

The Value in Sustainability

Where are we now?

Prof. Sarah Sayce BSc PhD FRICS IRRV

Head of School of Surveying & Planning

Kingston University

Member of RICS Valuation & Sustainability Group

&

Dr. David Lorenz FRICS

Karlsruhe Institute of Technology (KIT)

Member of RICS Valuation & Sustainability Group

40 per cent Symposium

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There is an undisputed desire to find the proof that 'green' or 'sustainable' buildings command a higher value (or others should be discounted?)

- To underpin a business case
- we need to (must?) reduce energy/ carbon consumption
- We wish to mitigate – in preference to adapt to – climate change
- To fulfil our public interest responsibilities
- We have a belief in and preference for **markets** to lead change

The Ambition

MARKET VALUE

Market value is the estimated amount for which an asset **should exchange** on the date of valuation between a willing buyer and a willing seller in an **arm's length transaction** after proper marketing wherein the parties had each **acted knowledgeably, prudently** and without compulsion.

WORTH OR INVESTMENT VALUE

Worth or Investment Value is: The **value** of property to a **particular owner**, investor, or class of investors for **identified investment** or operational objectives.

Market Value & investment worth

Valuers primarily reflect *the behaviour of the markets...*

*...how far can it be assumed that a **knowledgeable** and **prudent** purchaser would account for sustainability issues in any assessment of prices, rents and yields now and **moving forward**?*

Key questions for sustainability and
Market Value

“Worth is the stuff of decisions”

Mallinson, 1994

*...how far in respect of sustainability issues
can it be assumed that a knowledgeable and
prudent investor **would act ahead of the
market?***

***Where worth leads – market value may
follow***

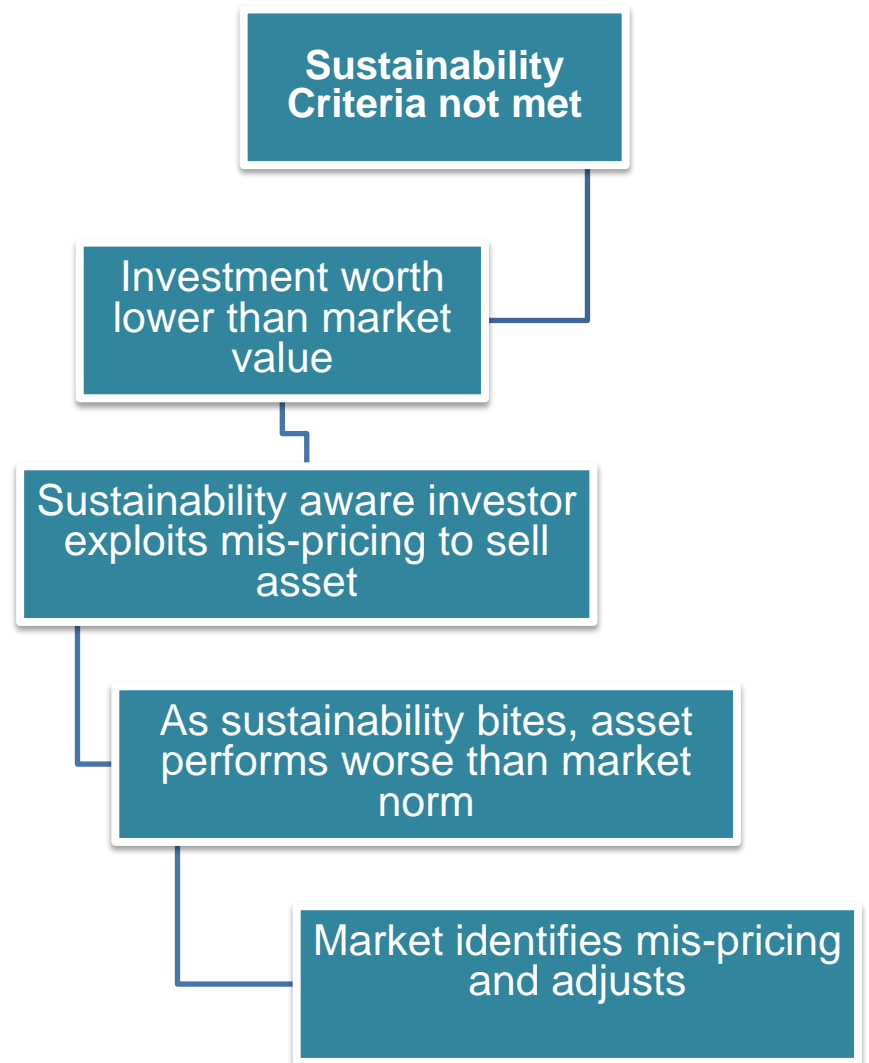
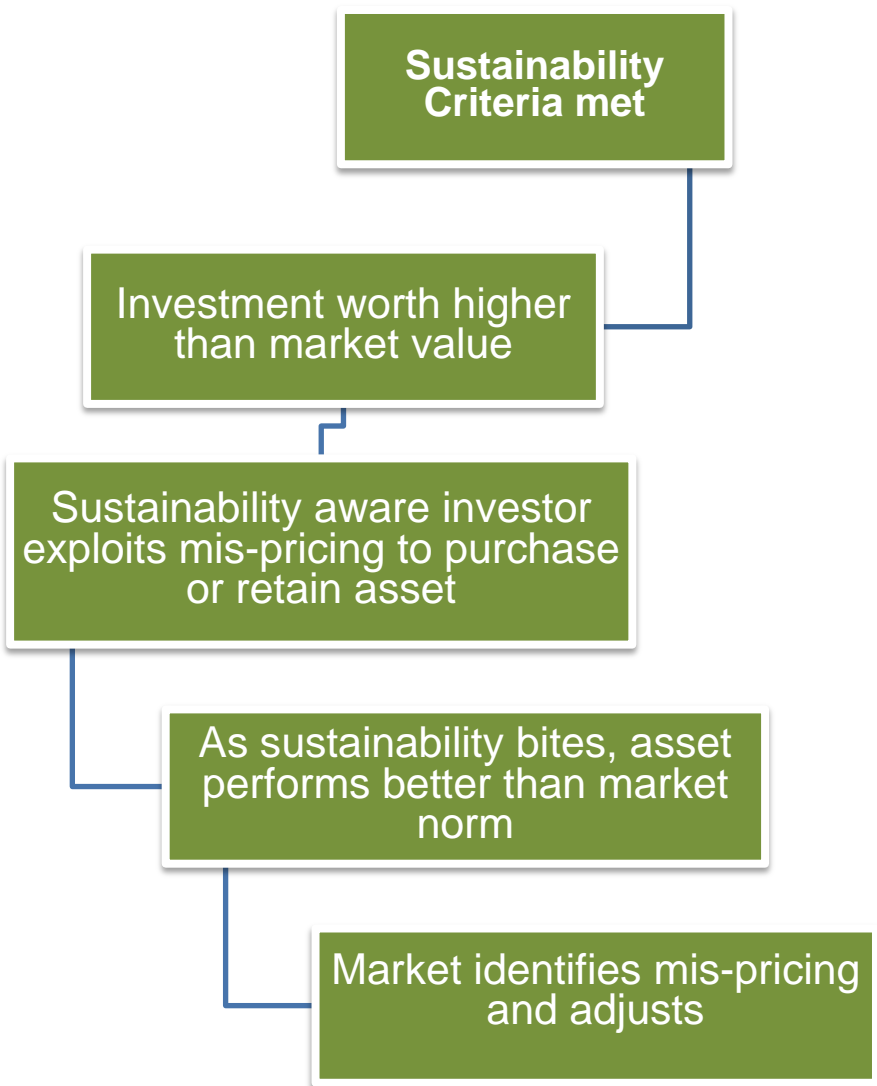
**Key Questions for Sustainability & Investment
Worth**

- The role of the valuer is primarily to reflect markets
- They work on data and *evidence*
- If there is a *lack* of evidence then the valuer cannot factor them in to their Market Values – but may need to advise on investment worth

“When calculating a property’s worth, the market doesn’t currently take the issue of sustainability into account, but this could also have been said for central heating way back in the 1970s when people weren’t convinced it was going to have a market impact”

Ben Elder RICS Global Valuation Director, September 2011

The Perceived Current Position



The Theoretical Position

Sustainable Buildings

High-Performance Buildings

Low-energy Buildings

Massive or lightweight

Green Buildings

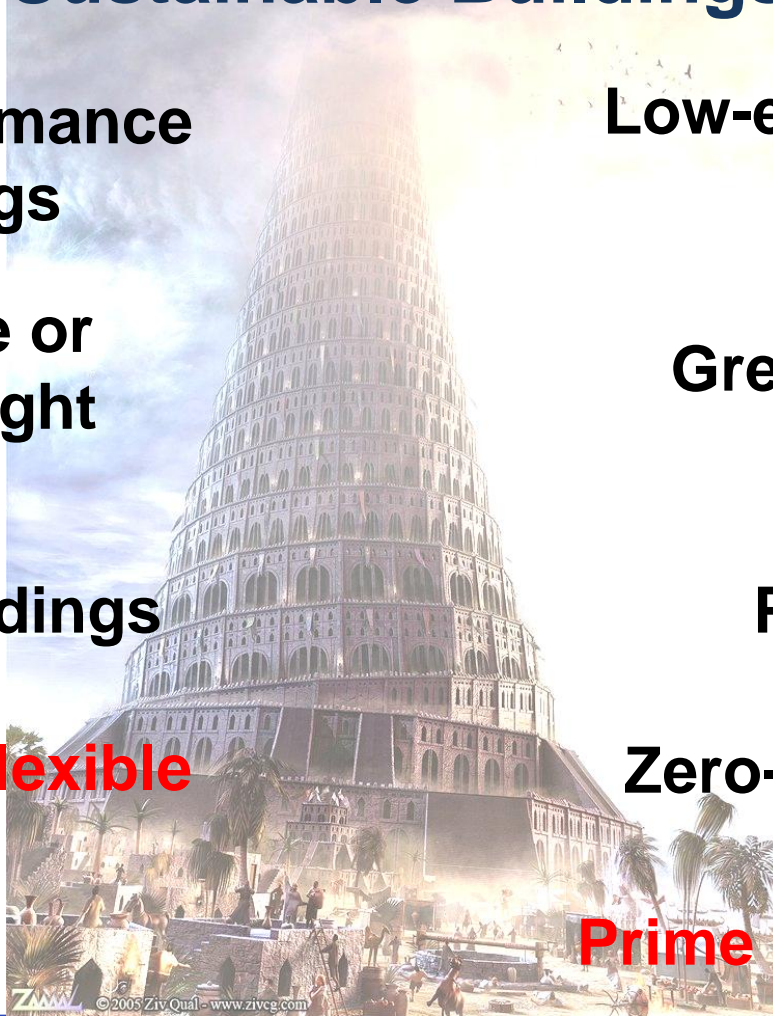
Healthy Buildings

Passive Buildings

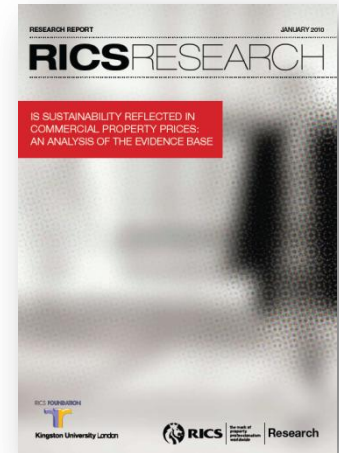
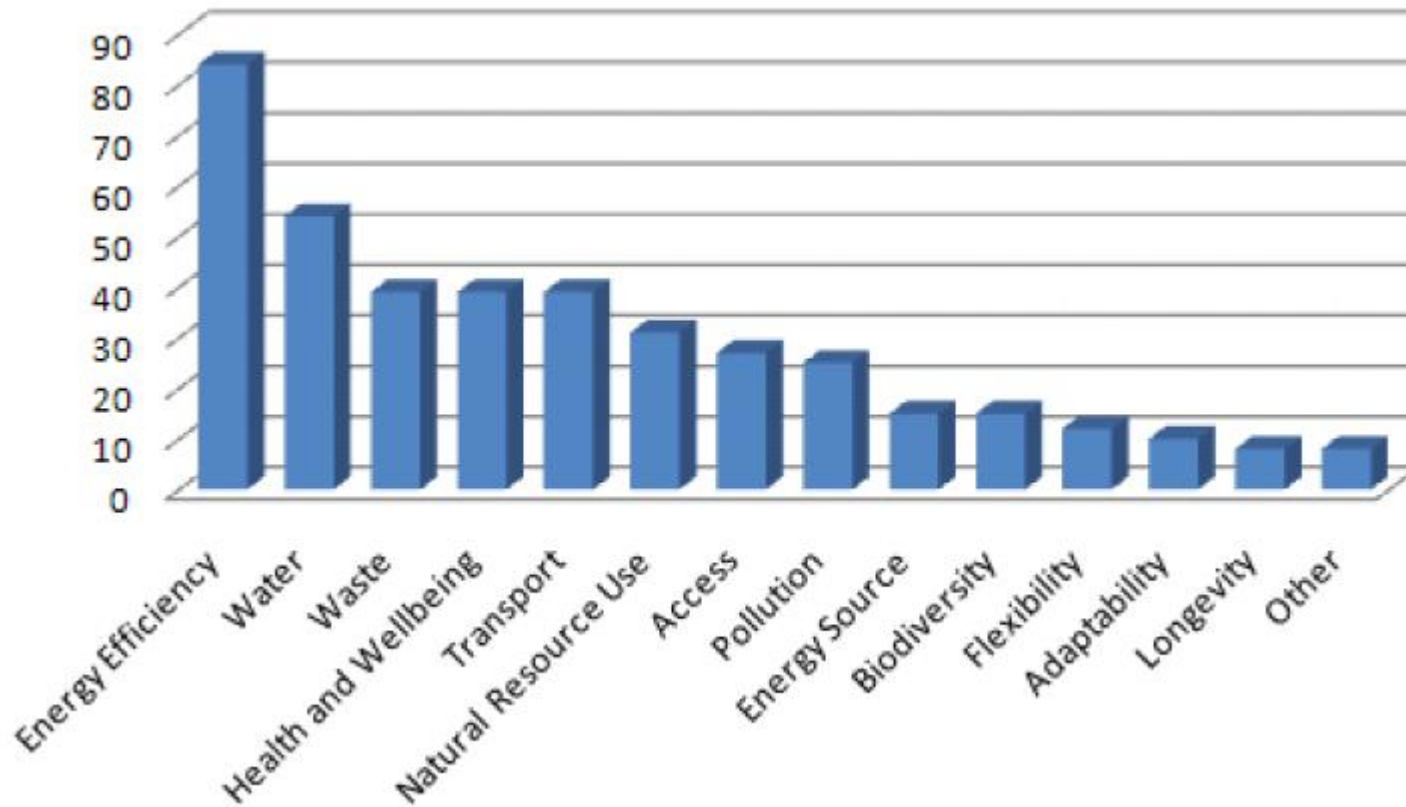
Adaptable /flexible buildings

Zero-emission Buildings

Prime buildings

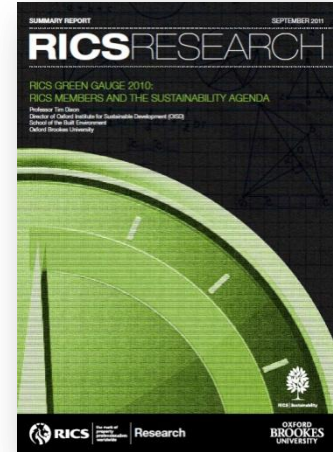
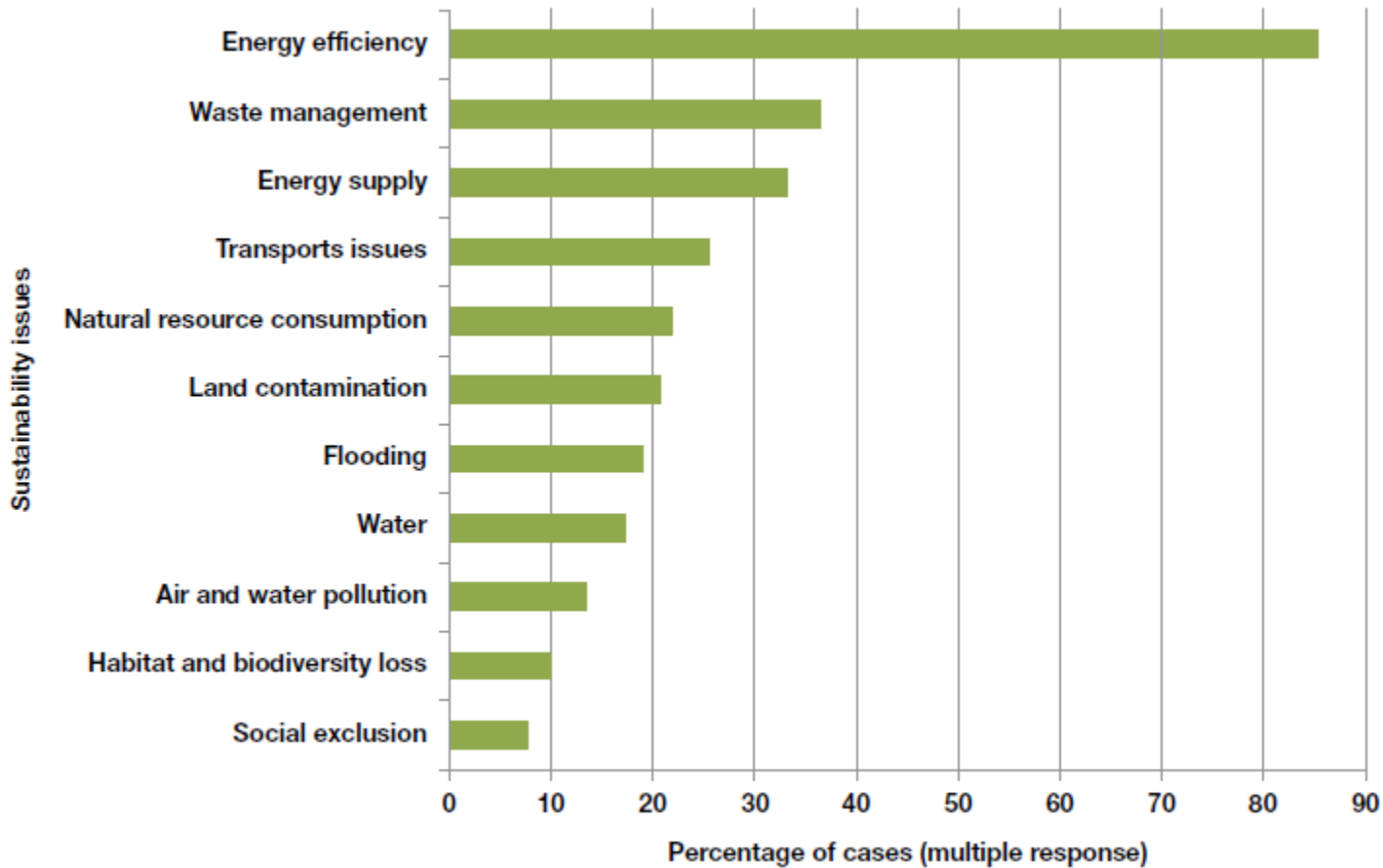


Sustainable Buildings: just what are they?



Source: Sayce, S., Sundberg, A. and Clements, B., 2010, *Is sustainability reflected in commercial property prices: an analysis of the evidence base*, RICS Research Report, January 2010

Attributes Investigated in Research



Source: Dixon, T., 2011, *RICS Green Gauge 2010: RICS Members and the Sustainability Agenda*, RICS Research, September 2011

Green Gauge Survey

Kingston University London

- **Energy source, usage and management**
- **Carbon emissions**
- **Occupant comfort, barrier-free accessibility**
- **Flexibility and adaptability of the building solution / floor plan**
- **Durability**
- **Environmental- and health-friendliness of building products and components**
- **Water usage and management**
- **Proximity to facilities such as education, retail and leisure destinations**
- **Proximity to public transport systems and nodes**
- **Risk of flooding and other natural or man-made hazards**



Source: Draft listing for discussion at RICS Seminar „Finding the links - Sustainability performance measurement, property valuation and asset management, ExpoReal, 5 October 2011, Munich, Germany

The Latest List – to what extent is this synonymous with Certificates?

“despite the publicity and promotion, the voluntary certificated section is miniscule in terms of the current commercial real estate stock”

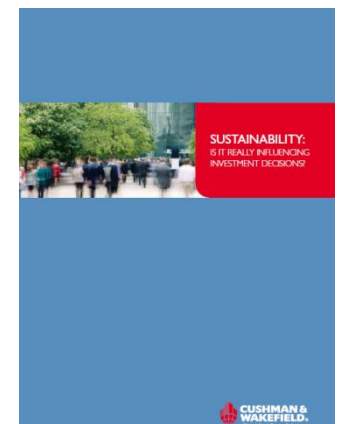
(Fuerst & McAllister, 2011)



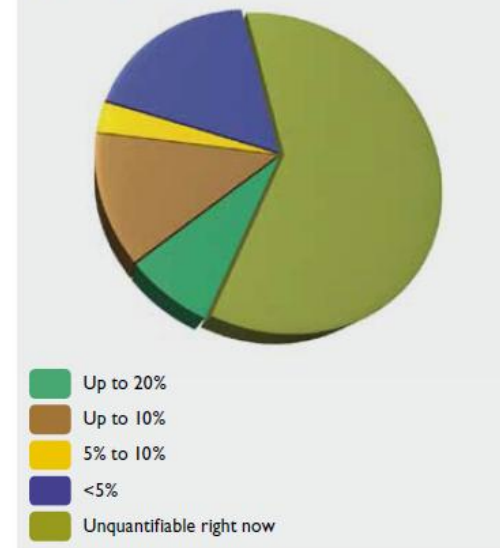
Valuers work throughout the building life cycle - there are still insufficient certificated buildings to provide good data for comparability..
EPCs are more universal in application – but only measure one dimension..
And sustainability is a moving target

Are Certificated Buildings a good Measure?

- Surveys have long shown that many people *say* they *might* pay up to 10% premium for LEED/BREEAM (CoreNet /JLL,2008)
- *But* interviews show that whilst sustainability is desired, traditional selection criteria dominate (Dixon *et al*; 2009; Cushman & Wakefield; 2011)



INVESTORS PERCEPTION OF A VALUE DIFFERENTIAL IN PERCENTAGE TERMS



“the trouble is that to calculate you need a sizeable benchmark and we don’t have that”

So- what have researchers done? Don't get too excited – yet!

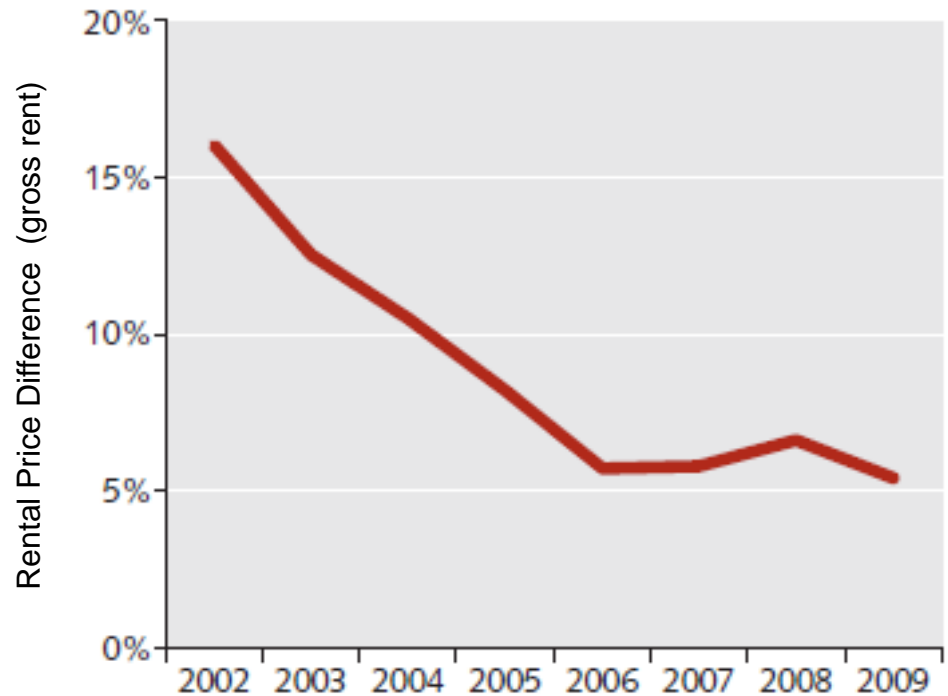
<i>Study/Authors</i>	<i>Country</i>	<i>Property Type</i>	<i>Sustainable Credentials</i>	<i>Observed impact on</i>	<i>+/-</i>	<i>Magnitude</i>
Australian Department of the Environment, Water, Heritage and the Arts, 2008	Australia	Residential Homes	Energy Efficiency Rating, EER, (0 to 10 stars in 0.5 star increment)	Selling Price	+	1.23 % – 1.91 % for each 0.5 EER star
Brounen and Kok, 2010	The Netherlands	Residential Homes	Energy Performance Certificate (Class A, B, C)	Selling Price	+	2.8 %
City of Darmstadt, Rental Index, 2010	Germany (Darmstadt)	Residential multi-family houses	Primary energy value below 250 kWh/m ² a	Rental Price	+	0,38 €/m ²
			Primary energy value below 175 kWh/m ² a			0,50 €/m ²
Eichholtz, Kok and Quigley, 2010	USA	Office Buildings	LEED	Selling Price	+	11.1 %
				Rental Price	+	5.9 %
			Energy Star	Selling Price	+	13 %
				Rental Price	+	6.6 %
Fuerst and McAllister, 2010	USA	Office Buildings	LEED	Occupancy Rates	+	8 %
			Energy Star		+	3 %
Fuerst and McAllister, 2008	USA	Office Buildings	LEED, Energy Star	Selling Price	+	31 % - 35 %
				Rental Price	+	6 %
Griffin et. al, 2009	USA (Portland / Seattle)	Residential Homes	Built Green, Earth Advantage, Energy Star, or LEED	Selling Price	+	3 % - 9.6 %
				Selling / Marketing Time	-	18 days
Pivo and Fischer, 2010	USA	Office Buildings	Energy Star, close distance to transit, location in redevelopment areas	Net Operating Income (NOI)	+	2.7 % - 8.2 %
				Rental Price	+	4.8 % - 5.2 %
				Occupancy Rates	+	0.2 % - 1.3 %
				Market Value	+	6.7 % - 10.6 %
				Income Returns / Cap Rates	-	0.4 % - 1.5 %

Empirical Research – concentrated in US Offices

<i>Study/Authors</i>	<i>Country</i>	<i>Property Type</i>	<i>Sustainable Credentials</i>	<i>Observed impact on</i>	<i>+/-</i>	<i>Magnitude</i>
Pivo and Fischer, 2011	USA	Office, retail, industrial and apartment properties	Walkability (distance to educational, retail, food, recreational and entertainment destinations), measured as a Walk Score from 0 to 100	Market Value (office, retail)	+	0.9 % for each unit increase in Walk Score
				Market Value (apartment)	+	0.1 % for each unit increase in Walk Score
				Net Operating Income (office, retail)	+	0.7 % for each unit increase in Walk Score
				Income Returns / Cap Rates	-	0.007 % for each unit increase in Walk Score
Salvi et. al, 2008	Switzerland	Residential Homes	MINERGIE Label	Selling Price	+	7 %
		Residential Flats		Selling Price	+	3.5 %
Salvi et. al, 2010	Switzerland	Residential Flats	MINERGIE Label	Rental Price	+	6 %
Wameling, 2010	Germany (Nienburg)	Residential Homes	Primary energy demand per m ² and year (kWh/m ² a)	Selling Price	+	Ca. 1,40 €/m ² per reduced kWh/m ² a
Wiley, Benefield and Johnson, 2008	USA	Office Buildings	LEED, Energy Star	Rental Price	+	7 % - 17 %
				Occupancy Rates	+	10 % - 18 %
Yoshida and Sugiura, 2010	Japan (Tokyo)	Large residential condominiums	Tokyo Green Labeling System	Selling Price	-	6 % - 11 %
Newell, MacFarlane and Kok, 2011	Australia	Office	NABERS Label	Rents	+ and -	Up to 9% for high rated and discount emerging for low ratings

Empirical Research – Starting to move to Europe and beyond

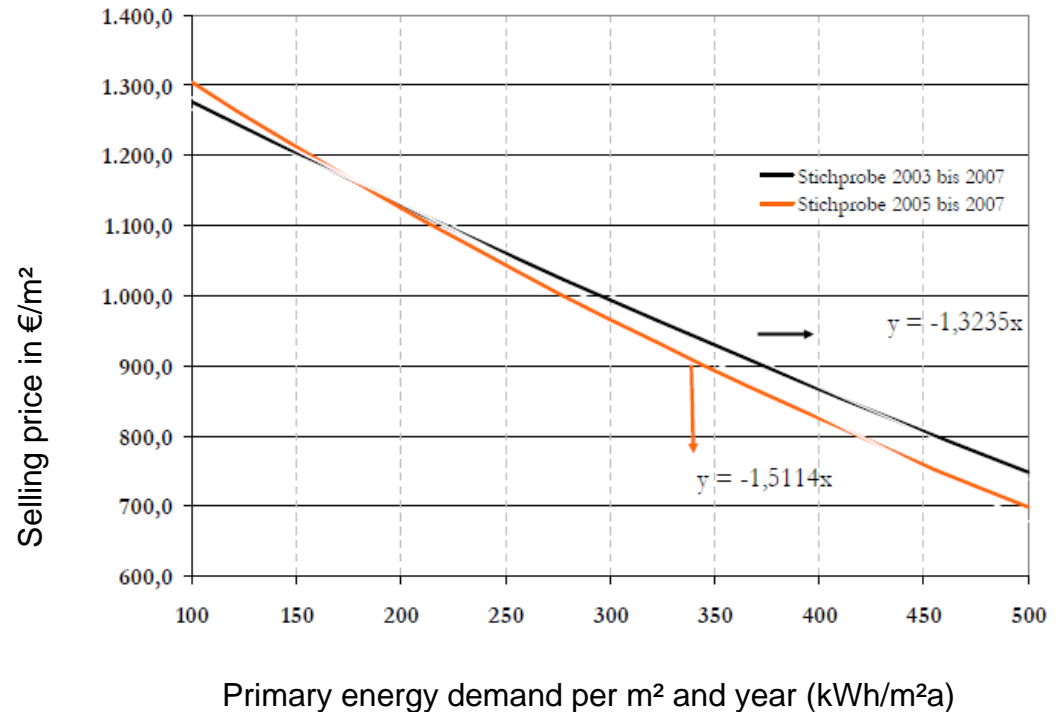
- In Switzerland, sustainable / energy efficient building practices are becoming the norm in new construction
- This will lead to price erosion for non-compliant stock
- The same is happening in SE Asia



Source: Salvi, et. al, 2010, *Der Minergie-Boom unter der Lupe*, Center for Corporate Responsibility and Sustainability, Universität Zürich

Again a link to Energy enabled by Data

- In the city of Nienburg selling prices for single family houses increase by circa 1.40 €/m² per reduced kWh/m²pa.
- This is unique fine graining ...
- Over time – if EPCs are reliable data will improve..
- Residential markets respond differently to commercial



Source: Wameling, T. (2010), *Immobilienwert und Energiebedarf. Einfluss energetischer Beschaffenheiten auf Verkehrswerte von Immobilien*, Fraunhofer IRB Verlag, Stuttgart

Again a link to Energy enabled by Data

- Green labeled buildings may also trade at a discount; in this case between 6 % and 11 %.
- May be due to buyers' skepticism of non-familiar technologies and limited knowledge of future performance

	Median Score	(1) OLS	(2) LAD	(3) Quadratic Size & Age	(4) Green x Age
1. Reduction of thermal loads	0.5			0.0457	
2. Renewable energy	0				
3. Energy saving	0				
4. Eco-friendly materials	0.5	-0.0393	-0.0287	-0.0286	-0.0319
5. Longer life of building	0.67	0.0869		0.1005	0.1099
6. Water circulation	0.5				
7. Greening	0.33		-0.0469	-0.0296	
8. Mitigation of heat island	0				
(A) Sum of itemized scores		0.0476	-0.0756	0.088	0.078
(B) Baseline effect		-0.1125		-0.1966	-0.1888
Total effect (A+B)		-0.0649	-0.0756	-0.1086	-0.1108

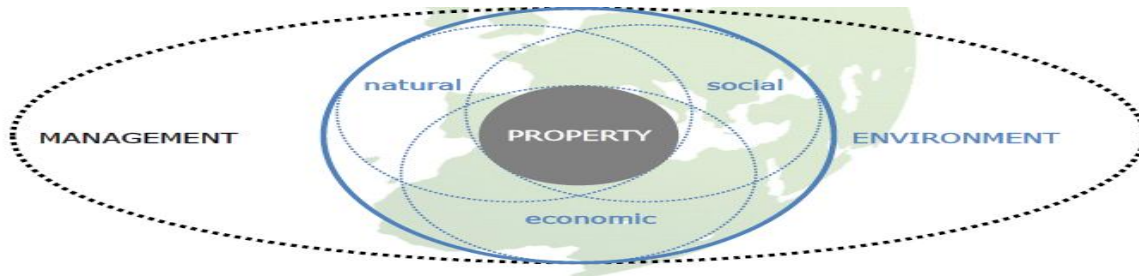
Impact of “green” on selling price: Tokyo

- London is one of the most ‘at risk’ cities internationally due to the economic importance
- Flood is as much about SUDS as coast of rivers
- Research found that whilst taken into account on purchases it is not adequately accounted for subsequently
- Too little recognition of impact of Flood & Water Management Act 2010
- Flood risk insurance is a ‘live issue

“it is important for valuers to understand how to articulate flood risk when pricing property investment assets even though evidence of a measurable effect on investment yields of on property rents is not readily apparent”

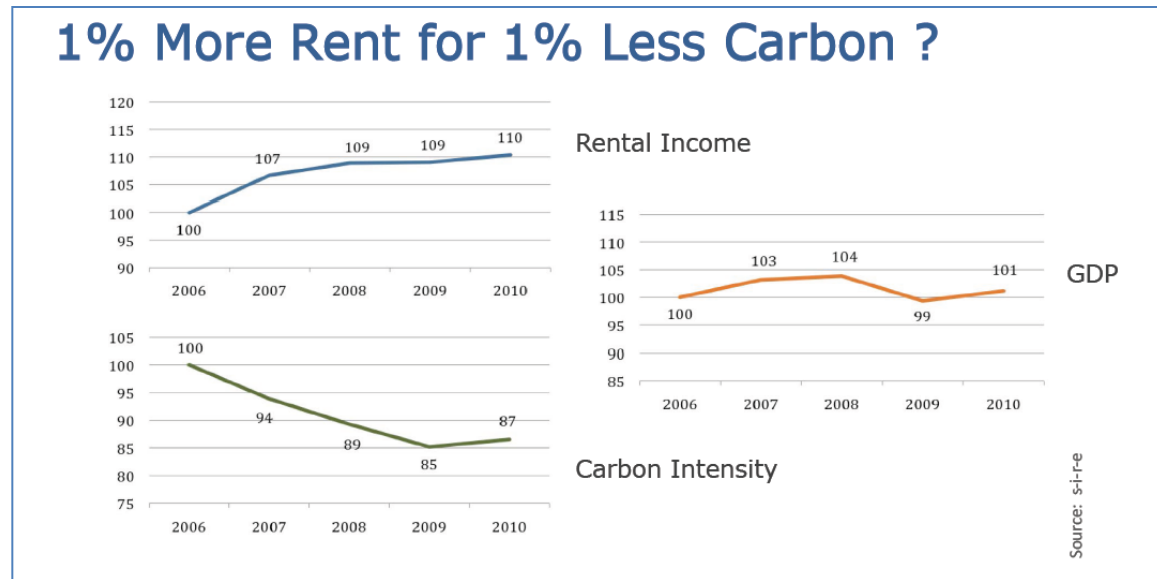
CEM, 2011

Other Environmental Issues ...



S-i-r-e Project
(Bernet, Sayce et al 2011)

- Examining the link with financial performance
- Analysis of 47 European Portfolios
- Very limited data series available



Another way of Analysing ..

ISPI Monitor of Sustainable Properties in the UK

“One good return deserves another”

- Recognises that few properties have full data
- Based on weighted criteria:
 - Energy
 - Waste
 - Water
 - Flood
 - Accessibility or
 - BREEAM
- Now monitoring 1,200 properties across 100 portfolios

“Sustainability is not yet priced into commercial property valuations in the UK, but when it is, the ISPI Monitor should show sustainability impacts on returns”.

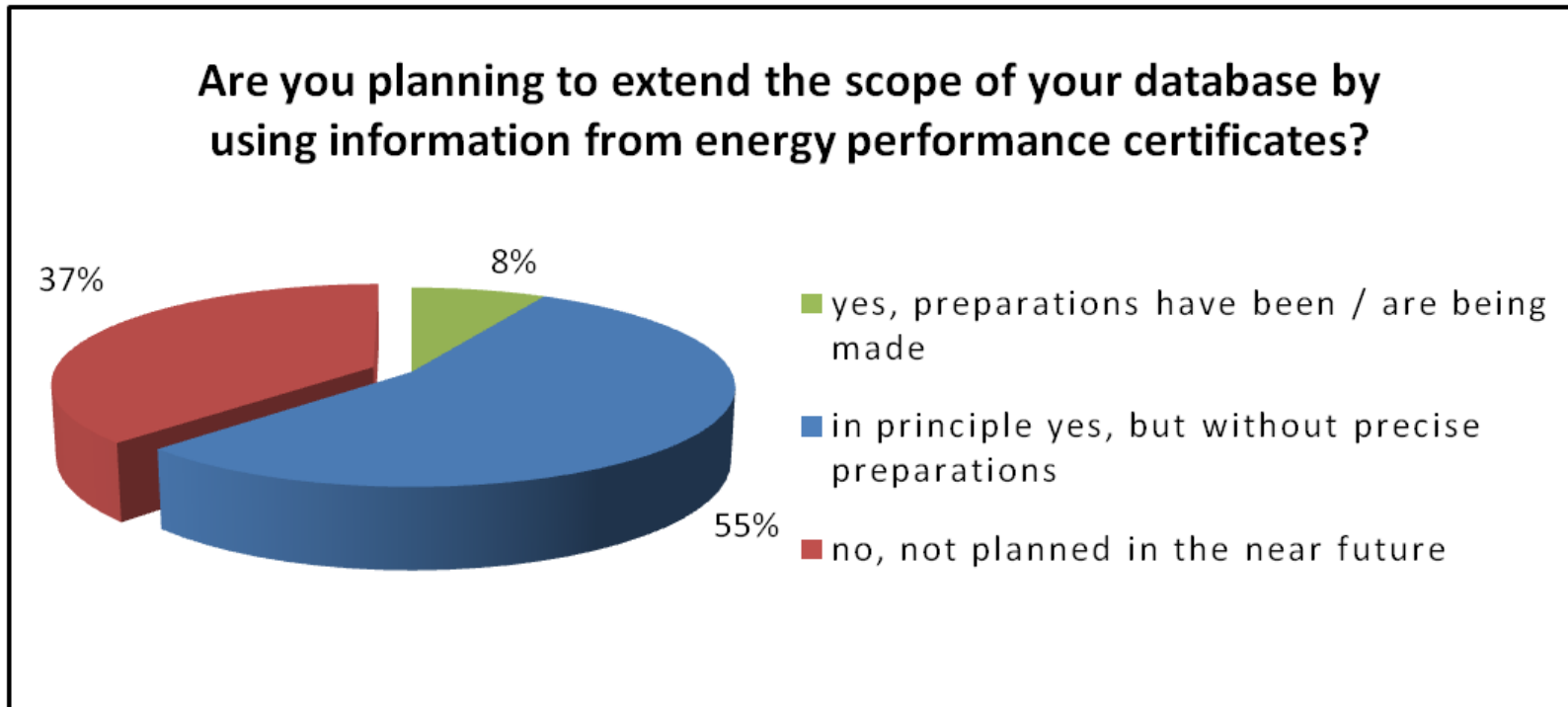


An important UK initiative ...

- It is all about energy ... where we have better metrics - mainly positive but..
- Offices in US – clear evidence to link energy certification (Energy Star) – some evidence re LEED
- Offices in Australia: discounts for low scores; impact return, yield and vacancy of CBD offices
- Broad brush – do not differentiate grades
- Relationship between rent/energy costs very variable
- In Europe fewer studies and extend to residential more than offices

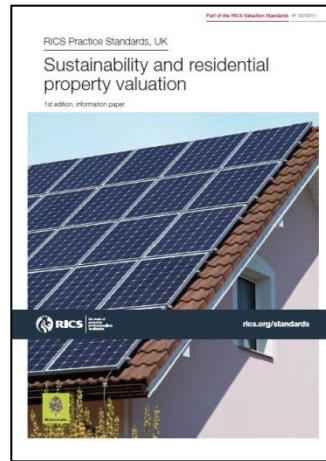
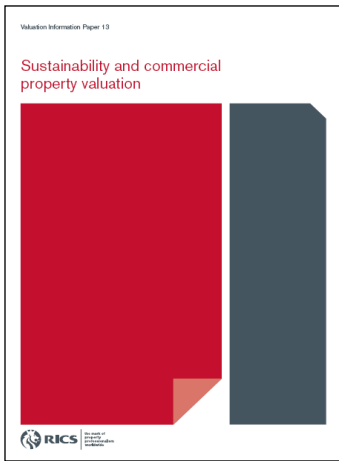
Summary

- A large scale survey of German valuation expert bodies
- But intention v action...



Source: Kertes, J., Lützkendorf, T. and Lorenz, D., 2008, German Property Transaction Data Survey, Universität Karlsruhe

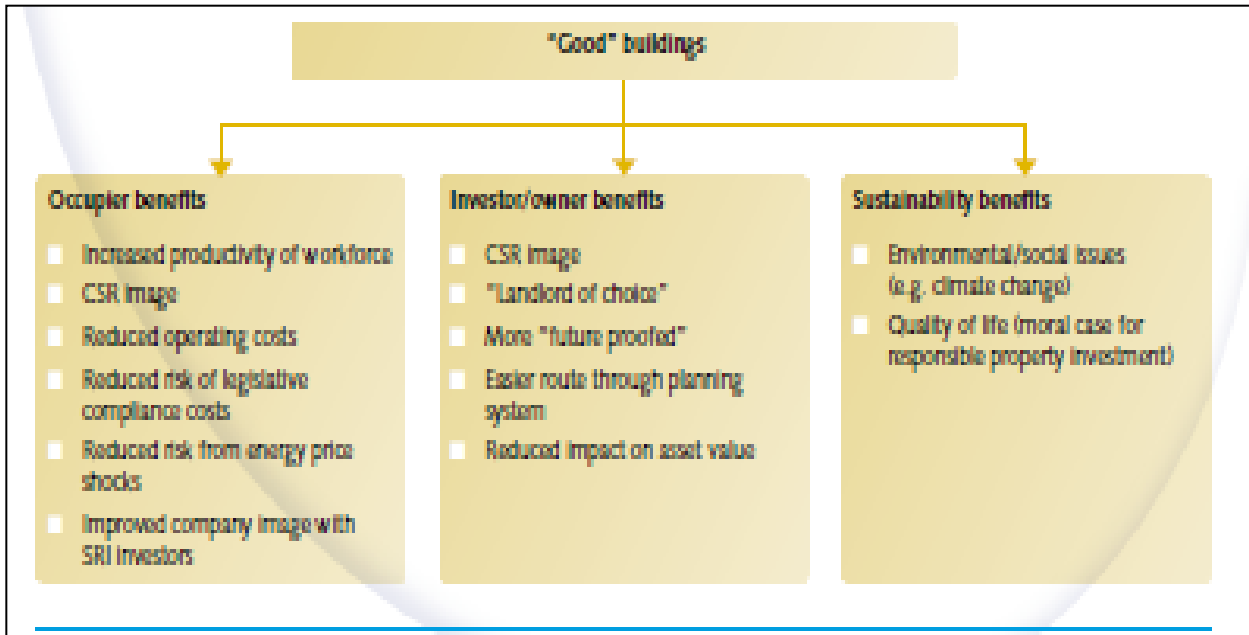
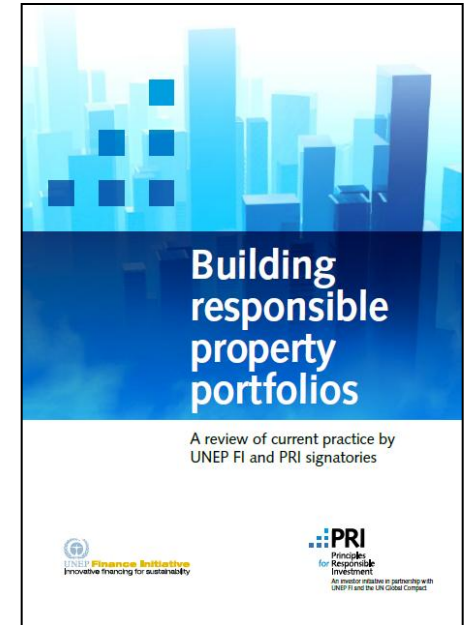
Valuer Response



A Values Dozen – A summary

Item	What should be 'Value Lost' for?	Cost	Implications	Result
1	Are basic energy efficiency measures implemented and implemented correctly? - Is there air conditioning? - Is there energy recovery? - Is there carbon compensation? - Is there air conditioning?	\$	Green	Green
2	Variable speed drive: - Have they been installed? - Have they been properly installed?	\$	Green	Green
3	Building Management and Control System (BMS): - Is there one equipped? - Does it have the right capacity? - Are they commissioned (or is just the BMS)? - Has the BMS been set up to save the building?	\$	Green	Green
4	Energy Efficient Centraire air lighting: - Is there efficient lighting on board? - (Check BMS) for automatic control?	\$	Green	Green
5	Energy Efficient 'Tweezer' lighting: - Is the lighting energy efficient with local control?	\$	Green	Green
6	Air conditioning system: - Are there other, additional controls in place such as carbon dioxide sensors? - Are they automatically engaged and able to react? - Is there a link to ventilation with heat recovery?	\$	Green	Green
7	Chillers: - Do the chillers replacement quantity show a high PUE? - Check settings and VAV/ECM improvements could bring forward a replacement a year or two. - Could the replacement be designed to match?	\$ \$ \$	Green	Green
8	Facade and windows: - Can improve thermal and reduce heat gain and glare on its occupants? - Facade upgrades usually have a very poor ROE but will improve energy saving in winter. - They can improve air conditioning performance. - They can make the building greener and increase daylight across the floor.	\$ \$ \$	Green	Green
9	Carbon Monoxide monitoring in car park: - Look for flow only monitoring when CO reaches a level where it needs to be. - For example a car park painted white to reflect as indicators that the lighting has been reduced.	\$	Green	Green
10	Low-voltage energy sensitive plant: - Is anything on place?	\$	Green	Green
11	Water saving devices and monitoring: - Is there started and maintained cooling tower consumption? - Are there water saving devices?	\$ \$	Green	Green
12	Environmental management system: - Are there management systems that are focused on occupant health and environmental sustainability? - Do they include: - Green cleaning? - Green print control? - Green line services ready? - Reduce health monitoring?	\$	Green	Green
13	Green Leases: - Is there a 'right' landlord or both green lease in place?	\$	Green	Green

- “it is increasingly important that the valuer is aware and can reflect (moves to sustainability) in the advice given.”
- Valuers should collect data – even if it is not apparently reflected in MV



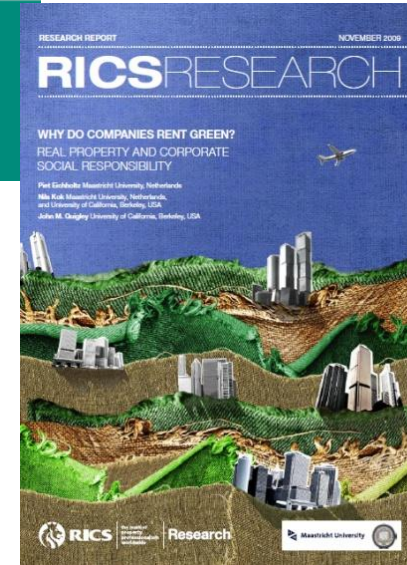
Clients are changing :Responsible Investors Agenda

- A different Metric
- From cost to risk reduction

**Buying into
sustainability
*Harms performance***

**Buying into
sustainability
*Has no effect on
performance***

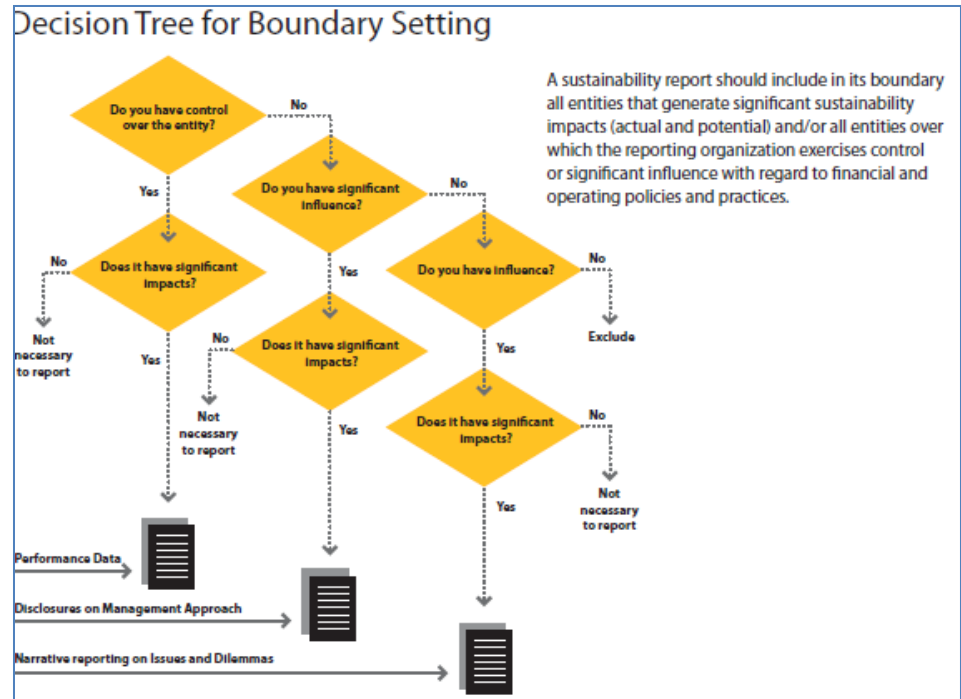
**Buying into
sustainability
*Enhances performance***



The business/investment argument
develops

Global Reporting Initiative

- provides guidance on how organizations can disclose their sustainability performance
- Construction and Real Estate Sector Supplement (CRESS – a sector supplement- September 2011)



Changing Perspectives: GRI and CRESS



UNEP Finance Initiative
Innovative financing for sustainability



RICS

- RICS and United Nations Environment Programme – Finance Initiative (UNEP-FI) statement of intent to
 - Increase market transparency
 - Gain insight into performance
 - Integrate sustainability within the ‘everyday’
 - And all within 5 years
- Recognition that it is a challenge in terms of skills, working with clients and with other professionals

RICS/ UNEP-FI a major step forward

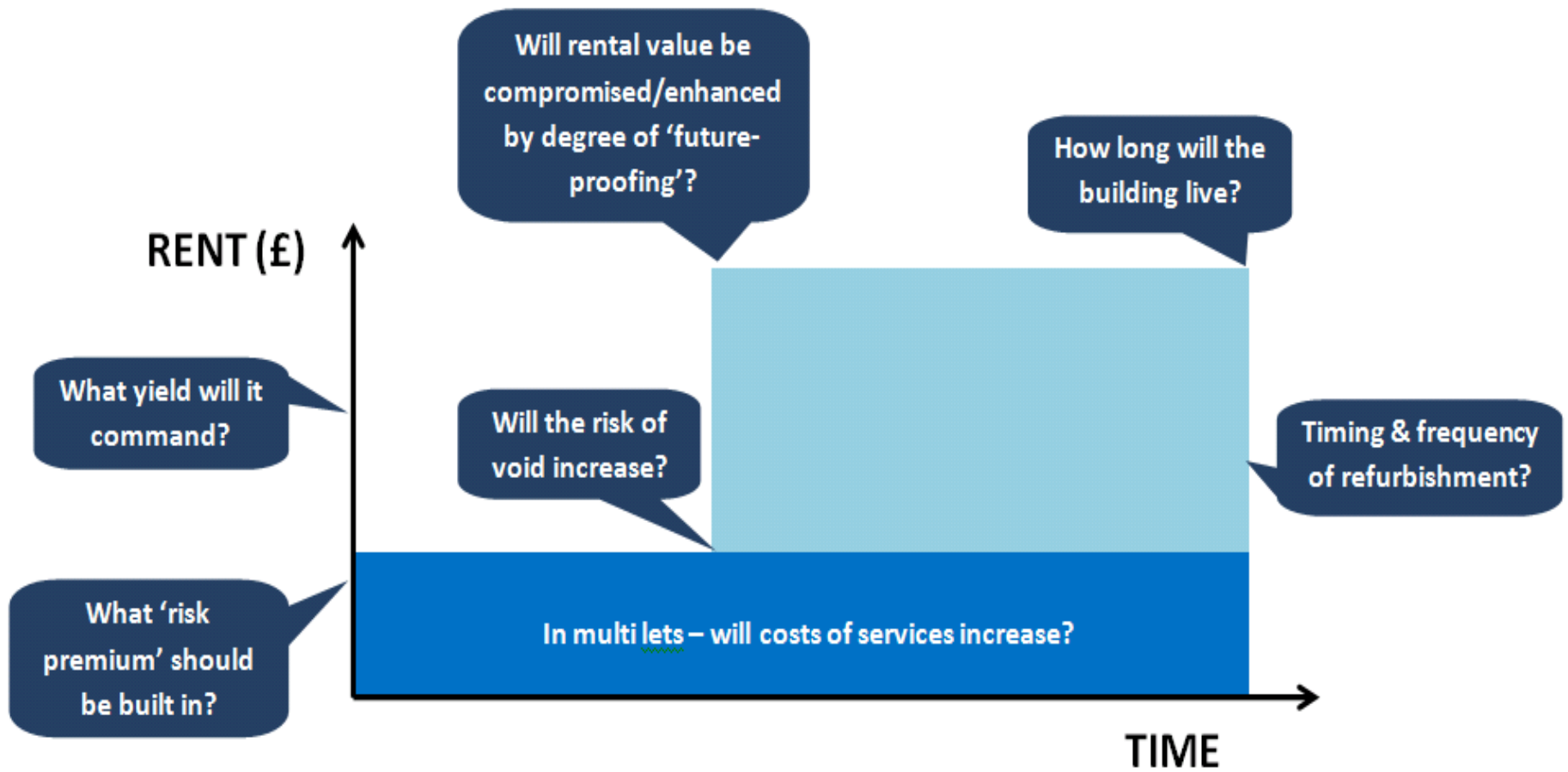
- **A lack of market response at the pace required:**
 - Energy targets not being met - legislation may increase
 - Challenge to create economic case to retro-fit stock – losing stock should not be the only answer
 - The pre-occupation with energy may have clouded other issues
 - Ratings and value too blunt a tool – and concern about accuracy
- **Changing corporate & societal environment**
 - The growth of GRI may prove more important..

Why more change is needed

- CBRE initiative:
- 6 point sustainability checklist (based on ISPI)
 - quality,
 - accessibility,
 - energy efficiency,
 - flooding,
 - waste and
 - water efficiency

other organisations may follow...

The Need for Data continues – but the will is now there!



A schematic of where value and sustainability meet

- Results are coming through but the pace is still slow
- Certification is not the only answer
- Guidance is improving
- Data is a continuing issue – consistency and accuracy require cooperation and management records
- Government agendas and grants may help/ require step change
- There is a danger of thinking just energy

Conclusion

The development of 'sustainable value' methodologies will take time and commitment and will reveal a skills gap that will require address

But on the positive side it presents opportunities for those ready to rise to the challenge



We must learn to measure that which we should value instead of only valuing that which we can measure

Conclusion