
FIBRE SERIES

IS SUSTAINABILITY REFLECTED IN
COMMERCIAL PROPERTY PRICES:
A REVIEW OF EXISTING EVIDENCE

RICS FOUNDATION



Kingston University London



RICS

the mark of
property
professionalism
worldwide

Research

The background

“Sustainability: a means of configuring civilization and human activity so that society, its members and its economies are able to meet their needs and express their greatest potential in the present, while preserving biodiversity and natural ecosystems, planning and acting for the ability to maintain these ideals in the very long term.”

In July 2008, Andrew Simms of the New Economics Foundation predicted that we have just 100 months left in order to save the world. Whether he is right or wrong is scarcely the point – what he was highlighting is that the time for action is upon us.

This report summarises the findings of a study funded by the RICS Foundation that tried to assess what evidence exists in the public domain on the contention that there is an observable link between the values achieved in the market place for commercial properties and their sustainability credentials. This was carried out by Sarah Sayce, Anna Sundberg and Billy Clements of Kingston University, UK.

Why was this thought to be important? While figures vary, it has been estimated that the built environment in its widest sense (including construction) is responsible overall for about 40% of CO₂ emissions, 30% solid waste generation and 20% of water effluents, as well as 40% of all energy used. Commercial property is a major contributor within this overall context. In the UK for example, the Carbon Trust has calculated that energy use in non-domestic buildings accounts for about 18% of total carbon emissions. In developed countries, much of the energy consumed to produce these emissions is used for space heating and lighting.

If we are serious in addressing this, then the price that we pay for commercial buildings – either as the capital value to purchase them or the rental value that we pay to occupy them – should reflect their sustainability credentials. For this to be case, it is important that valuers – the main agents involved in assessing the value of buildings – have access to reliable and timely information on the relative financial performance of buildings with regard to the sustainability credentials, and that they advise their clients accordingly in relation to the values that they place upon them. The lack of such information is likely to hamper and slow the uptake of buildings that can support our desire to move to a low carbon emissions world.

This executive summary does not seek to provide an analysis of all the material considered, but simply captures the key themes that emerge. The analysis of the complete evidence base is contained in the full report, *‘Is sustainability reflected in commercial property prices: an analysis of the evidence base’*, available at:

www.rics.org/research

“We are living in an interminable succession of absurdities imposed by the myopic logic of short-term thinking”

Jacques Cousteau

The argument

Over the last decade there have been increasing column inches devoted to the articulation of a so-called business case for sustainable property. Much of this relates to difficulty that has been encountered by investors and developers active within the commercial property markets to find ways of embracing the sustainability agenda and justifying any additional build costs that might be incurred by investing in so-called 'green' buildings.

In particular the key question has been: will such investment result in superior financial returns in the shape of either or both increased rents or lower yields?

“Man has been endowed with reason, with the power to create, so that he can add to what he’s been given. But up to now he hasn’t been a creator, only a destroyer. Forests keep disappearing, rivers dry up, wildlife’s become extinct, the climate’s ruined and the land grows poorer and uglier every day.”

Anton Chekhov, *Uncle Vanya*, 1897

The findings

The researchers carried out a thorough and detailed review of all publicly available material of all forms – such as conference papers, industry and press reports, learned journal articles – and identified 128 publications which, in one way or another, provided useful evidence. Based on an analysis of these publications, what were their conclusions?

Assessing the evidence

Very few large-scale empirical studies have been undertaken. However, three recent studies undertaken in relation to US office buildings, by a team led by Norm Miller, by Franz Fuerst and Pat McAllister, and by Piet Eichholtz, Nils Kok and John Quigley, claim some rental value differentiation between buildings that have some form of sustainability label and those that do not. The work of Eichholtz, Kok and Quigley found an aggregate rental premium in the order of 3% and an effective rental premium of over 6% for accredited stock. However, the evidence suggested only a premium for Energy Star rated buildings, with none found for LEED buildings. This may suggest that it is indeed energy rather than sustainability *per se* which is beginning to be critical to occupiers.

The evidence base does not distinguish between grades of accreditation and all authors point to the very preliminary nature of the findings. Substantive evidence of capital value shift was not found.

Whilst no empirical evidence of capital value differentiation has yet come through, within the UK, Investment Property Databank (IPD) are now beginning to track performance of a small number of buildings against their sustainability credentials but, although initially launched, no significant results are expected for some years.

Opinion was abundant and formed a significant part of the study. Most of this work has been undertaken by real estate consultants, and stretches from the UK, to Europe, the USA and Australia. Many of these surveys indicate that potential occupiers state that they would be prepared to pay more for green or sustainable buildings, even in the downturn, on the grounds of potential cost savings. However, work by Tim Dixon in 2009 suggests that, when tested in actual behaviour there is not the evidence that this is happening.

There is a burgeoning body of theoretical literature that make the case as to why there should be a value differential. Often these are based on examination of worth appraisals, using DCF techniques. The work of Terry Boyd, Pedro Guertler, Jon Robinson Louise Ellison and Sarah Sayce, Sven Bienert, David Lorenz and Thomas Lutzkendorf, and Paul McNamara all argue a value and sustainability relationship *should* be developing. The merits of these studies lie in their contribution in informing market players and promoting deeper understanding of sustainability related issues. There is also an acknowledgement that legislation and ethical considerations may play an increasing role moving forward.

Much of the literature argues that sustainable buildings are worth more to occupiers, based on grounds that they are more economic to run and offer better working environments. Authors such as Gregory Kats and Jon Robinson, as well as RICS's 2005 *Green Value* report, point to occupational value benefits. However any evidence that tenants will be willing to pass on their cost savings in the way of additional rent is not proven, so the investment case lies in the presumption that such buildings will retain tenant attractiveness and therefore be less subject to obsolescence. Put against this, some recent studies, by Cathy Turner and Mark Frankel, and by Warren Paul and Peter Taylor, point to green buildings not always performing as expected given their specifications.

“Human history becomes more a race between education and catastrophe”

H G Wells

The findings

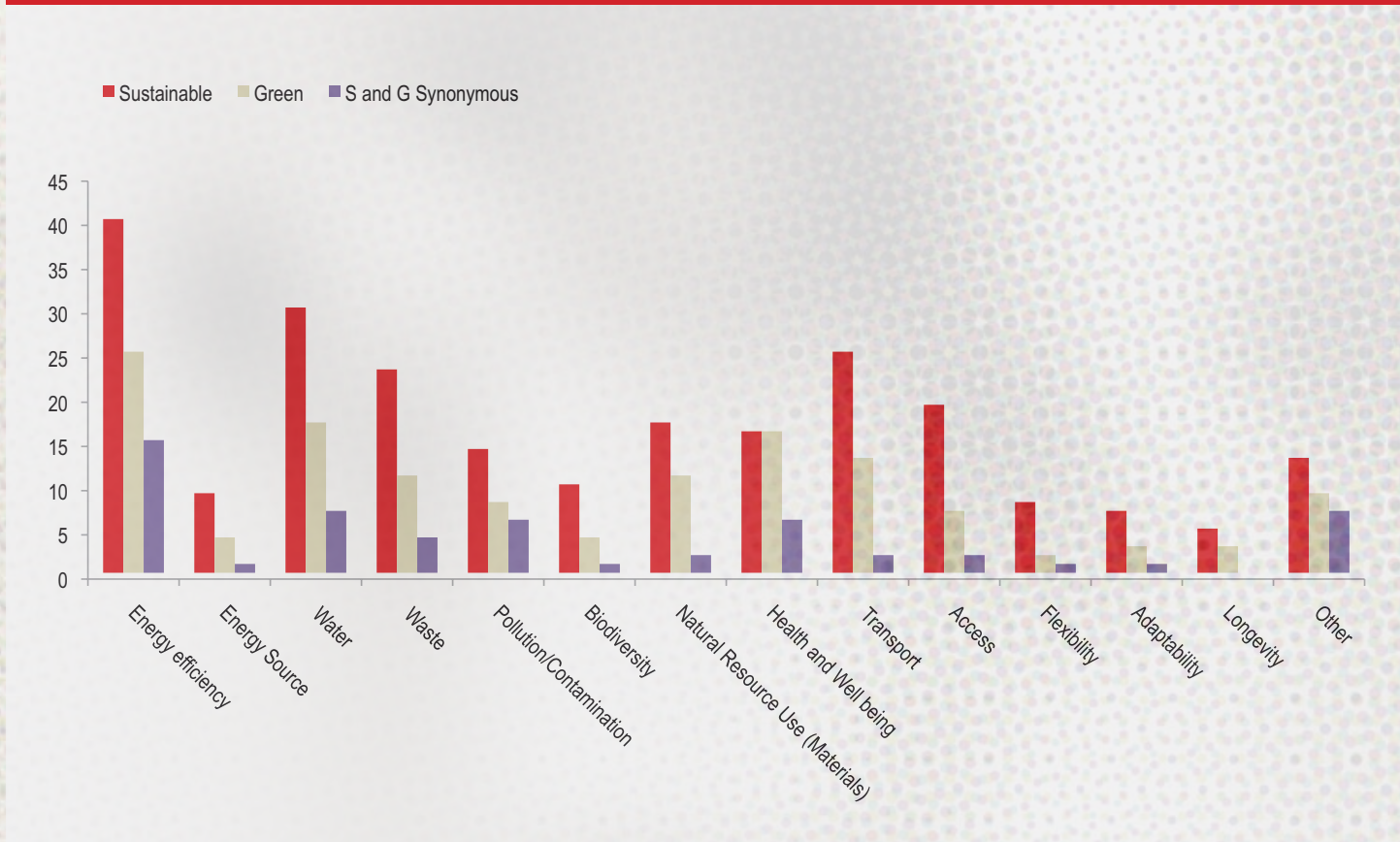
Characteristics of the literature

There is, as yet, little academic literature on the subject; although a few major studies are now coming through and there are some peer-reviewed journal articles, opinion articles from the professional press and research reports by consultants constitute almost half the substantive literature.

Overwhelmingly the literature reviewed was from the United States of America (28%) followed by the United Kingdom (26%) and Australia (22%) and some 70% was written for a practitioner, rather than scholarly audience.

By number, most of the literature addresses the case for a linkage in theoretical terms or through the medium of attitudinal studies. Very few empirical studies were available to review and most major empirical work is US based. There are no major UK empirical studies.

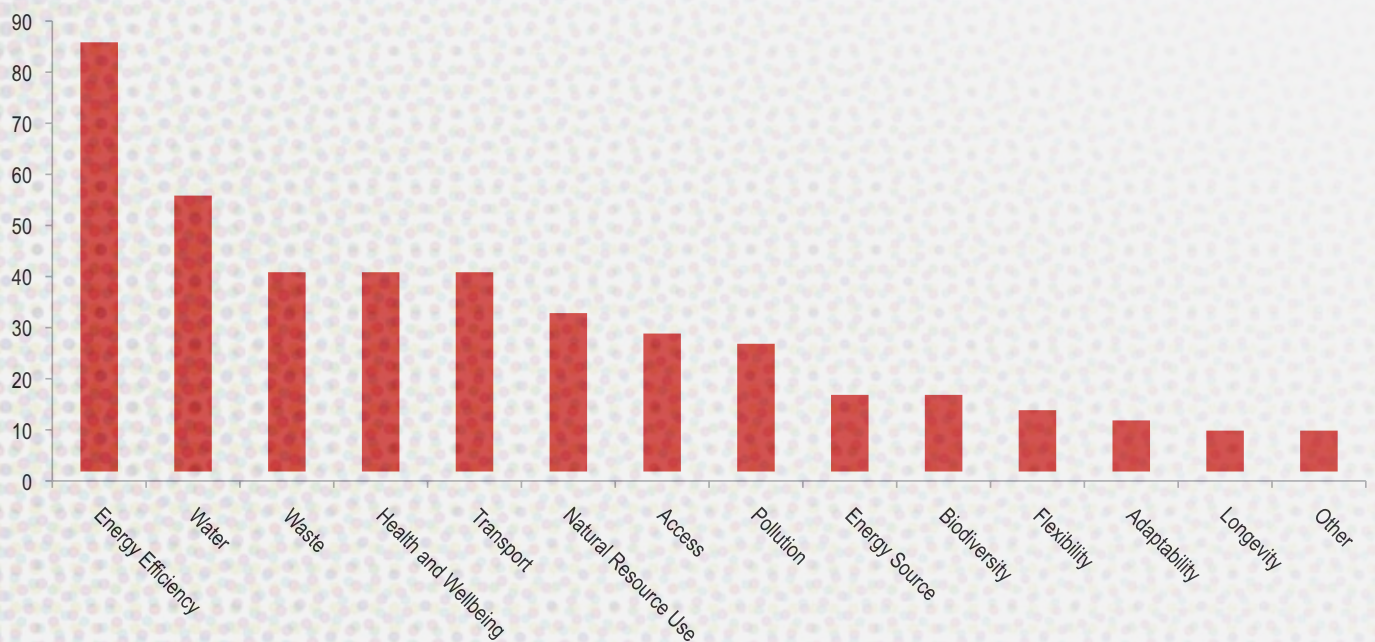
Figure 1: Attributes investigated/terminology used



Some of the literature, particularly that emanating from the US, refers to 'green' buildings; other authors, notably from the UK and Australia use the term 'sustainable' buildings; yet others used the terms inter-changeably. To many authors whichever term was used, the issue was restricted primarily to environmental concerns and, within this, energy. Others recognise a fuller range of social and environmental considerations. In the light of the definitional issue, which is widely acknowledged in the literature, later studies tend to use building rating systems such as LEED and BREEAM as surrogates for a sustainable buildings definition (see figures 1 and 2).

The literature predominantly related to office buildings, which was to be expected as this sector has the most sustainability-rated buildings. However, retail and leisure, which arguably make the highest energy demands, together accounted for only 9% of articles reviewed. Industrial buildings studies accounted for a mere 1%.

Figure 2: Attributes investigated



Overall conclusions

The search for a link exists between the sustainability credentials of a building and its rental or/and capital value began some ten years ago, but is still in its infancy. Early attempts at a business case were founded on low additional cost, lower risk and reputational benefit. There was also a strong view that cost savings in the hands of the tenant would result in rental differentiation, leading in turn to a reduction of long-term risk and better ‘future-proofing’ of investments. The argument also turns on their ability to support investors’ and occupiers’ CSR policies.

The review pointed to many surveys having been undertaken which give credence to the view that that sustainable buildings are worth more. However, the nature of intention is that it is just that – intention not actuality.

Over the last two years data has begun to emerge in the form of a handful of large-scale studies based on the US office market. The evidence is acknowledged still to be tenuous and generally goes no further than to point to a connection between higher rents achieved for LEED and Energy Star accredited buildings compared with similar non-accredited buildings. There is no substantive evidence that points to any firm connection with increased capital values achieved on sale.

Currently further empirical studies are hampered by the lack of agreement as to what constitutes a sustainable building and the lack of a simple benchmark that remains static over time. Moves towards a universal definition are beginning to be manifested and as these start to filter down to the market, and as the work of organisations such as IPD begin to provide data on sustainable buildings, so a finer basis for analysis will emerge.

For now the value and sustainability link is argued strongly in theory and in opinion, but in terms of hard evidence it is very limited and restricted to rental differentiation within a tight geographical area and within one sub-sector of the market.

“The insufferable arrogance of human beings to think that Nature was made solely for their benefit, as if it was conceivable that the sun had been set afire merely to ripen men’s apples.”

Cyrano de Bergerac, États et empires de la lune, 1656

Recommendations

- Data relating to building certification, such as BREEAM should be made more accessible to the public, thus enabling better tracking and evaluation of financial performance.
- The property industry should work towards the successful development of a meaningful index of sustainable property performance, and should support the development of an internationally aligned and accepted rating system for buildings.
- Further work should be undertaken to arrive at an industry-wide definition of sustainable buildings which can form the framework for benchmarking individual buildings assessments and thus support valuers by providing information which they can incorporate in the preparation of valuations.
- Further research should be undertaken to develop a deeper understanding of what sustainability features really matter to tenants and building occupiers.
- In recognition of the pivotal role that property professionals play in interpreting markets, professional education at both pre- and post-qualification stages should incorporate a focus on sustainability. CPD providers and the professional and representative bodies have a key role to play in achieving this.

The full report and evidence base are available at:

www.rics.org/research

Glossary

Building Research Establishment Environmental Assessment Method (BREEAM)

A method of assessing the sustainability performance of both new and existing commercial buildings primarily based in the UK.

Discounted Cash Flow (DCF)

The present value of the estimated future cash flow to be derived from an investment in a capital asset, over a given period of time. DCF can also mean the technique for analysing the viability of a capital investment project by discounting all budgeted, or projected, income and expenditure flowing from or into a project, including the initial outlay and any residual value.

Energy Star

An energy performance rating system for commercial, institutional and industrial buildings developed by the US Environmental Protection Agency. The rating can also be used to determine whether a property qualifies for Energy Star recognition.

Investment Property Forum (IPF)

An independent membership organisation aimed at improving the awareness, understanding and efficiency of property as an investment.

IPD/IPF Sustainable Property Index (ISPI)

A current project producing a financial performance index of the more sustainable properties in the market by developing a system to identify and then track the investment performance of the more sustainable commercial buildings in the UK on a quarterly basis.

Leadership in Energy and Environmental Design (LEED)

A method of assessing the sustainability performance of both new and existing commercial buildings primarily based in the US.

Valuation

The act or process of determining the value or worth, an assessment of the market value of a property at a given time. According to the RICS Red Book (2009):

A member's opinion of the value of a specified interest or interests in a property at the date of valuation, given in writing. Unless limitations are agreed in the terms of engagement this will be provided after an inspection, and any further investigations and enquiries that are appropriate, having regard to the nature of the nature of the property and the purpose of the valuation.

About the study

The work was carried out by Sarah Sayce, Anna Sundberg and Billy Clements of C-SCAIBE (Centre for Sustainable Communities Achieved through Integrated Professional Education) at Kingston University, with funding from the RICS Foundation.

Contact

C-SCAIBE
School of Surveying and Planning
Kingston University
Knights Park
Kingston KT1 2QJ
United Kingdom

s.sayce@kingston.ac.uk

The work was guided and supported by a steering group comprising:

Chris Corps, Asset Strategics Limited

Miles Keeping, GVA Grimley

Philip Parnell, Drivers Jonas

Chris Strathon, Jones Lang LaSalle

Further reading

Bienert, S, Wagger, C, and Steixner, D (2008) *Models to evaluate the quantitative effects of climate change on real estate markets* – Paper to The PPRES Conference 2008, Kuala Lumpur.

Boyd, T (2005) *Can We Access The Worth of Environmental and Social Characteristics In Investment Property?* Brisbane; Queensland University of Technology; Australia.

Dixon, T, Ennis-Reynolds, G, Roberts, C and Sims, S (2009) *Demand for Sustainable Offices in the UK*, London: IPF Research

Eichholtz, P, Kok, N, and Quigley, J M (2009) *Doing Well By Doing Green? An Analysis of the Financial performance of Green Office buildings in the USA; A research Report*; RICS London.

Ellison, L and Sayce, S (2006) *The Sustainable Property Appraisal Project: Final Report* Kingston University

Ellison, L, Sayce, S and Smith, J (2007) *Socially Responsible Property investment: Qualifying the relationship between sustainability and investment property worth* *Journal of Property Research*. Vol. 24 No. 3 pp: 191-219

Fuerst, F and McAllister, P (2008) *Pricing Sustainability: An Empirical investigation of the Value Impacts of Green Building Certification*. *American Real estate Society Conference*, 16-19 April 2008, Florida, USA.

Guertler, P, Kaplan, Z and Pett, J (2005) *Valuing Low Energy Offices. The Essential Step for Success of The Energy Performance of Buildings Directive*. Ile- Saint-Denis, France: ECEEE2006 Summer study.

Kats, G (2003) *Green Building Costs and Financial Benefits*. Barr Foundation

Lorenz, D and Lützkendorf, T (2008a) *Sustainability in Property Valuation- Theory and Practice*. *Journal of Property, Investment and Finance*. Vol. 26 No. 6, pp: 482-521

Lorenz, D and Lützkendorf, T (2008b) *Next generation decision support instruments for the property industry – Understanding the financial implications of sustainable buildings*. Melbourne; *World Sustainable Buildings Conference 08*, 21-25 September 2008.

McNamara, P (2008) *Will Greener Buildings Bring Bigger Profits?* Professional Investor, pp. 41:43 www.cfauk.org

Miller, N, Spivey, J and Florance, A (2007) and (2008) *Does Green Pay Off? Draft paper updated from 2007* www.sandiego.edu/business/documents/Econ_of_GreenJuly2008.pdf [Last Accessed: 17 May 2009]

Paul, W L and Taylor, P A (2008) *A Comparison of Occupant Comfort and Satisfaction between a Green Building a Green Building and a Conventional Building*. *Building and Environment*, Vol 43, pp.1858-1870

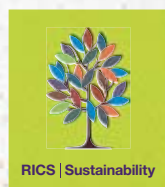
RICS (2005) *Green Value. Green Buildings, Growing Assets Report*. RICS, London

Robinson, J (2005) *Property valuation and analysis applied to environmentally sustainable development*. In PPRES, 11th Pacific Rim Estate Society Conference 2005, Melbourne, 23-27 January 2005.

Turner, C and Frankel, M (2008) *Energy Performance of LEED for new Construction Buildings* Vancouver, Canada; NBI New Buildings Institute.

Note: This list does not represent the full set of material analysed, but simply the reports referred to in this executive summary. The full evidence base is contained in the full report, 'Is sustainability reflected in commercial property prices: an analysis of the evidence base', available at:

www.rics.org/research



For more information on RICS Sustainability please visit rics.org/sustainability

RICS HQ

Parliament Square
London SW1P 3AD
United Kingdom

Worldwide media enquiries:

E pressoffice@rics.org

Contact Centre:

E contactrics@rics.org
T +44 (0)870 333 1600
F +44 (0)20 7334 3811

Advancing standards in land, property and construction.

RICS is **the world's leading qualification** when it comes to professional standards in land, property and construction.

In a world where more and more people, governments, banks and commercial organisations demand greater certainty of **professional standards and ethics**, attaining RICS status is the recognised **mark of property professionalism**.

Over **100 000 property professionals** working in the major established and emerging economies of the world have already recognised the importance of securing RICS status by becoming members.

RICS is an **independent** professional body originally established in the UK by Royal Charter. Since 1868, RICS has been committed to setting and upholding the **highest standards of excellence and integrity** – providing **impartial, authoritative advice** on key issues affecting businesses and society.

RICS is a **regulator** of both its individual members and firms enabling it to **maintain the highest standards** and providing the basis for **unparalleled client confidence** in the sector.

RICS has a worldwide network. For further information simply contact the relevant RICS office or our Contact Centre.

**Europe
(excluding
United Kingdom)**
Rue Ducale 67
1000 Brussels
Belgium

T +32 2 733 10 19
F +32 2 742 97 48
ricseurope@rics.org

Asia
Room 1804
Hopewell Centre
183 Queen's Road East
Wanchai
Hong Kong

T +852 2537 7117
F +852 2537 2756
ricsasia@rics.org

Americas
60 East 42nd Street
Suite 2918
New York, NY 10165
USA

T +1 212 847 7400
F +1 212 847 7401
ricsamericas@rics.org

Oceania
Suite 2, Level 16
1 Castlereagh Street
Sydney
NSW 2000
Australia

T +61 2 9216 2333
F +61 2 9232 5591
info@rics.org.au

United Kingdom
Parliament Square
London SW1P 3AD
United Kingdom

T +44 (0)870 333 1600
F +44 (0)207 334 3811
contactrics@rics.org

Africa
PO Box 3400
Witkoppen 2068
South Africa

T +27 11 467 2857
F +27 86 514 0655
ricsafrica@rics.org

Middle East
Office F07, Block 11
Dubai Knowledge Village
Dubai
United Arab Emirates

T +971 4 375 3074
F +971 4 427 2498
ricsmiddleeast@rics.org

India
48 & 49 Centrum Plaza
Sector Road
Sector 53, Gurgaon – 122002
India

T +91 124 459 5400
F +91 124 459 5402
ricsindia@rics.org