

November 1, 2021

Re: Acoustics Survey for Bunker Hill Phase 1 Buildings

Dear Charlestown Residents:

The document provided here contains supplemental information about the proposed project that was discussed at the community meeting on 10/27/21.

This package contains the following documents:

- Acoustics Narrative by Acentech

This acoustics survey was conducted by Acentech, an acoustical consultant, to understand the current noise conditions at the sites of the Bunker Hill Phase 1 Buildings, which is a standard part of the development process. This report provides a baseline that the team will utilize during the design process for these buildings to ensure that they are designed to block out noise pollution.

You can submit questions or comments to info@bunkerhillhousing.com.

Please email us at info@bunkerhillhousing.com to request translation into Spanish.

Sincerely,

The Bunker Hill Housing Redevelopment Team

ACOUSTICS NARRATIVE

Exterior Windows and Walls

According to the 2019 Massport noise contours for Logan Airport, it appears that both building sites are located beyond the 60 dB Ldn contour. The US Department of Housing and Urban Development (HUD) lists the acceptability of sites and the amount of exterior façade attenuation they need based on the Ldn. HUD indicates that Ldn values of 65 dB or less are acceptable, and that no special exterior façade constructions beyond normal construction are needed for aircraft noise. However, the Tobin bridge near Building F is a louder noise source.

We completed site environmental noise measurements over a period of several days to determine typical site ambient noise levels. From these measurements we can determine the required exterior façade construction to meet HUD requirements.

Building F

Our noise monitor on Decatur St measured ambient noise levels during the several-day measurement period. From our measurements, the daytime ambient levels are around 72 dBA, and nighttime levels are never below 50 dBA.

We measured an Ldn of 77 dBA at an elevated receiver facing the highway. For sites exceeding Ldn 65 dBA, HUD requires special approvals, environmental review, and attenuation. HUD does not define “additional attenuation” but we understand that an interior Ldn of 45 dBA is the guiding criterion. A standard 1-inch insulating glazing unit will not be sufficient to meet these interior sound levels.

Based on our estimates of exposure at different points along the façade of Building F, the following are glazing recommendations to meet Ldn 45 dBA and to reduce disturbances from transient noise peaks and low frequency truck noise:

1. Ldn 77 dBA – Interior storm window spaced at least 2 inches, preferable 4 inches, from the insulated glazing.
2. Ldn 73 dBA – Interior storm window spaced 2 inches from the insulated glazing.
3. Ldn 70-71 dBA – Use laminated glass from one of the lites in the insulated glazing.

These recommended upgrades are marked up on the site plan in Figure 1 below. For areas not identified on the markup, a 1-inch insulated glazing unit will be sufficient.

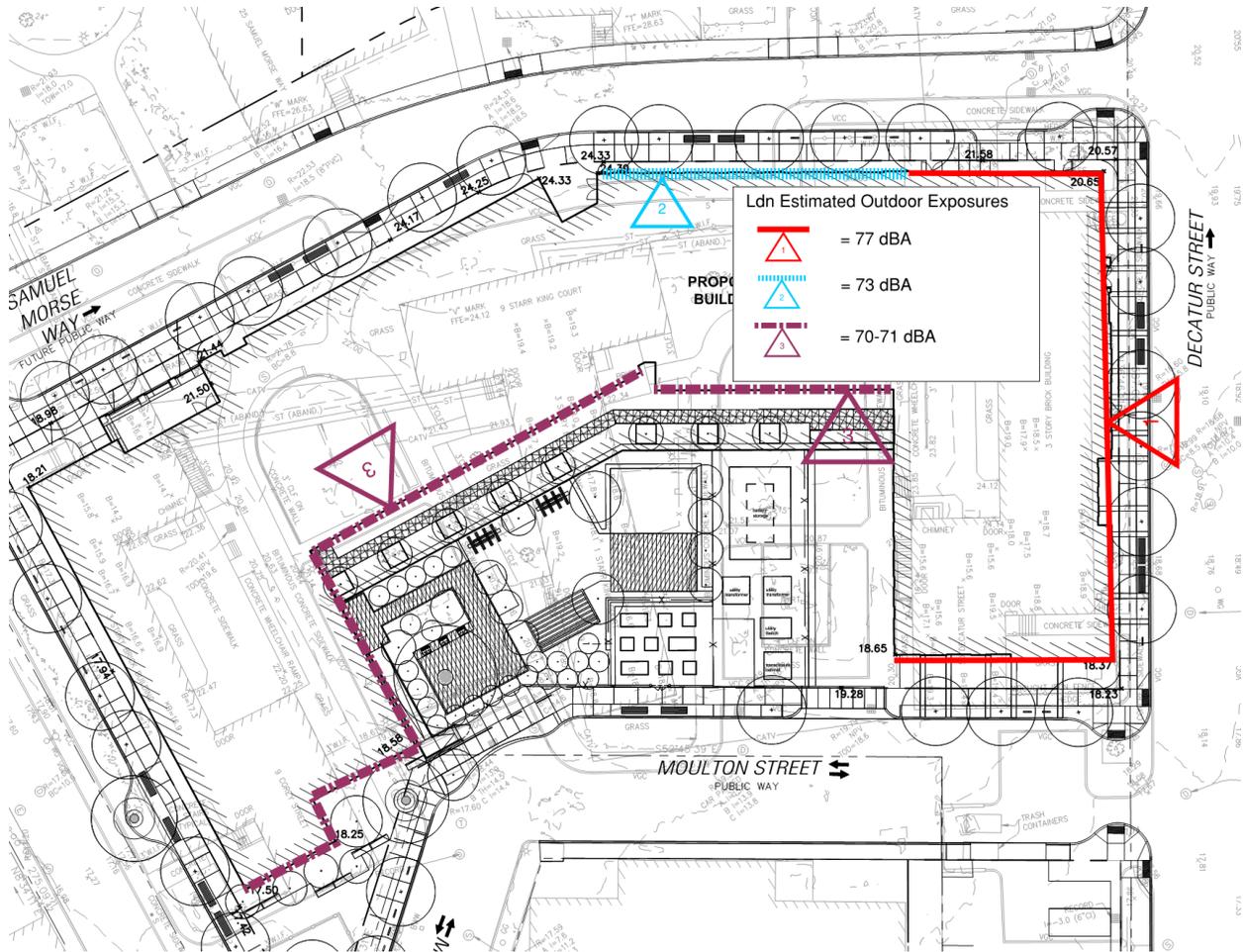


Figure 1: Estimated Ldn Façade Markup for Glazing Upgrades

Building M

Assumptions regarding site conditions to inform our recommendations are based on both reasonable estimates and data garnered from other monitors in close proximity. Limited data was obtained from our noise monitor on Corey St and will be conducted again for more specific data. For sites exceeding Ldn 65 dBA, HUD requires special approvals, environmental review, and attenuation. HUD does not define “additional attenuation” but we understand that an interior Ldn of 45 dBA is the guiding criterion. We anticipated that a standard 1-inch insulating glazing unit will be sufficient to meet these interior sound levels.

Exterior Noise Emissions

The City of Boston’s Noise Code requires that the project building MEP equipment’s noise to neighboring properties not exceed 60 dBA during the daytime and 50 dBA at night.

Building F

For daytime testing of the Building F rooftop generator to meet the Boston Noise Code requirement at the nearest residential neighbor (approx. 102 feet to the north), the generator would need to be in an enclosure that limits the noise emissions to 73 dBA at 7 meters (23 feet), which is the performance of the quiet site II second stage enclosure for the 300 kW generator.

Building M

For daytime testing of the Building M generator to meet the Boston Noise Code requirement at the nearest residential neighbor (approx. 55 feet to the east), the generator would need to be in an enclosure that limits the noise emissions to 65 dBA at 7 meters (23 feet). To achieve this, a third-party custom walk-in enclosure would be required for the 300 kW generator.