

## Town of Southborough, Massachusetts

## Neary Building Committee – Sustainability Subcommittee

Thursday, January 2, 2025

1:00 PM

Virtual Zoom Meeting

Pursuant to Chapter 20 of the Acts of 2021, An Act Relative to Extending Certain COVID-19 Measures Adopted During the State of Emergency, signed into law on June 16, 2021, this meeting will be conducted via remote participation. No in-person attendance by members of the public will be permitted.

Neary Building Committee – Sustainability Subcommittee**Members Present:** Roger Challen, and Chris Evers**Members Absent:** Mark DavisEx-Officio**Members Present:** Keith Lavoie, Assistant Superintendent of Operations**Members Absent:** None

## I. Call Meeting to Order

Roger Challen called the NBC - Sustainability Subcommittee Meeting to order at 1:05 pm.

## II. Review the LCCA (Life Cycle Cost Analysis) from the HVAC engineers.

Kate Bubriski from Arrowstreet reviewed the HVAC life cycle cost analysis (LCCA) as part of its efforts to finalize an HVAC system design for a sustainable, net-zero building. The meeting covered the evaluation of three system options: VRF systems, ground-source heat pumps, and air-to-water heat pump chillers. The focus was on assessing energy use, costs, maintenance, and overall performance to determine the best long-term solution.

The VRF system requires higher maintenance due to more components. The ground source heat pump emerged as the most energy-efficient option, especially with the availability of state and federal incentives, which provided instant payback. The air-to-water heat pump chiller offered moderate energy efficiency with the added advantage of reusable mechanical piping and air handlers. The ground source heat pump aimed to achieve an Energy Use Intensity (EUI) of 25 or less, meeting net-zero building standards.

The analysis compared systems based on energy use, indoor air quality, thermal comfort, acoustics, service life, and maintenance needs. Ground source and air source systems, utilizing displacement ventilation, provided superior air quality and quieter operation compared to the overhead system of the VRF option. Maintenance needs varied, with ground source systems requiring less frequent servicing, than air source systems, due to their design and indoor components.

Cost analysis showed that ground source systems had the lowest annual operational costs when incentives were applied. Without incentives, none of the systems achieved a payback within the assessed period. However, the ground source heat pump still stood out as the most cost-effective in the long term due to energy savings and incentive availability.

The Subcommittee agreed they would like the design consultants to move forward with the geothermal-based HVAC system design, marking a significant step toward achieving a sustainable and efficient infrastructure for the building project. An official vote will take place during a full Neary Building Committee meeting.

III. Public Comment (None at this time)

IV. Other business that may properly come before the Committee (None at this time)

V. Adjournment

Roger Challen requested a motion to adjourn.

*Roger Challen moved, Chris Evers seconded, and it was unanimously voted by roll call, "To adjourn."*

MOTION TO  
ADJOURN

Roll Call

*For: Chris Evers, and Roger Challen*

*Opposed: None*

*Abstained: None*

Roger Challen adjourned the meeting at 1:37 pm.

Respectfully submitted,

Mariana Silva, Central Office Administrative Assistant

Office of Superintendent

Documents used during the meeting:

1. NBC – Sustainability Subcommittee Agenda January 2, 2025

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May be watched or may participate in the meeting remotely with the meeting link at:

<https://www.southboroughma.gov/674/Virtual-Meetings>

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Agenda (all items may have one or more votes taken to the extent action is required):

- I. Call Meeting to Order
- II. Review the LCCA (Life Cycle Cost Analysis) from the HVAC engineers.
- III. Public Comment
- IV. Other business that may properly come before the Committee
- V. Adjournment

Roger Challen, Chair