

# GREEN BONDS AND PROPERTY



## **A London Conversation**

On how sustainable finance can help fast track emissions reductions in the built environment



# Foreword

## **It was an opportunity too good to miss.**

Early in 2015, I interviewed Sean Kidney, chief executive of the Climate Bonds Initiative, during his visit to Australia. The man was on fire. Full of the passion and excitement at the potential of climate bonds and green bonds to change the trajectory of climate change.

Lined up and looking for green and clean investment opportunities were the biggest and wealthiest investors on the planet – institutions and pension funds. In quick time they had sensed the world was changing. Their ultimate investors – their members and shareholders – were increasing pressure to divest from coal, to fund solar energy, wind power, wave power, trains and other public transport.

If the world's powerful financial markets could be mobilised in this campaign, then it would be game on.

Now *The Fifth Estate* had a chance to visit London, thanks to Bentley Systems and its yearly confest, where it flies in journalists from all over the world to hear about building information modelling, the incredible technology that is being used to design and

deliver massive infrastructure projects like the Cross Rail in London and its new sibling the High Speed 2, or HS2.

BIM was exciting, but London was even more exciting: the centre of the financial world and hot-bed of green bond and climate bonds development; right on the cusp of Europe's bubbling nexus of pension fund fomentation of demand for green investment; and just days ahead of the COP21 climate talks in Paris.

And so we beavered and badgered away in the evening hours in Sydney, convincing some of London's finest, most-engaged property and finance people in the space to join us for dinner one night in November.

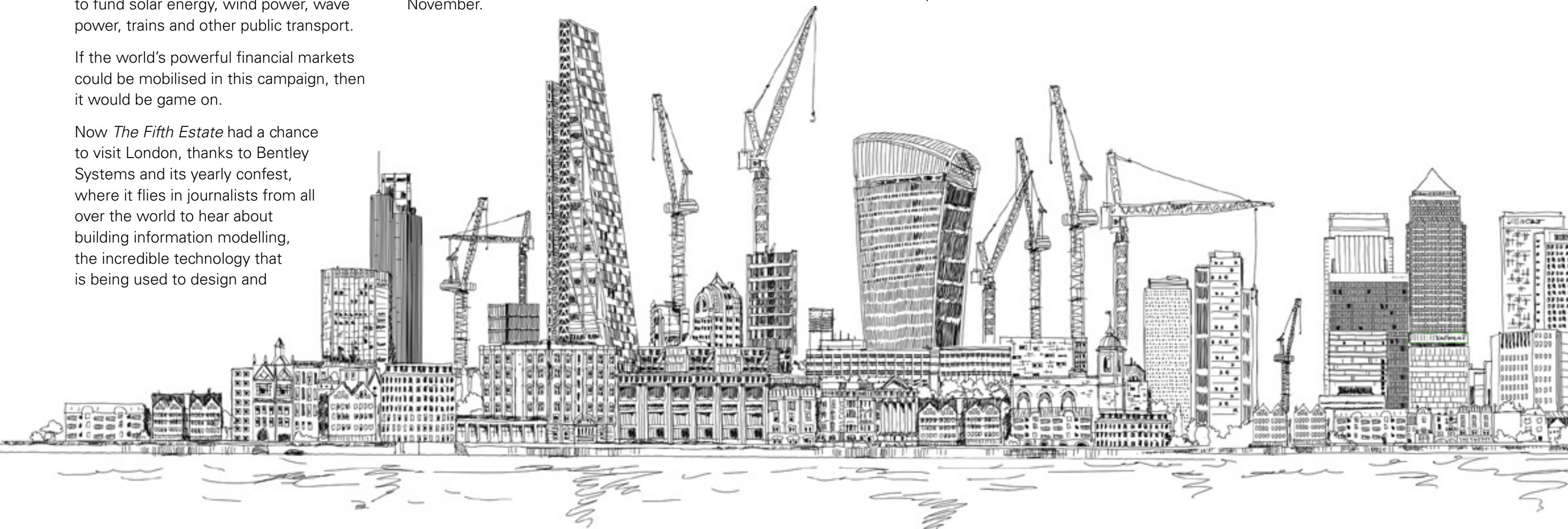
This book is the result.

A massive thanks to all who attended and helped shape this event. The irrepressible Sean Kidney, who flew in straight from Beijing, suitcase in hand, to attend the dinner. The highly regarded Tatiana Bosteels of Hermes, who we quickly learnt would be the major drawcard and generously accepted our invitation. Sarah Ratcliffe of the Better Buildings Partnership, who gave invaluable advice and support. Likewise Julie Hirigoyen of the UK Green Building Council and her critical insight into the industry and politics of the land. And ANZ's Cath Bremner, who just happened to be in London on leave; Lloyds Bank's Adam Macdonald;

**"If the world's powerful financial markets could be mobilised in this campaign, then it would be game on."**

the UK Trade and Investment's Allan Walker; Starfish Capital's Martin Gerrelli; M&G's Nina Reid; LaSalle Investment Management's James Smith, London Energy Efficiency Fund's Steven Fawkes; and, finally, our intrepid TFE UK writer David Thorpe.

**Tina Perinotto,**  
**Managing editor and publisher,**  
***The Fifth Estate***





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Lead author: David Thorpe



# The power of green bonds

The next 20 years is set to see more infrastructure built than has occurred in the past 6000 years, according to World Bank president Jim Yong Kim.

So happens a great opportunity to make sure the infrastructure we must build is resilient and climate sensitive. Indeed, a successful response to climate change demands significant investment in areas like renewables, green buildings, low-carbon transport and sustainable water infrastructure.

"We can choose to build smart cities and develop clean transportation systems," Dr Kim has said.

This is where financial instruments like green bonds can play a role in tackling the climate challenge.

In short, green bonds are relatively new debt instruments used to finance or refinance projects that have positive environmental

**"There needs to be cumulative investments of US\$53 trillion in energy and efficiency to limit climate change to 2°C."**

outcomes. The issuing entity makes a guarantee to repay the bond over a set period of time, plus a fixed or variable rate of return.

Green bonds operate in a context of numerous factors affecting investment, governance and development, such as globalisation, changing political landscapes, ecosystem depletion, urbanisation, resource utilisation, demographics, climatic patterns and climate change, employee attitudes and consumer preferences. Their potential application is correspondingly manifold.

A range of currencies, geographies and maturities now feature in the market, with new issuers and new types of green



bonds such as asset-backed securities from Toyota linked to hybrid and electric vehicle loans, to bonds from Mexican and Indian developments banks and green 'pfandbrief' (covered bonds) in Germany. Beyond the corporate sector, municipal green bonds have been a growth area in 2015.

China and India will lead the way in 2016. These bonds are seen as vital to support sustainable development in developing nations, for example Latin American countries looking to increase their renewable energy capacity.

## MARKET GROWTH

According to the last Climate Bonds Initiative **State of the Market report** from mid-2015, "climate-aligned bonds" – both those labelled as green and those unlabelled (not officially labelled green but deemed to be going towards green projects) – totalled \$US597.7 billion (AU\$817.42 billion).

Sounds like a large figure, but there's still a lot of work to do. The International Energy Agency estimates there needs to be cumulative investments of US\$53 trillion in energy and efficiency to limit climate change to 2°C. With governments

now **agreeing to head towards 1.5°C**, investment will need to be greater.

A huge ramp up is needed. But luckily the green bonds market has been booming.

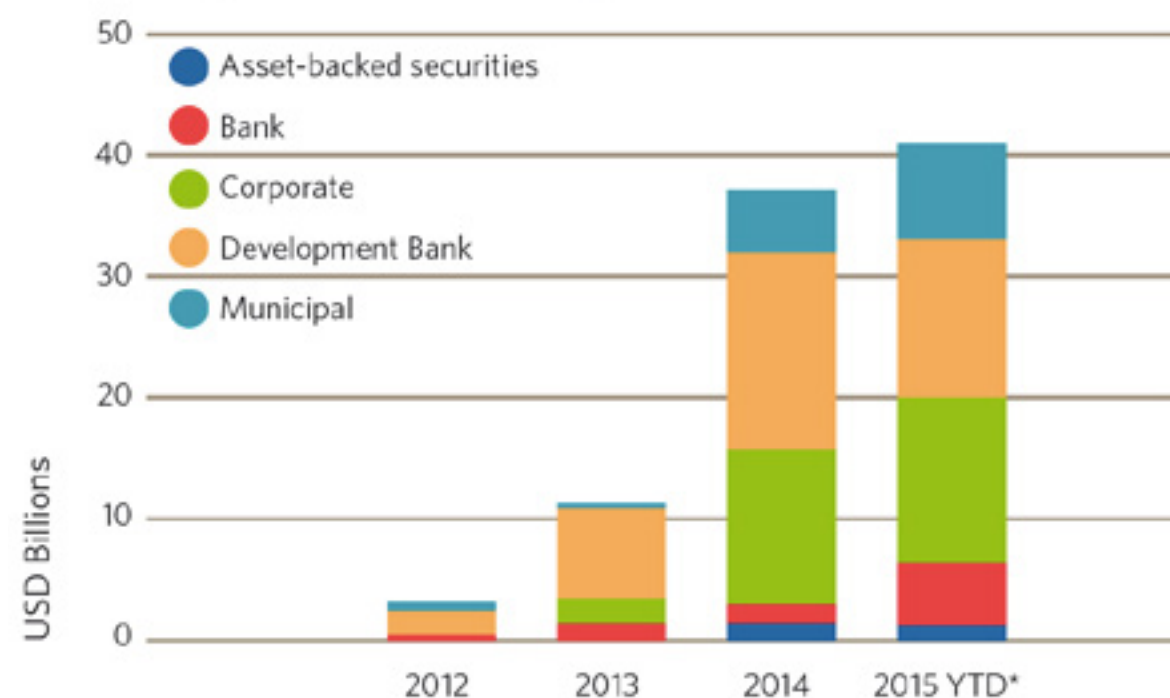
Total issuances of labelled green bonds – those that have been certified as going towards climate-friendly projects – hit \$65.9 billion in June 2015, and went up to \$97.8 billion by December 2015, according to the CBI.

For 2015, issuances were \$42 billion, the highest level of green bonds achieved in a year, with \$7.92 billion in new issuances in November making it the biggest month ever for green bonds.

However, the CBI did expect 2015 to produce green bond issuances of up to \$70 billion, so it's not all good news. The slowdown relates to poor economic conditions that have affected the entire bonds market, though there are signs of a recovery.

One signal that green bonds are on the agenda in a big way is the release of the **Paris Green Bonds Statement** at COP 21, where 27 global investors representing \$11 trillion of assets under management released a statement committing to working to "grow a large and robust

## Growing momentum in green bond issuance



Graph: Climate Bonds Initiative, 10 December 2015



market that makes a real contribution to addressing climate change”.

The statement calls on:

- industry experts and stakeholders to develop clear standards for the climate change impacts and benefits of bond financed projects
- bond issuers to ensure transparency around the use of bond proceeds and their impact
- governments to develop projects that can be financed by green bonds

## HOW GREEN IS GREEN?

Labelling a bond as “green”, though, is a process that demands scrutiny. Investors need to be sure what they are funding actually has positive outcomes.

Commonly, issuers will abide by the Green Bond Principles, created in 2014 by a group of banks and guided by the International Capital Market Association. They are described as “voluntary process guidelines that recommend transparency and disclosure and promote integrity in the development of the green bond market by

clarifying the approach for issuance of a green bond”.

The Green Bonds Principles comprise:

- **Use of proceeds:** All designated green project categories should provide clear environmentally sustainable benefits, which, where feasible, will be quantified or assessed by the issuer
- **Process for project evaluation and selection:** The issuer of a green bond should outline the decision-making process they follow to determine the eligibility of projects using green bond proceeds
- **Management of proceeds:** Funds should be credited to special accounts until allocated to support financing of eligible project disbursements
- **Reporting:** Detailed project reporting, summarised project information and green bond impact reporting should be made available

The principles, however, have been criticised by NGO BankTrack. In 2015 it released a letter criticising what it said was a lack of transparency.

“We are increasingly concerned about the

significant gap between the stated aims of the Green Bond Principles to increase transparency and disclosure, and their actual contents, which explicitly allow and provide for important information on green bonds to remain under wraps,” the letter said.

“Combined with the decision of the principles to avoid addressing the issue of ‘what is green’ head-on, this lack of transparency means that observers, civil society organisations and others do not have the information available to adequately scrutinise the market’s development.

**“Total issuances of labelled green bonds hit \$65.9 billion in June 2015, and went up to \$97.8 billion by December 2015.”**

“Without a clear definition of what is green, our fears that the Green Bond Principles may be associated with the financing of destructive projects have already been realised,” the letter said, pointing to a GDF-Suez green-labelled bond that financed the Jirau mega-dam in Brazil, which BankTrack said had “egregious environmental, social and human rights impacts”.

Third-party certification is a potential solution, including the Climate Bonds Initiative’s Climate Bonds Standard, a screening tool for investors and governments that provide confidence that funds are being used to tackle climate change.

The world has massive infrastructure upgrade needs over the next 20 years. Ensuring the infrastructure we build contributes to a low-carbon world that keeps warming to 1.5°C is crucial to the climate challenge. Green bonds are one weapon in the arsenal of strategies too help us get to where we need to go. ●

– with Cameron Jewell



## GREEN BOND MARKET CONDITIONS

**Allan Walker, head of project finance for the Institutional Investment and Infrastructure Team at UK Trade and Investment, outlines what green bonds can do to further energy efficiency.**

“Green bonds represent a small proportion of the total amount being invested, but it is growing rapidly,” Walker says.

“The green bond market is a young industry growing from a low base, but it has already reached between US\$40 and \$50 billion (AU\$56 and \$70 billion) per year. The potential is enormous, and this is just the tip of an iceberg. Most offers are oversubscribed, typically by about double. Demand is growing enormously.

**“Bonds can be traded at any time, for whatever value they have at the time.”**

“Bonds are popular because they are tradable which makes them liquid. Most pension and insurance funds have limits on what they can invest in terms of projects, which would be done in exchange for debt or equity, which is not a liquid, tradable form of investment. But bonds can be traded at any time, for whatever value they have at the time. This makes them attractive, so this is a good way to raise finance. There are many subcategories of green bonds.

“Energy efficiency is smaller scale: it’s usually on a building or regional scale, and therefore figures less in this. Having said that, investment in a rail network could be considered investment in energy efficiency if it is more efficient than what it replaces.”







## THE EVENT

**A LONDON CONVERSATION ON CLIMATE BONDS  
AND GREEN FINANCE FOR SUSTAINABLE PROPERTY**

**12 NOVEMBER 2015  
THE DON PRIVATE DINING  
20 ST SWITHINS LANE, CITY OF LONDON**

Left to right: Martin Gerrelli, Sean Kidney, Cath Bremner,  
Tatiana Bosteels, Sarah Ratcliffe, Adam Macdonald, Julie  
Hirigoyen, Nina Reid, James Smith, Steven Fawkes, David  
Thorpe, Allan Walker



# Guests



Sean Kidney

## **Sean Kidney** Chief executive of the Climate Bonds Initiative

Sean Kidney is chair of the Climate Bond Standards Board, consultant to projects for the People's Bank of China and the Chinese government's Development Research Centre on how to grow green bonds in China.

He is also an advisor on green bonds to the UN Secretary-General's Climate Finance Team, a consultant to the European Commission's Directorate-General of Climate Change, and a member of: the German International Aid Ministry's TRANSfer Expert Group; the Commonwealth Expert Group on Climate Finance; the Finance Advisory Board of the European Wind Energy Association; Mercer's Sustainability Opportunities Fund Advisory Panel; and the Corporate Knights Capital Advisory Council.

Kidney has spoken about climate bonds and green bonds at conferences and meetings on and issues marketing.

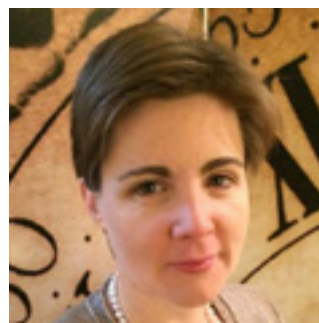
## **Tatiana Bosteels** Head of responsible property investment at Hermes Investment Fund Management

Since joining Hermes in 2008, Tatiana Bosteels has focused on the integration of environmental, social and corporate governance in real estate investment and asset management practices, and leads on Hermes' carbon risk strategy.

Bosteels is also chair of the Institutional Investors Group on Climate Change Property program, a board member of the UNEP Finance Initiative Investment Commission, a member of the Better Buildings Partnership, and sits on the British Property Federation's sustainability committee and



Tatiana Bosteels



Catherine Bremner

the advisory boards of the Building Performance Institute Europe and the Global Real Estate Sustainability Benchmark.

She holds a master's in environmental management from Imperial College London, a master's in mechanical engineering from UCL Leuven Belgium and is a Fellow of the Royal Society of Arts.

## **Catherine Bremner** Global head of sustainable finance solutions at ANZ Bank

As head of Sustainable Finance Solutions, Catherine Bremner provides advice to ANZ clients in developing opportunities for environmental finance solutions.

She led the development of ANZ's first Environmental Upgrade Agreement financing, green bond, distributed energy financing and energy efficiency advisory roles, and is currently on the advisory board of CSIRO, Climate Works and the Climate Bonds Initiative.

Prior to joining ANZ, Bremner was the chief operating officer at Low Carbon Australia, head of international development for the UK's Carbon Trust, and an analyst at McKinsey & Company.

She is a graduate of the Australian Companies Institute of Directors and holds a master's in environmental management from Oxford University and a bachelor's of chemical engineering from the University of Queensland.

## **Adam MacDonald** Director of corporate solutions at Lloyds Bank Capital Markets

Adam MacDonald is leading Lloyds' push into the developing market for green and sustainable capital markets.



Adam MacDonald

He led Lloyds Bank's first and second Environment, Social and Governance bonds, for £500 million (AU\$1 billion) and also closed the first green loan for J Sainsbury PLC in July 2014 for £200 million (\$AU417 million).

Earlier this year, MacDonald led the first sterling bond linked to Consumer Price Index, raising £200 million (\$AU417 million) to fund London's Northern Line extension.

Prior to Lloyds, MacDonald held positions at Bank of America, UBS Investment Bank and Rothschilds.

## **Allan Walker** Head of project finance for the Institutional Investment and Infrastructure Team at UK Trade and Investment

Allan Walker joined UKTI in London as head of project finance in March 2015. He is responsible for inward investment into green infrastructure, such as offshore wind, energy efficiency and urban regeneration, including rail.

Walker has more than 30 years of experience in project finance and private equity. Prior to joining UKTI, he ran the funds management group for Masdar, the Abu Dhabi government's renewable energy investment company.

His previous roles have been with global financial institutions such as JP Morgan, Credit Suisse and Black River (Cargill) in London, New York and Sao Paulo.

Walker has a master's in economic geography from Cambridge University.

## **Julie Hirigoyen** Chief executive of the UK Green Building Council

Julie Hirigoyen is accountable to the chairman and board of trustees for UKGBC's impact and

performance and leads the team on a day-to-day basis. She is focused on delivering lasting change within the industry by engaging with UKGBC members, regulators, and wider stakeholders in an effective and collaborative way.

Hirigoyen was previously UK head of sustainability and international director at JLL, after having joined the company in 2007 as a result of its acquisition of Upstream, a sustainability consultancy that she co-founded.

She also sits on the Igloo Sustainable Investment Advisory Committee and the ULI UK Sustainability Council Steering Committee, and recently chaired the British Property Federation's Sustainability Committee for a period of two years.

## **Sarah Ratcliffe** Program director of the Better Buildings Partnership

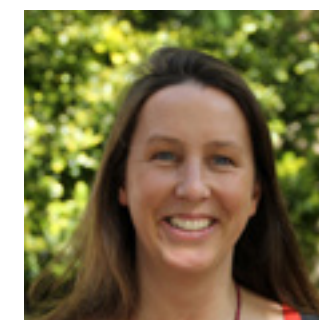
Sarah Ratcliffe has more than 15 years' experience advising many of the UK's leading property investors and developers on sustainability issues.

She was a founding director and joint managing director of Upstream (acquired by JLL in 2007), where she helped establish some of the earliest sector sustainability benchmarks including the Property Environment Group, NextGeneration and The Third Dimension.

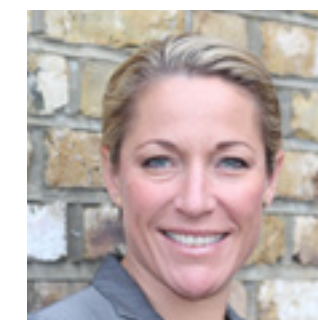
As a European director at JLL, Ratcliffe was responsible for leading the firm's sustainability consultancy in the UK and Europe and sat on the Global Sustainability Board.

In addition to various independent advisory roles, Ratcliffe is now a visiting lecturer on Sustainable Real Estate at Cass Business School and a board director of the Sustainable Development Foundation.

Sarah Ratcliffe



Julie Hirigoyen



Allan Walker







Martin Gerrelli



Steven Fawkes



Nina Reid



James Smith



### **Martin Gerrelli**

#### **Chief executive of the Starfish Group**

Martin Gerrelli is founder and CEO of the Starfish Group, a multi-disciplinary new build, housing retrofit and sustainability consultancy based in Chesterfield, Derbyshire. It was formed six years ago with the aim of creating better businesses and communities, by working as a consultancy to improve the energy efficiency of homes. It has since moved into new builds and energy supply.

Gerrelli expects turnover for the Starfish Group to be more than £20 million (AU\$41.5 million) in 2015, and will have 100 houses under construction.

Before setting up Starfish, Gerrelli was business development director of Connaught PLC for seven years.

### **Dr Steven Fawkes**

#### **Investment Committee member on the London Energy Efficiency Fund, and senior adviser to the Investor Confidence Project**

Dr Steven Fawkes is an energy efficiency expert that has advised corporates and governments on energy management and energy services in Europe, Asia, North America and the Middle East. His roles include special adviser to the Investor Confidence Project and member of the Investment Committee of the London Energy Efficiency Fund.

He has published two books on energy efficiency and writes a regular blog:

[www.onlyelevenpercent.com](http://www.onlyelevenpercent.com)

### **Nina Reid**

#### **Director of responsible property investment at M&G Real Estate**

Nina Reid is responsible for managing the

development and implementation of M&G Real Estate's global responsible property investment strategy and environmental reporting programs by further embedding sustainability into the investment decision-making process.

She oversees a wide range of sustainability projects including energy management, environmental risk management and sustainable investment.

Prior to joining M&G Real Estate in 2011, Reid was an associate director within the Upstream Sustainability Services Team at JLL.

She has a master's in natural sciences from Cambridge University and is an associate member of the Institute for Environmental Management & Assessment.

### **James Smith**

#### **Director at LaSalle Investment Management**

James Smith is a director in LaSalle's asset management team responsible for implementing value-add initiatives and strategies across a number of pension fund portfolios. This also includes sustainability projects such as solar PV installation.

Smith sits on LaSalle's Global Sustainability Committee and is also responsible for entrenching LaSalle's environmental and social strategies into the investment decision-making process of their assets in the UK. He also assists in developing sustainable risk management practices.

Before joining LaSalle in 2005, James worked at Lambert Smith Hampton.

**Also consulted but not present was Peter Sweatman, chief executive of the Spanish building energy efficiency finance company Climate Strategy.com**



# The introductions

**According to Sean Kidney, who kicked off discussions, there is no end of demand for green bonds – the problem is supply.**

“On the government side we’re now working on policy settings that will help scale up the green bonds market – settings that will help in shifting capital to green solutions, transition solutions.”

He had just returned from Beijing (that evening) where he is working with the Central Bank on new green bond regulation “which will be the starting pistol for the green bond market. In China you cannot call it green unless the government allows you to call it green. That’s very different to the UK.

“Property of course is the key area,” Kidney said. But while it produced **40 per cent of emissions** [with predictions it would soon go to 50 per cent], “it’s two thirds of real asset value in OECD countries.

“So within a few years I would expect green property bonds to make up at least 40 per cent of the market”

“I am thrilled to be here because I have to



say we have a problem... a big problem. We need to make rapid change very quickly in the property space.

“The IEA’s [International Energy Agency] scenarios show that we are not moving fast enough to shift to a low-carbon economy; most people don’t understand the potential of green bonds to support the rapid changes we need.”

According to **Allan Walker** the move was on and there were growing numbers of institutions issuing climate or green bonds on a global basis.

For example, China had recently launched a RMB-denominated green bond to support Chinese green projects in the London market, the United States had seen issuances by municipalities for water and regional transport as well as those for energy-efficient real estate companies, the Mexican government had issued a

**“Most people don’t understand the potential of green property bonds to support the rapid changes we need.”**



green bond to finance wind projects and Transport for London had financed cleaner transport infrastructure. There was also the possibility of issuing more sharia-compliant “Islamic finance” green bonds, which could deepen the investment base further.

Walker said his work on behalf of UK Trade & Investment was to attract foreign investment into British infrastructure and green energy projects; he also worked closely with the UK Green Investment Bank.

An example was giant Chinese energy company Three Gorges that had announced during the recent state visit to the UK that, subject to certain conditions, it would be the first significant Chinese investor into UK offshore wind projects, specifically in the Moray Firth project off the coast of Scotland. This would be a direct equity investment into a project-specific company and not technically a “green bond”, which are more frequently used for refinancing already-operational asset.

Walker said Danish energy developer DONG was already leading the way with a non-recourse green bond for its German Gode offshore wind project, which allowed these liquid instruments to be sold to German insurance companies.

**Catherine Bremner** led ANZ’s oversubscribed green bond issuance this year for AU\$600 million on five-year tenor, with half the bond going to buildings, using Climate Bond Initiative standards. Since the issuance, ANZ has been keen to do more, Bremner said, but more exciting was the continued interest from the bank’s property clients, including for reasons of diversification.

“The emergence of green bonds in this market is starting to add some twist to a normal financing route, particularly for a bank like ANZ, which is very capital constrained... Can we use the green

bond market to facilitate new capital to come into not just buildings projects but infrastructure projects, renewables, which are long term?”

An issue that needs attention, she said, relates to the assurance around the performance of the underlying asset, especially in relation to a perceived lack of clarity between various rating systems across countries.

“I was in Singapore last week, speaking at the Responsible Business Forum and one of the things we were talking about with colleagues is that we have quite a strong property book with green bonds in Singapore, but how does Green Mark compare with NABERS in Australia [and with ratings in other countries]?” There was not sufficient clarity around standards from a banker’s perspective to enable the issuance of green bonds in a range of countries, she said.

“Our target is AU\$10 billion of sustainable finance in the next five years. Goldman Sachs’ is AU\$100 billion.

“We do see big potential for green bonds in property and property clients, but how will standards play into that?”

**“We do see big potential for green bonds in property.”**





## STANDARDS

Australia's National Australian Built Environment Rating System was frequently cited by the panel as a system worth learning from. It is a government initiative to measure and compare the environmental performance of Australian buildings and tenancies. There are NABERS rating tools for commercial office buildings to measure greenhouse gas emissions, energy efficiency, water efficiency, waste efficiency and indoor environment quality. There are also energy/greenhouse and water rating tools for hotels, shopping centres and data centres.

Australian government legislation through the Commercial Building Disclosure, or CBD program, requires owners of office buildings to disclose the NABERS energy rating of offices of 2000 square metres or more when they are offered for sale or lease. There are indications of support from industry and state and territory governments for this to be expanded to other building sectors and smaller offices. A certified NABERS ratings for offices can be used to measure the performance of a tenancy, the base building or the whole building and is the main energy efficiency indicator for building owners.

- The tenancy rating includes only the energy or resources that the tenant controls.
- A base building rating covers the performance of the building's central services and common areas, which are usually managed by the building owner.
- A whole building rating covers both the tenanted spaces and the base building, and is typically used in an owner-occupied building, or where there is inadequate metering to obtain a base building or tenancy rating.

NABERS ratings are used throughout the property sector to drive deep cuts in environmental



impacts, and evaluate the real results of initiatives. The star ratings have become a common language. This deep knowledge of building performance and potential for improvement has transformed the Australian property industry. Annual ratings allow owners or occupiers to keep track of performance, measure the impact of any actions taken, address issues and make improvements, and set targets for each year.

The system has been emulated to an extent elsewhere:

- **NABERSNZ:** The Energy Efficiency and Conservation Authority in New Zealand licensed NABERS in 2013 to create NABERSNZ.
- **The Global Real Estate Sustainability Benchmark:** a global standard for portfolio-level sustainability assessment in real estate. The GRESB benchmark addresses issues including corporate sustainability strategy, policies and objectives, environmental performance monitoring, and the use of high-quality voluntary rating tools such as NABERS.
- **The Climate Bonds Initiative:** The CBI creates Climate Bonds Standards, which provide a Fair Trade-like labelling system for bonds, designed to make it easier for investors to work out what sorts of investments genuinely contribute to addressing climate change. Data from NABERS Energy rating reports can be used in Climate Bond reporting under the Climate Bonds Standard for Low Carbon Commercial Buildings.
- **NABERS IE in India:** One NABERS Indoor Environment rating has been conducted in India, at the Paraharpur Business Centre.



Tatiana Bosteels

**Adam MacDonald** said one of the areas under his jurisdiction is the green and sustainable bond business. In property terms Lloyds is probably the biggest property lender in the UK "by a decent margin," he said and he had recently worked on ING's green bond and issued two environmental and social governance bonds for Lloyds. "Something I've been tasked with by the board is to understand how green our lending is, starting with commercial real estate.

"Externally we'll be working with clients in 2016 on energy efficiency – and we're calling that out as a large and often-missed opportunity. You see a lot of very smart LED lighting solutions sold to property departments who don't have a sufficient capital budget. They want to save money but don't want to spend £20 million [AU\$42 million] upfront."

The idea, he said, is a finance package that does not mean borrowing money but is paid out of energy savings. "We see a lot of clients coming to us about financing their CO2 reduction commitments...so we're working on designing a number of deals where finance is raised from third parties

and repaid based on the savings generated.

"A big focus for me is to try to mainstream energy efficiency finance."

**Hermes' Tatiana Bosteels** described how she had been working on responsible property investment strategy and engaging the real estate sector and investors, such as pension funds, in scaling up finance for green buildings and energy efficiency. She has contributed to the EFIG (Energy Efficiency Finance Investor Group) to establish a dialogue with policy makers and identified specific actions for policy makers and investors to increase investment in energy efficiency. She has

**"Climate standards have a greater potential for positive change in addressing climate change than the fossil fuel divestment campaign."**

helped to take the findings to the G20 and it will now be a key focus of the G20 Chinese presidency in 2016.

She said that while not directly involved in green bonds (Hermes does not specifically differentiate between



Adam MacDonald





Martin Gerrelli

them and any other bonds as part of its corporate fixed income investment, but rather “looks at the investment fundamentals and underlying financial risks and return”), she believes it is important to establish transparent green property bond standards. She was one of the members of the Green Property Bonds technical committee for the Climate Bonds Standards.

Bosteels has been a keen advocate for scaling up finance, saying: “It is necessary to take a portfolio-wide approach and aggregate projects rather than financing

energy efficiency improvements on a building-by-building basis.

“That’s probably the best way to unlock scale in energy efficiency investment, to actually aggregate them all at once,” she said.

Bosteels has worked with the Better Building Partnership on lending and found a major data gap or barrier to progress: performance needs to be measured.

She added: “A trustee of a pension scheme told me that the potential for engaging on debt, and developing climate standards in the lending market, has a greater potential for positive change in addressing climate change than the fossil fuel divestment campaign.”

**Martin Gerrelli** described his work with local authorities and housing associations, such as the One Group and the Riverside Group, to deliver new, energy-efficient houses and housing retrofits. He is also currently delivering renewable energy projects such as wind farms and energy from waste. His company, Starfish Capital, has £550 million (AU\$1.1 billion) worth of



Julie Hirigoyen

**“The built environment is the biggest downstream energy resource we have – as well as the cheapest, cleanest and easiest to access.”**

bonds under offer, mainly in combined heat and power and biomass, and a pipeline of projects exceeding £6 billion (AU\$12.5b).

He estimated his business had refurbished 5000 houses and “taken many thousands of families out of fuel poverty” using elements such as external wall insulation and solar panels.

It was about to start building energy efficient homes and had “lots of relationships with housing associations”.

He said he was very excited to be working with bond issuers at the moment. He had met Kidney six weeks before the salon and said he was in negotiating to issue the first climate bonds in the UK. A difficulty, he said, was the expense of due diligence.

**Steven Fawkes** has been working in energy efficiency since the 1980s and is currently engaged on bringing more finance into the sector. His work with the Investor Confidence Project is about making energy efficiency into an asset class, which is critical for project aggregation, as described by Bosteels.

He said: “Increasing investor confidence in energy efficiency and making it more like an asset class is important, it’s about standardisation of the development and documentation of projects, which I think are critical if you’re going to aggregate lots of small energy efficiency projects and then one day issue a bond around them.

“Energy efficiency needs standardisation in order to look more like energy to financiers, so they can evaluate projects quickly and

much more easily and establish the rate of return. We need that to scale it up.”

When renewable energy projects were being developed in the 1980s, there weren’t standards for them either, but that it quickly became standardised. However, this has not yet happened for energy efficiency in buildings.

“The built environment is the biggest downstream energy resource we have, as well as the cheapest, cleanest and easiest to access,” Fawkes said.

**Julie Hirigoyen** pointed out that the UK Green Building Council, of which she is chief executive officer, is one of around 100 such councils around the world. She noted, however, that the UKGBC doesn’t operate or own any environmental rating systems for buildings, preferring to remain “rating agnostic.”

She agreed with Fawkes that standardisation is key: “All around the world we have different tools to measure the sustainability of buildings and that makes it far more complex from a global capital operation.



Steven Fawkes



## GREEN BUILDING COUNCIL COMMITMENTS

More than 1.25 billion square metres of buildings – almost double the size of Singapore – will be registered, renovated or certified as green building space over the next five years, under **commitments** made by Green Building Councils at COP21 in Paris.

Green Building Councils from around the world, including Mauritius, India and the US, unveiled national commitments to transform the sustainability of their buildings to reduce greenhouse gas emissions and ensure that the buildings and construction industry plays its part in limiting global warming to two degrees.

The commitments were made at Buildings Day – the official COP21 meeting led by Ségolène Royal, the French Minister of Ecology and former presidential candidate – and include:

- 25 Green Building Councils committing to register, renovate or certify over 1.25 billion square metres of green building space and train over 127,000 qualified green building professionals by 2020
- All 74 national Green Building Councils supporting the high level commitment from the World Green Building Council (the global network of which they are members) to achieve Net Zero carbon new building and energy efficient refurbishment of the existing building stock by 2050
- 3 Green Building Councils (Canada, Australia and South Africa) committing to introduce Net Zero certification for buildings
- More than 125 corporate members of Green Building Councils making bold commitments, including the French product manufacturing giant Saint-Gobain, Australian developer Lendlease and Swedish construction firm Skanska

A new alliance of 16 countries and over 60 organisations, known as the Global Alliance for Buildings and Construction (which includes WorldGBC, its 74 Green Building Councils and their 27,000 member companies) was also launched, and publicly committed to help countries meet their Intended Nationally Determined Contributions (INDCs) through green building.

“These rating systems are not standardised so it is necessary to harmonise the tools that there are around the world,” she said.

The UKGBC is trying to influence government policy and has a campaign running at the moment on “**Homes Fit for the Future**”, which aims to demonstrate how the net economic benefit of retrofitting for energy efficiency can be harvested. She estimated that the net economic benefits of making the energy efficiency of homes and national infrastructure priority could be equivalent to £9 billion (AU\$16.7 billion) in the next 10 years or so – “the same as some of the UK’s largest infrastructure projects such as Crossrail”.

According to Hirigoyen, politics has made progress difficult, and government U-turns at the moment are “clobbering the sector”, so there is no doubt that industry leadership is needed.

With over 60 UK-GBC members making climate pledges in advance of COP21, it’s clear that the role of buildings and the built environment is now central stage for climate change negotiations (see separate box). She said that this would also be the first time that COP would hold a Buildings Day in specific recognition of this.

As well as the UKGBC, Hirigoyen also sits on the Igloo Footprint Advisory Committee chaired by Jonathon Porritt, CBE. The Igloo Regeneration Fund is a partnership of pension, life and charity funds managed by Aviva Investors, which invests in sustainable urban regeneration across the UK.

According to **Sarah Ratcliffe**, the Better Buildings Partnership’s 27 members, who are large property owners and investors, are working to transform the market. She said that the BBP is focused on existing buildings and provides practical guidance



Sarah Ratcliffe

for the commercial property market on how sustainability can be integrated into real estate investment. The BBP does this by providing toolkits that are used around the world, for example on green leases and green building management.

The BBP’s involvement in green bonds is twofold, she said. Firstly, the BBP Market Transformation Working Group is looking at how green bonds can be used for real estate investment and what standards are appropriate to deliver the required changes.

“Whilst it’s a relatively new and emerging field in the UK commercial real estate sector, a lot of our members recognise that and want to understand a little bit more about green bonds,” Ratcliffe said.

“We’d like to discover how we as an organisation might contribute towards standards for green bonds and help our

**“We’re talking about whether or not standards need to be mandated.”**

members understand the field a bit better.”

Where green bonds look to invest in existing buildings, it is important they go beyond the simple use of design standards for new buildings, or even retrofits, and look at actual in-use building performance when occupied. This is particularly relevant to the lifespan over which bonds operate and therefore the return on investment, she said.

Secondly, the BBP’s commercial real estate lending group includes leading property companies and industry associations who are aware of the growing importance of lending in the real estate sector and are engaging others on how to integrate sustainability into their decision-making, Ratcliffe said.





James Smith

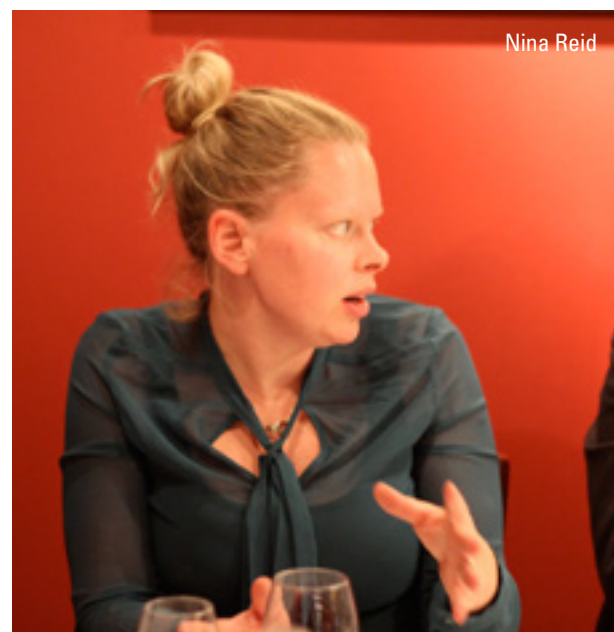
“The BBP can work in this area by providing guidance to lenders on the key questions they need to ask in terms of risk exposure, in both their existing portfolios and new acquisitions. We recently published an industry insight on that issue to kick-start that conversation as well as the opportunities lenders have to create new products, which is where green bonds can play an important role.”

On the theme of standardisation, the BBP has a Real Estate Environmental Benchmark with data for around 1000 buildings, which could form an important aspect of green bonds standards.

“REEB is critical in enabling investors to assess the actual performance in use of real estate assets. We are looking at how this could be used in the bonds market to establish the relative performance of assets within the market, hence enabling those setting the standards to set the boundaries for the inclusion of assets,” Ratcliffe said.

#### Could NABERS work in the UK?

A new project supported by the BBP on design for performance kicks off shortly with a feasibility study to assess whether



Nina Reid

or not the UK market is ripe for the introduction of a scheme like the Australian NABERS program.

“We’re talking about whether or not these standards need to be mandated. We’re trying to understand what happened with NABERS in Australia and see if we can replicate it here. One of the big challenges in the UK is that there is very limited likelihood of that standard being mandated at the moment. However, our research indicates to us that a mandated standard may not be the most effective way forward.

“A scheme like this for the UK would be ideal for enabling investors to make the vital link between building performance and value.”

The BBP is also collaborating with the Investor Confidence Project protocols.

“We are only on the first rung of this process. Each of these initiatives has been developed to carefully target a particular barrier to improving the performance in use of buildings. If we succeed in ‘joining the dots’, it will constitute a significant step forward for the industry,” Ratcliffe said.

**James Smith** gave a brief summary of his work for LaSalle Investment Management

where he is director of the asset management team and works mainly on behalf of pension fund investors.

Within the UK, JLL has implemented an energy reduction program that resulted in a 15 per cent reduction in consumption to the year ending April 2015.

He said: “There are many ideas and technologies out there and we are trying to find the options we can efficiently implement and that clients will buy into. In terms of green bonds it is early days but I see it as a potential area where we can raise capital, in both the private the public sectors.”

He noted that institutional investors can be hesitant to try new and untested technologies but there is a definite increasing appetite for greener and more socially aware funds.

**Nina Reid** of M&G Real Estate wondered how the bonds impacted on portfolios over time, since portfolios change. Portfolio trading reflects the short-term thinking of many investors, she said, which is a potential problem that needs addressing since the type of measures funded by a green or climate bonds are often long term.

Her clients include investors in shopping centres and she spoke of the need to get tenants to buy into energy-saving measures and initiatives. One of the challenges she observed is that the work involved in delivering energy-saving projects can be significant but the savings in terms of energy costs aren’t always that significant relative to fund size, which means you need to ensure resources are focused on the right projects.

She said she had not looked at green bonds since most of her clients finance energy savings measures themselves.

## INVESTOR CONFIDENCE PROJECT ENERGY PERFORMANCE PROTOCOLS

**Energy Performance Protocols** are an industry best practice assembly of existing building energy renovation standards, practices, and documentation used to create the data necessary to enable underwriting or managing of energy performance risk. There are different protocols for different building types.

They have been compiled by Investor Confidence Project Europe working with many stakeholders in the finance and energy efficiency industries through the project’s European Technical Forum to address the range of typical tertiary and apartment block building projects found in the European market. Tertiary is defined as offices, educational buildings, hospitals, hotels, restaurants, sports facilities, wholesale and retail trade services buildings and institutional buildings.

These protocols reference international, European and national standards and best practices to provide all market actors across the European renovation and investment community with standardised tools to improve the bankability of building energy renovation projects.

Similar to an appraisal pack in a commercial real estate deal, each defined EPP creates a standard set of documentation that will help standardise project performance underwriting, leading to better data on performance, and a more efficient marketplace with less duplicative engineering and lower transaction costs. The result should be an increase in deal flow and a more transparent and efficient market.

The first protocols have now been issued and additional ones are in draft form for review. The protocols are already being embedded into real projects and investment programmes across Europe. Further information is available from Panama Bartholomy (ICP Europe’s Project Director) at [panama.bartholomy@eepperformance.org](mailto:panama.bartholomy@eepperformance.org) and <http://europe.eepperformance.org/protocols.html>





# The discussion

## A WORLD IN TRANSITION, BUT IT NEEDS TO BE FAST

According to Sean Kidney climate resilience is an increasing focus of concern around the world and while reducing emissions from the built environment is the driver for energy efficiency, the climate bonds standard is about the transition to the low-carbon economy.

The Climate Bonds Initiative wanted to take relativity into account when developing its climate bond.

“In terms of the way we crafted the overarching principles of the climate bond standard is that it’s about a transition,” Kidney said. “It’s about getting to a world in 2050 of net zero carbon in the open environment. How do you get there? You do have to start with relativity – Mumbai is not the same as Copenhagen, so we decided that in every single market round the world, no one is good enough – so we’re just going to take the top 15 per cent of buildings in every market.”

Energy efficiency is key, he said. “What we need to do is reduce consumption of fossil fuels, shut down fossil fuel plants and urgently reduce the emissions trajectory. However, this is 50 years, probably 100 years away. Tatiana [Bosteels] is absolutely right, there is no way to achieve that vision in time to avert catastrophe without energy efficiency.”

Bosteels said that it has been shown by a large number of international bodies, the IEA first, that without energy efficiency there cannot be a solution to carbon intensive energy.

Kidney said he expected 40 per cent of green bonds to be low-emissions-property-related in 2020.

“Frankly they have to be or else we’re in

even deeper trouble,” he said.

“One of the quickest and most fiscally efficient ways to get to a low-carbon economy is to dramatically reduce emissions coming out of the built environment – that’s where the scale is too. If we can get that down, that will reduce the hump in terms of investment to make the transition.”

**“Around 40 per cent of green bonds need to be low-emissions-property-related in 2020 or we’re in even deeper trouble.”**

## IT’S ABOUT PERFORMANCE

For Kidney, the rating tools to achieve this, such as BREEAM (the UK building environmental design rating tool) need to address performance, not just design.

“It’s about building occupiers as well as owners.” He said. “We have to start [devising operational metrics] and improve their accuracy as we go along. We can be tolerant of mistakes and inaccuracies at the moment, but as we go along we need to ratchet up accuracy. We need to pin down emissions from the building sector and set up the context of conversations to have in the future.”

Energy Performance Certificates are being used today in the UK to underpin the legislation that has had the greatest impact on buildings’ energy performance: minimum energy efficiency standards. Their purpose is to help with the securitisation of the investment in energy efficiency.

Kidney said the market would acclimatise to the use of EPCs and “then we start improving the standards and bringing them closer to an approximation of the



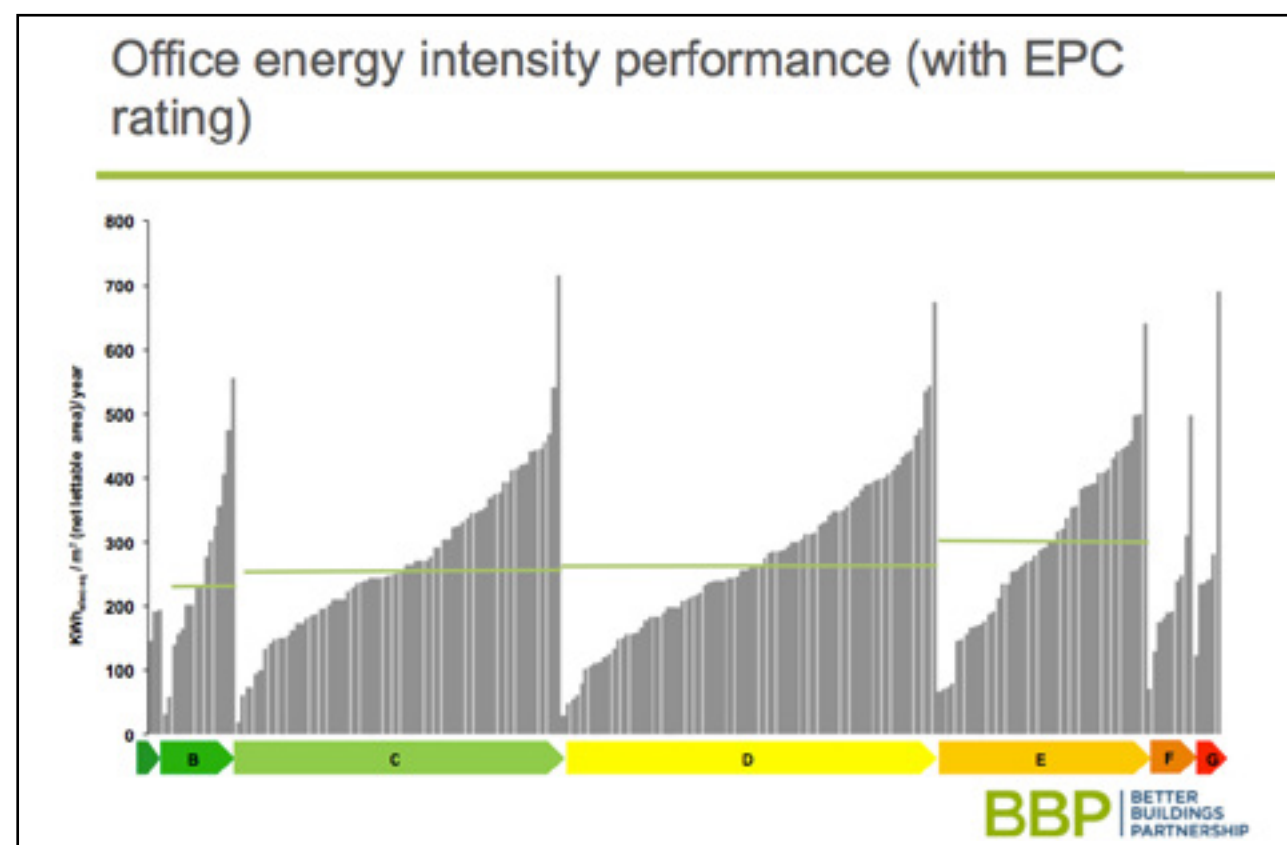
downward emissions pathway. We have to make a big shift.

“And we need a pricing drive on green bonds.”

Gerrelli said that good EPC ratings improved the resale value of a building; properties were more robust if refurbished, he said, but Ratcliffe observed that many lenders are still unaware of EPCs.

## BUT ENERGY PERFORMANCE CERTIFICATES DON'T CORRELATE WITH PERFORMANCE

The graph below from the BBP REEB dataset shows there is no correlation between EPC ratings of buildings and actual performance in use. Bosteels said that this is exactly why we need both design and operational certificates, as NABERS provides, adding that she would like to see such a system introduced to the UK. The source for this graphic is **BBP's REEB**



**report**, which also has a similar graph for retail buildings.

## FROM SCEPTIC TO ZEALOTS – TREASURERS AND GREEN BONDS

Kidney said there is strong enthusiasm in the market for green bonds. “People who hold them dispose of their non-green bonds first.” This makes green bonds more valuable in the secondary market, though they already fetch a good price in the primary market.

What will help more is good measurement and verification.

“If we can build in verification of performance then we will get a better price,” he said.

Green bonds will become more popular, as treasurers become less sceptical of them, he said.

“I’ve yet to meet a treasurer in the world who has issued a green bond and wasn’t

sceptical in advance. But, every single one that I have met afterwards has become a zealot for it. And that’s because of the investors they get, the conversations they have with investors, and the pure PR.

“The treasurer of Massachusetts says the best bond issuing day he had in his life was when he brought out his first green bond, because he was flooded with phone calls saying how great it was. And treasurers don’t normally get that!”

Walker, who was present on behalf of Sir Michael Bear (chairman of the UKTI’s Regeneration Investment Organisation) and noted the predominantly real estate theme of the evening’s event, asked whether anybody was aware if the UK, “one of the largest and most innovative financial markets in the world and a world leader in green bonds,” had yet to see the issuance of a green bond by an entity based purely on a built environment property portfolio, as there has been in the US and Europe.

The answer was a resounding no.

Participants said that the reason for the lack of uptake was possibly the absence of a strong definition of green assets. The split incentive issue in buildings, where improvements paid for by the landlord benefit the tenants, might be another barrier.

And so too that it is not easy to compare different portfolios that contain different building stocks/uses/types, or their performance over time.

This has been achieved elsewhere, in Australia for example. “We need amortisation profiles to see if at any point in time there are enough assets in place to cover everything – investors need this,” Walker said. “Transparency and publicly available information is needed from all angles.”

It was added that large emitters will have greenhouse gas emission records, and this can provide a basis for rolling out a standard method for recording and publishing emissions.

Bosteels noted Ratcliffe’s point that the BBP’s REEB benchmark has over 1000 buildings already, and agreed that this could potentially be used as the basis of the UK standard.

**“I’ve yet to meet a treasurer in the world who has issued a green bond and wasn’t sceptical in advance.”**

She added that the UK has not been doing itself any favours by playing down the tools that it already has. “They may have an imperfect methodology, but it is something,” she said. “We need to improve them so that there is a system for collecting performance data.”

Ratcliffe said the Climate Bonds Standard could be used, but the market is not there yet.

In the investment world, Bosteels said, there was generally a correlation between environmental performance and financial performance. It was difficult to prove this in the UK as very few companies certify green building performance, but it had been possible to show the correlation in countries like France, Germany, and Australia, where such certification is mandated.

## THE BONDS SECONDARY MARKET

According to Bremner green bonds are used to re-finance transactions and this is core to their purpose. However, she said that the sector is starting to see secondary market trading as well.





Bonds are not a project finance tool, but a refinance tool, Hirigoyen said. Capital raised is used for the enabling actions, and therefore they do have a significant role to play and the ultimate source of funding is banks, which, like loans, use debt financing for 90 per cent of the lending across the world using the corporate amortisation of capital from clients' assets, she said.

"The bonds enable all these other actions. Securitisation is needed. Refinancing creates confidence and more profit, thereby freeing capital up for further investment.

## THE QUESTION OF INVESTOR CONFIDENCE

MacDonald pointed out that issuers need to be confident of emissions reporting.

"Any green bond/securitisation would require emissions reporting that issuers are confident will deliver improved emissions over time. Of course, there is currently no 'green' reporting requirement on a standard bank loan. A change of building use beyond landlords' control can put emissions up (for example, where a tenant moves their IT department into a building or increases the occupancy).

"We need to find solutions to this in order to give issuers and investors confidence in this market."

Bosteels said she believes that this is why it is important to look at performance of the entire portfolio over time. This would help take into account changes in the portfolio in individual buildings (some will improve and others get worse) and allow a focus on implementing improvements throughout the investment process. Performance at the portfolio level would then become more consistent.

A number of BBP members such as Hermes, M&G, Land Securities, British Land and many other members already demonstrate improvements in building performance through active management and sustainable refurbishments, she said.

Ratcliffe said: "The BBP wants to build up an evidence base to support positive change by looking at the impact on value and the strength of the demand for change from occupier market, those who demand better buildings. Investors will gain more confidence when they see the impact on value. There are a number of case studies and individual transactions that illustrate

this, but these have not yet been brought together and reflected within the valuation processes and professional training."

But Smith noted that he hadn't seen any evidence from occupiers that they are willing to pay more for a more sustainable building. It was just a new standard that is expected from a Grade A building, he said. The vast majority (90 per cent) of properties he deals with were not brand new and were therefore not built with the latest energy-efficient monitoring and evaluation tools.

Smith said that dealing with these

properties would have a bigger impact on mitigating climate change [than building excellent new buildings]. Outside of the large corporate occupiers, it is more difficult to engage on this issue with occupiers as they see it as an area that is less important to their business. However, Smith stated that this is starting to change.

Ratcliffe asked "If there isn't a relevant evidence base available to give investors confidence, should people wait before acting?"

Nina Reid responded: "No"

## THE BUSINESS CASE FOR GREEN BUILDING

The WorldGBC has undertaken a review of the costs and benefits of green buildings for developers, investors and occupants.

In its report, which examines whether or not it is possible to attach a financial value to the cost and benefits of sustainable buildings, the GBC highlights how green buildings can be delivered at a price comparable to conventional buildings, and how investments can be recouped through operational cost savings.

It also notes that with the right design features, green buildings can create a more productive workplace.

The report specifically focuses on the potential benefits of green buildings throughout the various stages of the building lifecycle, from reduced costs during the design and construction phases through to improved health and productivity of workers when a building is in use.

Key findings include:

- **Asset value:** Emerging evidence in some markets of green buildings being able to more easily attract tenants and to command higher rents and sale prices
- **Design and construction costs:** There has been an overall reduction in the costs associated with designing and constructing sustainable buildings

- **Operating costs:** The direct benefits from green buildings in use (such as reduced energy and water use and lower long-term operations and maintenance costs) typically exceed any costs premiums associated with their design and construction within a reasonable payback period
- **Workplace productivity and health:** The characteristics and indoor environments of green buildings can influence the productivity and health of workers who occupy them, resulting in bottom line benefits for businesses

The Business Case for Green Building report includes a wide range of case studies from around the world, demonstrating the different aspects of the business case.

The WorldGBC has also launched a Better Build Green campaign, which aims to show the world that green buildings offer one of the best and most cost-effective ways to tackle climate change and help keep global temperature rises within the two degrees limit.

The message is this: not only had we better build green if we are to reach a two-degree world tomorrow, but we are better off today if we do.

**The campaign highlights green buildings' key role in reducing emissions and creating economic and societal benefits.**

- See [The business case for building greener buildings](#)



MacDonald noted that if green bonds “industrialise capital flows” into a sector, it creates pressure to improve the quality of disclosure and benchmarks over time.

## 90 PER CENT OF BUILDINGS IN THE UK ARE NOT PERFORMING

However, Hirigoyen said that she was concerned with “linking green bonds to the best-in-class in the market,” as those buildings already exist and are already prime.

## CALIFORNIA'S SB 350 LAW MEANS YOU GET PAID BY PERFORMANCE

Regulation SB 350 in California represents a sea change in the way energy efficiency will be counted in future.

Up until now the state incentive schemes run by the utilities have only been able to reward energy savings over and above Title 24 – the rigorous building code, that is, you can only get an incentive to improve your existing building to a level over and above the high level of efficiency required for new buildings.

Given that it is often impossible to do this, lesser but still valuable improvements weren't being incentivised, nor were they based on performance.

SB 350, on the other hand, requires measurement of savings it defines as “reducing the quantity of baseline energy services demanded”. It includes both the adoption of efficiency measures and practices such as behavioural change.

Savings “shall be measured taking into consideration the overall reduction in normalised metered electricity and natural gas consumption”.

In other words you get paid for performance. The measures needed to achieve this are left up to the market.

“The problem we've got in the UK is that 90 per cent of buildings aren't performing. They don't have those qualifications and credentials and we need to get them up to a better standard. We need to incentivise that in packages that somehow encourage energy efficiency investment in a more aggregated sense across a portfolio.”

This has the potential to bring into the fold buildings that would otherwise not be considered for performance improvement, she said.

On investor confidence Fawkes said the fundamental obstruction in the lack of a market for energy efficiency was because it is not like energy. “If we see energy efficiency in the same terms in which we view energy, that is we pay for performance rather than equipment, then it will work.” He cited the examples of initiatives in California and New York City. See box.

## WHAT'S THE BEST MODEL FOR FINANCING?

Kidney said that in his travels world wide he's not found support for an energy performance-linked coupon in terms of green bonds. “It needs to be converted into a tool for improving the capital value of the building, he said.

Fawkes said he wanted a model that turns energy savings into a revenue stream and hence adds value for the building owner.

Bosteels said there was room for multiple models to attract different types of investors and investments.

“I think we need all the models,” she said.

“I find it very difficult to think it's either or – that is either bonds or lending, I think we need them all. I don't think it's right to say operational models are right and EPCs are wrong – we need them both.”



MacDonald emphasised the need to distinguish between capital investment and cost reduction.

He said: “When you look at who buys and makes the decision on energy efficiency it's usually the property managers. They're not given a capital budget, they're given a cost target – so you have to sell it to the customer based on cost savings rather than capital.”

The key to unlocking more investment in energy efficiency, MacDonald said, is looking at payment for performance (often called Pay As You Save) financing structures whereby instead of direct capital investment, energy efficiency solutions are funded by third parties that share the savings they deliver.

Bosteels noted that there were zero conditions on loans relating to sustainability.

“If we were to make lending conditional to energy performance ratings and operation

ratings, that would completely change things,” she said.

“If we move away from projects which are contingent upon the performance of the installed measure but look at the impact of the investment on the fund level, this is where you would be unleashing far more finance and scaling up higher. That would completely change the financing model. I like very much the idea that we need more conditionality for lending in bonds.

**“The problem we've got in the UK is that 90 per cent of buildings aren't performing.”**

“This could raise a large amount of energy efficiency finance. I've been part of a climate bonds property project, and I'm very supportive of that in order to have a transparent methodology.”





She proposed the idea that there should be more conditions on sustainability for lending, perhaps even in general.

### What about resilience as a condition of lending?

Bremner pointed out that, as yet, there is no standard for banking related to climate resilience (but see box on insurance) and suggested that this could be looked at as a method of improving adoption.

Another question raised related to how we should define investment-grade “priority” projects. One potential answer, given by MacDonald, was based on EPCs and pricing buildings differentially.

“In the UK, buildings rated F or G could become higher risk than those rated A or B,” he said.

Ratcliffe expressed unease with this approach, saying that EPCs are an important tool, but – as highlighted previously – do not reflect actual performance in use, so it may be misleading to use them as a proxy for risk and investment in improvements.

MacDonald said a number of clients are keen to explore performance-based

financing models, but that this hasn’t taken off at scale yet.

## GIVING HAS ITS (FINANCIAL) REWARDS

On social bonds Martin Gerrelli said that his model depends upon sustainable interest rates.

“The reason why the Green Deal [a UK program to fund residential energy efficiency upgrades] didn’t work was due to the level of interest the people were expected to pay,” he said.

“In the last decade, registered providers and local authorities have innovated the market using stock transfers and refinancing activities, and because of that – there’s a significant amount of work that needs to be refinanced,” he said.

The Starfish Group model, he said, included taking offers out to local authorities.

“We’ve currently got an offer out to 30 local authorities, each of those are around £40 million (AU\$80.3 million), and [they] involve creating a waste and recycling solution.”

Waste could be lucrative. An extreme example given was the gold in road sweepings; potentially £2 million (AU\$4.1 million) of the precious metal could be recovered from these sweepings every year, Gerrelli said.

But it’s the social aspect of the project that is most innovative. “For every £40 million I lend, I’ll be giving £60 million back to communities over a 20-year period.

“I’m happy to make £14 million a year on a waste plant that cost me £40 million, and give three or four million a year back to the local authority as a charitable reinvestment... so that they can do energy efficiency activities on their stock.



## STANDARDS

### The need for verification

Whatever standard is used for measuring performance in buildings, it must be verifiable and transparent. In a fast urbanising world this is an urgent task to create, using open data, easily updatable information and present it in a way that people can actually use at all levels to determine what is sustainable.

In energy management, “what gets measured gets saved.” Energy management is a field that is well advanced in establishing baselines, monitoring and performance, with all sorts of software and technology geared to measurement and improving efficiency. There are international standards, the principal one being ISO 50001.

Any comparisons about the performance of buildings need to be made against baselines, which should be established at the beginning. But while it is useful to deal with percentage reductions or increases of particular indicators against those baselines, these are not absolute measurements. Absolute measures enable one building to be compared with another. Carbon accounting is a form of absolute measurement and so is energy consumption in, say, kWh per day.

### Life Cycle Analysis

The real target of measuring the sustainability of any development should be overall lifetime impact. This means that life-cycle analysis is another potential contender that could be deployed, but, again, the data and the methodology is not yet quite up to what we actually need.

A Life Cycle Assessment (LCA) quantifies and assesses the emissions, resources consumed,

and pressures on health and the environment attributed to different products over their entire life cycle. It quantifies all physical exchanges with the environment, whether these are inputs (resources, materials, land use and energy), or outputs (emissions to air, water and soil).

The advantage of using it is that life cycle assessment is already standardised through a range of ISO documents, including ISO 14040:2006 and ISO 14044:2006, which cover principles, framework requirements and guidelines and, published six years later, ISO/TR 14047:2012 and 14049:2012, which help with applying the earlier standards the impact assessment and inventory analysis.

The LCA process may be divided into four key steps:

- identify goal and scope by defining boundaries and the functional unit
- model the processes and resources involved in the system, collate the life cycle inventories of these processes and resources and generate any new inventory required
- adjust life-cycle impacts in terms of mid points and endpoints
- evaluate and interpret results and generate the report for decision-making

Life cycle assessment is complicated enough for a single product. A building is an assembly of many different products, and a town or city may contain millions. Clearly this approach by itself from the bottom up will be impractical. There is, however, an attempt ongoing to apply life-cycle analysis to land use. The Joint Research Centre’s Institute for Environment and Sustainability leads the European Platform on Life-Cycle Assessment.





**“I’m proud of the opportunity to not only make profit, but to give some back.”**

“That’s the most sustainable thing you can do.

Gerrelli added: “I’m proud of the opportunity to not only make profit, but to give some back.

The best way to save money is to make money and then reinvest it.”

This benevolent approach helps attract, and keep, customers, he said.

This seemed like a systems approach to local government. But how does it work?

On housing projects, Gerrelli said, giving something back to housing associations “opens the door to other housing associations”

Some shareholders struggle with it,” he

said, “but I like the CSR impact on public relations.”

For instance in greater Manchester his company retrofitted 50 “deprived homes” and the authority is now talking about doing hundreds of them.

“This kind of work has benefits because it liberates the spending power of fuel poor households, to spend the money on other things, benefiting the economy.”

#### **Were the banks onto this model?**

MacDonald said similar models are often seen in the public and housing association sector.

“While we take social considerations into account, the main driver of lending decisions is credit risk and the borrower’s ability to repay,” he said.

Kidney said that in general we should all be doing more projects like Gerrelli’s because it provides deeper engagement for everybody,

particularly investors, in the community. He felt that it would happen within the next generation, saying that people would like to be “getting richer by being nice.”

But in this case, is the return on investment in energy efficiency the driver for action? Kidney was dubious about is, and said he would need data to prove this to help differentiate assets. This would encourage banks to lend more to green projects.

#### **Why treat green differently to all other credentials?**

Reid wondered why we need to justify investment in green projects differently from the way we justify other investment projects, which is solely on financial return.

Ratcliffe agreed that it was ironic that we had to isolate the sustainability benefits in order to demonstrate the value derived from the building fabric’s improvement.

### **THE INSURANCE MODEL**

Could a leaf not be taken out of the insurance sector’s approach to climate risk?

Kidney said that in relation to property, the resilience work the sector has done is about heightened risk of loss as a result of climate change, and they have sometimes adjusted premium pricing, sometimes more or less withdrawn from a market (for example, at-risk coastal property in Florida), and sometimes worked with their policyholders to improve resilience

### **THE IMPACT OF CLIMATE CHANGE ON THE INSURANCE SECTOR**

According to a **Bank of England report** published in September 2015 in association with the Prudential Regulation Authority, there are three channels of risk for the insurance sector: physical risks, directly resulting from climate-related events; transition risks associated with the repricing of carbon-intensive assets; and liability risks arising from potential legal claims by parties injured due to climate-related events on those deemed to be responsible.

In terms of real estate, the report says: “There are already cases, albeit limited in scope, of severe weather events resulting in general insurers restricting property insurance in high-risk areas, which can impact upon property values. The potential impact of extreme weather on both the asset and liability side of insurers’ balance sheets presents another example of correlated risk.”

The report identifies a number of climate change-related opportunities for insurance firms. These include new sources of premium growth, such as renewable energy project insurance, supporting resilience to climate change through risk awareness and risk transfer, investments in ‘green bonds’ and providing financial sector leadership on climate change.

Zürich Financial Services Group is one sector leader in the role of insurance in pricing climate-related risks. This and many other insurance companies are now part of a G7 initiative on Climate Risk Insurance. The ‘**InsuResilience**’ initiative was adopted at the G7 Summit in Germany in June 2015, and is to be implemented in close partnership between the G7 states, developing countries and emerging economies. It has done work on integrating climate risk insurance into a comprehensive climate risk management approach. Those in high-risk areas face higher premiums, but also conditions upon obtaining insurance that involved taking steps to become more resilient. It is suggested that premiums should be used to pay for disaster relief and adaptation work.

Contractual arrangements between investors and real estates portfolio managers on the one hand and building occupiers on the other could include similar types of conditions in the context of investment in the built environment in energy efficiency and resilience. These conditions could, for example be performance related and linked to benchmark data for the building type, or contain penalties for non-compliance with conditions, such as not changing the interior of the building to remove energy-saving aspects of its design.



preparation (for instance Zurich Insurance educating small business policyholders in flood-prone Queensland to be flood-ready for a quick return to business).

There were concerns voiced, however, that looking at the relationship between value and sustainability in real estate runs the risk of “separating out what should be a core issue”. By separating it out to measure it, sustainability becomes a separate, rather than integral, part of a building.

“You wouldn’t value the percentage of worth of a marble hallway in a house... the same should be for sustainability,” Bosteels said.

## THE LIMITATIONS OF REGULATION

Hirigoyen pointed out that the public sector would not have all the answers. It is too short-termist. A top-down solution is not going to take us all the way. For example the

### RESOURCES FROM THE BETTER BUILDINGS PARTNERSHIP TO CATALYSE THE MARKET

- **Why Green Bonds**
- **Real Estate Debt Finance Model**
- The **BBP Real Estate Environmental Benchmark**
- **Commercial Real Estate Lending:** A new Working Group report has a focus on the risk management of Minimum Energy Efficiency Standards, also touching upon wider sustainability considerations and the opportunities for lenders to look beyond risk management and identify new opportunities via new products and business models. This was launched at an event with CREFC Europe andGRESB about their inaugural **Debt Survey results**.

**“You wouldn’t value the percentage of worth of a marble hallway in a house... the same should be for sustainability.”**

intended nationally determined contributions, or INDCs, submitted to the UNFCCC will only go so far. It is up to the private sector to meet the gap, and green and climate bonds have a massive role to play.

“They can bring about a culture change which is more powerful the regulation.”

Ratcliffe noted that regulation in the UK has driven improvements to building regulations, which have cut us a long way on new build, but not on retrofit, which is the main part of the challenge. “It has been an invisible part of the world’s carbon footprint.”

Reid still insisted that government needs to incentivise the market more to transform it, as has been the case with NABERS in Australia. Perinotto replied that at A and B grade buildings, the challenges in Australia were just as hard. The CBD disclosure program, which mandates disclosure of NABERS energy, only applies to offices of more than 2000 square metres when they are bought or sold).

## CONCLUSIONS

Ratcliffe said that regulation in the UK has driven improvements to Building Regulations, which have come a long way on new build, but not on retrofit, which is the main part of the challenge. “It has been an invisible part of the world’s carbon footprint.”

Reid said that government needs to incentivise the market more to transform it, as has been the case with NABERS in Australia.



However in Australia, *The Fifth Estate* pointed out, the challenges of transforming B and C grade buildings have been just as hard.

## IN THE END, WE DO NEED HELP – THE PRIVATE SECTOR IS NOT ENOUGH

Kidney concluded by saying that he did not know of any development in the world that had delivered good outputs without public sector involvement.

He said: “I don’t know of any example in the world where non-public sector drivers have delivered targeted outcomes. I don’t know anywhere in the world where leaving the decision about building or buying a green building to the punter works – at the speed and scale needed to address the climate challenge.

The best example is Germany, he said, where with effective zero interest loans for

sustainability upgrades there was still, relative to targets, a modest take up of programs.

“I think it’s entirely about the difficulty in engaging about this issue. When it comes down to how we make rapid changes, the challenge is how to do a different kind of work in the public sector and offer solutions from politicians where they don’t have to slug us in the way they feel like they have done in the past.

“We need innovative schemes that can make retrofitting buildings (to become more energy efficient) palatable to investors and portfolio managers at a large scale. We can use EPCs and similar tools to stimulate politicians to act and change the market. This is already working. All the politicians have to do is to bow charge something that is already present. Nobody likes policy uncertainty, yet that is what we get.” ●



## PART II: DEEP DIVE





# Ché Wall: On ensuring we make the deep cuts we need



Achieving deep emissions cuts in our building stock has never been more important, with COP21 seeing green bonds for buildings as an important climate action.

It is expected that achieving the necessary abatement dividends post-COP21 will require the engagement of new actors to leverage institutional finance at scale. It is also necessary that substantial impact is differentiated by low impact so that the finite capital available does not get locked-up in sub-optimal outcomes, resulting in drag on the momentum required to ensure that we can limit climate change to well below two-degrees of warming.

The notion of the lock-in effect can be applied to debt capital as well, as it applies to built assets. Encouraging the movement of funds earmarked for climate-friendly investment towards “pale green” and sub-optimal outcomes will lock in valuable capital that could otherwise be directed to meaningful outcomes and further reinforce the need to achieve significant outcomes to access green-branded finance.

Experience shows us that success in the green building rating arena has been most

effectively achieved when there has been a laser-like focus on the intended market and the needs of those participants.

The **Climate Bond Standard for Low Carbon Buildings** has several unique characteristics that are a product of a very distinct set of needs. The primary objectives were established for a standard that could:

- mobilise capital to green investments
- achieve deep emission cuts from buildings
- be used across different jurisdictions
- create volume through aggregation and provide a simple method for aggregation
- create methods that align with sophistication of the market and the nature of financing transactions

The nature of financial transactions requires a simple method for assessing eligibility for inclusion into a low-carbon property portfolio with information provided from existing sources, avoiding the cost and time burden of seeking a third-party audit or rating.

The commercial building standard uses operational carbon performance as the singular measure. This low intervention and overhead approach means that institutions and funds can use their normal auditors or advisors to rapidly screen assets with the intent that such assessment becomes routine.

The simple carbon measure also allows for simple aggregation and creation of volume. Aggregation is essential to engage the market as bonds require buildings to be pooled together to achieve sufficient size. An added bonus of this is that aggregation based on raw performance provides far greater

accuracy than bundling or tiered rating, which would be required if star ratings were used.

Using a simple, undistorted carbon measure for testing of eligibility allows for cost-effective assurance for the life of the bond. It also means that the burden of proof for eligibility can be shifted away for pre-qualification and the limitations inherent in certifying at a singular milestone. Monitoring and verification is used to demonstrate compliance over the tenure of the bond providing a level of assurance that puts low-carbon property financing on an equal footing to renewable energy projects.

The most significant innovation in the standard for low-carbon buildings is how the targets are applied across different jurisdictions. No amount of good ambition can overcome the frailties of trying to localise a standard to different countries based on empirical approximations of climate zones, prevailing market practices and the inherent greenhouse intensities of the fuel supply. To prevent the standard being undermined by layers of approximations and adjustments, each city is explicitly benchmarked and the target set against a common percentile.

To ensure that the ambition on Climate Bond certification relates to significant impact investment pools, a threshold for the best 15 per cent of a local market has been set. This is then used to create a trajectory to a zero carbon outcome in 2050, producing a target that becomes more stringent year-on-year, and giving investors clarity upon future expectations.

The commercial building method provides a progression in how we benchmark the carbon intensity and “greenness” of our built environment. It is only feasible given the data we now have access to from mandated disclosure schemes and industry-held databases that proved reliable information on the actual performance of a statistically relevant sample set of buildings.

**“Aggregation is essential to engage the market as bonds require buildings to be pooled together to achieve sufficient size.”**

This approach, while inherently simplistic, was not viable five years ago, and still remains out of reach for some cities and for some commercial building types where the data simply does not exist in any reliable form. In these markets, transition equivalents will be established, leveraging the existing industry toolkits and efforts made to create the datasets necessary to undertake proper benchmarking.

Perhaps the Climate Bond Standard for Low Carbon Buildings’ main departure is that it has been shaped from the ground up to be future focused. It targets a common zero carbon future in 2050 and lays out a pathway to get there in a manner bespoke to each city’s present circumstance. It is designed to leverage the best data available to ensure the benchmarks are appropriate with transitional provisions where lack of data prevents reliable market insight. It is simple enough to provide rapid screening and meaningful monitoring and verification for assurance without transaction costs undermining any price benefit green bonds may provide. These departures are necessary complements to the current options for assessing green and low-carbon buildings.

It is likely that post COP21, strategic asset allocation of the large institutional investment portfolios will need adjusting. The Climate Bond Standard will ensure that funds flowing from any adjustment will have meaningful outcomes when directed to the property sector. ●

**Ché Wall is a director of flux consultants – a Sydney-based sustainability consultancy focused on sustainable buildings. He was founding chairman of the World Green Building Council and co-founder of the Green Building Council of Australia.**



# Peter Sweatman: How to finance energy efficient buildings

**Peter Sweatman, chief executive and founder of Climate Strategy, is widely acknowledged as a European leader on the transition to a low-carbon economy and financing instruments to tackle climate change and promote energy efficiency. He was invited to our salon but was unfortunately not able to attend. In the following pages, Sweatman tells *The Fifth Estate's* UK correspondent, David Thorpe, his views on how energy-efficient buildings could be financed.**

Sweatman has been working in low carbon finance and consulting since 2003. He was managing director at Climate Change Capital between 2004 and 2009, during which time it raised around €1 billion (AU\$1.5b) to support low-carbon technologies, renewable energy, carbon funds, Clean Development Mechanism projects, green/low-carbon buildings and energy efficiency.

After the economic crash of 2008-09, he decided it was a good time to set up Climate Strategy which began to focus a lot on energy efficiency.

"At the time of the financial crisis, energy efficiency was low-hanging fruit for the low-carbon economy," he says.

"It seemed to me that while there had been a lot of focus on renewables and carbon reduction generally, there had not been so much focus by financial institutions and investors on energy efficiency. I wanted to know why, so that's what we have been concentrating on for much of the last seven years."

Sweatman says one of the things that makes energy efficiency challenging is that the size of the projects is relatively small. A 50-megawatt wind farm might require €50 million (AU\$74 million) of financing, putting it within the range of a number of institutional investors and banks. However, a hospital looking for an energy efficiency retrofit might only require an investment of €1 million (AU\$1.5 million) – and might therefore need to aggregate with other small projects to become attractive to investors.

Further, as energy efficiency investment is happening across the world in different markets, it can be difficult to measure. For example, manufacturers of white goods, cars, aeroplanes, and power plants are all increasingly being made to be more energy efficient – and the market is still growing. Sweatman highlights the IEA's Bridge Scenario (which draws a line from current emissions down to the emissions required in 2050 by the two-degree target) as a marker for this growth, as it estimates that, by 2035, 49 per cent of all the necessary investments are in energy efficiency and would use existing technologies.

"Energy efficiency is all around us but the thing we [need to] work on is how to get banks and investors more attuned to the need for looking for energy-efficiency projects and the specialised approach that encourages them and their suppliers to always adopt energy-efficient choices where multiple alternatives are available," he says.



"This often requires finding specific lines of action to deliver against the recommendations of energy audits, which some banks do but others don't. For us it's about embedding a culture of energy-efficient investing into the financial world."

## INVESTOR CONFIDENCE AND RETURN

Sweatman made the analogy with wind farms: "The projected output of windfarms depends upon estimates of windspeed etc., matched to the efficiency of the technology under test conditions. A similar approach is required with energy efficiency. For production systems using wind technology, as long as the production continues in the way forecast, then the return on investment will continue as forecast.

"In the case of building energy efficiency it is highly dependent upon occupant behaviour. Different sets of occupancy patterns will generate different levels of energy use."

According to Sweatman, buildings are attractive for debt financing, as they are a

**"There is a lot of institutional inertia in the planning, construction and infrastructure industries that we must work to change."**

"fixed and valuable asset" and the asset value of the premises can be used to "collateralise the loan" .

"When you retrofit a building, you are adding better lighting or cooling systems, windows, insulation, changing the heating system to a more efficient or intelligent one, you would certainly be tempted to use debt for that because the measures purchased form a part of the building" he says.

"Policymakers need to better support the implementation of energy-efficiency measures. If you have an energy-efficient property which is using, say, one fifth of the energy of a comparable [non-energy-efficient] building, then that property, we argue, is going to be more valuable than one where you spend more than four times the amount of money on heating and cooling.



“So, when we talk to banks we like them to see that the tenants or owners of such properties will be more credit worthy paying less for energy and that the bank should therefore value the property higher.

“This in turn means that the capacity for the building to have debt against it is higher. If that amount is just four per cent (which is a number that has come out of some academic studies), in many cases, a four per cent increase in value is sufficient to finance the work required.

“We need to increase awareness, in a regulatory sense, of the increasing debt capacity of a building due to its energy performance to get our building stock to be improved and more energy efficient.”



## REGULATION CAN IMPROVE ENERGY EFFICIENCY

Sweatman believes the European Union should make its energy efficiency goals more ambitious and mandatory. The current 2030 goal is 27 per cent and thought to be easily and profitably achievable, with the right stimulus and finance. However, as this target is voluntary, it does not help create drive, he says.

“I believe that it should be mandatory because if you put energy efficiency first, it also has the happy result of making Europe’s other targets more easily achievable.

“If you are using less energy, then you are emitting fewer greenhouse gases. And, by lowering energy demand with increasing renewables penetration, then, by definition, your renewables percentage increases faster. So achieving a percentage reduction in energy use or renewables generation or emissions reduction becomes proportionately easier and more cost-effectively achievable with energy efficiency considered and done first.”

He adds that the European Union’s energy efficiency policy could also be amended to improve uptake.

“A key policy detail has been the discount rate used to evaluate the cost effectiveness and impact of energy efficiency policy, which, in the opinion of various stakeholders, was extremely high: 17.5 per cent,” he says.

“The discount rate is what tells you what benefits you get from a particular policy or investment action. Governments may typically use a social discount rate (four to five per cent) to tell them the benefit of specific social policies. The lower the discount rate is, the higher the expected present benefit

of the action in the present time will be, for example, building a road or hospital.

“A 17.5 per cent discount rate meant that the numerical support for specific policies for energy efficiency was being severely handicapped compared to other supply-side policies that were being evaluated, such as building new generation plants and energy infrastructure. These often had much lower discount rates.”

**“We urgently need to ensure that countries do not lock themselves into expensive, energy-wasteful and rapidly out-moded infrastructure that will poorly suit the needs of the future, just because it copies an erroneous past.”**

Organisations have written to the EC to try to change the discount rate to help it encourage investment. Sweatman says that this could enable Europe to get to “at least a 30 per cent target for 2030,” which he says should be “the minimum.”

## ECONOMIES OF SCALE ARE KEY

Sweatman highlighted that economies of scale can play a big part in success – highlighting that when the Prime Minister of India announced that he wanted all city lighting (several million light installations) to be replaced by LEDs, and manufacture of these bulbs increased, the pay-back period dropped from 10 years to two.

He says that this trend, which has already been seen in solar PV panels, could also happen for lithium ion batteries for electric vehicles and other forms of electricity storage.

“As people invest and the market takes an interest in the next marginal energy-efficient technology, progress is not linear it is exponentially positive,” he says.

Sweatman concludes: “It seems to me that, with the right policies, financial institutions are often quite happy to invest and make a profit when the returns are good as, for example, in the Indian streetlight case. I’m aware of organisations in Africa that are investing in battery-connected solar lights in Kenya, Tanzania and Nigeria, which deliver an economic and energy saving compared to the alternative of kerosene lamps and walking miles to charge a cell phone. So ‘leapfrogging’ is real.

“It is true that the growth and sustainable development of cities can be slow, and I attribute this to a high degree of conservatism in the construction industry and the high degree of inertia among city policymakers and their institutions on the planning side.

“Today, it’s more or less the same cost to build an energy-efficient building as it is to build a non-energy-efficient building, but despite this, the construction industry continues to be more comfortable building in the same way as it always has, making the reduction of capital expenditure their primary concern rather than the production of a high-performing asset.

“I’m afraid there is a lot of institutional inertia in the planning, construction and infrastructure industries that we must work to change. We urgently need to ensure that countries do not lock themselves into expensive, energy-wasteful and rapidly out-moded infrastructure that will poorly suit the needs of the future, just because it copies an erroneous past, which is where policy leadership can really help.” ●



# Julie Hirigoyen: View from the UK Green Building Council

**Julie Hirigoyen is CEO of the UK Green Building Council, which has hundreds of members across the built environment, in construction, engineering, product manufacturing, materials supplying and so on. She has ultimate responsibility for organisational strategy and execution. Here, she outlines the barriers to financing energy efficiency in the commercial sector.**

## THE INVESTMENT BARRIER

Hirigoyen says that although some of the larger estate and property owners finance energy efficiency projects with loans and debts, “quite a lot of it” is done through capital recycling. However, she states that green bonds are not seen as attractive to estate owners as they largely have access to capital either at no cost (due to recycled capital) or at low cost, as they have “substantial capital assets that they are already of interest to professional lenders”, and can therefore receive much better interest rates.

She says: “A lot of these people are already doing some energy efficiency work, but I think where the debate gets stuck is that while it’s possible to get 80 per cent energy savings on a portfolio by doing a deep refurbishment, this would require a substantial retrofit and there isn’t necessarily a short-term return on that investment.

“It does get quite granular on an asset basis. What this means is that the asset management strategy needs to reflect the length and terms of the leases, the state

and condition of the buildings, the building type, age, the location, the occupancy, the likely yield, so trying to draw out generalisations or conclusions on even one building type, let alone different building types, is virtually impossible.”

Hirigoyen says that as a general rule of thumb, the low-hanging fruit of energy efficiency can yield between 15 and 20 per cent savings, but to get to 80 per cent there needs to be “substantial capital investment”.

“If the building condition is such that it needs major upgrading in order to reposition the asset on the market at a higher rent, or target a different kind of client and give it a new lease of life, then quite a lot can be done. This is the opportunity space for a major refurbishment. In such a case there is the possibility to be ambitious and achieve great savings.

“The challenge for the debate is that it is an iterative process to continue the upward trajectory of efficiency improvement as the life of the asset evolves, and that is essentially a complex, challenging exercise.”

## THE LANDLORD-TENANT PROBLEM

Hirigoyen says that there are problems with landlords installing energy-efficiency upgrade to houses, as it is the tenant – not the landlords – who pays for energy. But, she says there are “more creative solutions” being found.

“We are starting to see more partnerships between tenants and landlords. It might be



in the form of a performance contract or a services agreement whereby both sides buy into the concept that they are in a different kind of commercial relationship. With such an arrangement they both understand that if the building is more efficient, it is better for the staff, as they are healthier and more productive. This may mean that the landlord is prepared to invest an incremental more in the refurbishment of the building.”

She adds that future tenants will expect to live in energy-efficient buildings, so this will help drive investment by landlords/developers, as “they are producing a quality product that meets the future needs of the occupier”.

## FRAGMENTATION IN THE INDUSTRY

However, she notes that although there are increasing instances of landlords and tenants working together, the greatest barrier to increasing the amount of energy efficient buildings in the UK is still fragmentation.

“There are a huge number of players

**“Our buildings are not performing at the level at which they have been designed.”**

across the spectrum of the industry... the managing agent, the facilities manager, the energy manager, the maintenance guys, the manufacturers, the legal representation, the construction people, and the project managers. It is incredibly complex and I think this is one of the reasons why we don’t quite get it right.

“Our buildings are not performing at the level at which they have been designed. That potential can be of a magnitude of up to 100 per cent in some cases. It begs the question of: are we getting enough feedback and flow-through of information so that all these parties can make sensible decisions (on the basis of similar assumptions and the same data) on how buildings really should perform in real life? Unfortunately all of this is really quite difficult.”



## THE PROBLEM WITH THE LACK OF DATA

Hirigoyen says that another big problem is the lack of secure and accurate data, and sharing of that data. For example, she states that few of the organisations she works with (from a property investment perspective) will have the energy monitoring standards to ISO.

“Many of them will have data about the assets but that will be landlord data not occupational data. There are myriad complexities there,” she says.

“Although the ISO can help a little bit, it is not what is actually preventing us from achieving much greater standards of efficiency improvement. I think it’s partly commercial pressures, short-term investment horizons and short-term return requirements, as well as a lack of common understanding of these issues.

“We need reliable benchmarks for energy performance of buildings in operation. We are overly reliant on Energy Performance Certificates (EPCs), which are design led. So we have a few challenges in terms of

speaking a common language across this fragmented industry. Many of those things we are trying to tackle at GBC and until we get those right we are not going to make much progress.”

## MINIMUM ENERGY EFFICIENCY STANDARDS

According to Hirigoyen, the UKGBC is “very supportive of the minimum energy-efficiency standards” (based on EPCs) that were passed in the UK in April. This was the first time that the standard was set for buildings, and applies to buildings that are going to be let from April 2018.

She notes that although it is “triggering lots of activity in the market”, the standard and EPCs “could do with some improvement, particularly if we start using them more at such transactional thresholds”. However, she says that at the moment the UKGBC is focused on ensuring “proper implementation and enforcement of those minimum energy-efficiency standards”.

Once these are in place, the council can then work to “gradually ratchet up the standard of EPCs”.

In the meantime, she is “strongly encouraging” members to not solely rely on EPCs, but also monitor portfolio performance in use. She says there is “plenty of evidence out there that even if you have an EPC rating of A or B [the building] can still in practice be performing well below the benchmark level for a building of that type – so both are necessary”.

The UKGBC says it also encourages greater uptake of Display Energy Certificates.

## THE PROBLEM OF THE LACK OF MONITORING AND ENFORCEMENT

Lastly, Hirigoyen says that the lack of monitoring and enforcement has also been a barrier – as there has only been one case of a legal action being brought forward for failure to implement Energy Performance Certificates.

She says that this lack of appetite for enforcement is “not encouraging”, nor is the fact that enforcement penalties for those breaching the minimum standards have not yet been detailed.

“The legislation has been passed but key parts of how it will be implemented won’t come until nearer 2018 and that’s one of the things we will absolutely be lobbying for,” she says.

**“We need reliable benchmarks for energy performance of buildings in operation.”**

“I was at a meeting two weeks ago at DECC (Department of Energy and Climate Change) talking to an official specifically about this. You have to have the right number and calibre of controls in place or it will fall flat on its face. They are very aware of that. Leaving it down to local

Building Control teams is challenging as they do not have many resources. Those are practical considerations that do need to be thought about.

“At the end of the day if government wants industry to lead, some of these instruments are very helpful in setting a common, level playing field, but as we know if there is no redress at the end of it then it is far more diluted in terms of its impact than it could be, which is very frustrating.”

## GREEN BONDS OR CLIMATE BONDS

Hirigoyen says that although UKGBC is not doing anything specifically with climate or green bonds at the moment, they are following “with interest” the huge upsurge in activity in this area, as they are potentially of direct relevance to members.

“I’m particularly interested to find out the type of investments that lend themselves most to green bonds when it comes to real estate,” she says.

“Is it applicable to a portfolio and environmental work on a hypothecated set of assets within that portfolio? That would work quite well, if there is a set amount of assets and a set amount of capital and some defined savings. But how, I wonder, could that be applied to major regeneration schemes or to placemaking at a wider scale, at the city or neighbourhood scale? What is the best application? I think there are all sorts of different angles on it. It is a question of aggregating projects together to make it of sufficient size to be of interest to investors.

“There are various investors looking at similar models. Not just bonds, but providing capital on a loan basis on an aggregated level for various kinds of infrastructure projects. We want to know what’s the best application for that and can it be more transformative.” ●





# Martin Gerrelli: How to work with the bonds market



**Martin Gerrelli is the founder and CEO of the Starfish Group, a multi-disciplinary new build, housing retrofit and sustainability consultancy organisation based in Chesterfield, Derbyshire. He tells *The Fifth Estate* about his work in the bonds market.**

## WORKING WITH THE BONDS MARKET

The Starfish model works by drawing money from the City of London, largely bond money, to help create an umbrella fund that councils can draw on to improve energy efficiency infrastructure and housing projects.

Although constrained by non-disclosure agreements, Gerrelli says that he looks to get a fixed interest rate of four per cent over a period of 20 to 30 years. The

borrowing arrangements are underwritten by the strength of the balance sheets of the stock held by the housing association or council, the credit rating, to get the interest rate as low as possible.

Gerrelli says that five per cent is a “good deal”, as this covers the administration costs to the council, while the housing associations and companies can still obtain low-cost finance.

He says that the model works as it helps councils “lock finance down now, at a reasonable rate, so that they can draw it back down over the long term”.

“We work with councils and housing associations and private entities to undertake projects to reduce energy demand and boost the use of energy efficiency and get schemes off the ground that have been waiting to happen, including sustainable housing and shopping centres”, he says.

“We also have the skillset to do infrastructure activity and facilitate the building of the houses.

“We want to manage these projects on behalf of councils to create pipelines of finance for projects that are realistic and can be undertaken. We find there is often willingness and readiness to undertake these projects but there is not the finance or the time or the skills to make it happen. This is where we come in.

“All cities need investment to make housing more sustainable and

communities more cohesive and placemaking, making cities more pleasant places to live and work and have fun. It’s all about investment and all cities have the wherewithal to do it.”

## ATTRACTIVE TO PENSION FUNDS AND BANKS

According to Gerrelli, the main players in this market are pension fund providers, such as Aviva, and “big banks”. They typically look for an annuity return of about three per cent on their investment.

“Banks on the whole do get it. When you’re dealing with significant volumes, small percentages can give healthy returns. There is also the CSR [corporate social responsibility] element, if banks invest in this market they’re helping to reduce the energy demand, and carbon loading. But there is also the job creation aspect.”

## GOVERNMENT SHOULD TAKE THE GREEN AGENDA MORE SERIOUSLY

Gerrelli says that although businesses are a key leader in this industry, he would like the government to “take the green agenda more seriously and invest in the green economy”.

“If the government was serious, it would support the energy efficiency agenda and more effectively support new and emerging technologies like CHP [combined heat and power]”, he says.

“Given the [four per cent] gap between maximum energy generation capacity and demand, together with an increasing UK population, [it] is necessary to improve energy efficiency urgently.

“We need to get rid of coal generation and reduce the energy demand of industry and buildings. The end of the Green

Deal Finance Company caused much consternation because the government was advised to set low interest rates, but they set them high.”

However, Gerrelli says that as well as government buy-in, corporations and investors should also be “open to business” and invest in small- and medium-sized enterprises “because the best ideas come from small businesses that are fleet of foot and can see the trends coming”.

**“We need to get rid of coal generation and reduce the energy demand of industry and buildings.”**

“Large businesses take months to make decisions, and we can move faster,” he says.

## MARKET BARRIERS

The main barrier to this market boils down to finance, says Gerrelli, adding that it is specifically about “the ability of the market to lend to realistic and sustainable projects”.

“We have the will and ability to help providers to grow the pipeline of activities, what’s holding us up is access to finance and the risk profile,” he says.

“We are looking to build up that ability to make payments against reserve accounts, using profits from projects to build a reserve to enable payment of bonds back if necessary.

“The government could motivate these investors more as well. We are the people who are going to get these things done [but] we need low-cost finance”

“It’s a good thing for the lenders and the UK economy and the goodwill of the people of the UK.” ●



# Sarah Ratcliffe: Constructing better buildings

**Sarah Ratcliffe is program director of the Better Buildings Partnership, a not-for-profit business with 27 members. With over £180 billion (AU\$374.8b) assets under management and over 450 million square feet of commercial property, it is a collaboration of the UK's leading commercial property owners who are working together to improve the sustainability performance of existing buildings. Its aim is to enable market transformation through sustainability leadership and knowledge sharing across the property industry.**

Here, Ratcliffe explains what the BBP is doing to further sustainability in the UK built environment.

## MOVING FROM WALKING TO TALKING

"I provide strategic direction to the organisation, establishing priorities, helping to develop and oversee its programme of work and engaging with members and other stakeholders to ensure the BBP meets its aim of improving the performance of the UK's existing building stock. As the BBP is a small organisation, I get involved in most aspects of the organisations' work including its various working groups and practical outputs such as the BBP toolkits, case studies, and other support and guidance for the industry.

"The BBP is going from strength to strength. I have been in post for just over a year now and I have observed that members have moved on from 'talking' to 'walking' –

what they really need is practical support to help them in their day-to-day roles.

"Many of the individuals from our member organisations have responsibility for implementing sustainability across diverse investment portfolios and they encounter many challenges along the way – the BBP is there to provide them with the tools they need to address these."

## BUILDING SUSTAINABILITY IN THE UK'S BUILDING SECTOR

Asked whether she was optimistic in general about the developing sustainability agenda in the building sector, Ratcliffe stated that the environmental policy in the UK is going through "significant change" at the moment [especially with the change in government in 2015], with the removal of some of the key tenets of environmental policy directed at the built environment.

"This has provided the opportunity for the simplification of a complex legislative landscape but it has also created significant uncertainty," she says.

"In simplifying the legislative landscape it will be important to establish long-term trajectories to provide greater certainty and to develop fiscal incentives that encourage innovation and investment in sustainable buildings. Pragmatism rather than optimism is the sentiment that best describes my outlook in this regard."

Ratcliffe stated that BBP's members are driven by two main sets of stakeholders: the



investors and the occupiers.

"Investors, almost despite government legislation, now see sustainability as a key part of their investment strategy and face increasingly demanding disclosure requirements on a number of aspects of sustainability," she says.

"Both investors and fund managers are increasingly acknowledging the impact that sustainability issues can have on investment performance.

"We are also seeing increasing interest from occupiers in the sustainability of the buildings they are occupying. Their drivers vary – sometimes it's about achieving a high BREEAM rating, but increasingly we are seeing them look at it from the point of view of health and wellbeing and staff productivity.

"So these two stakeholders are critical in driving the sustainability agenda forward and this makes me more optimistic."

Energy is also an important consideration, Ratcliffe stated, adding that the sustainability agenda within the built environment is

**"Investors, almost despite government legislation, now see sustainability as a key part of their investment strategy."**

increasingly broadening-out beyond simple energy consumption.

"Firstly, energy consumption has to be considered within the wider climate change agenda. This is not just about consumption, but about emissions, mitigation and adaptation strategies. Certainly the COP21 meeting in Paris will heighten the issue of climate change in peoples' minds," she says.

"The main challenge with focusing on energy is that it doesn't speak to all stakeholders' priorities on sustainability – investors are concerned about risk and investment performance, occupiers are concerned about productivity and more recently, health and well being. It is critical to make the relationship between sustainability and their priorities, rather than simply talking about 'energy'."



## THE ROLE OF THE OCCUPIER IN BUILDING ENERGY PERFORMANCE

Occupiers are “absolutely critical” to improving building energy performance, Ratcliffe states, noting that the BPP has identified engagement with occupiers as one of its key priorities, and has published several tool kits, such as the Green Lease Toolkit, on this topic.

The Green Lease Toolkit provides guidance on the inclusion of environmental provisions either in the lease or in a Green Memorandum of Understanding, which sits alongside the lease and is not legally binding. These provisions set up a framework for collaboration, but are worthless unless they result in action to achieve resource use reductions.

Building on this, the BPP have also created a Green Building Management Toolkit, which provides practical guidance on how to establish and run a Green Building Management Group (forums comprising the owner, occupiers and building management representatives that aim to “achieve real reductions in resource use in their building”) and effectively manage, monitor and record environmental improvements in a commercial building, with examples of best practice already in place.

The BPP is also now developing an Occupier Fit-Out Toolkit to ensure that any work done integrates sustainability throughout.

## THE FRAGMENTATION OF THE INDUSTRY

The relationship between the occupier and the investor/owner of a building has been, historically, a difficult one. At a recent debate, Julie Hirigoyen of the UK Green Building Council and Ratcliffe agreed that the fragmentation of the building industry and “the huge distance separating the

investor or owner from the tenant of a building is a key barrier to change.”

Ratcliffe adds: “By investor we don’t mean fund managers, we mean the institutional investors – pension funds, private equity players etc – who are so disconnected from the actual customer, the occupier who sits in the building in which they invest. I’m not sure they even know who each other are.

“So, the way in which investments and the benefits of those investments are experienced by these different parties is a significant barrier to change. For example if you are planning to invest in a building to improve its energy efficiency, who pays for the investment in a particular technology to achieve that? Who accrues the benefit? So, quite often, the investor will pay for it but the benefit accrues to the tenant in terms of a decrease in their energy bill, so there is a barrier there.”

## OTHER BARRIERS TO POSITIVE CHANGE

Ratcliffe says there are two other barriers to positive change that need to be overcome.

“Firstly, the well versed ‘short-termism’ inherent in investment decision-making. This is a key barrier in other sectors and real estate is no exception. Whilst buildings are a much more tangible asset than, say, stocks and shares, they still change hands on a frequent basis, meaning that investment decision-making is made on the basis of the period for which the investor expects to hold the asset.

“Secondly, related to this, the conundrum of the relationship between sustainability and value – whilst the theoretical case has been made, there are still relatively few real-life examples of sustainability impacting upon transaction values. However, case by case these are

emerging (particularly around Minimum Energy Efficiency Standards) and hopefully it will not be long before the evidence base will support the integration of sustainability issues within the valuation methodologies.

## MARKET LEADERS

But Ratcliffe says that progress is happening and that there are a number of fund managers leading the way on building sustainability, such as M&G, L&G, Henderson and Hermes, noting that there are “many other fund managers who are now coming forward trying to catch those leaders up”.

Likewise, in terms of owners, Ratcliffe says the big property companies have traditionally led the way, the likes of British Land, Hammerson and Land Securities, but that smaller companies are beginning to challenge them.

Touching on members of the BBP, she highlights that Grosvenor has done “fantastic work on heritage buildings”, producing the first Passivhaus retrofit on a heritage building, while Crown Estate has done “some very innovative work” on the total contribution that their estate (which includes urban, marine and rural assets) makes in terms of creating economic, social and environmental value.

Ratcliffe adds that an “increasing number” of BBP members are “looking at redefining value and looking to quantify the value they create beyond traditional financial parameters”.

The BBP will continue to share best practice among the membership and with the wider industry through working groups, the publication of case studies and “a wide range of practical outputs”, she said. ●







# **GREEN BONDS AND PROPERTY**

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