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## BOUYGUES CONSTRUCTION SHOWCASES R&D

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Bouygues Construction is organising a forum on "Research & Development for Innovation" on 26-28 June 2007. The conferences and exhibition, which are held at Challenger - the group's headquarters - are open to employees and partners. The forum highlights some of the group's cross-disciplinary R&D topics.

Research in the service of innovation – a key performance driver – is more than ever central to Bouygues Construction's strategy. The areas of study are varied. During this forum, four major topics are highlighted: sustainable construction, productivity and robotisation, virtual construction and concrete.

### **1) Sustainable construction**

Representing 21% of the R&D budget, sustainable construction is the group's main area of research expenditure. Several subjects are being studied to bolster Bouygues Construction's sustainable development policy, including development of a Sustainable Construction Index, positive energy housing, and research into external walls and glazing. In addition, Bouygues Construction is investing more and more in projects that meet the requirements of HQE (High Environmental Quality) standards.

### **2) Productivity and robotisation**

Automation of certain tasks makes them less laborious and increases productivity. Several prototypes of robots (e.g. a drilling robot, a sanding robot, etc.) have thus been developed in association with Robosoft, CRIIF (Centre de Robotique Intégrée d'Ile-de-France) and Modules Associés. They will start their test phase on work sites during the second half of 2007. A construction works inspection drone has also been developed alongside Bertin to inspect electricity pylons, civil engineering structures, high-rise buildings, etc.

### **3) Virtual construction**

Virtual construction – which consists in making a digital model of a building or structure – enables all the contributors involved in a project to work on one same model, thus facilitating the sharing of information. It also provides better understanding of projects through computer-generated views, and is used for simulations (acoustic or thermal simulations, etc.). Virtual construction is an invaluable decision-making aid.

### **4) Concrete**

Concrete is essential to Bouygues Construction's business activity and has always been a strategic area of Research & Development. For several years, the group has had a laboratory dedicated to concrete, focusing on its properties and its various applications. Bouygues Construction is currently working with Lafarge on two subjects: materials to reduce energy loss from buildings and materials to reduce cracking.

Research & Development is a powerful lever used by Bouygues Construction to build more effectively for future generations. A leading contractor must meet many challenges – such as formulation of higher-performance materials, development of more ecological alternatives, greater control of engineering to reduce energy consumption in housing, use of new construction methods, and greater consideration of a facility's life cycle – in order to provide innovative responses.

### **Press contacts**

Christophe Morange: +33 1 30 60 55 05

Hubert Engelmann: +33 1 30 60 58 68 - [h.engelmann@bouygues-construction.com](mailto:h.engelmann@bouygues-construction.com)

### **BOUYGUES CONSTRUCTION**

Bouygues Construction is a global leader with top-ranking positions in the building, civil works and electrical contracting/maintenance markets. It combines the power of a large group with the responsiveness of a network of local companies which deliver innovative solutions for the financing, design, construction, operation and maintenance of buildings and infrastructure. Bouygues Construction employs 43,000 people in 60 countries and recorded sales of 6.9 billion euros in 2006.