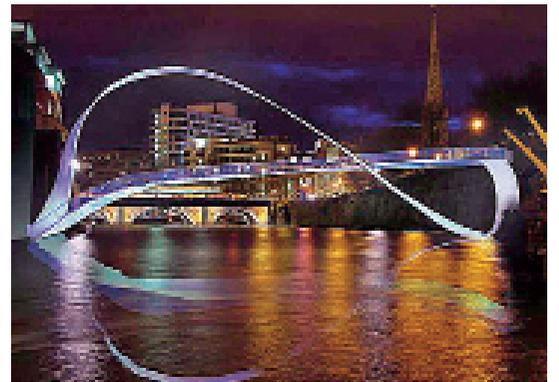




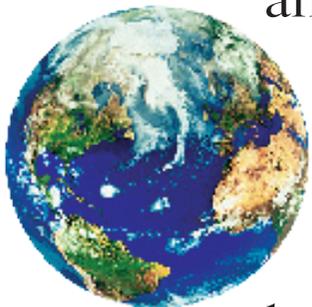
# THE NEW VICTORIANS

REPORT Bill Dunn PORTRAITS Jude Edginton

The Victorians, for all their ills, got one thing right. They celebrated **people** who dared to **experiment**, to do things. Their culture was obsessed with those at the forefront of **science**, technology and **discovery**: geniuses such as Charles Darwin, Isambard Kingdom Brunel, Michael Faraday



and David Livingstone. In that same spirit, and as the **Large Hadron Collider** smashes together its first proton beams, we present the new **heroes of science**, technology and construction. These are the British pioneers who are **building bridges**, harnessing power, **conserving wildlife** and shaping the world of the future. **Meet the New Victorians...**



'We're turning plants into charcoal, which takes CO<sub>2</sub> out of the atmosphere. There's a lovely symmetry to the whole thing'



Paleoclimatologist  
Chris Turney, who is using  
plants to save the planet

## The new David Livingstone

**Chris Turney, 35, is a paleoclimatologist and chair of physical geography at Exeter University. Through his carbon-sequestration company Carbonscape, Turney looks at past climates and environments and shares the lessons to be learnt.**

**There's no doubt that there's an urgency in what we need to do,** but if you only address the negatives it's easy just to give up. The key is to use these lessons to create positive changes in policy at an international level, rather than say, "We're all going to die." If you can explain what the science really means, it's far easier to create change. I try to give an irreverent view of how we know what happened in the past so people can better understand the challenges. **Most of our climate models are based on data from the past 160 years.** But we can use ancient mud, corals, trees and ice to extend this record of climate change back into the

distant past. This is helping us to understand how quickly change has happened, and the processes that drove it. There's a wonderful tree, the kauris, or *Agathis australis*, that can live for 2,000 years. There are loads buried in the peat bogs on New Zealand's North Island. They span the past 60,000 years, giving us a year-by-year record of climate conditions. **Here's a timescale that blows people's minds:** 125,000 years ago, the Earth's orbit was a little closer to the sun. Sea levels were 4-6 metres higher than today, suggesting a large number of the ice sheets had melted. The Earth then was 1.7C warmer than before industrialisation kicked off. Europe and the rest of the world's goal now is to keep world temperatures from rising by 2C. Worryingly, a 1-metre sea-level rise alone would displace 145 million people. This is how the past can inform the future. **Climate change can happen fast.** In Greenland, these records in the ice cores mean you can count back year by year. It shows us the last Ice Age, 11,700 years ago, ended in one year. **I wanted to stop being negative and do something about it.** I've got two gorgeous kids,

and I hate the idea that in 10 or 20 years, they might say to me, "You knew what was going on – what were you doing about it?" **When I was a teenager, I microwaved a potato for 40 minutes.** It was a huge mass of charcoal. Years later, I was thinking about a way of turning carbon into charcoal, which is stable and locks it away permanently. So we came up with Carbonscape. It's effectively an enormous microwave with a few technical tweaks. We're turning plants, including waste, into charcoal, which takes CO<sub>2</sub> out of the atmosphere. The charcoal can be put into the soil or go back down the coal mines whence it came. There's a lovely symmetry to the whole thing. It buys us time to decarbonise our economy, which is ultimately what it's going to be about. **Even if we stopped all emissions today, the system will carry on warming.** Governments are talking about reducing emissions in the future, but we've already got 200 billion tonnes of carbon in the atmosphere that shouldn't be there, and that's what's driving the changes we see today. We need to get this carbon out of the atmosphere, and fast. ➔