

State Street RETROFIT

Brooklyn, New York

This four-story brick townhouse was gut renovated and expanded with a three-story addition in the back, built using ICFs. The garden level has a separate studio apartment in front and an indoor, 8-foot by 13-foot swim-in-place pool in back. Although the pool area is within the home's thermal envelope, addressing the humidity issues posed by this special use required air sealing the room off from the rest of the house and installing a separate, small-capacity HRV there.

Team

Architects

Prospect Architecture
[Jane Sanders Architect](#)

Builder

[The Remy Group](#)

Mechanical Engineer

[ZeroEnergy Design](#)



EXTERIOR Townhouse Retrofit

Brooklyn, New York

This townhouse's original street-facing brick wall had been overlaid with faux-stucco in the mid-20th century. With no historic façade to save, this retrofit could proceed from the exterior. Removing the stucco

Products (for both)

Air/Moisture Control
[Sto](#)

Insulation
[InSoFast](#)

Skylights
[Lamilux from 475](#)

Windows
[\(State Street\) Zola](#)
[\(Exterior Retrofit\) Ikon](#)

would have inflicted too much damage to the brick, so architect Jane Sanders chose to apply an exterior insulation and finish system (EIFS) over the brick façade.

The missing cornice was reconstructed using EIFS as well. The back façade was rebuilt using concrete block, EIFS on the outside, and preassembled insulated panels on the interior.

Team

Architect and Certified Passive House Consultant
[Jane Sanders Architect](#)

Builder

[Mobili De Angelis](#)

Mechanical Engineer

[Baukraft Engineering PLLC](#)

Photos by Jane Sanders

Passive House Metrics

Specific space heating demand	3.2 kBtu/ft ² /yr	10 kWh/m ² /yr
Specific space cooling demand	7.6 kBtu/ft ² /yr	24 kWh/m ² /yr
Source energy use intensity (EUI)	37.4 kBtu/ft ² /yr	11.8 kWh/m ² /yr
Air changes per hour	1.0 ACH ₅₀ (design)	

Passive House Metrics

Specific space heating demand	2.4 kBtu/ft ² /yr	7.5 kWh/m ² /yr
Specific space cooling demand	5.4 kBtu/ft ² /yr	17.1 kWh/m ² /yr
Source energy use intensity (EUI)	26 kBtu/ft ² /yr	82 kWh/m ² /yr
Air changes per hour	0.9 ACH ₅₀	