

# NEW ATLAS

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## UK apartments will be a Beacon of sustainable luxury



Stu Roberts | October 19th, 2016



The Beacon apartment tower will be located in the UK town of Hemel Hempstead (Credit: Lumiere Developments)

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Luxury living, affordability and sustainability rarely go together, but a new UK development shows that they can. The Beacon will, it's claimed, be the world's most sustainable residential tower, with residents still able to enjoy high-end specs and annual savings of up to £11,000 (US\$13,500).



The tower, developed by Lumiere Developments, will be located on a 0.5-ac (0.2-ha) brownfield site adjacent to greenbelt land in Hemel Hempstead, from where it's possible to get into the center of London in under half an hour by train. It is part of the town's regeneration scheme and will see 272 apartments spread over 17 levels.

Lumiere says enough heat and power will be generated on-site to almost run the building entirely. Ground source heat pumps will be used to extract heat from the building's basement, while air source heat pumps will do so from its atrium. The heat will be used to provide hot water to the building's residences.

Electricity, meanwhile, will be produced using 860 kW of solar panels integrated into the balconies around each apartment. According to Lumiere, this will be the world's highest density solar farm, at about 1.6 MW per acre (0.1 ha), which is achieved by virtue of the solar panels being installed vertically on the site as well as laterally. Additional power is generated by two wind turbines and surplus energy generated during the day will be stored on-site for use in the evening.



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As a result of the on-site generation capabilities, Lumiere is offering "Free Energy For Life" to residents, with heating and electricity done away with. The firm says that while it may be necessary for the building to draw power from the grid occasionally, the amount will be "negligible," based on its modelling.

Water bills are also expected to be reduced due to rainwater being harvested for use flushing toilets and as irrigation. An estimated five million liters (1.1 million gallons) a year are expected to be saved in this way.

Lumiere is keen to point out that, although the design costs of the building are said to have been higher than comparable projects, the construction costs are expected to be slightly lower, allowing it to pass power and water savings of up to £2,000 (\$2,500) a year on to residents, rather than having the costs hidden elsewhere.



Among the building's energy conservation features will be triple- and quadruple-glazing, and LED lighting that turns off automatically when rooms are empty. Its expected thermal emissivity (the amount of heat it gives off) is calculated to be less than 0.2 Watts per square meter per degree Kelvin, which is 70 percent better than what's currently required in the UK.

The residences themselves range from studios to one, two and three-bedroom apartments and penthouses, all with 2.7-m (8/9-ft) high ceilings. They boast Hacker kitchens with stone worktops and Siemens appliances, bathrooms with Hansgrohe fittings, and all have a balcony or terrace. Biometric door access and RFID lift access helps to ensure security.

To minimize or eliminate the need for car ownership, residents at the Beacon will have access to an electric car and bike-share scheme. There will be a choice of five electric pay-as-you-go vehicles depending on what is required, including the Tesla Model 3, the Nissan Leaf and the BMW i3, and hire will be charged at what Lumiere says will be a "nominal amount" for mileage. This, along with the lack of energy bills, contributes to the potential £11,000 (US\$13,500) of savings, with other on-site amenities also contributing.



For those who still need to own a car, a 319-space car-park will be serviced by a robotic parking system. This will allow users to drop their car off and have it automatically ferried to a space, eliminating the need for anyone to enter the car park and therefore improving safety and doing away with the need for some lighting and ventilation. Shorter vehicle idling time will reduce emissions and vehicles will be retrieved when needed in just 45 seconds. Resident who do not need to use an allocated space will be allowed to rent it out.

Residents will also benefit from a reception area with concierge, gym, cinema room and residents café with patio area. A landscaped roof garden will provide views of the surrounding areas, including the Boxmoor greenbelt and the Chiltern Hills, while an internal arboretum will not only be a visual feature, but will help to clean the air.

Apartments at the Beacon are priced from £217,950 (\$267,500) and the development is due to be complete in 2018.



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