

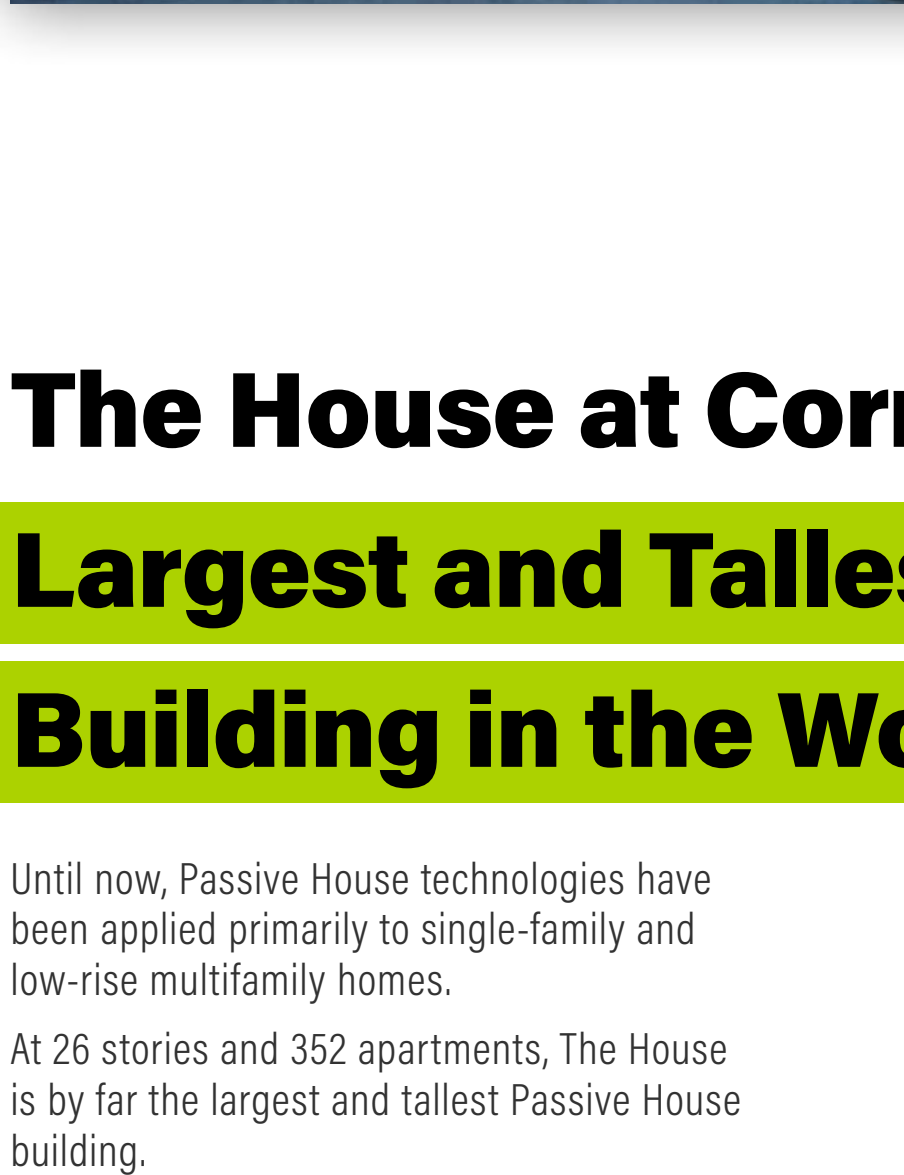
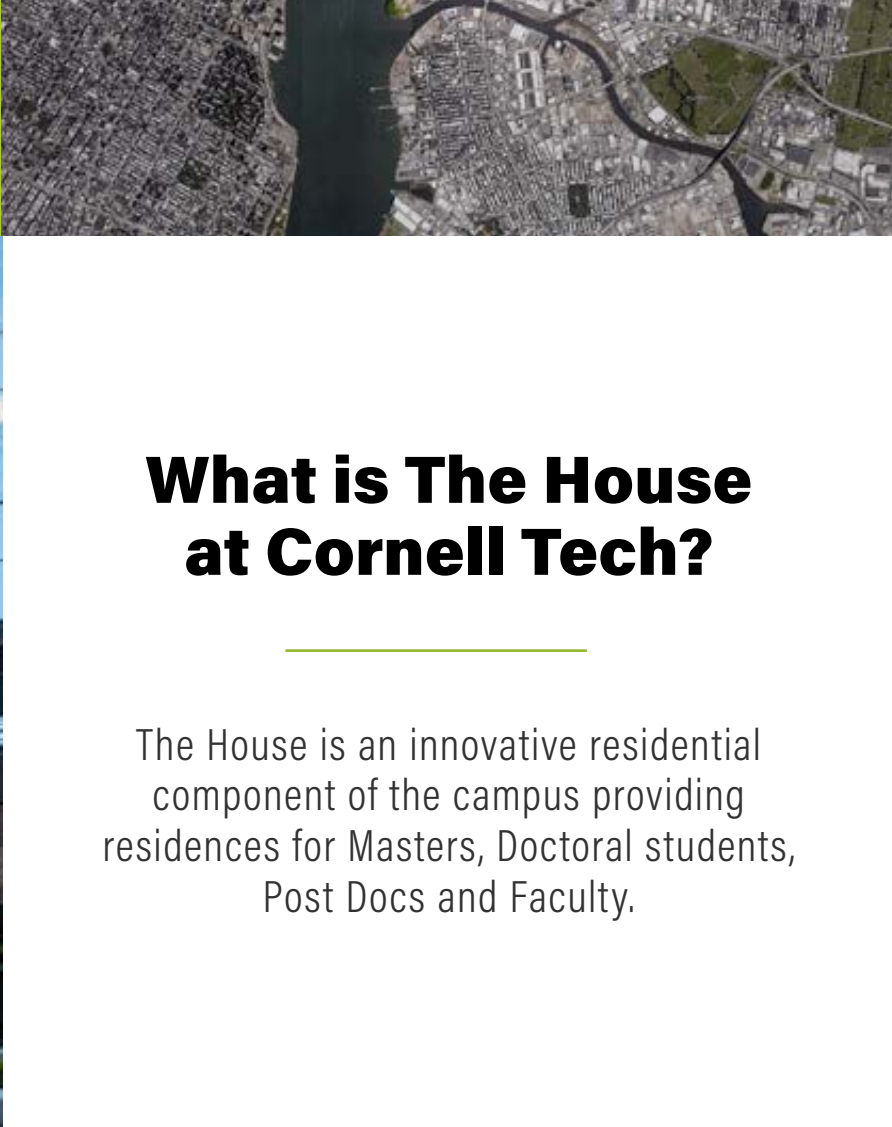
Cornell Tech is Open!

CORNELL TECH CAMPUS, ROOSEVELT ISLAND, NYC



What is Cornell Tech?

Cornell Tech is a new Applied Sciences campus located on Roosevelt Island in New York City. It is another leg for New York City's economy combining the innovation of Silicon Valley with financial clout of Wall Street.



What is The House at Cornell Tech?

The House is an innovative residential component of the campus providing residences for Masters, Doctoral students, Post Docs and Faculty.

The House at Cornell Tech is the Largest and Tallest Passive House Building in the World.

Until now, Passive House technologies have been applied primarily to single-family and low-rise multifamily homes.

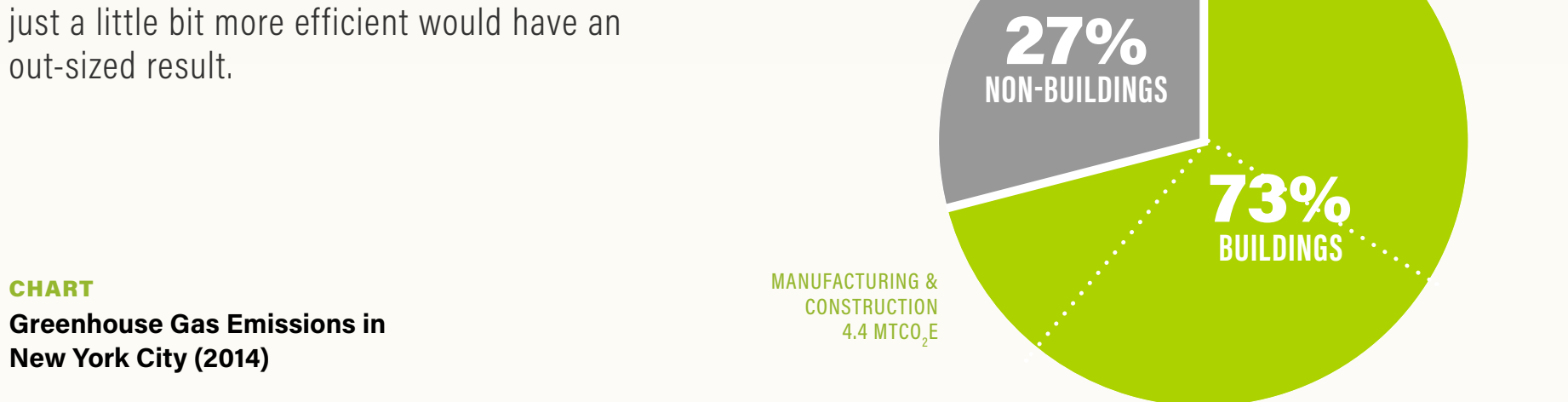
At 26 stories and 352 apartments, The House is by far the largest and tallest Passive House building.

Why Does this Matter?

Climate Scientists calculate that unless we drastically reduce our carbon output, the world will hit a point of no return in 2042.

Estimated Point of No Return
A global average atmospheric concentration of carbon dioxide of 450 parts per million (ppm)

GRAPH
World Energy-Related Carbon Dioxide Emissions

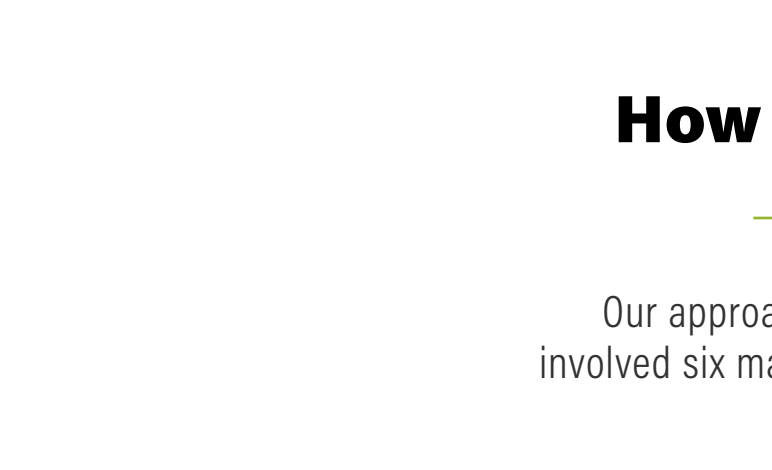
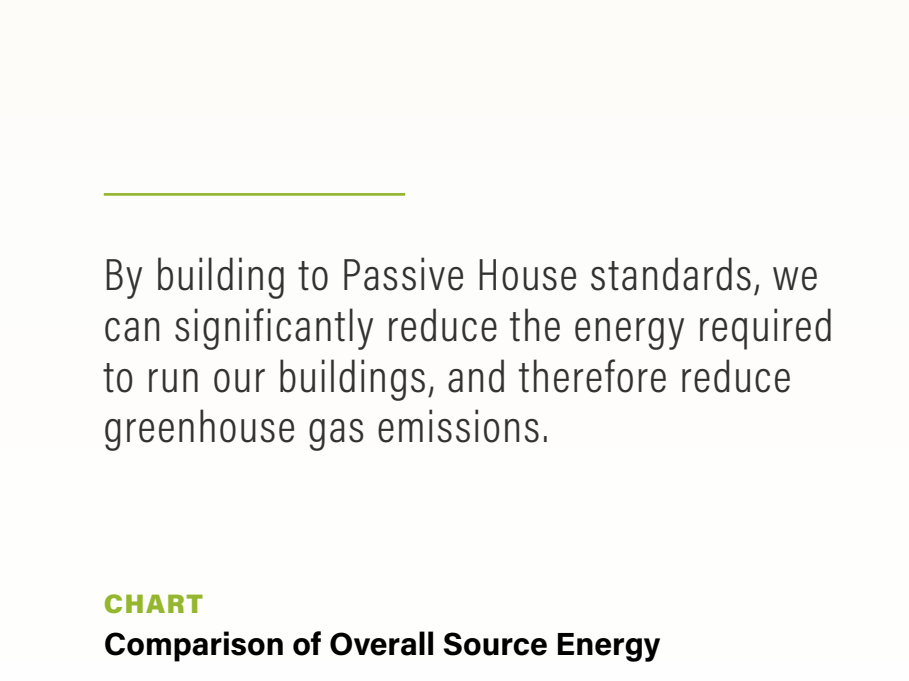


* OECD: The Organisation for Economic Co-Operation and Development
U.S. Energy Information Administration Annual Energy Outlook 2015, Scientific American

Since buildings make up a majority of the world's carbon output, making them even just a little bit more efficient would have an out-sized result.

CHART
Greenhouse Gas Emissions in New York City (2014)

City of New York, Inventory of New York City Greenhouse Gas Emissions, November 2014



By building to Passive House standards, we can significantly reduce the energy required to run our buildings, and therefore reduce greenhouse gas emissions.

CHART
Comparison of Overall Source Energy

* Local Law 84 (LL84) requires buildings in NYC to annually report their energy (and water) use data to the city.

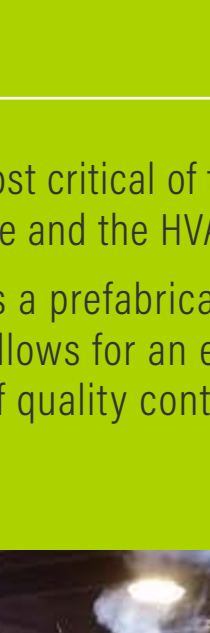
Local Law 84, Buro Happold

How Do We Do It?

Our approach to designing The House involved six major sustainable design criteria.



SITING



COMPACT BUILDING SHAPE



ENCLOSURE



LOW ENERGY HVAC SYSTEM



ENERGY EFFICIENT APPLIANCES & LIGHTING



USER FRIENDLINESS

The two most critical of these are the enclosure and the HVAC system. The facade is a prefabricated panel wall system. This allows for an exceptional level of quality control.



DIAGRAM
Installing Prefabricated Panel Wall



The enclosure had to be sealed at over 3,000 façade anchor points and various penetration points.

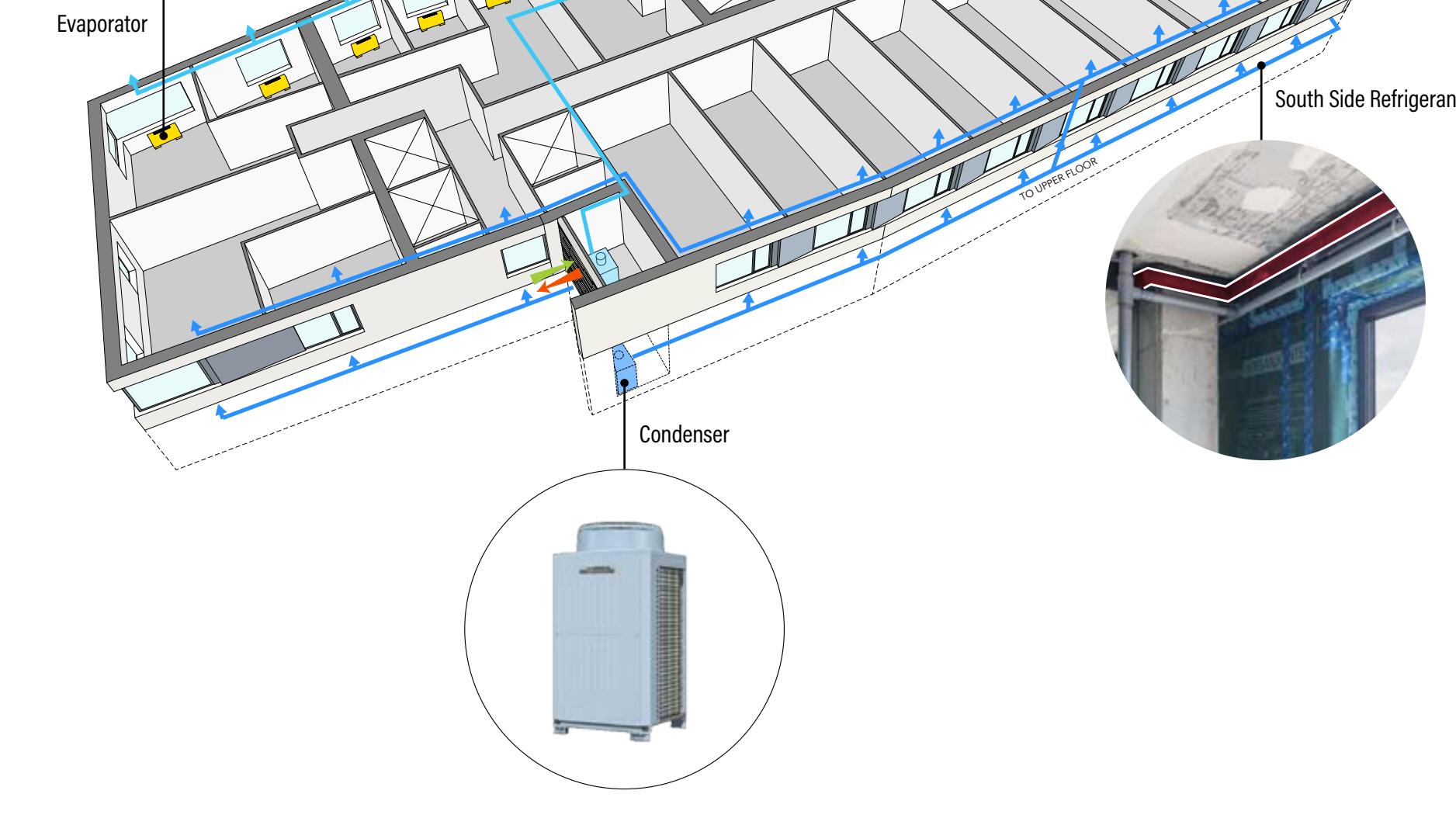


Thermal bridging had to be eliminated wherever possible, including at panel joints, building canopy, and at rooftop mechanical equipment.



The HVAC system uses an energy efficient VRF system to heat and cool.

DIAGRAM
Variable Refrigerant Flow (VRF) System



On the roof, an Energy Recovery Ventilator Unit provides fresh air to the apartments, while removing exhaust air.

DIAGRAM
Energy Recovery Ventilator (ERV) System



Bathrooms / Kitchens
Exhaust air exits the building at the roof after passing through the ERV so heat energy can be captured

Fresh Air
Tempered supply air provided to all bedrooms and living rooms in separate supply risers

The House at Cornell Tech is a leading example of the steps we can take to reduce global warming.



Team

Cornell University | Hudson Companies | Related Companies
Handel Architects | Steven Winter Associates | Buro Happold
Vidaris | Monadnock Construction