Sustainable Urban Development: The FrenchDreamTowers

By: Rapid Access International, Inc.

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A mixed-use building development launched in June of this year in Hangzhou is certainly symptomatic of a strong Chinese appetite for French goods and culture. But, the FrenchDreamTowers project further demonstrates a unique approach to climate change and sustainable urban development.

The 'FrenchDreamTowers': Building Purpose

The FrenchDreamTowers building project is being driven by 'a partnership between a Chinese developer and Systematic, a French business cluster supported by the Île-de-France region'.[1] Diagrams of the development listed on designboom clearly demonstrate the emphasis on French goods, culture, and business. The facility is divided into four main categories: 1) a French Tech Hub, 2) Food and Restaurants (including French cuisine), 3) an Art Center to include galleries, an artist residence and art market and 4) a Hospitality component to include a hotel, healthcare, beauty and cosmetics categories, and a spa.[2] These categories are all reflective of Chinese demands for French exports of luxury products, food, art and technology.

The 'FrenchDreamTowers': Building Design and Function

Set along the banks of the West Lake of Hangzhou, A UNESCO World Heritage Site, the multi-tower development was designed by French architectural firm, XTU Architects, to optimize energy usage of the buildings. A key component of this effort is placed in the panels of the buildings. As opposed to standard glass construction, composed of two separate panes of glass separated by an air pocket, XTU Architects 'plans to utilize that space as a greenhouse environment for bioreactive cultures.'[3] XTU co-founder Anouk Legendre explains that this design "allows for a symbiosis: the bio-façade uses thermal materials to regulate the growing temperature of algae, which in turn contributes to the thermal regulation of the building."[4]

The shape of the towers is also designed to direct rain water into roof and ground basins. "Through natural phytoremediation processes, flora growing near these basins cleans polluted air and rain before it is released into the atmosphere, while aquaponics systems embedded in the structure allow for the cultivation of vegetables, flowers and fish."[5]

The FrenchDreamTowers: Blockchain Facility Management

Beyond the unique design and function, the practice of facility management, including 'air quality, energy storage and the multitude of environmental systems interacting within the towers', will be

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[1] Pinto, Juan Sebastián. *China And France Build On Relations With New Eco-Tower*. Forbes. July 10, 2018. Available at: https://www.forbes.com/sites/juansebastianpinto/2018/07/10/blockchain-controlled-and-algae-paneled-towers-in-china-to-symbolize-international-cooperation/#901390423439. Accessed on August 30, 2018.

[2] *XTU architects presents an algae-covered, organic-shaped building proposal in Hangzhou*. designboom. May 1, 2018. Available at: https://www.designboom.com/architecture/xtu-architects-building-hangzhou-05-01-2018/. Accessed on August 30, 2018.

[3] Pinto, *op. cit.*

[4] *Ibid*.

[5] *Ibid*.

handled by a blockchain support network created by Hangzhou-based Gold Truffle Engineering.[6] 'This will be the first application of a massive internet-of-things superstructure designed to address the needs of future smart-cities—stimulated in part by a Chinese commitment to spend more than $360 billion on renewable energy by 2020.'[7]

XTU Architects

Based in Paris, XTU Architects has been involved in a number of design projects that have pushed the envelope of sustainable building design. Photos and details of this project, and other completed projects, are provided on their website. The design approach of this firm and others are likely to be utilized to a greater extent going forward, as the concepts are deemed more practical and help countries to meet their environmental commitments and responsibilities. XTU profiles themselves as follows:

"Convinced that living organisms will be the biotechnology revolution of tomorrow, XTU engages its innovative research onthe themes of bio-inspired and photosynthetic architecture. In addition to these innovations, XTU also develops biofacades for cultivating plankton species on the exteriors of buildings and creating new architectural ecosystems."[8]

[6] *Ibid*.
[7] *Ibid*.
[8] XTU_The Agency. XTU Architects Website: Profile. Available at: https://www.xtuarchitects.com/xtu-agency/. Accessed on August 30, 2018.