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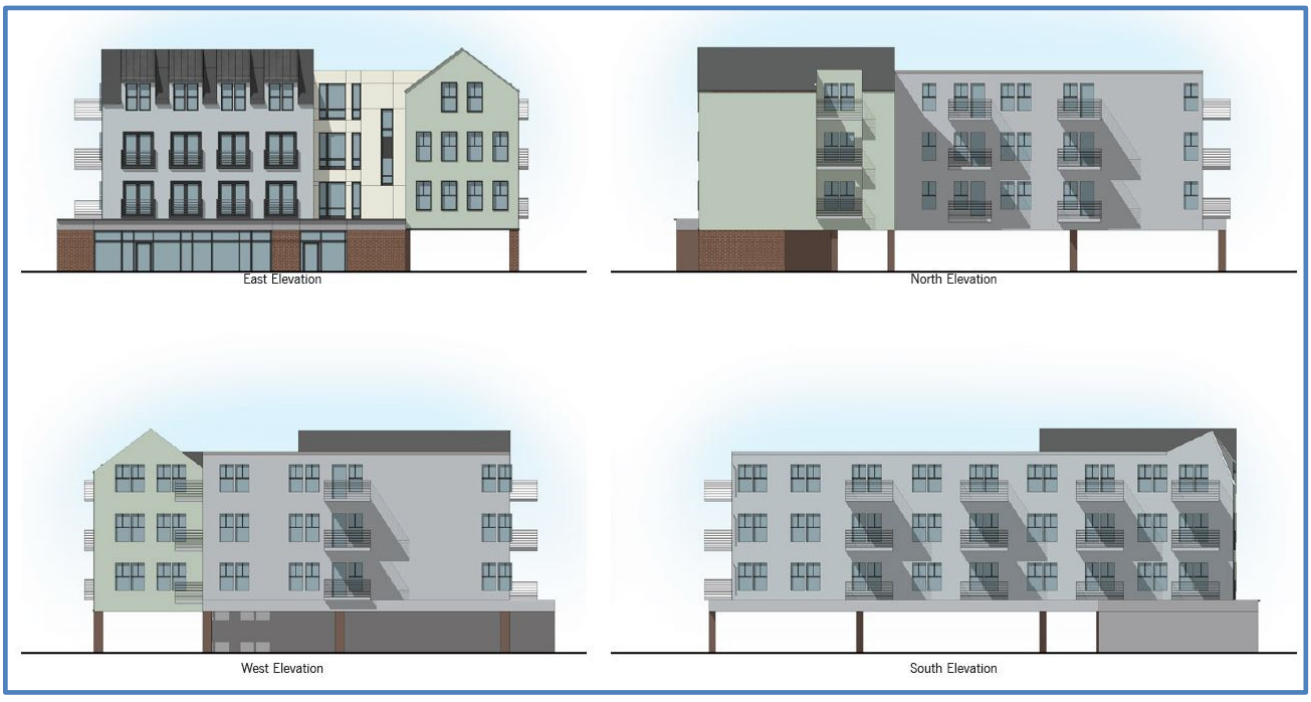
SUSTAINABILITY/ENERGY NARRATIVE

1148-1151 Walnut Street

Newton, Massachusetts



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PHIUS+2018 Passive House – Affidavit

March 22, 2021

Project: 1149-1159 Walnut Street

Project Description:
The 1149-1151 Walnut Street project in Newton, Massachusetts consists of one mixed use building containing 25 dwelling units with first floor commercial space. The residential portion of the building is being designed using the PHIUS+2018 Certification program for Passive House design and construction.

I am the current Green Building Professional for this project and have over 10 years of experience working on high performance and sustainable buildings. I am a LEED AP as well as a Certified Passive House Consultant.

I acknowledge that I have reviewed all relevant documents and that to the best of my knowledge, the documents provided indicate that the green building project is being designed to achieve the requirements of this Section 5.13.

Sincerely,

Ian Johnson
LEED AP HOMES/BD+C, WELL AP, CPHC
Senior Director
Linnean Solutions

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ENERGY NARRATIVE

1149-1151 Walnut Street, Newton

1149-1151 is beginning the design process in which the project team is thoroughly incorporating sustainable design elements in order to meet Passive House Certification. 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. High efficiency heating and cooling systems (heat pumps or VRF)
5. Energy Recovery Ventilation (ERV) – to capture waste energy to help pre-condition incoming ventilation air.
6. Balanced Ventilation systems
7. High efficiency hot water heating systems and insulated water pipes.
8. Heat pump or condensing clothes dryers.
9. Recirculation kitchen hoods. (Kitchen exhaust handled by ERV).
10. No or very limited thermal bridging. The building will eliminate or greatly reduce any potential thermal bridges in structural elements or attachments.

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SUSTAINABILTY NARRATIVE

Summarized below are the sustainability strategies that the petitioner will pursue at 1149-1151 Walnut Street, separated into two categories: “Committed to achieve or implement” and “Committed to analyze in terms of feasibility”.

1. **Committed to Achieve or Implement:**

a. The building is designed to be transit oriented, resulting in reduced vehicular use on the property.
b. The parking ratio of less than 1:1 will discourage vehicle use.
c. Bicycle parking/storage will be provided for 24 bicycles.
d. Two central Energy Recovery Ventilation Units (ERVs) with AHSP heating/cooling will be located on the roof.
e. The building will achieve at least LEED Silver certification.
f. The petitioner will utilize electric “Energy Star” appliances.
g. The building will use electric heat and electric heat-pump hot water for the residential portion of the building and natural gas for retail use.
h. The building will use insulated double glazing in units.
i. The building shell will be R-21min.

2. **Committed to Analyze in Terms of Feasibility:**

a. The petitioner has conducted a Passive House certification study though the PHIUS+ 2018 program. Based on the results of the study, the petitioner will seek to achieve Passive House Certification for the residential portion of the building if feasible. If not feasible, the petitioner will employ passive house features to the extent feasible.
b. The petitioner will monitor new technologies for sustainability and will evaluate the feasibility of incorporating the new technologies.

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LEED AP BD+C

GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

Ian Johnson

HAS ATTAINED THE DESIGNATION OF

LEED AP® Building Design + Construction

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED green building program.

10681032-AP-BD+C
CREDENTIAL ID

23 JUL 2013
ISSUED

25 APR 2022
VALID THROUGH

MAHESH RAMANUJAN
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.

LEED AP HOMES

GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

Ian Johnson

HAS ATTAINED THE DESIGNATION OF

LEED AP® Homes

by demonstrating the knowledge and understanding of green building practices and principles needed to support the use of the LEED ® green building program.

10681032-AP-HOMES
CREDENTIAL ID

28 APR 2012
ISSUED

25 APR 2022
VALID THROUGH

MAHESH RAMANUJAM
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.