LINNEAN SOLUTIONS

NET ZERO NARRATIVE

366 Broadway, SOMERVILLE

PHIUS 2021 Passive House – NET ZERO Narrative

July 13, 2022

Project: 366 Broadway, Somerville, MA

Project Description:
366 Broadway, in Somerville, Massachusetts consists of one multifamily residential building containing 58 dwelling units. The project is being designed to Net Zero Ready standards using PHIUS CORE 2021 Certification program for Passive House design and construction.

Sincerely,

Jim Newman
LEED AP O+M, LFA, Eco District AP, LENSES Faculty Member
Principal
Linnean Solutions

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366 Broadway is beginning the design process in which the project team is thoroughly incorporating sustainable design elements in order to target Net Zero Ready building. The project will reduce overall energy demand through the use of high-performance building strategies and through targeting Passive House Certification using the PHIUS CORE 2021 certification program.

PHIUS CORE 2021 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 meet 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 CORE 2021 to set the performance targets based on climate and building density, the project will also pursue NET ZERO READY 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. Electric-ready building systems
5. Fully electric high efficiency heating and cooling systems (heat pumps)
6. Fully electric residential cooking systems
7. Energy Recovery Ventilation (ERV) – to capture waste energy to help pre-condition incoming ventilation air.
8. Fully balanced Ventilation systems
9. High efficiency hot water heating systems and insulated water pipes.
10. Heat pump or condensing clothes dryers.
11. Recirculation kitchen hoods. (Kitchen exhaust handled by ERV).
12. No or very limited thermal bridging. The building will eliminate or greatly reduce any potential thermal bridges in structural elements or attachments.
13. Heat pump hot water heating (if viable).
14. Meet the appropriate Electric Vehicle requirements (if applicable)