

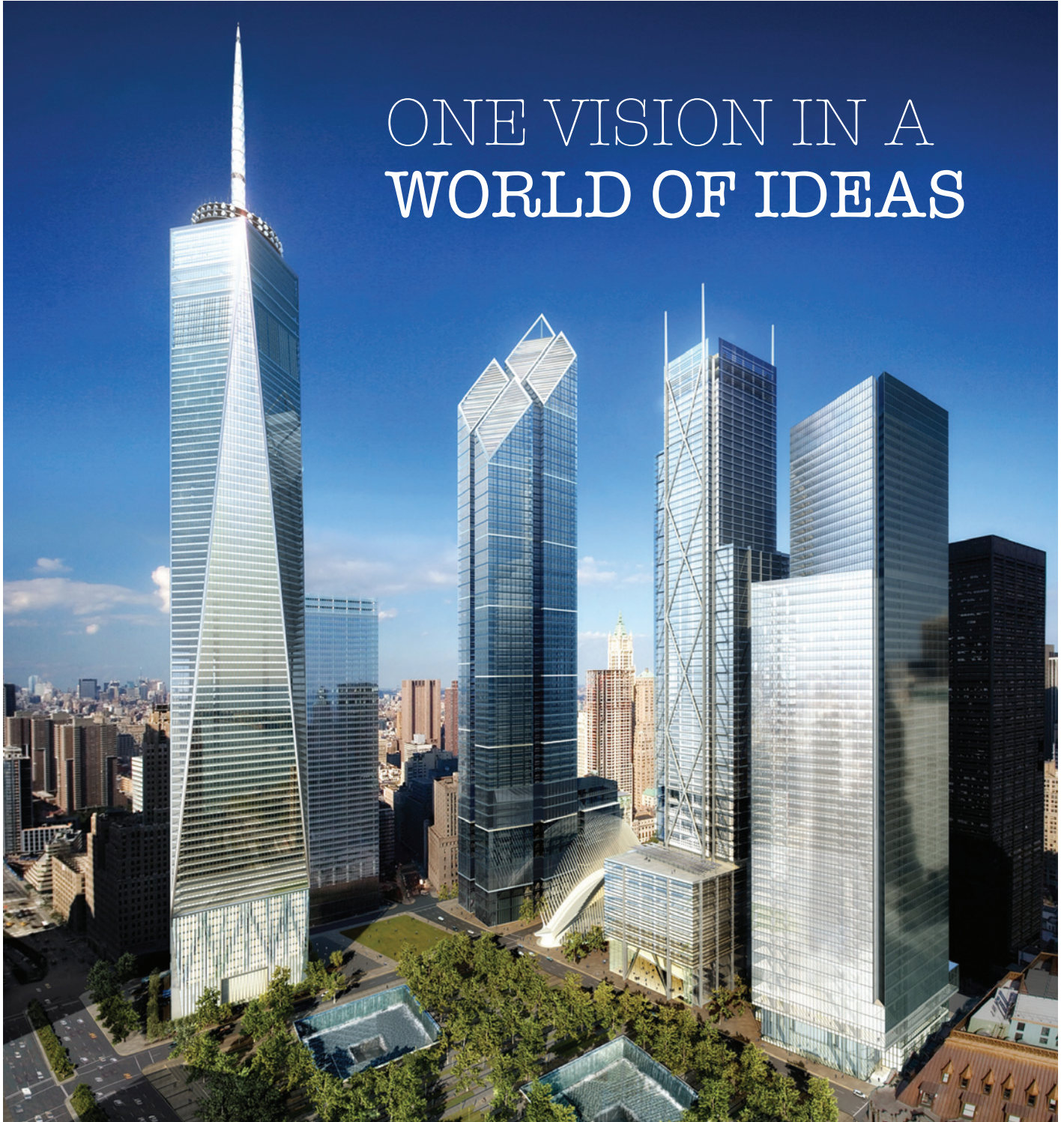
building

TOMORROW

driving innovation for the built environment

issue 1 / autumn 2010 / £9

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ONE VISION IN A WORLD OF IDEAS

Comment: Dr Vince Cable

“Innovation will ensure that the construction industry emerges from this period of austerity fit for the future”

Project: The Shard London

London leads the world with specialist high rise vertical transportation technologies and structural building solutions

Interview: Richard Miller

The Technology Strategy Board's Head of Sustainability throws down the innovation challenge to construction

Cut from a different cloth

An innovative concrete cloth has achieved a class B rating, making it suitable for internal building applications.

Concrete Cloth is a flexible, cement-impregnated fabric that hardens on hydration to form a thin, durable, waterproof fire resistant layer.

Developed by William Crawford and Peter Brewin, Concrete Cloth was developed for the Concrete Canvas shelter, a "building in a bag", which has proved popular with military and disaster relief organisations.

Concrete Cloth has a number of applications in the civil and construction sectors such as ditch lining, pipe protection, roofing, asbestos containment, flood defences and erosion control.

Crawford added: "Concrete Cloth has good drape characteristics, allowing it to take up the shape of complex surfaces, including those with a double curvature. The unset cloth can be cut or tailored

using basic hand tools, so is flexible and easy to use onsite."

Crawford said: "We needed to carry out reaction to fire testing to be able to take the product forward for interior use, both in building and other applications such as film sets, where evidence of fire performance is absolutely essential."

A test programme was created in association with Chiltern International Fire, covering a range of thickness from 4mm to 13mm with horizontal and vertical joints.

The product has previously made an appearance on Dragons' Den where the inventors turned down an offer of investment.

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Below: The fire resistant concrete cloth, a cement-impregnated fabric that has a number of applications.



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Fire stopper

Research institute develops multi-purpose intumescent to prevent the spread of fires.

The Industrial Technology Research Institute, Taiwan, has developed Reddex, a specialist coating that can be used on steel or wood in building frames or on installation materials such as PU foam.

During a fire, reactive polymers and inorganic materials react with the inorganic materials absorbing the heat, converting it to radiation and emitting it. When exposed to temperatures greater than 1,000°C, the material remains fireproof – and instead of burning, melting or dripping, the material chars. As char is hard to burn, fire spreading is prevented and buildings can be prevented from collapsing, and so increasing chances of escape.

The versatile material has wide range of applications as it has been designed to be flexible and easy to coat and shape. It could also be used as paint or a coating, made into jackets for wires and cables or applied as a sealant around pipes and wall gaps to prevent fire spreading.

Reddex can be coated on with a blade or sprayed on. It can also be injected into a mould to make any desired shape by itself or in combination with other materials.

As Reddex does not use ignition resistant additives containing halogen, sulphur or phosphorous elements, it does not generate toxic gas or smoke when exposed to fire.

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