



## **The state of sustainable architecture in New York City - by David West**

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Until recently, cutting-edge, sustainable design was mainly reserved for flagship corporate, institutional, and civic projects, while market-rate residential projects were generally designed strictly to code. Now, with tenants and property owners becoming more sensitive to building performance, sustainable design is becoming the norm across all building typologies in New York, for the reasons outlined below.

### Stricter Building Codes

Over the last decade, city and state baseline codes have become significantly more stringent. Buildings built to “code minimum” now have far more efficient exterior envelope insulation, for example, than even just a few years ago. Developers have embraced zoning incentives that encourage greater efficiency in return for modest floor area increases, resulting in a crop of buildings that are well ahead of the sustainability curve. One example of this would be PLG, a recently completed, all-electric rental building in South Brooklyn.

### New Technologies

Sustainable design also continues to evolve through advances in technology. For example, new residential buildings are far more likely to employ electric HVAC systems than in previous years, relying less on fossil fuel. This will pay dividends in the future as the grid becomes more and more renewable.

More sophisticated strategies such as Passive House, a voluntary standard for energy efficiency in a building, are making inroads as well. These strategies, which require much tighter envelopes, have so far mainly been employed in the public and non-profit sectors for affordable housing and civic projects. As real estate developers are generally risk averse and shy away from new unproven technologies, the not-for-profit sector has fortunately created a pool of builders and consultants familiar with the Passive House methodologies who can lead the way for other sectors. Due to the availability of components, the cost premium for Passive House has come down significantly—another huge benefit to developers. Today, more residential Passive House projects are popping up in New York, including Hill West’s 202 East 23rd St., a luxury rental development in Manhattan’s Kips Bay.

## Government Mandates

Government mandates are playing a major role in advancing sustainability, and New York City has been at the forefront. Local Law 97, which will measure actual energy performance and require near net zero energy use over the course of the next several decades, is already making an impact. Other recent mandates include Local Law 154, which bans fossil fuel use in new buildings and will phase in over the next five years

Rather than fighting these mandates, many building developers are embracing them, seeing marketing opportunities, energy savings and improved tenant satisfaction as incentives. Tangible benefits include better indoor air quality, reduced noise and lower utility costs. In the near future, it seems likely that having an inefficient building will become a liability, and having a Passive House (or something similar) will become a highly marketable feature. Plus, a verifiable, “envelope-first” approach to energy reduction (such as Passive House) offers certainty in a landscape where the cleanliness of the grid remains uncertain.

## Sustainable Materials

Since approximately 70% of the emissions caused by buildings can be attributed to their operational energy, it makes sense to prioritize building envelope and operations efficiency. However, the embodied energy in construction materials themselves makes up the other 30% of emissions, and has become a hot topic among builders, developers and designers. Concrete and steel are carbon-intensive to produce, while mass timber construction—a more sustainable option—has been employed in some regions, but has yet to make a dent in NYC. Given current levels of interest in eco-friendly materials, I expect that NYC codes will evolve to permit some version of mass timber, at least in midrise structures.

## Renewable Energy

Developers can maximize renewable energy easily, since rooftops are natural places for solar panels. Though current codes and zonings are slowly catching up to these newer technologies, battery storage for solar energy has remained a sticking point due to still outdated building codes that don't properly address risks and hazards. Advanced research and activism are in progress to help define what is safe and encourage even greater use of renewable energy and accompanying storage systems.

In summary, there have been two types of real estate developer in the past: those that choose to do whatever is the minimum mandated by code, and a few lonely crusaders who have reached beyond. Going forward, I predict these will merge and sustainability will become mainstream. Not only will it help save our planet, but it will also be the wisest business decision.

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