

# ARE ECO-TOWERS COMING TO DOWNTOWN PARIS, FRANCE?



An engineering and architecture firm has been working on Paris' Climate/Energy Plan, to be achieved by 2050. Their work led to plans for large, positive energy apartment buildings.

How can we invent the city of the future while considering the constraints, necessities, and aspirations of its inhabitants, administrations, and enterprises?

This, especially given that we live in a world where climate imbalance is provoking an increase of at least 2 degrees Celcius, with risks of heatwaves and floods.

How can we intelligently standardize work, housing, and transportation? And finally, how can we manage energy, waste production, and different forms of pollution while reducing collective costs?

The capital's Climate/Energy Plan for 2050 aims to reduce greenhouse gas emissions by 75% -by 2050. The architectural firm VCA (Vincent Callebaut Architectes) and the engineers at Setec Bâtiment worked in response to this goal. They returned their work to the City of Paris along with an invitation to tender. The two firms worked at the request of the city's technical services (ed: The Urban Ecology Agency and the Management of Green Space and the Environment), and returned with their results after four months.



“Our plan calls for reflection on the city’s position on high-rise buildings and their integration into Paris’s 20 districts,” explains Vincent Callebaut. “We want the city to reflect and prove that it is not condemned to progressive gentrification and ever-increasing social inequality. On the contrary, the young architect in me would like to push forward a new social and political dynamic by ensuring ecological change.” Imagine eight neighborhood prototypes that would transform current horizontal, high-energy consumption buildings into high-rise, positive-energy apartment buildings that “would bring nature to the city.”

### **Eco-friendly Buildings**

The first phase of comparative studies was led during the summer of 2014 by Setec Bâtiment, a civil engineering and contracting firm that is known for its work on the Fondation Louis Vuitton and the (currently under construction) future headquarters of the Grand Tribunal of Batignolles in Paris’s 17th district. Their first inventory concerned the differences (positive and negative aspects) between high-rise apartment buildings and compact apartment buildings.

“The assessment was, at best, contrasting,” explained Kelly Floch, spokesperson for the building physics department at Setec. This result allowed them, in effect, to create a hypothesis about high-rise buildings.

“The mineralization and impermeability of the city compete to create little islands of urban heat,” specifies Vincent Callebaut. Therefore, we imagined positive-energy towers that would redistribute their surplus energy around them. This energy would be shared with the village-neighborhoods nearby the high-rises by means of an energy internet- like an energy Facebook for freely sharing energy in real time.

### **Rue de Rivoli Project by VCA**



Vincent Callebaut, a young Franco-Belgian architect, notably set to work on the Rue de Rivoli, where a judicial decision put an abrupt halt to work on the future Samaritaine building because one of the facades was judged to “clash” with the surroundings.

In this same historic vein, Vincent Callebaut proposes “mountain towers:” immense “climatic mountains” powered by sun and water and affixed to the roofs of haussmannien buildings, which are today hyper-protected by several associations. “I adore and respect our country’s heritage,” explains the architect, “but the city has to evolve. The Baron Haussmann practically razed the Île de la Cité for hygienic reasons. Two hundred years later, Paris would become untouchable.” Thus, he proposes densifying the city by adding height to the 3km-long street in order to build three times as much housing than currently present. “We are leaving the high-energy consumption model for autonomous buildings that consume the waste that they produce,” adds the architect.



Another emblematic project from his exploratory work is the rehabilitation/transformation of the Montparnasse Tower. “I love the Montparnasse Tower,” vows the self-proclaimed “archibiotete” of 38 years. “But its problem is its facade and its mono-functionality. I’ve had a dream ever since I used to go out when I was younger to see the Luxembourg Garden -and then come back past the tower. This, of course, usually done on a skateboard. I’d imagine a “Vertical Central Park,” with a spiraling promenade open to the public that led towards the skyline. The building would be covered in a dress made of positive-energy green algae up all of its 58 stories.”

Other neighborhoods studied by his firm and Setec Bâtiment included the 13th district and the towers of Masséna, which will be dedicated to urban agriculture, auto-sufficient and capable of cultivating their own organic food on-site. The petite ceinture, the former railway that surrounds the capital, will be transformed into a “Sustainable, 23-kilometer belt around the heart of the city, punctuated by non-polluting towers that perform photo-catalysis,” acting as “green lungs” to the city.

### **Electricity Underfoot**

The train stations, like the Gare du Nord, could welcome “mangrove towers,” mixed-use constructions consisting of offices, hotels, and housing.

These green towers, which would not include steel train platforms, would produce their electricity thanks to platforms covered in piezoelectric sensors, generating energy under the feet of hundreds of thousands of travelers every day. Another strong proposition is for “Bridge towers,” two bridge-buildings traversing the Seine, covered in windmills and watermills that use the kinetic energy of the Seine to generate energy.



“Our preliminary studies do not factor in the gray energy that would be dispensed during the construction of the towers, nor do they include studies on mobility,” admits Kelly Floch from Setec. “But we let ourselves dream, beyond budgetary constraints, about architectural forms and energy performance in line with the Climate/Energy plan for 2050. And we learned a lot.”

Source: <http://www.globalsiteplans.com/environmental-design/are-eco-towers-coming-to-downtown-paris-france/>