

## MEMORANDUM

TO: Board of Directors, Massachusetts School Building Authority  
FROM: James A. MacDonald, First Deputy Treasurer, Chief Executive Officer  
John K. McCarthy, Executive Director, Deputy Chief Executive Officer  
SUBJECT: Recommendation to Update the MSBA Green Schools Program Policies  
DATE: June 15, 2022

### **Introduction**

The Massachusetts School Building Authority (the “MSBA”) has reviewed new information related to upcoming changes to the building code and changes related to indoor air quality that may affect the MSBA’s Green Schools Program. This memorandum provides a summary of these efforts, summarizes next steps and makes a recommendation to the MSBA’s policy for indoor air quality that will affect all new construction and major renovation/addition Core Program projects requesting Project Scope and Budget approval after the June 22, 2022 MSBA Board meeting.

### **Background**

Since its formation, the MSBA has been an advocate of “green” sustainable building design for all MSBA-funded public K-12 school buildings. Under the current policy, MSBA guidelines include a base level of sustainable requirements for all Core Program projects and conditional provisions that award a school district an additional 2% of a project’s eligible costs if the project achieves higher levels of sustainability using the established criteria.

As of May 2022, 155 MSBA Core Program projects have registered with USGBC LEED-S and 62 projects have registered with NE-CHPS. Of that 217 project total, 74 LEED-S projects and 55 CHPS projects have completed certification, totaling 129 certified projects to date. The total additional reimbursement from the MSBA through this program to date is roughly \$216 million, averaging approximately \$1.25 million dollars per project. Although in the past, the MSBA sustainable design policy emphasized increased energy efficiencies, it has also supported lower water consumption, improved indoor air quality, more efficient transportation costs, reduced use of materials, and a higher quality educational indoor environment.

### **Discussion**

As noted, staff have been considering new information that could affect the MSBA's sustainability policies and have taken a closer look at the challenges and benefits of two items:

- Upcoming changes to the Massachusetts building code and energy codes; and
- Improving indoor air quality.

#### Upcoming changes to the Massachusetts building code and energy codes

Federal and state standards continue to require increasing levels of energy efficiency with a goal of “Zero Net Energy Buildings” by 2030. The US Department of Energy, using statutory authority within the Energy Conservation and Production Act, requires each state to analyze and

ultimately conform to the most recent edition of the two national model energy codes, the American Society of Heating, Refrigerating and Air-Conditioning Engineers Energy Standard for Commercial Buildings (“ASHRAE 90.1”) and the International Energy Conservation Code (“IECC”), by updating their state energy codes to align with these energy standards within a reasonable period of time. In order to meet its targeted goals, Massachusetts is currently scheduled to adopt the 2021 IECC in 2023 as a part of a new 10th edition of the state's building code. As of December 2021, 296 of the 351 communities in Massachusetts have adopted the Massachusetts “Stretch Energy Code” as their basis of energy code standards, and a new municipal opt-in “Net-Zero Specialized Stretch Code” is also under development by the Massachusetts Department of Energy Resources and anticipated in 2023.

As currently written, MSBA energy policy standards rise along with efficiency increases in the base energy code, and staff anticipates an increase in energy efficiency for all MSBA Core Program projects in 2023 that would follow any increases in the new energy code. MSBA staff will continue to monitor the development and implementation of these codes and will provide an update and any recommended changes, as may be needed, at a future Board meeting.

#### Improving Air Quality

The MSBA has recognized developments regarding the quality of indoor air in buildings with tighter exterior envelopes and increasing levels of thermal insulation. On January 1, 2021, House Bill 4900, Chapter 21A of the Massachusetts General Laws was amended by adding Section 28, prohibiting within Massachusetts the manufacture, sale, distribution in commerce or importation of bedding, carpeting, children’s products, residential upholstered furniture, and window treatments that contain certain flame retardant chemicals. There are also concerns regarding interior building products that include volatile organic compounds, anti-microbials, rust inhibitors, preservatives, and stain resistant chemicals among many others. These chemicals are shown to present long-term hazards to building occupants, especially in children (See MSBA Project Advisory 69, March 2021).

There are categories within the US Green Building Council’s LEED for-Schools and Northeast Collaborative for High Performance Schools sustainability standards that address indoor air quality, and more specifically those that require identification and reduction of chemical products used in school construction that may present a hazardous environment for building occupants. Based on outreach to organizations and design professionals, as well as a review of the quantity and types of sustainable points school districts target for approved school projects, it appears that requiring points within the Indoor Air Quality category is achievable. Therefore, staff recommends requiring each Core Program project achieve a minimum number of points from among these indoor air quality categories, similar to the MSBA requirement that Core Program projects exceed minimum energy efficiency levels by 10%.

With this proposed update to the Green Policy, the MSBA is encouraging school districts and their design teams to specify products that conform to material transparency through product disclosures and to specify products that don’t include these chemicals. With this initial change, the MSBA looks to encourage school districts to require this for their projects and to signal to manufacturing companies that there will be demand for furniture, equipment and construction materials that are chemical free. Our research indicates that additional products are becoming

available which will be critical in complying with the public procurement rules for 3 or equal products for all public bids. In addition, a controlled building ventilation “flush-out” and air testing can help remove any volatile organic compounds from the building before occupancy. The MSBA plans to continue its research and, as we learn more, will consider future updates to the Green Policy that will continue to emphasize these indoor air quality issues and increase specific requirements in this section.

### **Recommendation**

As presented at the Facilities Assessment Subcommittee on May 18, 2022, MSBA staff recommends requiring each Core Program project achieve a minimum number of points from among these indoor air quality categories, similar to the MSBA requirement that Core Program projects exceed minimum energy efficiency levels by 10%, that all new construction and major renovation/addition Core Program projects requesting Project Scope and Budget approval after June 22, 2022 must comply with the following updated Green Schools Program:

(See Attachment 1)

**Attachment 1**  
**MSBA Green Schools Program Policy**

*(In addition to 963 CMR, 2.04 General Site and School Construction Standards), and using the current editions of either LEED-S or NE-CHPS*

Minimum requirements for all new construction and major renovation/addition Core Program projects funded by the MSBA, for no additional reimbursement:

**Minimum Requirements<sup>1</sup>**

| <b>Current 2017 Policy</b>   | <b>Proposed 2022 Policy</b>   |
|--|---|
| <p>Using LEED-S, for no additional reimbursement, achieve a minimum of “Certified”,</p> <p align="center">OR;</p> <p>Using NE-CHPS, for no additional reimbursement, achieve a minimum of “Verified”.</p> <p align="center">AND;</p> <p>Exceed the level of energy efficiency required in the current Massachusetts (base) energy code by 10%, using the LEED-S EA “Optimize Energy Performance” credit submittal or the NE-CHPS “Energy Efficiency” credit submittal to demonstrate that performance.</p> | <p>Using LEED-S, for no additional reimbursement, achieve a minimum of “Certified,” including a minimum total of three points (from seven points available) from the following three categories:</p> <ul style="list-style-type: none"> <li>• MR Building Product Disclosure and Optimization - Material Ingredients</li> <li>• IEQ - Low Emitting Materials</li> <li>• IEQ – Indoor Air Quality Assessment</li> </ul> <p>OR;</p> <p>Using NE-CHPS, for no additional reimbursement, achieve a minimum of “Verified”, including a minimum total of five points (from ten points available) from the following four categories:</p> <ul style="list-style-type: none"> <li>• EQ 5.1.3 Indoor Air Quality Management – Building Flush Out</li> <li>• EQ 7.0 Low Emitting Materials</li> <li>• EQ 7.1 Additional Low Emitting Materials</li> <li>• MW 10.1 Health Product Information Reporting</li> </ul> <p>AND;</p> <p>Exceed the level of energy efficiency required in the current Massachusetts (base) energy code by 10%, using the LEED-S EA “Optimize Energy Performance” credit submittal or the NE-CHPS “Energy Efficiency” credit submittal to demonstrate that performance.</p> |

**Additional Reimbursement<sup>2</sup>**

| <b>Current 2017 Policy</b>   | <b>Proposed 2022 Policy</b>  |
|--|--|
| <p>For an additional reimbursement of 2% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must exceed the level of energy efficiency required in the current Massachusetts (base) energy code by 20%, using the LEED-S EA “Optimize Energy Performance” credit submittal or the NE-CHPS “Energy Efficiency” credit submittal to demonstrate that performance.</p> | <p>For an additional reimbursement of 2% of the Estimated Basis of Total Facilities Grant, and in addition to the minimum requirements described above, projects must exceed the level of energy efficiency required in the current Massachusetts (base) energy code by 20%, using the LEED-S EA “Optimize Energy Performance” credit submittal or the NE-CHPS “Energy Efficiency” credit submittal to demonstrate that performance.</p> |

The requirement to comply with the current / 2017 policy remains in effect for all Core Program projects that request Project Scope and Budget approval on or before the June 22, 2022 MSBA Board meeting. For projects that predate 2017, refer to the Green Schools Program policies in place at the time.

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<sup>1</sup> *For projects that have a budget and scope of work limited to repairs, minor renovations, or small additions relative to the size of the overall existing building, the MSBA recognizes that meeting energy efficiency standards intended for major renovation and replacement projects may not be feasible (it is the responsibility of the design professionals, in conjunction with the local authorities having jurisdiction, to determine the minimum energy efficiency requirements for a renovation project). Therefore, the MSBA, at its sole discretion and after review with the district, may allow a Core Program project to proceed without meeting the minimum requirements of the MSBA Green Schools Program. However, all new construction is required to incorporate sustainable design features to the extent required by the new energy code.*

<sup>2</sup> *As with previous MSBA Green Schools Program policies, incentive points provided by the MSBA are provisional, subject to the district meeting certain sustainability requirements for the project. If the District does not meet the requirements for energy efficiency, the district will not qualify for these incentive points, and the MSBA will adjust the reimbursement rate accordingly.*