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## Briefing: Innovative cladding at the 'Think Tank'

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In 2007, a new cladding with several innovative characteristics was introduced to the market. A crystal layer beneath its mineral fibre façade refracts light into a range of different colours to create an iridescent quality. Its colour changes according to the time of day or angle from which it is viewed. The manufacturing process, in which mineral wool fibres are compressed at high pressures, creates an extremely tough substance that is as hard wearing as stone but as flexible and workable as wood. It is also eco-friendly, being fully reusable/recyclable (without any downgrade) and manufactured from at least 30% sustainable sources. This briefing explains the circumstances that led to its first specification and instalment on a building called the 'Think Tank' in the UK.

### 1. INTRODUCTION

Rockclad Chameleon cladding was introduced in 2007 by Rockpanel, part of the Danish-based Rockwool Group and a market leader in mineral wool based products (Rockpanel, 2010). It is manufactured from mineral wool fibres compressed under high pressure, and it is this process that gives the product its unique characteristics. It is hardwearing but flexible enough to be shaped easily. The boards can be sawn with standard woodworking tools, curved in many ways and follow the contours of any design, so that they can be used in a wide variety of different building projects. This cladding is also low-maintenance, safe and fire-proof.

### 2. IRIDESCENCE

The mineral fibre façade boards are combined with a crystal layer underneath a high-gloss coating. This kind of coating, which has been commercially available for a considerable time, was first used in the automotive industry. Depending on the colour of the base coat, the crystal layers refract light into a range of different colours, from pink to light grey. The crystal layer also has an interesting impact on how colour is perceived, by changing colour when struck by natural light. This allows its colour to change at different times of day, when viewed from fresh angles and after different amounts of exposure to sunlight.

The cladding has a protective layer applied on top of the crystal layer, making the surface more durable, more rigid and smooth so that it stays clean for longer. It is available in light grey, grey, green and blue.

### 3. SUSTAINABILITY

The cladding is made from at least 30% recycled material. Production processes allow the manufacture of over 400 m<sup>2</sup> of cladding from just a single cubic metre of basalt rock, a very sustainable natural resource. The boards are 100% reusable/recyclable with no downgrade in any of the recycling or reusing stages. It is suitable for use in projects with sustainability targets such as the (Building Research Establishment environmental assessment method) (BRE, 2010a) and its residential counterpart, the Code for Sustainable Homes (BRE, 2010b).

### 4. THE BUILDING

The innovative cladding was first specified in the UK during redevelopment of the Innovation Centre in Lincoln, designed by architect Marks Barfield. A key requirement of the design was sustainability and originality. It was built by contractors Kier Marriott and the project won the company the chairman's award at the East Midlands LABC Building Excellence awards. Using a range of the latest environmental technologies and with a low carbondioxide footprint, it is a flagship sustainable development.

### 5. CLADDING SPECIFICATION

The architects originally specified a flexible concrete-based product that has been produced in flat panels since 1991; it has

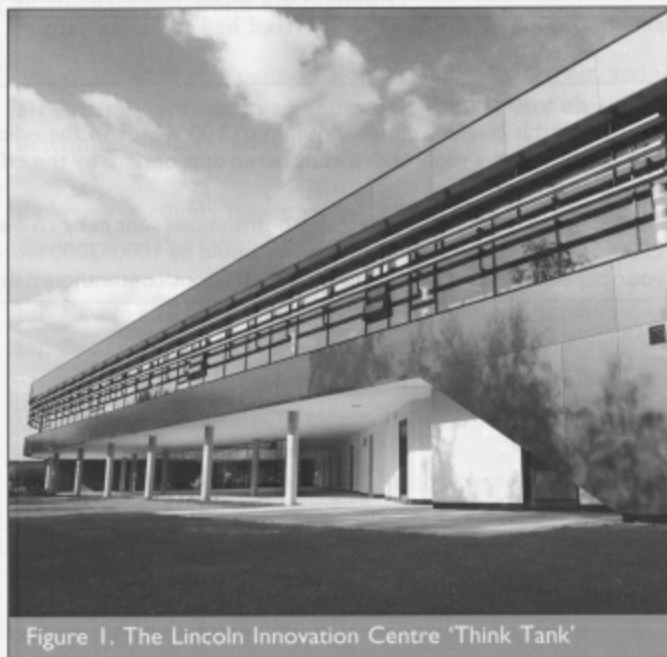
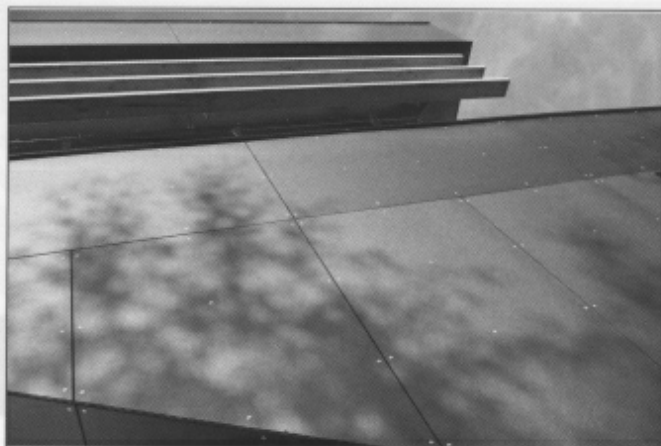


Figure 1. The Lincoln Innovation Centre 'Think Tank'



(a)



(b)

Figure 2. Innovative cladding at the 'Think Tank'

subsequently been reformulated by another manufacturer that took over production in 2004. It is extremely durable and, at just 13 mm thick, is light and easy to install. The architects selected grey-green coloured panels to give the building a layered, organic and textured feel, in keeping with the environmental theme. However, at the design budget stage it was decided that the cost of using this product was prohibitively expensive. Moreover, since it is manufactured to order and not mass-produced, the lead time for procurement of the panels was some 4 months, which would have caused delays to the build schedule.

The architect and contractor Kier invited SBS Exteriors to source an alternative. Rockpanel's Rockclad Chameleon – a product that had not previously been used in the UK – was suggested. At half the price of the originally specified product and readily available (within 1–2 weeks) in the volumes required, this was an attractive proposition. Furthermore, at just 8 mm thick it offered great flexibility for the installation process (i.e. requiring a less robust fixing structure and able to be cut and shaped on site). The product was also suitable in terms of durability.

## 6. INSTALLATION

The flexibility of the newly specified cladding meant installation at Lincoln Innovation Centre took just 20 weeks. The board panelling to which the cladding is fixed had to be partially

redesigned to accommodate the product. To do this, a central fixing system was devised that consisted of a large rivet to attach the cladding at the back of the framing. When first seeing the design, project manager for Lincoln Council remarked that it 'looked like a tank'. Subsequently, the Innovation Centre has become known as the 'Think Tank'.

Rather appropriately, the centre is built on the site where the world's first military tanks were tested. Given the area's historical military connections, the building's iridescence is reminiscent of army camouflage: while the façade panels seem mainly grey and green from one angle, viewed face-on they have a bronze appearance and in the sun they take on an orange glow (Figures 1 and 2). The redeveloped Innovation Centre was completed at the end of 2008, after just over a year of work and at a cost of £7.1 million. It opened its doors to tenants in spring 2009.

## REFERENCES

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