LINNEAN SOLUTIONS

NET ZERO NARRATIVE

THUNDER ROAD

379 Somerville Ave, SOMERVILLE

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PHIUS+2018 Passive House – NET ZERO Narrative

March 19, 2021

Project: Thunder Road, 379 Somerville Ave, Somerville, MA

Project Description:
Thunder Road located at 379 Somerville Avenue, in Somerville, Massachusetts consists of one mixed use building containing 10 dwelling units. The project is being designed to Net Zero standards using PHIUS+2018 Certification program for Passive House design and construction.

Sincerely,

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379 Somerville ave is beginning the design process in which the project team is thoroughly incorporating sustainable design elements in order to target Net Zero Energy consumption. The project will reduce overall energy demand through the use of high performance building strategies and through targeting Passive House Certification using the PHIUS+2018 program.

PHIUS+2018 is a rigorous standard that includes a "thorough passive house design verification protocol with a stringent Quality Assurance/Quality Control (QA/QC) program performed onsite by highly skilled and specialized PHIUS+ Raters and Verifiers." Through this program the project will also me U.S. DOE Zero Energy Ready Home status, Energy Star for Homes, U.S. EPA Indoor Air Plus program for indoor air quality, and EPA Watersense Homes for whole building efficient water use.

Using PHIUS+2018 to set the performance targets based on climate and building density, the project will further pursue NET ZERO through the following prescriptive elements:

1. Improved Airtightness – PHIUS require 0.06 cfm/sf of building envelope area. A continuous airtight layer will wrap the building ensuring improved airtightness.
2. Continuous and robust thermally insulated building envelope.
3. High performance windows and doors
4. Fully electric high efficiency heating and cooling systems (heat pumps or VRF)
5. Fully electric residential cooking systems
6. Energy Recovery Ventilation (ERV) – to capture waste energy to help pre-condition incoming ventilation air.
7. Balanced Ventilation systems
8. High efficiency hot water heating systems and insulated water pipes.
9. Heat pump or condensing clothes dryers.
10. Recirculation kitchen hoods. (Kitchen exhaust handled by ERV).
11. No or very limited thermal bridging. The building will eliminate or greatly reduce any potential thermal bridges in structural elements or attachments.