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LA MANTILLA, CITY BLOCK DEMONSTRATOR

A 32,000 SQ. METER CITY BLOCK FEATURING APARTMENTS, OFFICES, AND BUSINESSES, BUILT ON EXEMPLARY ENERGY INNOVATIONS: HIGH-PERFORMANCE CONSTRUCTION, RENEWABLE HEATING AND AIR CONDITIONING, AND DISTRIBUTED INTELLIGENCE.

This program covers a floor surface area of 32,000 sq. meters, combining apartments and offices, with businesses on the ground floor. This group of buildings comprised an ideal setting for practical applications of the various innovative actions in the EcoCité City of Tomorrow project, notably:

- *High-performance construction, exceeding thermal regulations.*
- *The first building equipped with renewable heat and air conditioning sources.*
- *A system of digital information exchange to optimize the distribution and use of energy.*
- *Engaging sustainable behavioral changes.*

This program is comprised of seven buildings, placed across the commercial lots, with the ground-floor and parking garage as a foundation. The buildings are organized around a vast central block area featuring nearly 2,000 sq. meters of green space.

Installed since May 2015.

INNOVATIONS

▶ **La Mantilla assets:**

- Heating and air conditioning originating from over 80% renewable energy.
- A large part of energy needs compensated by wood co-generation electricity production.

▶ The goals of EcoCité city block demonstrators focus on energy performance, shared energy consumption, and connection to a common network. It leverages a mechanism of "distributed intelligence".

STAKEHOLDERS

▶ The City of Montpellier, originator of the major urban Port Marianne project.

▶ SERM, the Montpellier Regional Development Company, responsible for developing the Jacques Coeur district and project owner for creating the parking garage.

▶ Caisse des Dépôts, as part of the France's "Investments for the Future" program, on behalf of the State.

▶ Montpellier Méditerranée Métropole, as part of its EcoCité and Smart City projects.

▶ **Project owners:**

- Bouygues Immobilier, developer and agent for the project team.
- Sogeprom Commerce & Services, developer.
- PragmA, developer.

▶ **Social housing operator:**

- ACM – Office Public de l'Habitat de Montpellier Méditerranée Métropole.

▶ **Architects:**

- Jacques Ferrier, chief architect.
- A+ architecture, associate architect.

▶ **Design office:**

- André Verdier, structural design.
- BETSO, fluid design.

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IMPLEMENTATION

▶ This city block provides an opportunity for real-life testing of new forms of sustainable city development for the city of tomorrow.

▶ The combined block, with housing, activities, and commerce, is a way to optimize the use of space for city's various time-frames for specific uses, including connected urban services benefiting from digital solutions in real-time: energy, parking, car-sharing, urban transportation, waste management, and more.

KEY FIGURES

➜ **Created on top of a 738-space parking garage, this combined property program with 32,000 sq. meters floor surface includes:**

- **407 apartments**
- **3,500 sq. m of offices**
- **5,700 sq m of street-level businesses**

RESULTS

/// High-performance construction, exceeding thermal regulations. Building design was the focus of particular attention to ensure effective control over energy consumption in both summer and winter.

/// The first building equipped with renewable heat and air conditioning sources. La Mantilla gets its energy from a tri-generation plant that produces renewable heating, cooling, and electricity simultaneously. With all of these high-performance components, La Mantilla leverages green sources for over 90% of its energy for heating, and over 50% for cooling.

/// A system of digital information exchange to optimize the distribution and use of energy. The Smart Network system was developed at the city block scale. It collects and manages data from over 1,000 sensors (hot water, cold, electricity, and more) installed in each apartment and building access controls. The network also integrates outside data, such as: weather, tramway schedules, underground parking, and more.

/// This information is transmitted to residents and users via videophones in their apartments or at a dedicated site. A powerful tool for steering and managing consumption, this interface is available to residents, building managers, and concessionaires. It also enables new digital services to be deployed.

/// Engaging sustainable behavioral changes. While data restitution systems are highly useful, they alone are not enough to change people's behavior profoundly. As such, personalized assistance leveraging a GD6D system provided by the company E3D, seeks to sustainably modify residents' practices in terms of eco-citizenship and help them reduce their environmental impact visibly while encouraging people to live together. Above and beyond individual assistance efforts, collective moments create a collective synergy that benefits all participants. In order to evaluate the method's impact, consumption by similar groups is being studied at the same time.

FINANCIAL ASPECTS OF THE OPERATION

/// La Mantilla is an EcoCité action that benefits to a large degree from financial aid for the "City of Tomorrow" program, part of France's Investments for the Future managed by Caisse des Dépôts on behalf of the State.

➜ **Overall program cost: 35 M€ (pre-tax)**

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