Hotel Marcel

New Haven, CT

Hotel
Retrofit

PHI Database ID#: 7461

Certification Goal:

EnerPHit ✓
Certified Retrofit
Passive House Institute
classic | plus | premium |

Status: **Certified**

Size: 89,694 FT2 TFA with 165 Guest Rooms

Description: Hotel Marcel is a renovation of an historic Brutalist building into a 165-room all-electric hotel and conference center.

DOE Climate Zone: 5a

Team:

Owner:
Becker & Becker Associates
www.beckerandbecker.com

Architect/Designer:
Becker & Becker Associates
www.beckerandbecker.com

PH Consultant:
Steven Winters Associates
www.swinter.com

MEP Design:
LN Consulting
www.lnconsulting.com

Structural Engineer:
GNCB Engineers
www.gncbengineers.com

Builder:
Consigli Construction Co.
www.consigli.com

Certifier:
Passive House Institute

Hotel Marcel is an historic preservation project that transformed the Pirelli building, originally designed by Marcel Breuer in 1969, into a 165-room boutique hotel in New Haven, Connecticut. Part of Hilton's Tapestry Collection, it features over 9,000 square feet of meeting space and is the first U.S. hotel designed to meet EnerPHit or Passive House standards, setting a new benchmark for sustainable hospitality.

Opened in May 2022, Hotel Marcel emphasizes electrification and minimizes both operational and embodied carbon through the adaptive re-use of the existing structure. This approach not only preserves an important piece of mid-century modern architecture but also significantly reduces the carbon footprint typically associated with new construction. The hotel's energy production and consumption are balanced to minimize environmental impact.

The building's rectangular design creates an efficient envelope, while deep-set windows offer ample daylight and reduce solar heat gain in the summer. All-electric systems, including Power-Over-Ethernet shades and lights, and a renewable microgrid with battery storage, eliminating the need for fossil fuels. Over 1,000 photovoltaic panels on the roof and parking lot canopies contribute to the hotel's energy needs.

Thermal Envelope

Ground:
Existing concrete slab on grade, with exemption

Walls:
Existing precast concrete panels with air-sealed closed-cell and open-cell insulation and aerogel blanket on the interior of the panels
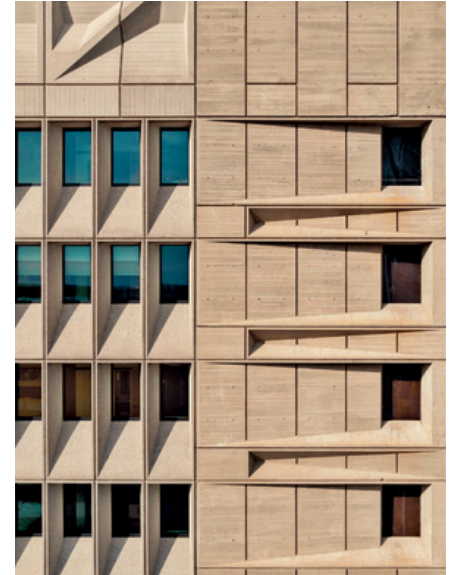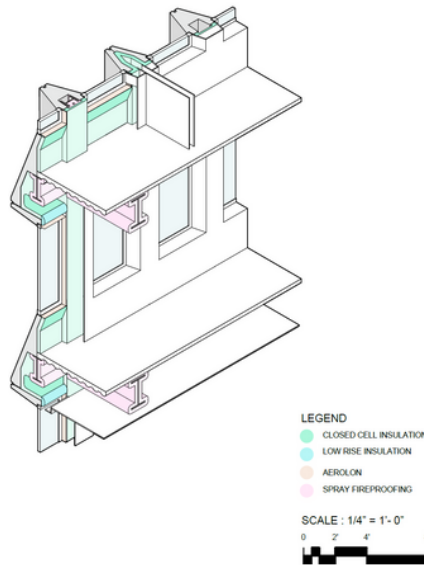U-value = 0.022 W/(m2K)

Roof:
Existing concrete roof slab with tapered rigid insulation topped with EPDM roofing
U-value = 0.019 W/(m2K)

Windows & Doors:
Thermally broken aluminum with triple-glazed laminated glass; windows and ground floor doors by Klar Studio; large sliding doors and windows on 9th floor by Neuffer
U w-value = 0.15 W/(m2K)
U g-value = 0.35 W/(m2K)
g-value = 83%

Shading Strategies:
Existing deep-set geometry of pre-cast panels shade the windows on all 4 facades

Mechanical Systems:

Ventilation:
2 Swegon Gold ERVs
85% efficient

Heating:
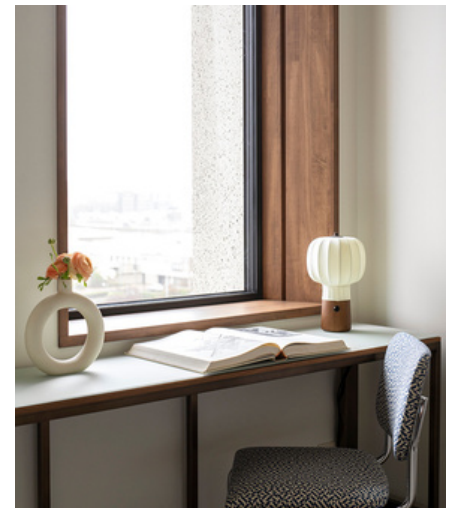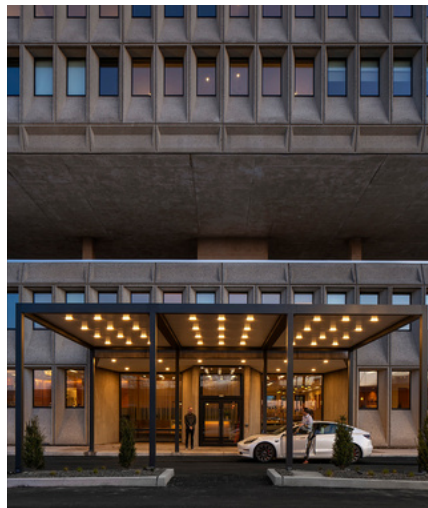Air source VRF heat pumps by Mitsubishi

Cooling/Dehumidification:
Air source VRF heat pumps by Mitsubishi

Domestic Hot Water:
Air source Heat20 Mitsubishi heat pumps

Onsite Renewable Energy:
1.5 MWh microgrid with over 1,000 solar panels

PHPP Values

Climate:
Cool-temperate

Airtightness:
n50 = 0.9/h

Annual Heating Demand:
78 kWh/(m2a)

Heating Load:
47 W/m2

Cooling & Dehumidification Demand:
15 kWh/(m2a)

Cooling Load:
13 W/m2

PE Demand:
145 kWh/(m2a)

PER Demand:
151 kWh/(m2a)

LEGEND
- CLOSED CELL INSULATION
- LOW RISE INSULATION
- AEROLON
- SPRAY FIREPROOFING

SCALE : 1/4" = 1'- 0"

The building's rectangular design creates an efficient envelope, while deep-set windows offer ample daylight and reduce solar heat gain in summer. The hotel's pre-cast concrete perimeter walls were insulated and air-sealed to mitigate thermal bridging. Triple-pane windows provide superior acoustic and thermal insulation, meeting Passive House standards and ensuring a quiet experience for guests. Mitsubishi VRF units optimize energy by transferring heat between spaces as needed, and Swegon energy recovery ventilators reduce energy consumption by conditioning ventilation air with about 80% less energy.

Locally sourced materials and union labor were used in the construction, emphasizing community involvement. The building's microgrid, managed by Ageto, monitors and optimizes energy usage in real-time, serving as an educational tool for guests and staff.

This project demonstrates that market-rate real estate developments can successfully meet stringent sustainability standards like Passive House and EnerPHit. It was financed through a combination of investor equity, commercial loans, tax credits, and energy efficient incentives, making it a model for sustainable development.