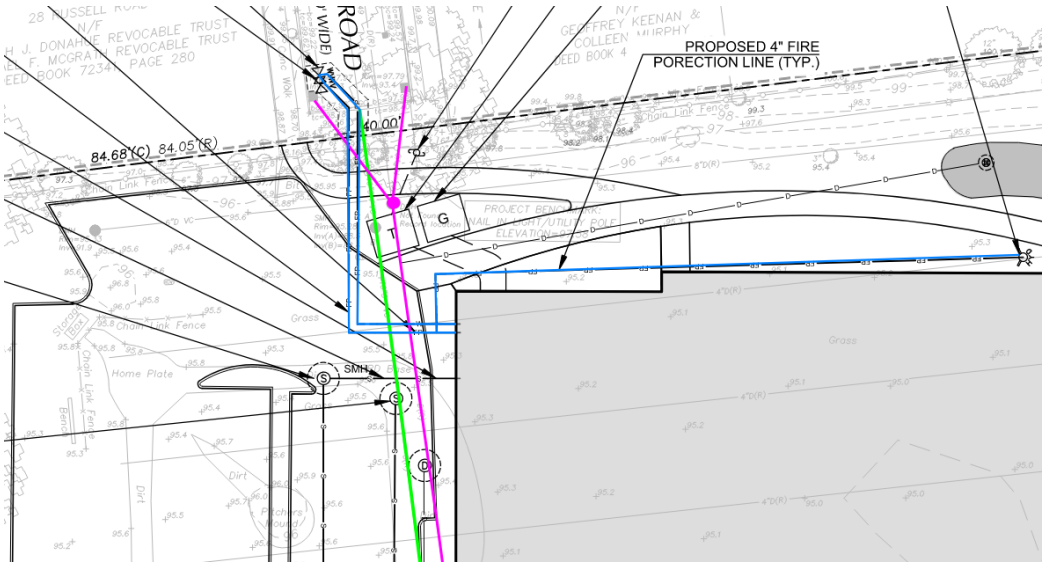
In reference to the above site, I have the following comments for a plan entitled:

Franklin Elementary School
90% Schematic Design
Prepared by: Samiotes
Dated: 4/17/2024

Executive Summary:

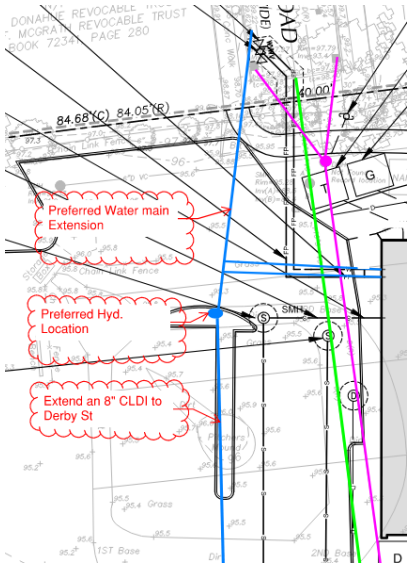
This application entails the construction of a new elementary school to the west of the existing school's footprint and new athletic fields in the location of the old school's footprint. The site currently has limited stormwater collection and little to no stormwater treatment. The engineer of record has designed a collection system to receive runoff from the school rood, athletic fields and the bus drop off driveway that will vastly improve stormwater quality and decease runoff from the site. The system will infiltrate and treat the collected water on site as required by the DEP and City Ordinances. As a housekeeping item the water quality volume for the City is based on 2-inches of rain not 1-inch as calculated.

The proposed location of the transformer & generator is directly over the existing City drain main, either the main should be relocated or the proposed transformer & generator.



Proposed Utility Layout

The existing 6-inch water main may not be sufficient for both fire suppression and domestic use, an 8-inch CLDI should be extended from Russell Road to Derby Street to provide a looped system. The fire & domestic service should be tapped off the newly extended 8" main rather than how it is configured on sheet C-5.0 see preferred water main extension and fire/domestic service layout. The engineer of record should submit these plans to the Utilities Division for review and comment.



Prefered Water main extension & layout

An Operation and Maintenace (O&M) plan will be needed to ensure that the long-term performance of the drainage system meets the City's MS4 permit and the design intent.

A construction management plan is needed for this project. At a minimum, it must address the following: staging site for construction materials and equipment, parking for construction workers vehicles, phasing of the project with anticipated completion dates and milestones, safety precautions, emergency contact personnel of the general contractor. It shall also address anticipated dewatering during construction, site safety & stability, siltation & dust control, and noise impact to abutters. The CMP must also address surface runoff during construction so that it does not impact abutters nor City streets & the stormwater system. Temporary detention basins, check dams or diversion swales should be considered.

Final Plans shall be stamped by a Professional Engineer.

If you have any questions or concerns, please feel free to contact me @ 617-796-1023

269-24

City of Newton, Massachusetts

Department of Planning and Development
1000 Commonwealth Avenue Newton, MA 02459

Telephone
(617) 796-1120
Telefax
(617) 796-1142
TDD/TTY
(617) 796-1089
www.newtonma.gov

Ruthanne Fuller
Mayor

Barney S. Heath
Director

Newton Historical Commission Demolition Review Decision

Date: January 30, 2024 **Application #** HRA-24-5

Address of structure: 125 DERBY ST

Type of building: Non-residential building
If partial demolition, feature to be demolished is

The building or structure is:

_____	in a National Register historic district or in a historic district eligible for listing
_____	individually listed on the National Register or individually eligible for listing.
X	importantly associated with historic person(s), events, or architectural or social history
X	historically or architecturally important for period, style, architect, builder, or context.
_____	in a local historic district not visible from a public way

is _____ **NOT HISTORICALLY SIGNIFICANT** as defined by the Newton Demolition Delay Ordinance.
Demolition is not delayed and no further review is required.
is X **HISTORICALLY SIGNIFICANT** as defined by the Newton Demolition Delay Ordinance (See below).

The Newton Historical Commission staff:

_____ **APPROVES** the proposed project based upon materials submitted see below for conditions (if any).
Demolition is not delayed, further staff review may be required.

X **DOES NOT APPROVE** and the project requires Newton Historical Commission review on this date January 29, 2024 (See below).

Conditions:

The Newton Historical Commission finds the building or structure:

~~269-24~~

is _____**NOT PREFERABLY PRESERVED**
Demolition is not delayed and no further review is required.

is __X__**PREFERABLY PRESERVED – (SEE BELOW).**

Owner of Record:
City of Newton

Delay of Demolition:
__X__**is in effect until** January 29, 2025

_____**has been waived - see conditions**

Please Note: if demolition does not occur within two years of the date of expiration of the demolition delay, the demolition will require a resubmittal to the Historical Commission for review and may result in another demolition delay.

Determination made by:

David Lewis, Chief Preservation Planner

Ruthanne Fuller
Mayor

City of Newton, Massachusetts

Department of Planning and Development
1000 Commonwealth Avenue Newton, MA 02459

Telephone
(617) 796-1120
Telefax
(617) 796-1142
TDD/TTY
(617) 796-1089
www.newtonma.gov

Barney S. Heath
Director

RECORD OF ACTION

DATE: January 30, 2024

SUBJECT: 125 DERBY ST

At a scheduled meeting and public hearing on January 29, 2024, the Newton Historical Commission, by vote of 5-0:

RESOLVED to: Find the property preferably preserved.

Voting in the Affirmative:	Voting in the Negative:	Abstained:	Recused:
Doug Cornelius, Chair John Rice Harvey Schorr Anne Marie Stein Scott Friedman, Alternate			

Title Reference:

Owner of Property: City of Newton
Deed recorded at: Middlesex County Registry of Deeds
Book/Page
Date

David Lewis, Chief Preservation Planner

Newton Historical Commission
1000 Commonwealth Avenue, Newton, Massachusetts 02459
Email: dlewis@newtonma.gov
www.newtonma.gov

CHHABRA RAHUL & YULIA
83 PLEASANT ST WST
WEST NEWTON, MA 02465

GOBLER KAREN L
154 CHERRY ST
NEWTON, MA 02465

GOBLER KAREN L
154 CHERRY ST
NEWTON, MA 02465

DEVOS EDWARD
SCHECHTMAN JUDITH L
150 CHERRY ST
WEST NEWTON, MA 02465

DESAI ASHWIN
SURI SONIA
115 FORDHAM RD
NEWTON, MA 02465

FOCHIOS STEPHEN D
WILSON NICHOLE M
123 FORDHAM RD
NEWTON, MA 02465

WOLFE JULIA
MOORE ERIC R
170 CHERRY ST
NEWTON, MA 02465

GAUTREAU RONALD J JR
74 PLEASANT ST WST
NEWTON, MA 02465

KRAJEWSKI MARK T
68 PLEASANT ST
NEWTON, MA 02465

WANG BING HUANG
KE XIAOLING
22 CAPPY CIR
WEST NEWTON, MA 02465

MOORES ANNA L
DAMORE BRUNO A
18 CAPPY CIR
WEST NEWTON, MA 02465

MUTTER WALTER P
KORZELIUS CYNTHIA A
73 DERBY ST UN 1
NEWTON, MA 02465

LJUNGBERG DAVID
HELLINGER AMY
73 DERBY ST 2
WEST NEWTON, MA 02465

RUDEK SUSAN J TR
SBARDELLI TRUST
79 DERBY ST
NEWTON, MA 02465

HALVORSEN AARON &
87 DERBY ST
WEST NEWTON, MA 02465

JIN CAINING
LIU FUSHANG
186 CHERRY ST
NEWTON, MA 02465

XU XIAOYING
180 CHERRY ST 182
NEWTON, MA 02465

CANT JAMES
SNIDMAN NANCY C
176 CHERRY ST
WEST NEWTON, MA 02465

PELLEGRINE RUSSELL N &
212 CHERRY ST
WEST NEWTON, MA 02465

XIONG KAN
HAN XIAOMENG
208 CHERRY ST
WEST NEWTON, MA 02465

LOW STEPHEN & JIE
84 DERBY ST
NEWTON, MA 02465

DAIGNEAULT PATRICK
TAHSILI SHIRIN TRS
28 GRANT ST
WEST NEWTON, MA 02465

MARCHAND CYNTHIA M TR
SEA CAM LIVING TRUST
24 GRANT ST
NEWTON, MA 02465

KIELTY ROBERT W &
20 GRANT ST
WEST NEWTON, MA 02465

LEE KEVIN W
10 GRANT ST
NEWTON, MA 02465

SCENNA DANIEL N
23 PERSHING RD
NEWTON, MA 02465

MCMILLAN LESLIE E TR
188 DERBY ST RLTY TRUST
1267 GATE POST LA
POWDER SPRINGS, GA 30127

BAACK ROSEANNA & JOHN P
184 DERBY ST
NEWTON, MA 02465

MONTILLO MARIANGELA
180 DERBY ST
WEST NEWTON, MA 02465

DUONG MIKE THOAI VINH
DUONG FONG-YEN LAM
176 DERBY ST
WEST NEWTON, MA 02465

ANNAS PAMELA J
172 DERBY ST
NEWTON, MA 02465

FURSTENBERG BARBARA S
174 DERBY ST
NEWTON, MA 02465

SANTARLASCI ROBIN Z &
168 DERBY ST
NEWTON, MA 02465

LEE PUI HO CONSTANCE
164 DERBY ST
NEWTON, MA 02465

SJOBERG MICHAEL C &
158 DERBY ST
WEST NEWTON, MA 02465

SEVIGNY STEPHEN P
SEVIGNY MARIA D
154 DERBY ST
NEWTON, MA 02465

GIROUARD CLAUDE J &
11 PERSHING RD
NEWTON, MA 02465

LUBARS STEVEN L
LUBARS IWEN HSU
105 FAIRWAY DR
NEWTON, MA 02465

SHRIVER JUSTIN
YOUDIVIN JULIE
15 GRANT ST
NEWTON, MA 02465

SIRUTIS DONNA M
19 GRANT ST
NEWTON, MA 02465

MCLEAN KATHLEEN M & JOHN
25 GRANT ST
NEWTON, MA 02465

DONOVAN JOHN B
31 GRANT ST
WEST NEWTON, MA 02465

DONOVAN JOHN B
31 GRANT STREET
WEST NEWTON, MA 02465

PARK SAEIM
LEE SANGWAN
37 GRANT ST
NEWTON, MA 02465

HOROVITZ ESHAI
REIMHERR ELIZABETH
148 DERBY ST
NEWTON, MA 02465

DERBY HOLDINGS LLC
141 MOFFAT RD
WABAN, MA 02468

FIORENTINO-HARDY MATTHEW
MEROLLA CARMELA
11 HOWARD ST
WEST NEWTON, MA 02465

FIORENTINO-HARDY MATTHEW
MEROLLA CARMELA
11 HOWARD ST
WEST NEWTON, MA 02465

GORDON MELINDA S
17 HOWARD ST WST
NEWTON, MA 02465

WONG WILSON & JEAN Y
224 ADAMS AVE
NEWTON, MA 02465

SOOHO ALAN TR
ALAN SOOHO TRUST
220 ADAMS AVE
WEST NEWTON, MA 02465

GENTILE LEONARD J &
99 ASPEN AVE
AUBURNDALE, MA 02466

BARNEY ROSS
ATWOOD ANN
18 PERSHING RD
WEST NEWTON, MA 02465

DCR REALTY LLC
54 FULLER TER
NEWTON, MA 02465

JIN YAN
CAI LILI
73 LAKEVIEW AVE
NEWTON, MA 02460

GENTILE GREGORY J TR
GENTILE FAMILY TRUST
124 DERBY ST
WEST NEWTON, MA 02465

GUNDILOVICH KONSTANTIN
GUNDILOVICH MARYNA
120 DERBY ST
NEWTON, MA 02465

LIPETSKER ALLA & IRENE F
114 DERBY ST
WEST NEWTON, MA 02465

KURKOSKI EILEEN TR
KEF LIVING TRUST
108 110 DERBY ST U 108
WEST NEWTON, MA 02465

PRESTI FRANCES A
110 DERBY ST
WEST NEWTON, MA 02465

SU YAW LANNG
KAO JENNIE SUCHEN
108 DERBY ST 108A
NEWTON, MA 02465

KRAJANGSART SITTIHEP
KRAJANGSART PORNMANEE
110 DERBY ST 110A
NEWTON, MA 02465

MINEO INNOCENZA
29 CHERRY ST
WEST NEWTON, MA 02465

FAN WENXING
207 CHERRY ST
NEWTON, MA 02465

PELLEGRINE RUSSELL &
212 CHERRY ST
NEWTON, MA 02465

DYETT JASON
CANEDO JOANA
260 ADAMS AVE
NEWTON, MA 02465

REED JOHN E & LINDA C R
254 ADAMS AVE
NEWTON, MA 02465

GENTILE GREGORY & ALISSA
248 ADAMS AVE
NEWTON, MA 02465

HUSTON CLINT W & ANYA B
242 ADAMS AVE
NEWTON, MA 02465

SIMONELLI RICHARD A
236 ADAMS AVE
NEWTON, MA 02465

SILVERMAN KAREN D &
10 HOWARD ST
NEWTON, MA 02465

SILVERMAN KAREN D &
10 HOWARD ST
NEWTON, MA 02465

KEENAN GEOFFREY
MURPHY COLLEEN
54 CLARK RD
NEWTON, MA 02465

SHEIBER AMY GROSYK
SHEIBER RICK LESLIE
48 CLARK RD
NEWTON, MA 02465

KOHSE GORDON E
DUNPHY JANE M TRS
38 CLARK RD
NEWTON, MA 02465

HARATSIS ADELE
POIRIER ROBERT S JR T/C
32 CLARK RD
NEWTON, MA 02465

FAWSON RAYMOND B JR TR
RAYMOND B FAWSON JR
28 CLARK RD
WEST NEWTON, MA 02465

BACCARI CLAUDIO & JESSICA
20 CLARK RD
WEST NEWTON, MA 02465

CIVETTI JAY P &
14 CLARK RD
NEWTON, MA 02465

GIANSANTE CURTIS
8 CLARK RD
NEWTON, MA 02465

LOOKNER SAUL P &
LOOKNER RLTY TRUST
14 JEROME AVE
NEWTON, MA 02465

SHAUGHNESSY KATE
GREENFIELD ROBERT
147 CHERRY ST
NEWTON, MA 02465

WESTSTRATE PATRICE A &
153-155 CHERRY ST #153
NEWTON, MA 02465

BRESLER KENNETH
153-155 CHERRY ST UN 155
NEWTON, MA 02465

KARP JUDITH
LOHR HARRY O JR
157 CHERRY ST
NEWTON, MA 02465

KELLY NANCY J
163 CHERRY ST
WEST NEWTON, MA 02465

BORNE BENJAMIN M
BORNE JACQUELINE I SAVAGE
167 CHERRY ST
NEWTON, MA 02465

ROONEY WILLIAM V & DALE M
171 CHERRY ST
NEWTON, MA 02465

SAMPSON ROBERT F &
177 CHERRY ST
NEWTON, MA 02465

FORSTER THOMAS C
183 CHERRY ST
WEST NEWTON, MA 02465

CARDUCCI DANIEL S &
CARDUCCI TRUST
99 DERBY ST
NEWTON, MA 02465

MOEHL JAN D & KATHLEEN W
MOEHL DANIEL P & MICHELLE
187 CHERRY ST
NEWTON, MA 02465

CITY OF NEWTON
SCHOOL DEPT-FRANKLIN
1000 COMM AVE
NEWTON, MA 02459

LEBLOND JANET A
FITZPATRICK DANIEL R
167 DERBY ST
WEST NEWTON, MA 02465

HE YANG
ZOU RUI
171 DERBY ST UN 3
WEST NEWTON, MA 02465

KIM CLIFFORD B
LEE KYUWON
173 DERBY ST 2
NEWTON, MA 02465

VELICKOVIC ALEKSANDER
VELICKOVIC MUNAVVAR
175 DERBY ST 1
NEWTON, MA 02465

ELLIOTT DEBORAH A
CADGE GWENDOLYN A TRS
177 DERBY ST
NEWTON, MA 02465

CHANG LEWIS C & EMILIE Y
9 EDWARD RD
NEWTON, MA 02465

BINNALL THOMAS
15 EDWARD RD
NEWTON, MA 02465

ROONEY ROBERT J JR &
21 EDWARD RD
WEST NEWTON, MA 02465

KHOSHATEFEH ASHKAN
43409 MONTE ST
TEMECULA, CA 92592

CHEN JOHN
LEE ALLISON A
49 EDWARD RD
NEWTON, MA 02465

MEAD GEORGE EDWARD &
53 EDWARD RD
WEST NEWTON, MA 02465

CHEN HUDONG & PAN LUYING
52 EDWARD RD
NEWTON, MA 02465

CAMPBELL DAVID B & TARA A
48 EDWARD RD
NEWTON, MA 02465

ALTMAN VALERY & ALINA
42 EDWARD RD
NEWTON, MA 02465

EAST MARK & LILLY
38 EDWARD RD
WEST NEWTON, MA 02465

BRODKIN HEATHER R
28 EDWARD RD
NEWTON, MA 02465

BAILEY VICTORIA
22 EDWARD RD
NEWTON, MA 02465

NG ERICA HONG & MATTHEW Y
16 EDWARD RD
NEWTON, MA 02465

SCHERTZER STEVEN M &
191 DERBY ST
WEST NEWTON, MA 02465

LEE TOMMY
10 EDWARD RD
WEST NEWTON, MA 02465

RIAK ERIC S & LINDA K
44 RUSSELL RD
NEWTON, MA 02465

RIAK ERIC S & LINDA K
44 RUSSELL RD
NEWTON, MA 02465

DONAHUE DAVID M & GLORIA
40 RUSSELL RD WST
NEWTON, MA 02465

DONAHUE D J & MCGRATH M
DEBORAH J DONAHUE TRUST
16 KENYON ST
NEWTON, MA 02465

HABART ELLEN
54 JEROME AVE
NEWTON, MA 02465

KOTZ KENNETH T & JOANNE D
46 JEROME AVE
NEWTON, MA 02465

LEVI RETSEF
NIDAR-LEVI ANAT
42 JEROME AVE
NEWTON, MA 02465

LEWIS ALLAN CLARK
WEINER SUSAN BETH
30 JEROME AVE
WEST NEWTON, MA 02465

LEWIS ALLAN CLARK
WEINER SUSAN BETH
30 JEROME AVE
WEST NEWTON, MA 02465

LI KUNHUA
LIU JINGWEN
51 CLARK RD
WEST NEWTON, MA 02465

HOSFORD SEAN
HEALY HELEN
15 JEROME AVE
NEWTON, MA 02465

MAWN SARA ELIZABETH
27 JEROME AVE
NEWTON, MA 02465

BSF CO INC
1714 BEACON ST
BROOKLINE, MA 02445

GRUSBY SCOTT
VIA ALLY
26 JEROME AVE
NEWTON, MA 02465

HORWITZ JOSH & EMILY
37 CLARK RD
NEWTON, MA 02465

GOLDMAN AARON M
LEVINE-GOLDMAN CHAVAH
11 JEROME AVE
NEWTON, MA 02465

MYUNG DANIEL H & JULES K
17 JEROME AVE
NEWTON, MA 02465

PAIMAN SHERITA EDITH
VAN KUIJCK MARCUS
35 JEROME AVE
NEWTON, MA 02465

SCULLY WILLIAM C &
53 JEROME AVE
WEST NEWTON, MA 02465

GOLDMAN MICHAEL & KAREN
22 JEROME AVE
NEWTON, MA 02465

ROBINSON DONALD L
ALDEN STACEY E
45 CLARK RD
NEWTON, MA 02465

GOLDMAN AARON M
LEVINE-GOLDMAN CHAVAH
11 JEROME AVE
NEWTON, MA 02465

DILIBERTO ADAM F
STONE KRISTI R
21 JEROME AVE
NEWTON, MA 02465

LANE JOHN V & PATRICIA M
JVPM REALTY TRUST
1372 BRUSH HILL RD D306
MILTON, MA 02186

Ruthanne Fuller
Mayor

City of Newton, Massachusetts
Office of the Mayor

241-24

Telephone
(617) 796-1100
Fax
(617) 796-1113
TDD/TTY
(617) 796-1089
Email
rfuller@newtonma.gov

May 28, 2024

Honorable City Council
Newton City Hall
1000 Commonwealth Avenue
Newton Centre, MA 02459

Councilors:

I respectfully submit a docket item to your Honorable Council requesting authorization to appropriate and expend the sum of seventy-two million six-hundred-eight thousand five-hundred-six dollars ($72,608,506) and authorize a general obligation borrowing of an equal amount for the construction of the Franklin School project.

Further, I request that your Honorable Council authorize any premium received upon the sale of the bonds or notes, less the cost of preparing, issuing and marketing them, and any accrued interest received upon the delivery of the bonds or notes be applied to the costs of the project being financed by the bonds or notes and to reduce the amount authorized to be borrowed for the project by a like amount.

The project design includes a geothermal heating and cooling system, for which we expect to receive federal tax incentive rebates totaling roughly $5,600,000. Should the City receive these anticipated tax rebates, we will ask your Honorable Council to reduce the authorized borrowing.

More information can be found on the project website, at https://www.newtonma.gov/government/public-buildings/capital-projects-investing-now-for-newton-s-future/school-projects/franklin

We look forward to discussing this very important project with members of the Council. Thank you for your consideration of this matter.

Sincerely,

Ruthanne Fuller

Ruthanne Fuller
Mayor

CITY OF NEWTON, MASSACHUSETTS
PUBLIC BUILDINGS DEPARTMENT
52 ELLIOT STREET, NEWTON HIGHLANDS, MA 02461

Ruthanne Fuller, Mayor
Josh Morse, Building Commissioner

Telephone (617) 796-1600
Facsimile (617) 796-1601
TDD/tty # (617) 796-1608

May 20, 2024

Ruthanne Fuller, Mayor
Newton City Hall
1000 Commonwealth Avenue
Newton Centre, MA 02459

Re: Franklin School Project

Dear Mayor Fuller:

The Public Buildings Department requests $71,458,506.00 to fund the Franklin Elementary School project through completion. These funds will complement the previously authorized $100,000 of ARPA funding, and $1,150,000 of funds from docket item #126-23 which funded the feasibility phase of design, to yield a total project budget of $72,608,506 as shown in the attached backup.

The project design includes a geothermal heating and cooling system, and we are slated to receive federal tax incentive rebates totaling roughly $5,600,000.

For additional information please see the project page at:
https://www.newtonma.gov/government/public-buildings/capital-projects-investing-now-for-newton-s-future/school-projects/franklin

Sincerely,

Josh Morse
Public Buildings Commissioner

cc: Maureen Lemieux, Chief Financial Officer
Jonathan Yeo, Chief Operating Officer
Alex Valcarce, Deputy Buildings Commissioner

CATEGORIES OF THE BUDGET	APRA Funding	#126-23	Requested	Total Project Budget
ARCHITECTURAL SERVICES	$ 100,000.00	$ 765,750.00	$ 5,296,580.00	$ 6,062,330.00
OWNER'S PROJECT MANAGER		$ 300,000.00	2,330,776.00	$ 2,630,776.00
SITE/ENVIRONMENTAL		$ 64,250.00	$ 390,750.00	$ 455,000.00
OTHER		$ 20,000.00	$ 665,000.00	$ 685,000.00
PROJECT CONTINGENCY			$ 350,000.00	$ 350,000.00
CONSTRUCTION			$ 58,000,000.00	$ 58,000,000.00
CONSTRUCTION CONTINGENCY			$ 2,900,000.00	$ 2,900,000.00
TECHNOLOGY			$ 575,000.00	$ 575,000.00
FF&E			$ 950,400.00	$ 950,400.00
TOTAL PROJECT EXPENDITURE BUDGET	$ 100,000.00	$ 1,150,000.00	$ 71,458,506.00	$ 72,608,506.00

Questions regarding the Center St Bridge Pipe replacement request:

- This new GOL and overall scope has not apparently been in NG's GSEP plans. Why is this work being proposed? If it is not an emergency situation why has it not appeared in a plan submitted to the DPU?

- Why abandon the 1964, 12", 22 PSI, bare steel main on the one side of the bridge, to construct a new main on the other side? Why not line it, since they've already done this in the circle of death on a 12" bare steel main (successfully, presumably), as we found out in an open records request, from 2021 or 2022?

- Lining might result in similar GSEP cost reimbursement as a new pipe, but would be less disruptive to traffic and pavement on both sides of the bridge.

We can't find the answers to these questions in the application – Can you answer them regarding the Center St. Bridge: 1. proposed time frame for completion, 2.type of materials to be used, 3. benefit provided to the City, 4.project mitigation plan as applicable, 5.street reconstruction plan including timetable for completion."

Mario Carbone, COO of Progressive Pipeline Inc., states that minor mitred bends are no problem for lining; it's only 90 degree corners that are problematic for lining. Can you describe the number of and angles of pipe bends in the project?

A 2021 or 2022 lining appears to have been performed on this same bridge. Was it on the same or a different pipe from the one that is proposed to be abandoned? And why was it acceptable for that project but not this?

Regarding Gas Leaks in Newton

1.Under what circumstances do you reline or repair pipes and under what circumstances is not possible? Is it less expensive, the same or costlier to reline then replace?

2. In the first quarter of 2023 NG was unusually effective in reducing leak extent in Newton. What prevents NG from repeating such success in each quarter?

We in Newton are very concerned about gas leaks with their risks to health and safety, and their contribution to greenhouse gas emissions. Newton appears to have a higher density of leaks (measured by leak extent per square mile) than any other municipality in Massachusetts. (See attached)

3. National Grid has been prioritizing expensive replacement of leak-prone pipe over inexpensive timely repair of significant leaks. Do you agree with this assessment? An investigation by Newton residents found that in 2022 the $125,000 spent on

repairing G3SEI leaks was more effective in eliminating leak extent than the $23,000,000 spent on replacing leak prone pipe. Their initial review of the May 1, 2024 GREC report indicates a similar experience in 2023. (In 2023 $17,000,000 spent on pipe replacement was less effective in reducing leak extent than $200,000 spent on leak repair). Can we move the method of eliminating links to repair instead of replacement? If not, why not?

4. Why is NG taking longer to repair SEI (Significant Environmental Impact) leaks than regulations require? For example, leak #7356438, at 741 Saw Mill Brook Parkway, was first measured on October 3, 2019 with a leak extent of 2,700 sf. Regulations required this leak to be repaired by October 2022. It is still leaking as of March 31, 2024. (See attached list of 34 such apparent Newton violations of SEI leak elimination regulations that are still listed as leaking.)

5. Many of the large leaks in Newton are not large enough to qualify as G3SEI. Is there anything preventing NG from repairing those leaks? (See attached data to support this question)

Newton				
National Grid Report Date	Number of Unrepaired Leaks	Total of Leak Extent, sf	Leak extent reduction in quarter	Reduction in number of leaks 2000+
03/31/2020	860	801,000		
06/30/2020	769	653,000	18%	-91
09/30/2020	737	557,000	15%	150
12/31/2020	718	524,000	6%	0
03/31/2021	695	572,000	-9%	-84
06/30/2021	682	569,000	1%	5
09/30/2021	677	567,000	0%	9
12/31/2021	644	607,000	-7%	35
03/31/2022	627	554,000	9%	16
06/30/2022	645	587,000	-6%	-9
09/30/2022	625	535,000	9%	9
12/31/2022	595	487,000	9%	-3
03/31/2023	580	377,000	23%	27
06/30/2023	573	342,000	9%	2
09/30/2023	552	336,000	2%	6
12/31/2023	515	306,000	9%	11
3/31/2024	502	298,000	3%	6

Newton Leaks that violated regulations and are still leaking

Total 34 | As of March 31, 2024

NG Leak ID Number	Measurement Date and Leak Extent Measurement	Date of SQ Report Following Measurement Date and NG's Asserted Designation	GSEP Facility according to SQ	NG Forecast Elimination Date	Elimination Date Required by Regulations	Current Status	Address
42479	5/30/2019 2,244 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	05/30/2022	Still leaking as of 3/31/2024	52 SEWALL ST
121969	4/17/2020 2,736 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	Non-GSEP	None	04/17/2022	Still leaking as of 3/31/2024	CRAFTS ST & FESSENDEN RD
155801	5/24/2019 2,800 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	Non-GSEP	None	05/24/2021	Still leaking as of 3/31/2024	KENDALL RD & WALNUT HILL RD
230386	4/8/2020 2,470 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	4/8/2023	04/08/2023	Still leaking as of 3/31/2024	LANGDON ST & BELLEVUE ST
270388	3/24/2021 3,080 sqft	SQ for 2021 filed on 3/1/2022 G3SEI	GSEP	3/24/2024	03/24/2024	Still leaking as of 3/31/2024	50 DORSET RD
270681	4/22/2020 2,808 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	4/22/2023	04/22/2023	Still leaking as of 3/31/2024	131 COUNTRY CLUB RD
270745	4/28/2020 2,660 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	4/28/2023	04/28/2023	Still leaking as of 3/31/2024	WALNUT ST & BACON RD
271180	5/9/2019 2,000 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	05/09/2022	Still leaking as of 3/31/2024	63 AVONDALE RD
343469	3/30/2021 2,400 sqft	SQ for 2021 filed on 3/1/2022 G3SEI	GSEP	3/30/2024	03/30/2024	Still leaking as of 3/31/2024	PARKER ST & BOYLSTON ST
347021	9/13/2019 2,520 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	09/13/2022	Still leaking as of 3/31/2024	160 COMMONWEALTH AVE
693516	5/17/2019 2,520 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	05/17/2022	Still leaking as of 3/31/2024	1 QUINOBEQUIN RD
854114	3/19/2021 6,241 sqft	SQ for 2021 filed on 3/1/2022 G3SEI	GSEP	3/19/2024	03/19/2024	Still leaking as of 3/31/2024	712 SAWMILL BROOK PKY
1215753	5/24/2019 2,450 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	05/24/2022	Still leaking as of 3/31/2024	52 ELLIOT ST
1230002	8/13/2020 3,420 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	Non-GSEP	None	08/13/2022	Still leaking as of 3/31/2024	WALNUT ST & LAKEWOOD RD
1337093	8/7/2021 18,750 sqft	SQ for 2021 filed on 3/1/2022 G3SEI	GSEP	8/7/2023	08/07/2023	Still leaking as of 3/31/2024	40 WINDSOR RD
1337305	8/13/2020 2,788 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	12/10/2023	08/13/2023	Still leaking as of 3/31/2024	108 WINDSOR RD
1593092	9/13/2019 3,192 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	09/13/2022	Still leaking as of 3/31/2024	1629 BEACON ST
4788513	4/9/2019 2,214 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	04/09/2022	Still leaking as of 3/31/2024	22 AUBURN ST
5866391	4/28/2020 5,280 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	4/28/2023	04/28/2023	Still leaking as of 3/31/2024	HAMMOND ST & COLLEGE RD
7324254	5/12/2020 2,400 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	5/12/2023	05/12/2023	Still leaking as of 3/31/2024	70 OAKDALE RD
7330111	8/5/2019 2,800 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/05/2022	Still leaking as of 3/31/2024	28 CONSIDINE RD
7332762	8/5/2019 2,100 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/05/2022	Still leaking as of 3/31/2024	ISLINGTON RD & KINGSWOOD RD
7335809	4/22/2020 2,736 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	4/22/2023	04/22/2023	Still leaking as of 3/31/2024	1319 CENTRE ST
7342376	1/16/2020 2,520 sqft	SQ for 2020 filed on 3/1/2021 Non-G3SEI	GSEP	None	01/16/2023	Still leaking as of 3/31/2024	3 DANIEL ST
7347786	8/19/2019 8,284 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/19/2022	Still leaking as of 3/31/2024	DEDHAM ST & MEADOWBROOK RD

7353086	8/13/2019 4,500 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/13/2022	Still leaking as of 3/31/2024	43 CENTRAL ST
7353089	8/13/2019 2,800 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/13/2022	Still leaking as of 3/31/2024	65 GROVE ST
7354547	8/8/2019 2,400 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/08/2022	Still leaking as of 3/31/2024	443 WOLCOTT ST
7354553	8/8/2019 2,800 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	Non-GSEP	7/9/2027	08/08/2021	Still leaking as of 3/31/2024	7 BUSWELL PIKE
7354698	8/13/2019 3,000 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/13/2022	Still leaking as of 3/31/2024	559 CENTRE ST
7355422	8/26/2019 18,000 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	08/26/2021	Still leaking as of 3/31/2024	1466 COMMONWEALTH AVE
7356438	10/3/2019 2,700 sqft	SQ for 2019 filed on 2/28/2020 Non-G3SEI	GSEP	None	10/03/2022	Still leaking as of 3/31/2024	741 SAWMILL BROOK PKY
7356852	11/19/2020 3,680 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	GSEP	11/19/2023	11/19/2023	Still leaking as of 3/31/2024	WATERTOWN ST & CRAFTS ST
7364119	5/13/2020 4,200 sqft	SQ for 2020 filed on 3/1/2021 G3SEI	Non-GSEP	5/13/2022	05/13/2022	Still leaking as of 3/31/2024	23 MAPLE ST

As of March 31, 2024 quarterly NG report

Number of unrepaired leaks in Newton which were reported by National Grid: 502

Total leak extent of unrepaired leaks: 298,000 sqft

50 Largest Gas Leaks in Newton

Address	Leak extent	Survey date	Class/grade assigned	Leak ID
HAMMOND ST and COLLEGE R	25,000 sqft	12/05/2023	12/14/2015	5866391
2322 WASHINGTON ST	20,000 sqft	06/20/2023	06/20/2023	7382271
43 ELM ST	8,700 sqft	02/15/2024	02/15/2024	7386487
BEACON ST and OWAISA RD	6,400 sqft	09/26/2023	12/17/2022	7379000
NORTH ST NVL and ALBEMARL	6,400 sqft	07/18/2023	06/13/2016	7326636
128 WOODWARD ST	4,830 sqft	07/18/2023	04/27/2004	270389
131 COUNTRY CLUB RD	4,560 sqft	12/05/2023	08/03/2004	270681
832 DEDHAM ST	4,550 sqft	12/19/2023	08/27/2015	5620596
140 WINDERMERE RD	4,050 sqft	07/24/2023	07/24/2023	7383029
100 CONCORD ST	4,025 sqft	11/14/2023	08/01/2017	7337028
324 WINCHESTER ST	3,875 sqft	11/16/2023	02/22/2023	7380677
26 PARKER ST	3,750 sqft	08/02/2023	08/02/2023	7383027
HIGH ST NUF and ELLIOT ST	3,640 sqft	08/14/2023	08/14/2023	7383508
295 DUDLEY RD	3,510 sqft	12/19/2023	09/19/2013	1363546
145 HIGHLAND ST	3,420 sqft	06/23/2023	05/11/2016	7326197
DORSET RD and METACOMET	3,360 sqft	11/16/2023	08/19/2010	337228
5 ANGIER CIR	3,000 sqft	12/20/2023	05/11/2022	7374854
HAGAR ST and CONCORD ST	2,750 sqft	09/12/2023	11/04/2022	7378581
200 DERBY ST	2,550 sqft	06/23/2023	08/24/2022	7376707
212 CHESTNUT ST	2,500 sqft	06/23/2023	10/09/2021	7371382
COMMONWEALTH AVE and AU	2,500 sqft	02/20/2024	01/12/2018	7341496
1629 BEACON ST	2,200 sqft	12/19/2023	02/19/2014	1593092
30 ELLIS RD	2,132 sqft	11/17/2023	10/13/2010	338429

	249 CYPRESS ST		2,025 sqft	11/13/2023	02/16/2023	7379849
	130 BEACON ST		2,016 sqft	12/19/2023	06/04/2015	4339243
	15 G ROADWAY		2,000 sqft	06/23/2023	04/06/2018	7343321
	14 ROKEBY RD		2,000 sqft	11/13/2023	01/14/2016	7323097
	640 GROVE ST		1,922 sqft	11/14/2023	04/22/2016	7325803
	8 WHITE OAK RD		1,914 sqft	03/21/2024	05/10/2016	7325718
	MASSACHUSETTS TPKE and L		1,840 sqft	12/20/2023	03/18/2023	7380675
	327 DEDHAM ST		1,800 sqft	11/17/2023	07/12/2017	7336297
	741 SAW MILL BROOK PKWY		1,800 sqft	02/16/2024	09/26/2019	7356438
	22 PURITAN RD		1,750 sqft	11/13/2023	03/30/2016	7324470
	321 HAMMOND ST		1,739 sqft	11/16/2023	09/09/2013	1363304
	117 NORTH ST NVL		1,725 sqft	12/13/2023	08/19/2019	7355561
	1013 BEACON ST		1,600 sqft	02/20/2024	07/18/2022	7376315
	205 MILL ST		1,600 sqft	12/13/2023	08/22/2019	7355556
	320 NEEDHAM ST		1,600 sqft	07/18/2023	10/11/2009	329373
	NONANTUM RD and CHARLESI		1,600 sqft	02/20/2024	02/01/2017	7332282
	569 SAW MILL BROOK PKWY		1,600 sqft	02/16/2024	09/25/2019	7356372
	1364 WALNUT ST		1,584 sqft	06/20/2023	10/09/2020	7365115
	18 ALDEN ST		1,530 sqft	11/16/2023	04/24/2015	3900011
	LOWELL AVE and WASHINGTO		1,520 sqft	09/15/2023	12/01/2022	7378477
	146 ALBEMARLE RD		1,500 sqft	08/04/2023	08/04/2023	7383021
	500 DEDHAM ST		1,500 sqft	01/04/2024	09/05/2019	7356212
	67 OAK CLIFF RD		1,500 sqft	12/12/2023	09/27/2017	7338745
	100 SUFFOLK RD		1,500 sqft	02/20/2024	08/19/2004	270655
	443 WOLCOTT ST		1,500 sqft	11/16/2023	07/09/2019	7354547
	53 HIGH ST NUF		1,495 sqft	06/07/2023	06/07/2023	7382270
	15 OAK ST		1,472 sqft	03/21/2024	02/01/2019	7350513
	Total of 50 largest		**173,334**			
	Total under 2000 sf		**37,591**			
	% under 2000 sf		**22%**			

Application Form

Profile

Michael
First Name

Middle Initial

Gevelber
Last Name

[redacted]
Email Address

166 Melrose ST
Home Address

Suite or Apt

Newton
City

MA
State

02466
Postal Code

What Ward do you live in?

☑ Ward 4

[redacted]
Primary Phone

[redacted]
Alternate Phone

Boston University
Employer

Research Associate Professor
Job Title

Which Boards would you like to apply for?

Citizens Commission on Energy: Submitted

Ethnicity

☑ Caucasian/Non-Hispanic

Gender

☑ Male

Interests & Experiences

Please tell us about yourself and why you want to serve.

Why are you interested in serving on a board or commission?

I've been a member of the energy commission since 2012, and I'm interested in continuing to make contributions to the cities efforts to meet sustainability objectives. Currently, I am working on aiding the Newton city group on BERDO legislation for Newton, and as a result of my research/analysis for Boston University, also developing expertise on cost and performance for heat pump for both commercial and residential buildings. I am also a contributing member to the heat smart alliance of MA.

Gevelber_resume_3_23_r_10_23_.pdf
Upload a Resume

MICHAEL A. GEVELBER

166 Melrose St.
Auburndale, MA 02466
(617) 964-7515

Boston University, Mechanical Engineering
110 Cummington St., Boston, MA 02215
[redacted]

Education

MASSACHUSETS INSTITUTE OF TECHNOLOGY Cambridge, MA

Ph.D in Mechanical Engineering, August 1988. Specialties: Controls, dynamics, heat transfer, and thermodynamics. Thesis: "Dynamics and Control of the Czochralski Process", G. Stephanopoulos, Dept. of Chemical Engineering, advisor.

MASSACHUSETS INSTITUTE OF TECHNOLOGY Cambridge, MA

S.M. degree in Mechanical Engineering, February 1984. Thesis: "Control System Analysis and Dynamic Simulation of an OTEC Power Plant", D.N. Wormley, advisor.

BROWN UNIVERSITY Providence, RI

Sc.B. in Physics, June 1978. Thesis: "Nuclear Magnetic Resonance Study of Motional Narrowing in Glass and Crystalline Cadmium Lithium Nitrate"
Honors in Physics, 1978, Sigma Xi, 1978

Experience

Department of Mechanical Engineering, Boston University Boston, MA
Assistant (1988), Associate Professor (1996), Research Associate Professor (2023). Research interests in advanced control design for enhanced materials processing including control and system design, modeling, instrumentation, and development of control analysis techniques. Co-chair of the University Energy Working Group and member of the University Sustainability Committee.

Aeolus Building Efficiency Boston, MA
Co-founder (2013) and CTO. Aeolus is commercializing a breakthrough technology for airflow optimization in commercial buildings. Winner Energy Efficiency Category of MIT Clean Energy Prize Contest May 2013.

,**Newton Citizens Commission on Energy**, Newton, MA
Member, appointed by the President of Board of Newton City Alderman, 2012-present

Expert Witness
Patent case heard in Federal U.S. District Court, Northern District of California, San Francisco, 2013.

Cyber Materials LLC Newton, MA
Founder (2004) and Manager. Development and commercialization of advanced control and sensor solutions to improve industrial material processing capabilities.

Consultant Cambridge, MA
August 1983 to January 1985. Simulation and control analysis for industrial process.

U.S. Department of Energy Washington, DC
Sept. 1979 to Feb. 1981. Analyst in Office of Plans and Technology Assessment, Fossil Energy.

Energy and Environmental Analysis Inc. Washington, DC
November 1978 to September 1979. Analyst. Equipment modeling and cost estimation.

Professional Activities

- BU Campus Climate Lab, Conducting research on "Heating Electrification Strategy for Decarbonizing BU's Charles River Campus", from 2020 to present.
- Member, Boston University, Climate Action Plan Task force, November 2016-2018.
- Faculty Advisory Board, BU Initiative on Cities (IOC), September 2020.
- Faculty Associate, Pardee Center for the Study of the Longer Range Future, 2015-present.
- Affiliated Faculty, Institute of Sustainable Energy, Boston University, 2015-present, and Institute Global Sustainability.
- University Energy Projects: 2008 to present: Current projects include: Analysis of all Electric building HVAC systems, Analysis of Energy Efficiency Measures for Brownstone Dorms, Analysis of Energy Efficiency Gains and Greenhouse Gas reduction for Boston University's CRC and medical campuses, Fume Hood/Laboratory Energy use analysis, assessment of energy use for the CRC campus.
- Advisory Committee for Carbon Free Boston, Carbon Free Boston, Boston University, Institute for Sustainable Energy, Boston University, United States, 01/01/2018, [Member of both Building task force, and Equity Advisory Group]
- Member, Newton's Citizens Commission on Energy, 2012 to present, and Newton EV Task Force, member, starting 09/2019
- Technical advisor to the Newton Heat Smart program, Newton MA, Other, starting 10/2019.
- Kern Fellow, 2012-2013, Boston University, College of Engineering. Developed modules to relate Societal Engineering aspects of Thermodynamics. Topic: Development of Hybrid and EV's and relation to US sustainability issues and automobile industry.
- Editorial Board, "Robotics and Computer Integrated Manufacturing, An International journal of manufacturing and product and process development", IFAC, the International Federation of Automatic Control, 2003-2009.
- Founder (2005-2010) and co-director of Burr Elementary School Science and Engineering Discovery Week, a program that brings scientists and engineers into the classroom to give students a feeling of what real scientists and engineers do and why its exciting.
- Thermal Spray Society Program Committee, ASM International, 2003-2010

- International Thermal Spray Conference Program Committee, 2003-2010.

- Session Chair, International Symposium on Flexible Automation, July 2006, Osaka Japan.

- Program Committee for Thermal Spray Society Workshop: Consistency & Reliability of Thermal Spray Coatings: Issues and Practical Solutions: Sensors and Controls, Fall 2004.

- INEEL Summer Faculty Fellowship (1998, 1999)

- Program Committee for 3rd International Workshop on Modeling and Crystal Growth, 2000

- Program Committee for Japan-USA Symposium on Flexible Automation, 1994, 1996

- Journal Reviewer:
  - Automatica
  - Polymer
  - Electrostatics
  - International Journal of Modelling and Simulation
  - IIE Transactions on Design and Manufacturing
  - IEEE Transactions on Control Systems Technology
  - Journal of Crystal Growth
  - Journal of Heat and Fluid Flow
  - Journal of Dynamic Systems, Measurement, and Control
  - Journal of Engineering for Industry.

- Reviewer, International Federation of Automatic Control (IFAC) conference proceedings and ACC proceedings.

- Proposal reviewer for NSF SBIR program 1997-2002, 2012, 2014, research proposal reviewer NSF 1998-2003, 2009 for the Division of Design Manufacture and Industrial Innovation, Nanotechnology Program

- Organizer of Emerging Technology and Best Industry Practices Seminar series, Boston University, Manufacturing Engineering Department, 1992-2002.

New Course Development:

- **ENG EK 131/132 MD: Introduction to Mechatronic Systems and Design.** This course teaches the design of mechatronic systems and centers around a laboratory experience in which students design and build a succession of mechatronic subsystems. Lectures complement the laboratory experience covering: operational principles related to programming Arduino micro-controllers, use of associated sensors and actuators, design issues associated with the spectrum of electro-mechanical components, and appreciation for how mechatronic systems can help solve society's problems. (started 2015)

- **EK 546: Assessment of Sustainable Energy Technologies**: This course provides students with the background needed to asses the potential for energy efficiency and effectiveness of different technologies, the related economics, identify the key technical risks in emerging technologies, evaluating the life cycle implications of emerging technologies, manufacturing issues, as well as estimating performance.. Examples are drawn from a variety of emerging technologies. (started 2012 and currently being offered)

- **MN 500/GE 520 Course on Analysis of Energy Conservation/Supply Alternatives: BU Case Study**, offered in conjunction with the Center for Energy and Environmental Studies. Multi-disciplinary evaluation of technical, economic, and organizational issues of conservation options for the Charles River Campus of Boston University. (offered between 2008 to 2012)

Patents

1) "Control System for the Czochralski Process", M.A. Gevelber and G. Stephanopoulos, U.S. Patent no. 4,857,278, 8/89

2) "Interface Angle Estimation System", M.A. Gevelber and A.T. Patera, U.S. Patent no. 4,943,160, 7/90.

3) "Method for Closed-Loop Control of CVD Process", M.A. Gevelber and M. Toledo-Quinones, U.S. Patent no. 6,162,488, 12/2000.

4) "Feedback Enhanced Plasma Spray Tool", M.A. Gevelber, D. Wroblewski, Fincke, W. D. Swank, R.L. Bewley, D.C. Haggard, U.S. Patent 6,967,304, 11/22/2005.

5) "Feedback Enhanced Plasma Spray Tool", M.A. Gevelber, D. Wroblewski, U.S. Patent divisional application, molten plasma flux control, application, 9/2007, 7,952,047, granted 4/11.

6) "Ebeam Vision System for Monitoring and Control", Michael Gevelber, Brian Vattiat, and Adam Brewster, U.S. Patent no. 7,479,632, 1/20/2009.

7) Vattiat, B., Wroblewski, D., Gevelber, M., "Plasma State and Flux Sensor", Patent 8,013,994, published 9/6/11.

8) Gevelber, M., D. E. Wroblewski, P. Gallagher, Automated Technique of Measuring Room Air Change Rates in HVAC Systems, U.S. Patent No. US9664400 B2, 5/30/17. Based on U.S., Provisional Patent Application No.: 61/561/131, Filed Nov. 17, 2011 and PCT Application filed Nov. 17, 2012 No: PCT/US12/65786

9) Gevelber, M., "Integrated airflow control for variable air volume and air handler HVAC systems to reduce building HVAC energy use", US Patent No. US 10,274,217 B2, utility patent filing date 7/22/16, issued April 30, 2019.

10) Konrad, J., Ishwar, P., Little, T., Gevelber, M., "FUSION-BASED OCCUPANCY SENSING FOR BUILDING SYSTEMS", 5/23/2019, patent 11,193,688, date granted 12/7/2021

11) Michael Gevelber and Xuri Yan, Provisional Patent Application, 10/09/2007, "Control System for Electrospinning of Nano-Fibers" (60/998,214), BU case 07-79.

Refereed Publications: Journal, Conference Proceedings, and Book Chapters,

1. Jayarathne, T., Browne, M., Gevelber, M. (12/2022), "Development and Experimental Evaluation of a Zonal Infiltration Measurement Method for Multi-Unit Residential Buildings: Error Analysis, Performance Evaluation, and Study of Building Characteristics", published in proceedings of ASHRAE/ORNL Buildings XV Conference, pp 148-156, Clearwater Beach, FL. Extended paper to be published in Science and Technology for the Built Environment.

2. Jayarathne, T., Browne, M., Gevelber, M. (2/2021). "Advanced Zonal Infiltration Measurement Method for Multifamily Buildings: A Novel Test Procedure to Determine Air Leakage Through External and Internal Surfaces", paper published and presentation given in *Proceedings of the 2021 ASHRAE Virtual Winter Conference.* Published in ASHRAE Transactions, Vol. 127 Issue 1, pp. 409-417.

3. Yunshen Cai and Michael Gevelber, "**Analysis of Electrospinning Bending Region Physics in Determining Fiber Diameter: focus on mass transfer and effect of relative humidity for non-aqueous hydrophilic solutions",** published as part of the ELECTROSTATICS JOINT CONFERENCE June 18-20, 2018 Boston University.

4. Y. Cai, M. Gevelber**, "Analysis of bending region physics in determining electrospun fiber diameter: effect of relative humidity on evaporation and force balance",** Journal of Materials Science, 2017, 52, 5, pp 2605-2627.

5. Yan, X., Gevelber, M., Electrospinning of Nanofibers: Characterization of Jet Dynamics and Humidity Effects, in **Particulate Science and Technology: An International Journal**, 35, 2, (139), 2017.

6. S. Gunnsteinsson, R. Kahn, M. Gevelber, "Airflow Based Model to Estimate Commercial Building HVAC Energy Use: Analysis to determine principal factors for different climate zones.", presented and published at Building Simulation & Energy Modeling session, International High Performance Building Conference, Purdue, July 2016, paper 3677, pp1-10.

7. Y. Cai, M. Gevelber, "*Analysis of Bending Region Physics in Determining Electrospun Fiber Diameter: Role of Relative Humidity on Evaporation and Force Balance*", Fiber Society's Fall 2015 Annual Meeting and Technical Conference, October 28-30, Raleigh, North Carolina, presented and awarded 2nd place in best student paper contest.

8. P. Gallagher, S. Gunnsteinsson, A. Morse, M. Gevelber, "*Airflow System Identification Analysis for Optimizing Commercial Building VAV Settings for Improved Energy Efficiency*", presented and published in the American Control Conference. Chicago, Il, July 1-3, 2015.

9. P. Gallagher, S. Gunnsteinsson, A. Morse, M. Gevelber, "Airflow System Identification Tool for Optimizing Commercial Building VAV Settings for Improved Energy Efficiency", presented and published in the ASHRAE Winter Conference. paper CH-15-C036, Chicago, Il, January 25, 2015.

10. Y. Cai, M. Gevelber, "Electrospinning Nanofibers: Measurements, dynamics, and control strategy development", Proceedings of the ASME 2014 Dynamic Systems and Control Conference DSCC2014 October 22-24, 2014, San Antonio, TX, USA, paper DSCC, 2014-5949.

11. Y. Cai, M. Gevelber, "The Effect of Relative Humidity and Evaporation Rate on Electrospinning: fiber diameter and measurement for control implications", Journal of Material Science, Nov. 2013, 48, pp 7812-7826, 2013.

12. D. J. Rubin, H. T. Nia, T. Desire, P. Q. Nguyen, M. Gevelber, C. Ortiz, and N. S. Joshi, "Mechanical Reinforcement of Polymeric Fibers through Peptide Nanotube Incorporation, pp 3370-3375, BioMacromoclecules, October 14, 2013, Vol. 14, Issue 10.

13. J. Winkler, M. Neubert, J. Rudolph, N. Duanmu, and M. Gevelber, Chapter 3, "Czochralski Process Dyanamics and Control Design", in "*Crystal Growth Processes Based on Capillarity: Czochralski, Floating zone, shaping and crucible techniques*", edited by Thierry Duffar, April 2010.

14. X. Yan, M. Gevelber, "Investigation of Electrospun Fiber Diameter Distribution and Process Dynamics", published in the Proceedings of the Electrostatics Joint Conference, Boston University, June 16-18, 2009 and in the *Journal of Electrostatics*, 68 (October 2010), pp. 458-264.

15. D. Wroblewski, G. Reimann, M. Tuttle, D. Radgowski, M. Cannamela, S. Basu, M. Gevelber, "Sensor Issues and Requirements for Developing Real-Time Control for Plasma Spray Deposition", *Journal of Thermal Spray Technology*, Vol. 19(4), June 2010, pp. 723—735.

16. E. Speyerer, M. Gevelber, D. Radgowski, "Development of an Adaptive System ID Method for Enabling Advanced E-Beam Sweep Pattern Design", pp 1-8 TuAT6.1, in the 2010 ASME Dynamic Systems and Control Conference Proceedings, ed P. Meckl, Cambridge MA, September 2010.

17. M. Gevelber, D. Wroblewski, M. Cannamela, S. Basu, D. Radgowski, and M. Tuttle, "Sensor and Control Design Issues for Developing Real-Time Deposition Rate Control for Plasma Spray", pp 1-8, TuAT6.6, in the 2010 ASME Dynamic Systems and Control Conference Proceedings, ed P. Meckl, Cambridge MA, September 2010.

18. X. Yan and and M. Gevelber, “Process Dynamics and Control Analysis for Electrospinning Nanofibers”, pp1-8, WeBT4.1, in the 2010 ASME Dynamic Systems and Control Conference Proceedings, ed P. Meckl, Cambridge MA, September 2010.

19. X. Yan, and M. Gevelber, “Elecrospinning of Nanofibers: Analysis of Diameter Distribution and Process Dynamics for Control”, In the “2010 International symposium on Flexible Automation” Conference Proceedings, ed. N. Sugimura and J. Cao, July 2010, Tokyo Japan

20. M. Gevelber, D. Wroblewski, M. Canemella, S. Basu, “Sensor Design Issues for Implementation of Real-Time Depsoition Rate Control for Plasma Spray”, In the “2010 International symposium on Flexible Automation” Conference Proceedings, ed. N. Sugimura and J. Cao July 2010, Tokyo Japan

21. M. Gevelber, D. Wroblewski, B. Vattiat, O. Ghosh, M. VanHout, and S.N. Basu, “Issues and Requirements for Developing a Plasma Spray Deposition Rate Sensor for Real-time control”, *International Thermal Spray Conference*, Maastricht, The Netherlands, June 2-4, 2008, Conference Proceedings: ed. E. Lugscheider, 2008, pp 912-916.

22. D. Wroblewski, O. Ghosh, A. Lum, M. VanHout, S.N. Basu, M. Gevelber, and D. Willoughby, “Analysis of Plasma Spray Particle State Distribution for Deposition Rate Control”, *International Thermal Spray Conference*, Maastricht, The Netherlands, June 2-4, 2008, Conference Proceedings: ed. E. Lugscheider, 2008, pp 838-843

23. Gevelber, D. Wroblewski, M. VanHout, O. Ghosh, D. Willoughby, S. Basu, “Sensor and Control Design Issues for Implementation of Real-Time Deposition Rate Control for Plasma Spray”, ASME International Mechanical Engineering Congress , Oct 31-Nov. 6, 2008, Boston, IMECE2008-68958, pp 10.

24. D. Wroblewski, O. Ghosh, A. Lum, D. Willoughby, M. VanHout, K. Hogstrom, S. Basu, M. Gevelber “Modeling and Parametric Analysis of Plasma Spray Particle State Distribution for Deposition Rate Control”, IMECE2008-68752, *ASME International Mechanical Engineering Congress*, Oct 31-Nov. 6, 2008, Boston.

25. X. Yan, M. Gevelber, “Analysis of Electrospinning Nanofibers: Diameter Distribution, Process Dyanmics, and Control”, *ASME International Mechanical Engineering Congress* , Oct 31-Nov. 6, 2008, Boston, IMECE2008-68299, pp8

26. G. Reimann, D. Radgowski, M. Gevelber, “Methods for Improving Optical Coating Quality for E-beam Deposition: Minimizing Deposition Rate Variations and Manufacturing Case Studies”, *51st Annual Technical Conference Proceedings of Society of Vacuum Coaters*, 2008 Apr 19-24 Chicago IL , Apr 19-24, 2008 Chicago IL , pp 427-432.

27. D. Radgowski, G. Reimann, M. Gevelber, "Critical Measurement and Control Issues in Selecting a Quartz Crystal Monitor," *51st Annual Technical Conference Proceedings of Society of Vacuum Coaters*, Apr 19-24, 2008 Chicago IL pp. pg 27-30, 2008.

28. S.N. Basu, G. Ye, R. Khare, B. McCandless, M. Gevelber, D. Wroblewski, “Dependence of splat remelt and stress evolution on surface roughness length scales in plasma sprayed thermal barrier coatings,” Int. Journal of Refractory Metals and Hard Materials, 2009.

29. G. Reimann, D. Radgowski, M. Gevelber, "Achieving reliable optical thickness without an optical monitor: industrial benchmarks," *50th Annual Technical Conference Proceedings of Society of Vacuum Coaters*, pp. 348-353, 2007.

30. Gevelber, M., Xu, B., Reimann, G., “Tools for Improving Precision Optical Coatings Through E-Beam Sweep Design”, published in the proceedings of the 2007 Optical Interference Coatings (OIC) Conference, June 2007, Tucson AZ, OSA, paper TuCPDP1.

31. Michael Gevelber, Xuri Yan, Jian H. Yu, Gregory C. Rutledge, “Electrospinning Process Dynamics and Fiber Diameter Distributions for Development of Real-Time Control”, presented at and published in proceedings of Symposium B. Processing of Nanofibers, MRS Fall 2006, MRS Proceedings, Vol. 948E, “Structure, Processing and Properties of Polymer Nanofibers for Emerging Technologies”, editors K.Kiick and T. Long, paper 0948-B07-02

32. Gevelber, M., Cui, C., Vattiat, B., Ghosh, O., Wroblewski, D., Basu, S., “Real Time Control for Plasma Spray: Sensor issues, torch nonlinearities, and control of coating thickness”, Paper 0255, Proceedings of the 2006 International Symposium on Flexible Automation, Osaka, pp. 686-691, July 2006

33. Reimann, G., Vattiat, B. Brewster, A., Gevelber, M., “Development of a Robust and Optimized Automatic Tuning System For Control of Evaporation Processes”, Paper 0238, Proceedings of the 2006 International Symposium on Flexible Automation, Osaka, pp. 663-670, July 2006.

34. Gevelber, M., B. Xu, D. Smith, “Improved Rate Control for E-beam Evaporation and Evaluation of Optical Performance Improvements”, Applied Optics, Vol. 45, Issue 7, March 2006, pp 1456-1460.

35. Reimann, G., Vattiat, B., Brewster, A., Gevelber, M., Hildebrand, J., Hildebrand, C., “Robust Controller Tuning for Evaporative Deposition Processes: Results from Manufacturing Case Studies”, Proceedings of the Society of Vacuum Coaters, 49th annual technical conference, Washington DC, 2006, pp. 421-427.

36. Xu, B., Gevelber, M., Smith, D., Reimann, G., Bellum, J., “E-gun Sweep Design to Improve Silica Coating Performance: E-Gun nonlinearity investigation and silica evaporation modeling for sweep design”, Proceedings of the Society of Vacuum Coaters, 49th annual technical conference, Washington DC, 2006, pp. 319-325.

37. Basu S.N., Ye G., Gevelber M., and Wroblewski D., "Microcrack formation in Plasma Sprayed Thermal Barrier Coatings", *International Journal of Refractory Metals and Hard Materials*, 23, 335-343(2005).

38. Reimann, G., Gevelber, M., Vattiat, B., Hildebrand, J., Hildebrand, C., "Robust System Identification and Optimized Tuning for Control of Evaporation Processes", Proceedings of the Society of Vacuum Coaters 48th annual technical conference. Denver, CO, 2005, pp 697-702.

39. Xu, B., Gevelber, M., Smith, D., Vattiat, B., "Improving Rate Control in Electron-Beam Evaporated Optical Coatings:, maintaining source surface uniformity for large size laser optics coatings and evaluation of system drift", Proceedings of the Society of Vacuum Coaters 48th annual technical conference. Denver, CO, 2005, pp 400-405.

40. Gevelber M., Cui C., Vattiat B., Ghosh O. , Wroblewski D., Basu S., "Real Time Control for Plasma Spray: Sensor Issues, Torch Nonlinearites, and Control of Coating Thickness", International Thermal Spray Conference, Basel, 2005, pp. 667-672.

41. M. Gevelber, B. Xu, D. Smith, "Improving Rate Control in Electron-Beam Evaporated Optical Coatings", in Vacuum Technology and Coating, August 2004, pp 58-65

42. Gevelber, M., B. Xu, D. Smith, "Improved Rate Control for E-beam Evaporation and Evaluation of Optical Performance Improvements", paper ME 9 in the Proceedings of the Ninth Optical Interference Coating Conference of the OSA, Tucson, June 2004.

43. M. Gevelber, B. Xu, D. Smith, J. Oliver and J. Howe, "Improving Rate Control in Electron-Beam Evaporated Optical Coatings: the role of arcing and controller tuning", Proceedings of the Society of Vacuum Coaters 47th annual technical conference. Dallas, TX, April 24 – 29, 2004, pp92-98.

44. M. Gevelber, B. Xu, N. Duanmu, D. Smith, "Development of Improved SiO2 Rate Control for Electron-Beam Evaporated Optical Coatings", published in the Proceedings of the Japan – USA Symposium on Flexible Automation, Denver, Colorado, July 19-21, 2004, paper UL 75.

45. M. Gevelber, C.Cui, B. Vattiat, D. Wroblewski, "Real-Time Control for Plasma Spray: Production Issues and Engineering Coating Structures", published in the Proceedings of the 2004 Japan-USA Symposium on Flexible Automation; July 19-21 2004; Denver, Colorado, Paper UL 67.

46. S.N. Basu, G. Ye, M. Gevelber and D. Wroblewski, "Microcrack Formation in Plasma Sprayed Thermal Barrier Coatings", to be submitted to the International Journal of Refractory Metals and Hard Materials

47. Gevelber, M., Cui, C., Vattiat, B., Wroblewski, D., Fincke, J.R., and Swank, W.D., “Real-Time Control for Plasma Spray: production issues and distribution implications" , International Thermal Spray Conference, 5-8 May, 2003, in Orlando, FL., pp 1121-1120.

48. Gevelber, M., Xu, B., Smith, D., “Improving Rate Control for E-Beam Deposited Optical Coatings", published in the 46th Proceedings of the Society of Vacuum Coaters, San Francisco CA., May 2003, pp 18-23.

49. Fincke, Swank, Bewley, Haggard, Gevelber, Wroblewski, “Control of Particle Temperature, Velocity, and Trajectory in the Thermal Spray Process”, International Thermal Spray Conference, 5-8 May, 2003, in Orlando, FL., pp. 1093-1100.

50. Basu, S.N., Ye, G., Gevelber, C. Cui, D. Wroblewski, M., Fincke, J.R., and Swank, W.D., “Plasma Sprayed Coatings with Engineered Microstructures", International Thermal Spray Conference, 5-8 May, 2003, in Orlando, FL., pp. 1599-1608

51. Wroblewski, D., Khare, R., Gevelber, M., 2002, “Solidification Modeling of Plasma Sprayed TBC: Analysis of Remelt and Multiple Length Scales of Rough Substrates," J. of Thermal Spray Tech, Vol. 11 (2) June 2002, pp 266-275.

52. M. Gevelber, D. Wilson, N. Duanmu, “Modelling Requirements for Development of an Advanced Czochralski Control System", Journal of Crystal Growth, 230 (2001) pp217-223.

53. J.R. Fincke, W.D. Swank, R.L. Bewley, D.C. Haggarda, M. Gevelber, D. Wroblewski, “Diagnostics and Control in the Thermal Spray Process", April 2001, Journal of Surface and Coatings Technology, Sept-Oct 2001, pp. 537-543.

54. M. Gevelber, D. Wroblewski, J. Fincke, W.D. Swank, “System Characterization and Plasma Particle Distribution Analysis for Development of Closed Loop Control for Plasma Spray", HTD Vol. 366-3; Proceedings of the ASME: Heat Transfer Division, November 2000, Vol 3, pp. 419-426.

55. M. Gevelber, “Process Control", in the Encyclopedia of Electrical and Electronic Engineering, John Wiley & Sons, 1999.

56. Gevelber, M.A., Bufano, M., Quinones, M.T., “Dynamic Modelling Analysis of Chemical Vapor Deposition for Control", Journal of Dynamic Syst., Meas. and Control, Vol. 120, 1998, pp164-169.

57. Gevelber, M., Quinones, M.T., Bufano, M.L., “Towards Closed-Loop Control of CVD Coating Microstructure, February 1995, Journal of Materials Science and Engineering A, Vol. 209, 1996, pp. 377-383.

58. Gevelber, M.A., M.C. Deniz, R. Liu, and E. Sumitra, “Modelling TiN Deposition for Control of CVD", “International Conference on CVD XIII", 189th meeting of the Electrochemical

Society, Los Angeles, May 1996, Proceedings Vol 96-5, ed. T.M. Bessmann et. al., pp. 157-162.

59. Smith, C.W., Narendra, K.S., and Gevelber, M.A., “Modelling for Control of Induction Plasma Deposition", Chemical Engineering Science, Vol. 50, No. 23, 1995, pp3747-3761.

60. Gevelber, M.A., Quinones, M.T., Bufano, M.L., “Dynamic Modelling of CVD for Real-Time Control of Microstructure", in the Materials Research Society Symposium on CVD of Refractory Metals and Ceramics III, edited by Lee, W.Y., Gallois, B.M., Pickering, M.A., Vol. 363, 1995, pp. 33-38.

61. Gevelber, M.A., Quinones, M. T., and Bufano, M., “Dynamic Characterization of CVD for Real-Time Control", in the Proceedings of the 1994 Japan-USA Symposium on Flexible Automation, Kobe Japan, July 1994, pp. 1417-1423.

62. Gevelber, M.A., Bufano, M, Quinones, M. T., Brown, D., and Passaro, R., “Dynamic Modelling for Control of CVD", American Control Conference Proceedings, June 29, 1994, pp. 2623-2627.

63. Quinones, M.T., Bufano, M., and Gevelber, M., “Lumped Modelling and Analysis of CVD Mass Transport and Chemical Reaction Dynamics", in Transport Phenomena in Non-Conventional Manufacturing and Materials Processing, edited by V. Prasad and F. Copera, pp. 93-100, HTD-259, Nov. 1993.

64. Narendra, K.S., Smith, C.W., and Gevelber, M.A., “Analysis of Induction Plasma Deposition Dynamics for Control", Journal of Dynamic Systems, Measurement, and Control, Vol. 117, No. 3, pp429-432.

65. Gevelber, M.A., “Dynamics and Control of the Czochralski Process, Part 4: Control structure design for interface shape control and performance evaluation", Journal of Crystal Growth, 139, 1994, pp.286-301.

66. Gevelber, M.A., “Dynamics and Control of the Czochralski Process, Part 3: Interface dynamics and control requirements", Journal of Crystal Growth, 139, 1994, pp. 271-285.

67. Gevelber, M.A., and Stephanopolous, G., “Modelling and Dynamic Characterization of the Czochralski Process", in Journal of Dynamic Systems, Measurement, and Control, Vol. 115, No. 1, pp. 109-114, 1993.

68. Gevelber, M.A., and Stephanopolous, G., “Control and System Design for the Czochralski Crystal Growth Process Journal of Dynamic Systems, Measurement, and Control, Vol. 115, No. 1, pp. 115-121, 1993.

69. Narendra, K.S., and Gevelber, M.A.,``Modelling and Control of Induction Plasma Deposition", Control Methods for Manufacturing Processes, ASME, Dynamic Systems and Controls, November 1991, DSC-Vol. 28, pp 7-12.

70. Gevelber, M.A., ``A Geometric Analysis Method for Control Structure and System Design", in Control Methods for Manufacturing Processes}, edited by J.L. Stein, Y. Koren, J. Holmes, ASME DSC vol. 18, December 1989, pp 123-128.

71. Gevelber, M.A. and Stephanopoulos, G., "Control and System Design for the Czochralski Crystal Growth Process", in Control Methods for Manufacturing Processes}, edited by D.E. Hardt, ASME DSC vol. 9, November 27, 1988, pp. 35-40.

72. Gevelber, M.A., Stephanopoulos, G., and Wargo, M.J., "Dynamics and Control of the Czochralski Process, Part 2: Objectives and control structure design", Journal of Crystal Growth, 91, 1988, pp. 199-217.

73. Gevelber, M.A., Stephanopoulos, G., and Wargo, M.J., "Dynamics and Control of the Czochralski Process, Part 1: Modelling and dynamic characterization", Journal of Crystal Growth, 84, 1987, pp. 647-668.

74. Gevelber, M.A., Wargo, M.J., Stephanopoulos, G., "Advanced Control Design Consideration for the Czochralski Process", Journal of Crystal Growth, 85, 1987, pp. 256-263.

Conference & Other Presentations, Papers, and Posters

1. Gayatri Sundar Rajan, Michael Gevelber, "Effective Decarbonization Strategies for Existing Large Campus Buildings", presented and published as part of the AASHE Global Conference on Sustainability for Higher Education in Oct. 2022.

2. A. Baumann, C. Lambert, A. Daswani, M. Gevelber, "Developing Heating Electrification Strategies to Decarbonize Boston University's Charles River Campus Phase 4: Study of Pilot Demonstration Buildings, Identification of HVAC Energy Efficiency Opportunities, and Analysis of Ground Source Heat Pump Opportunities", BU Institute for Global Sustainability, 10/27/2022.

3. M.A. Browne, T. Jayarathne, M. Gevelber, (2022), "Multifamily Infiltration Testing, Research and Development" presented at 2022 RESNET Virtual Conference. May 3-5 2022.

4. BU Institute for Sustainable Energy, Heating Electrification Seminars, "Decarbonization of Existing Commercial Buildings", 2 seminars organized by M. Gevelber. Presented by Professor Gevelber and Gayatri Sundar Rajan, Part 1: Technical Issues & Opportunities (November 5, 2021), Part 2: Financial Issues (December 3, 2021)

5. 2020 ASHRAE Virtual Conference June 29th - July 2nd, 2020, Seminar 27, Low-Cost Occupancy Sensors Systems for Residential and Commercial Building HVAC System Controls "Development of Vision Based Occupancy Sensing System for HVAC Applications" Michael Gevelber, Janusz Konrad, Prakash Ishwar, Thomas Little, Boston University, presentation given and slides published, part of ARPA-E SENSOR program.

6. Gevelber and Browne, DOE Building America Team Project Update, 8 September 2020, "Development of Advanced Measurement and Modelling Standards for Zonal Infiltration and Compartmentalization in Multifamily Buildings", presentation given.

7. Keeley Bombard, Gayatri Sundar Rajan (ENG '22), Nathan Phillips, & Michael Gevelber, "Heating Electrification Strategies to Decarbonize BU's Charles River Campus", 9/9/2020, presented and posted to the BU Campus Climate Lab.

8. Keeley Bombard, Gayatri Sundar Rajan (ENG '22), & Michael Gevelber, "Heating Electrification Strategies to Decarbonize BU's Charles River Campus: Phase 2 Focus on Key Existing Buildings", Presented and posted on the BU Campus Climate Lab, 1/29/21.
9. Brown, H., & Purdy, J., Gevelber, M., et. al., August 14 2019, "Newton Citizens Climate Action Plan, Acting Now to Secure our Sustainable Future". Newton Citizens Commission on Energy, City of Newton MA.

10. Gevelber, M., & Browne, M. (2019). Development of Advanced Measurement and Modelling Standards for Zonal Infiltration and Compartmentalization in Multifamily Buildings. In DOE Building America Seminar.

11. Gevelber, M., Weliczko, E., Gevelber, T., & Hill, E. (2019). CWRU HVAC Air Flow Study & Savings Analysis, presented to Steven Cambell, Vice President, Campus Planning & Facilities Management Office of Administration, Chris Wilson, Director Facilities, and Facilities Staff, CWRU.
12. Presentation of class findings to the university community: "Analysis of Energy Efficiency Opportunities on BU's Charles River and Medical Campuses: focus on HVAC systems", special project class using the university as a Living Learning Laboratory, by Gabriella Henkels, Bradley Miller, Ryan Peters, Carly Baracco, Anthony Graziano, Cole Ashman, Paul Chiampa Jr., Jessica Gimbel, Cristian Morales, presentation, May 10, 2017.

13. Presentation of class findings to Facilities Management and Planning Staff, "Analysis of Energy Efficiency Opportunities on BU's Charles River and Medical Campuses: focus on HVAC systems", presented by Gabriella Henkels, Bradley Miller, Ryan Peters, Paul Chiampa Jr., Jessica Gimbel, May 12, 2017

14. M. Gevelber, "CAP energy working group report" 11/25/17 (available at http://www.bu.edu/climateactionplan/climate-action-plan-task-force/report/)

15. M. Gevelber, “Alternative Energy Efficiency Strategies”, Report to CAP leadership and energy working group. 8/16/17
16. Y. Cai, M. Gevelber, “Analysis of Electrospinning Bending Region to Determine Fiber Diameter for Non-aqueous Solutions: Evaporation and Water Absorption”, presented at The Fiber Society 2016 Fall Meeting and Technical Conference, The Fiber Society, October 10-12, 2016, Cornell
17. M. Gevelber, “Minimizing HVAC Energy Use Through Low-cost Software-based Airflow Optimization”, awarded Judges commendation for Impact, one of 7 finalist (out of 19 proposals), MIT Climate Mitigation Solutions contest, as part of the MIT Climate Colab 2016 Competition. https://climatecolab.org/contests/2016/mit-climate-mitigation-solutions/c/proposal/1331588
18. Juan Tomas Leal, Daniel Quigley, Terry Hatfield, Lisa Tornatore, Dennis Carlberg, Bastien Richelle, Max Davidowitz, Michael Gevelber, “Collaborative Research to Improve Dorm Heating Performance: Improved comfort and energy efficiency “, presented at the AASHE Sustainability Conference, Oct 11, 2016, Baltimore,
19. Gevelber, M., Morse, A., “Software-Based Building Airflow Analysis (BAAT) Tool for Enabling HVAC Energy Use Savings in Commercial Buildings”, Poster, presented at the DOE Building Technology Review Meeting, Vienna, VA, April 14, 2015.
20. Y., Cai, M. Gevelber, "Impact of Water Vapor/ Solvent Interaction on Electrospinning: focus on fiber diameter for polystyrene solutions", presented at "The Fiber Society 2014 Fall Meeting and Technical Conference", Drexel University, Philadelphia, Pennsylvania, USA, October 22-24, 2014.
21. Y., Cai,, M. Gevelber, "Study of Multi-jets Formation in Electrospining Process of Hyaluronic Acid Solutions", poster, presented at "The Fiber Society 2014 Fall Meeting and Technical Conference", Drexel University, Philadelphia, Pennsylvania, USA, October 22-24, 2014.
22. M. Gevelber and Y. Cai “Relative Humidity and Measurement Implications for Control of Electrospinning: Solvent and Polyelectrolyte Issues , The Fiber Society Spring 2014 Technical Conference, Fibers for Progress, Liberec, Czech Republic, May 21–23, 2014.
23. J. Lee, S. Shirazi, L. Tornatore, T. Hatfield, M. Gevelber, D. Carlberg, “NET ZERO BROWNSTONE ANALYSIS *Achieving Net Zero and Implications for the Brownstone Portfolio”*, September 2014.
24. Cai, M. Gevelber, “The Effect of Relative Humidity and Evaporation Rate on Electrospinning: fiber diameter and measurement implications for control”, International Symposium on Fibers, Interfacing the World, Fiber Society, October 23-25, 2013, Clemson, South Carolina, p. 140.
25. Matthew Tuttle , Dennis Radgowski, Michael Gevelber, Donald Wroblewski, Soumenda Basu, “Requirements for Developing Robust Plasma Spray Control for Production Operations”, presented in “Processing and Performance of Advanced

Thermal Barrier Coatings - Session II" May 21-24, Houston Texas, International Thermal Spray Conference 2012

26. Michael Gevelber, Yunshen Cai, Thierry Desire, and Xuri Yan, "Developing Real-Time Control for Electrospinning of Nanofibers: Evaporation and Measurement Considerations for Aqueous and Non-Aqueous Solutions", Presentation at the Fiber Society Conference , published in the extended conference abstracts, Nov 7-9, 2012, Boston

27. M. A. Gevelber, "Process Dynamics and Measurement Considerations for Developing Electrospinning Control: needle and free surface system", presented at "Nanofibers for the 3rd Millennium", NC State, The Nonwovens Institute, August 2010.

28. M.A. Gevelber, M. Cannemela, D. Wroblewski, S. Basu, "Alternative Real-Time Control Strategies and Sensing Requirements for Improving Thermal Spray Performance", presented at paper given at the International Thermal Spray Conference, Las Vegas, May 2009.

29. D. Wroblewski, M. Cannamela, M. Gevelber, O. Ghosh, M. VanHout, A. Lum, K. Hogstrom, S. Basu , "Plasma Spray Process Modeling for Control: Effect of Torch Inputs on Particle State Distributions", paper given at the International Thermal Spray Conference, Las Vegas, May 2009.

30. M. A Gevelber, "Alternative Control Strategies and Requirements for Improving Thermal Spray Performance", presented at the "Symposium on Improving Reliability and Consistency in Thermal Spray, Dec 2-3 , 2008, Montreal Quebec, organized by the ASM Thermal Spray Society.

31. X. Yan, M. Gevelber, "Investigation of Electrospinning Parameters that Determine Fiber Diameter Distribution" The Fiber Society 2008 Technical Conference, Oct 1-3, 2008, Boucherville Canada, Abdellah Ajji, Chair

32. M. Gevelber and X. Yan, "Analysis of Electrospinning Process Dynamics and Resulting Nanofiber Diameter Distributions" The Fiber Society 2007 Technical Conference, Oct 911, 2007, University of California at Davis, CA, , You-Lo Hsieh, Chair

33. Gevelber, M., Ghosh, O., Cui, C., Wang, H., Basu, S., Wroblewski, D., "Alternative Strategies for Plasma Sprayed Coating Thickness Control", paper given at the International Thermal Spray Conference, Seattle, May 2006.

34. Reimann, G., Vattiat, B., Brewster, A., Gevelber, M. A., Hildebrand, J., Hildebrand. C., "Robust System Identification and Optimized Tuning for Control of Evaporation Processes: benchmark study results of manufacturing performance", paper given at AVS, Boston November 2005.

35. Gevelber, M., “Manufacturing Performance Evaluation of Alternative Control Strategies for IGT Thermal Barrier Coatings”, Combustion Turbine Coatings Symposium, Houston Texas, October 26, 2005, invited.

36. Michael Gevelber, Brian Vattiat, Chenhuan Cui, Boston University, Manufacturing Engineering, Larry Pollard, William Barker, Progressive Technologies, David Harter, Siemens Westinghouse Power Corporation-Stationary Fuel Cells, Performance Comparison of Various Sensor Systems and Plasma Spray Torches”, poster given at the International Thermal Spray Conference, Basel, May 2005.

37. M. Gevelber, C. Cui, B. Vattiat, D. Wroblewski, S. Basu, “Real-Time Control for Plasma Spray: Production requirements, sensor issues, control design problems and solutions”, paper given at the Sensors and Controls 2004 Workshop, International Thermal Spray Society, October 2004

38. Gevelber, M., B. Xu, D. Smith, “Improved Rate Control for E-beam Evaporation and Evaluation of Optical Performance Improvements”, presented at the Optical Interference Coating Conference of the OSA, Tuscon, June 2004.

39. Basu, S.N., Ye, G., Cui, C., Gevelber, M., Wroblewski, D., Fincke J.R., and Swank, W.D., Engineering Plasma Sprayed Coating Microstructure by Advanced Control, presented at the Fall MRS Meeting, Dec. 2-6, 2002, Boston, MA.

40. Ye, G., Basu, S., Wroblewski, D., Gevelber, M., Fincke, J., Swank, W, "Characterization of the Plasma Spray Process for the Development of Closed Loop Control", presented at the ASM Materials Solutions Conference, Cincinnati, November 1999.

41. Khare, R., Wroblewski, D., Gevelber, M.A., “2-D Thermal Modeling of Splat Cooling on Rough Substrates", presented at ASM Materials Solutions Conference, Cinncinnati, November 1999.

42. Y. Chen, Z. Ren, P. Nair, and M. Gevelber, “Model Based Control Analysis of the Czochralski Process", Presented at the 13th International Conference on Crystal Growth, Jerusalem Israel, July 1998.

43. Y. Chen, J. Jiang and M. Gevelber, “Process Modelling Analysis for Enhanced Control of INP Synthesis", Presented at the 13th International Conference on Crystal Growth, Jerusalem Israel, July 1998.

Invited Seminars, presented by M. Gevelber

1. Interview by the Sweaty Penguin, 11/27/20 “Ventilation” (The Sweaty Penguin is hosted by Ethan Brown, an Environmental Analysis & Policy and Film & Television student at Boston University. Each episode focuses on a specific environmental issue.)

2. M. Gevelber, “Improving Performance & Sustainability of Commercial Buildings”, presented at the BU Conference on Sustainability Research, co-sponsored the Frederick S. Pardee Center for the Study of the Longer-Range Future, held on May 9, 2016, at Boston University.

3. "Improving Performance & Sustainability of Commercial Buildings", M. Gevelber, BU Research on Tap symposium, March 3, 2015, sponsored by the Associate Provost for Research.

4. E Silva, R. Kaufmann, M. Gevelber, "The Future of Urban Housing: Enhancing Energy Efficiency", Pardee Center, Boston University, September 17, 2014.

5. "Analysis of Process Dynamics and Sensing for Development of Robust Electrospinning Process Control", February 6, 2014, presented to the Molecular Sciences and Engineering Team, Natick Soldier Research, Development & Engineering Center (NSRDEC).

6. "Real Time Control for Improving Materials Processing Capabilities and Optimizing HVAC systems in Commercial Buildings to Improve Energy Efficiency", November 8, 2013, UCLA, Mechanical Engineering Department Control Seminar.

7. "Process Control for Improving Materials Processing Capabilities and Sustainability Initiatives at Boston University, presented at the ASM Boston Chapter meeting, November 2010.

8. "Process Dynamics and Measurement Considerations for Developing Electrospinning Control: needle and free surface systems", presented at the Elmarco and University of North Carolina Nonwoven Institute conference: "NANOFIBERS FOR THE 3RD MILLENNIUM 2010", August 2010, Raleigh, North Carolina.

9. "Boston University's Plasma Spray Research", presented to China Academy Institute of Machinery (CAM), Zhejiang Branch and Hangzhou Turbine Power Corp, Hangzhou, China, July 2010.

10. "Electrospinning Process Dynamics and Fiber Diameter Distributions for Development of Real-Time Control Donaldson, Minneapolis, MN, March 2007.

11. Real-time Control for Improving Materials Processing Capabilities: examples from e-beam deposition of precision optical coatings and plasma spray of TBC and fuel cells", M.I.T., Laboratory for Manufacturing, October, 2006.

12. "Advanced Control for Improved Electron Beam Deposition for Precision
    a. Optical Coatings", Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Jiading, Shanghai, July 2006.

13. "Advanced Control for Improved Electron Beam Deposition for Precision", Shincron LTD, Tokyo, July 2006.

14. "Advanced Control for Improving Materials Processing Capabilities: examples from e-beam deposition for optical coatings and plasma spray of TBC and fuel cells**",** Department of Mechanical Engineering. UCLA May 2006.

15. "Advanced Control for Improving Materials Processing Capabilities: examples from e-beam deposition for optical coatings and plasma spray of TBC and fuel cells", Department of Mechanical Engineering, UCSB May 2006

16. Gevelber, M., “Analysis of Electrospinning Dynamics for Development of Real Time Control:, Department of Polymer Chemistry, University of Akron, February 2006

17. Gevelber, M., “Development of Real-Time Control for Plasma Spray: sensing and nonlinear issues, University der Bundeswehr, Munich, Department of Electrical Engineering, November 2005.

18. Gevelber, M., “Development of Real-Time Control for Electron Beam Coatings for Precision Optics”, Leybold, Aseneu Germany, November 2005.

19. “Advanced Real-time Control for Enhanced Processing Capabilities for E-beam Deposited Optical Coatings”, Laboratory for Laser Energetics, University of Rochester, August 2003**.**

20. “Advanced Control for Engineering Plasma Sprayed Coating Structure: system characterization and implementation results”, Mechanical Engineering Department, University of Toronto, Center for Advanced Coating Technology, August 2003.

21. “Advanced Control for Engineering Plasma Sprayed Coating Structure: system characterization, sensor issues, and implementation results”, Institute of Materials Science, University of Connecticut, June, 2003.

22. “Real-Time Control for Improving Materials Processing Capabilities: examples from e-beam deposition of optical coatings and plasma spray of TBC and fuel cells”, Mechanical Engineering Department, University of California, Berkeley, May 2003.

23. “Real-Time Control for Plasma Spray: production issues and distribution implications" SUNY Stony Brook, Center for Thermal Spay, Feb. 2003.

24. “Real-Time Control for Plasma Spray: production issues and distribution implications" NIST, Ceramics Division, Washington DC, Dec. 2002.

25. “Real-Time Control for Plasma Spray: performance evaluation and production/implementation issues", SURFTEC annual meeting, Industrial Materials Institute, National Research Council Canada, Montreal, November 2002.

26. “Advanced Control for Engineering Plasma Sprayed Coating Structure: system characterization, sensor issues, and implementation results", September 2001, presented at the University of Connecticut, Department of Mechanical Engineering.

27. “Real-Time Control for Plasma Deposition: system characterization, sensor issues, and implementation results", Tufts University, Thermal Manufacturing Workshop, School of Engineering, M. Gevelber, June 2001,

28. “Dynamic Modeling Analysis for Control of CVD" , University of California, Santa Barbara, Mechanical Engineering Seminar, May 1998

29. “Process Control for Enhanced Processing of Engineered Materials", June 16-20, 1997 at M.I.T., part of the New Developments in Manufacturing Process Technology Seminar at the Laboratory for Manufacturing and Productivity.

30. “Advanced Control for Enhanced Processing of Engineered Materials", IEEE Control and Systems Society, Boston, January 15, 1997,

31. “Real-Time Control of CVD", February 1998, Kennametal.

32. “Real-Time Control of CVD", October 1997, Northeastern University.

33. “Dynamic Modelling of CVD for Real-time Control of Microstructure", NASA Lewis, Systems Dynamics Branch, June 16, 1995.

34. “Dynamic Modelling of CVD for Real-time Control of Microstructure", RPI Mechanical Engineering Seminar, March 23, 1995.

35. “Dynamic Modelling of CVD for Real-time Control of Microstructure", University of Minnesota, Mechanical Engineer Seminar Program, March 8, 1995.

36. “Modelling of Induction Plasma Deposition for Control Design", University of Minnesota, Guest Lecturer, Plasma Processing Graduate Seminar, March 8, 1995.

37. “Dynamic Modeling of CVD for Real-Time Control of Coating Microstructure", Brown University, Joint Materials Science/Solid Mechanics Seminar, Sept. 28, 1994.

38. “Control of Materials Processing", Kao Corp, Recording and Imaging Science Lab, Tochigi Japan, July 18, 1994.

39. “Dynamic Modelling of CVD for Real-Time Control of Microstructure", Berkeley, Mechanical Engineering Department, April 1994,

40. “Dynamic Modelling of CVD for Real-Time Control of Microstructure", Stanford University, Electrical Engineering Department, April 1994.

41. “Dynamic Modelling of CVD for Real-Time Control of Microstructure"., University of Michigan, March 1994.

42. “Modelling for Control of Induction Plasma Deposition", Universite de Limoges, Laboratoire de Materiaux Ceramiques et Traitements de Surface, P. Fauchais, November 1993.

43. “Control of Materials Processing", MIT, Sematech Center of Excellence meeting, March 5, 1993.

44. “Modelling and Control of Induction Plasma Deposition", University of Wisconsin, Plasma-Aided Manufacturing Research Center, March 6, 1992.

45. “Modelling and Control of Induction Plasma Deposition", GE Engineering Materials Technology Laboratories, Lynn MA, October 9, 1991.

46. “Dynamics and Control of Czochralski Crystal Growth", University of Rochester, December 13, 1988.

47. “Dynamics and Control of Czochralski Crystal Growth", Harshaw/Fitrol Comp., , December, 1988.

48. “Materials Processing: Design and Control", Boston University Minuteman Seminar: Frontiers in Manufacturing, October 1988.

49. “Control Design Consideration for the Czochralski Process", General Electric Corporate Research & Development, Control Division Schenectady. September 1987.

50. “Dynamics and Control Design for the Czochralski Process", New England Section of the American Association for Crystal Growth, Boston. May 1987.

Funded Research Grants (Gevelber as PI or co-PI)

1. Scalable, Dual-Mode Occupancy Sensing for Commercial Venues, DOE/ARPA-E, $998,728, 5/1/18-4/30/21.

2. Development of Advanced Measurement and Modelling Standards or Zonal, DOE/BTO, $917,985, 5/1/19-4/30/22.

3. Michael Gevelber, “Development and Performance Analysis of a new Optimized HVAC Control Architecture for Minimizing HVAC Energy Use in Commercial Office Buildings”, MassCEC Catalyst Program Award, 9/2018 to 8/2019, $65,000

4. “STTR proposal: Software-Based Building Airflow Analysis Tool for Enabling HVAC Energy Use Savings in Commercial Buildings”, M. Gevelber, BU PI, co-PI on Aeolus proposal, submitted through Aeolus Building Efficiency to NSF STTR program, $70,126 (BU part).

5. “Development of Software System Prototype for Optimized Commissioning and Adaptive Control of Building HVAC” , MA CEC, with Don Wroblewski, $40,000, 9/11 to 9/12.

6. **“**Development of Software System Prototype for Optimized Commissioning of Building HVAC”, BU OTD Ignition Grant, with Don Wroblewski, $50,000, 9/12.

7. “Analysis for Development of Electrospinning Control Concepts”, to U.S. Army Natick Soldier RD&E Center, 5/1/11-7/30/16, $337,290**.**

8. “Real-Time Control for Engineering Electrospun Nanofiber Diameter Distributions for Advanced Applications”, Gevelber, PI, NSF, 9/2008-8/2011, $224,100

9. “STTR Phase II: Development of Advanced E-Beam Sweep Patterns and Control Systems”, Cyber Materials LLC / NSF, BU subcontract: $151,217.00, 4/1/06 - 3/31/08, co PI

10. “GOALI: Engineering Coating Microstructure Through Advanced Plasma Spray Processing: Fuel Cell and Thermal Barrier Applications “, National Science Foundation, $398,954.00, 5/1/03 - 4/30/07, PI

11. “GOALI: Engineering Coating Microstructure Through Advanced Plasma Spray Processing: Fuel Cell and Thermal Barrier Applications (REU Supplement)”, National Science Foundation, $12,000.00, 5/1/05 - 4/30/07, PI

12. STTR Phase 1 Proposal: Advanced Control of Electron-Beam Deposition for High Precision Optical Coatings, NSF SBIR, BU subcontract: $58,240, 1 year, PI: Douglas Smith, Vacuum Process Technology, Michael Gevelber, co-PI

13. Proposal to Develop Advanced Control Capabilities for E-beam Deposition, Sandia, via VPT $34,656 for 8 months, Gevelber (PI), 8 months,

14. “Control Development and Modelling for Enhanced Crystal Growth: Application to Novel New Technologies and Extension of Conventional Capabilities”, PI, National Science Foundation, $270,000.00, 9/1/01 - 8/31/05

15. “Control Development and Modelling for Enhanced Crystal Growth: Application to Novel New Technologies and Extension of Conventional Capabilities (REU)”, PI, National Science Foundation, $30,000.00, 9/15/01 - 8/31/05

16. Development of Advanced Instrumentation for Student Research and Education on Plasma Coating Crack Formation Fundamentals, equipment grant, $88,900, NSF/DMR, Gevelber (PI), Wroblewski, and Basu.

17. Supplemental Research Experience for Undergraduates, NSF, Gevelber (PI) $12,000.

18. Integrated Plasma Deposition Processing for Advanced Control of Coating Structure", $334,000 for 3 years, NSF, Gevelber (PI), Wroblewski, and Basu.

19. DURIP Equipment Proposal: Real Time Control for Advanced Materials Processing", $120,000 from AFOSR, Gevelber (PI), Wroblewski, Basu

20. Intelligent Process Control for Czochralski Crystal Growth, ARPA/AFOSR through SUNY Stony Brook, Gevelber, co-PI, 2 year for $149,594.

21. Research Gift from Intelcore, related to work in analysis of control performance for Fiber Preform Manufacture and Fiber Draw: $34,000. Summer 2001.

22. “Supplemental Research Experience for Undergraduates," NSF, from 1998-2003, $32,000

23. Intelligent Process Control for Czochralski Crystal Growth, ARPA/AFOSR through SUNY Stony Brook, Gevelber, co-PI, 3 year for $224,391.

24. Integrated Plasma and Chemical Vapor Deposition Processing for Advanced Control of Coating Structure", $12,000, 1 year grant from United Technologies University Program, Gevelber, Wroblewski and Basu.

25. Real-Time Control of Engineered Coating Microstructure, Gevelber (PI) and Sarin, NSF, $179,706, 3 years.

26. Modelling and Control of Plasma Deposition for Enhanced Materials Production, Gevelber, NSF, $204,155, 3 years

27. Insitu Intelligent Materials Processing Equipment Grant, Gevelber and Sarin, NSF, $47,066.

28. System and Control Analysis of Low Pressure Plasma Deposition", Gevelber, NSF, $70,000 (Research Initiation Award).

Grants with Gevelber as co-PI

1. Enhancing Energy Efficiency for Urban Housing: Madison Park Development Corporation, Wells Fargo, $80,000, R. Kaufmann, N. Kulatilaka, M. Gevelber, E. Silva, 11/12 to 5/13. Phase II, $50,000.

2. "GLACIER - Global Change Initiative Education and Research (graduate teaching fellow K-12 program)", from NSF, $2,844,110, Sucharita Gopal, Earth and Environment, PI, 09/01/10 - 08/30/15

2. "Building Design. Smart Micro-grid Enabled Buildings Interacting with Utility-Side-of-the-Meter Electricity", NSF EFRI program, $1,986,606, Caramanis PI, 08/15/10 - 08/15/14

Related Research Grants through Cyber Materials with significant Boston University Involvement

1. Air Force SBIR, Phase 1, "Control of Plasma Sprayed Coating Structure", $100,000 [with S, Basu]

2. NSF SBIR, Phase II grant, "Plasma Spray Sensor Development", $500,000 [with Donald Wroblewski].

3. NSF SBIR, Phase I grant, "Plasma Spray Sensor Development", $100,000 [with Donald Wroblewski]

Ph.D Thesis Supervision (advisor and first reader).

1. Yunshen Cai, Ph.D. Thesis, "Modeling and Experimental Analysis of Electrospinning Bending Region Physics in Determining Fiber Diameter for Hydrophilic Polymer Solvent Systems", Boston University 2017.

2. Michael Cannamela, "Development of a Fluid Model for DC Arc Plasma Torches and Its Integration with Downstream Models of Atmospheric Plasma Spray Particle Plumes", 2012 (co-advisor and second reader).

3. Xuri Yan, "Electrospinning of Nanofibers: analysis of diameter distribution and process dynamics for control", Ph.D. in Mechanical Engineering, Oct. 2010.

4. Chenhuan Cui, " Experimental and modeling analysis of plasma spray nonlinearities for advancd process control design", Ph.D. in Manufacturing Engineering, 2007.

5. Bing Xu, "Experimental and modeling analysis for developing improved electron beam processing capabilities for precision optical coatings", Ph.D. in Manufacturing Engineering, 2007.

6. Ning Duanmu, "Modeling, dynamics, and control of the Czochralski crystal growth process", Ph.D. in Manufacturing Engineering, 2006.

7. Manuel Toledo-Quinones, "Dynamic Modelling of Chemical Vapor Deposition for Real-Time Control", May 1995, Ph.D. in Electrical Engineering,

M.S Thesis advisor and first reader:

1. Yunshen Cai, "Electrospinning Process Analysis: The relation of process parameters to fiber diameter and process dynamics for closed loop control design", 2013, M.S in Mechanical Engineering

2. Paul Gallagher, "Developing an Experimental System Identification Method to Extract Air Flow Rates from Room Temperature Measurements", M.S in Mechanical Engineering, 2013.

3. Emerson Speyerer, "Optimizing Sweep Pattern Designs for Improved Electron Beam Deposition of Optical Coatings", 2010, M.S in Mechanical Engineering

4. Onomitra Ghosh, "Modeling and sensing strategies of plasma spray particle distributions for deposition rate control", 2007, M.S. in Manufacturing Engineering.

5. Brian Vattiat, "Analysis of the Sensor and Measurement Requirements for Feedback Control of Plasma Spray Processes", January 2004, MS, Mechanical Engineering,

6. D. Wilson, "Modelling of Czochralski Crystal Growth for Advanced Control Design", May 2002, M.S. in Electrical Engineering,

7. R. Liu, "Modelling and Dynamic Analysis of TiN Deposition for Control of CVD", May 1998, M.S. in Manufacturing Engineering,

8. M. Sikka, “Modeling for Control of Plasma Deposition: Plasma-Particle Interactions and Solidification Process", May 1997, M.S. in Manufacturing Engineering,

9. E. Sumitra, “Modeling and Analysis of CVD for Closed Loop Control: Deposition Physics, Dynamic Characterization and Experimental Verification", May 1997, M.S. in Manufacturing Engineering,

10. C. Smith, “Low Order Modelling and Control Analysis of Induction Plasma Deposition", May 1995, MS in Manufacturing Engineering, First Reader. Publications: [12, 17

11. M. Bufano, “Dynamic Modelling of Heat and Mass Transport for Control Of Chemical Vapor Deposition", January 1995, MS in Mechanical Engineering,

12. M. Sharma, “Control Structure Analysis and Design for Poorly Conditioned Multivariable Systems", May 1993, MS in Manufacturing Engineering,

13. K.S. Narendra, “Modelling and Control of Induction Plasma Deposition", January 1992, MS in Manufacturing Engineering.