

CHALLENGER BECOMES THE WORLD'S FIRST BUILDING TO OBTAIN TRIPLE LEED®, BREEAM® AND HQE® CERTIFICATION

Challenger, the head office of Bouygues Construction, has become the first building in the world to achieve triple certification: LEED®, BREEAM® and HQE® (1).

North Triangle, the first of the Challenger buildings to be renovated (handed over in February 2012), has obtained each of these distinctions at the very highest level: "platinum" for LEED®, "outstanding" for BREEAM® and "exceptional" for the Passeport HQE®. This means that the environmental excellence of the site has been attested to by the leading international standards.

This triple certification is a reward for all the efforts that have been made to ensure that the site complies with the most stringent environmental guidelines. Numerous areas of expertise within Bouygues Construction in design, construction and operation have been brought to bear in order to achieve this result.

Elan, a Bouygues Construction subsidiary, has overseen the process of obtaining these certifications. The works were first designed back in 2008 to meet criteria specific to each of the distinctions that were targeted. Considerable work was necessary to reconcile each of these sets of demands:

- For HQE® certification, for instance, it is essential to determine the environmental impact of all the materials used on the site. Elan teams therefore carried out a life-cycle assessment of the building using the Elodie software tool, jointly developed by the Scientific and Technical Centre for Building (CSTB) and Bouygues Construction.
- BREEAM® certification specifically calls for special care to be given to preserving biodiversity. A phyto-purification installation that enables grey water and rainwater to be purified through the action of plants is particularly significant.
- LEED® certification, meanwhile, focuses on interior air quality, entailing the use of materials with low volatile organic compound and formaldehyde content, construction processes that limit dust and air quality tests carried out on handover of the building. It calls for meticulous research into all the materials used, 20% of which must be sourced within a radius of 800 kilometres and have high recycled content. It often refers to standards rarely employed in France, particularly ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers), which stipulates analysis of all the building's energy consumption, including that relating to its users.

(1) LEED®, BREEAM® and HQE® are three certification standards reflecting the environmental performance of buildings. They were originally developed in the United States, the United Kingdom and France, respectively.

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A global player in the building, civil works, energy and services sectors, Bouygues Construction operates at all points of the value chain of projects: finance, design, construction and facilities management (operation and maintenance). On every continent, its 52,000 employees devise and develop solutions that make an improvement to the environment and to everybody's lives. In 2011, Bouygues Construction generated sales of 9.8 billion euros.



Challenger is a world first in the sustainable renovation of buildings. The works carried out by Bouygues Construction on the building, which dates from 1988, are unique in terms of scale: the complete renovation of 67,000 m² of buildings, the construction of a cockpit (the control centre and showcase), the installation of 21,500 m² of photovoltaic panels and 420 m² of thermal solar panels, the installation of 75 geothermal sensors, and the creation of a phyto-purification installation. The aim is to make Challenger into a showcase of Bouygues Construction's know-how, using the latest cutting-edge 21st century technologies. Primary energy consumption on the site will be divided by 10 and the annual water consumption will be reduced by 60% by comparison with the original data. The maintenance and operation of the site will be managed by Exprimm, another Bouygues Construction subsidiary, which became involved in the project at the design stage in order to optimise costs over the entire lifecycle of the buildings.

The Challenger renovation works began in 2010 and they are scheduled for completion in the third quarter of 2014. Following the North Triangle, a second building, the South Triangle, was handed over in August 2012. When the renovation is complete, all the buildings on the site will have triple certification.

This renovation project forms an integral part of strategy for Bouygues Construction, which is seeking to become a leader in sustainable construction. Since 2007, the Group has systematically incorporated eco-design and the environment in the construction of buildings and structures. Bouygues Construction is also committed to reducing energy consumption levels, in both new build and renovation projects.



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