ENVIRONMENTAL PERFORMANCE, GREEN VALUE AND CERTIFICATION

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Brussels 2012 June 7

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1/ World context, political drivers and certification

- Sustainable and energy efficient buildings: a global movement
- Buildings in European Union: 40% energy and 36% $C0_2$ emissions, in the USA: 40%-40%*

**Michaela Holl, European Commission, Syam Sunder, NIST, 2009*

- Buildings: the 1st issue for two planet challenges:
  - energy supply security
  - climate change
- Before industry and transportation, for example, energy in France (2010)*:
  - Buildings 43%
  - Transportation 33%
  - Industry 22%
  - Agriculture 2%

**Ministry of Ecology and Sustainable Development. 2011.*

1/ World context, political drivers and certification

- “Climate Change is the greatest and widest-ranging market failure ever seen”.

  Sir Nicholas Stern, former World Bank Chief Economist,
  “The Economics of Climate Change” Review, London, 2006

- So drivers are political:
  - Continental level: the “3X20% in 2020” European policy + Energy Performance Buildings Directive n°2010/31/UE
  - National level: Environmental policies in France, Germany, UK, Switzerland, California…
  - Territorial level: Paris, Copenhagen, Freiburg, Barcelona…

1/ World context, political drivers and certification

- But markets are awakening
- Environmental certifications are new market norms
- In the Parisian region, 85% of more than 5000m² offices which will be put on the market in 2013 are HQE® certified*.

** Jones Lang LaSalle 2011.*

2/ Green value: definition and first evidences

- Green value: a price signal linked to an environmental quality signal

- Definition:
  - A premium for certified buildings compared to non certified buildings with same characteristics (location, size, comfort…)
  - Or a lower value for non green buildings compared to green buildings with same characteristics

- Green value central question: what are the risks, in particular of obsolescence, of a non green building compared to a green building with same characteristics?

2/ Green value: definition and first evidences

- •*Eichholtz Piet, Kok Nils, Quigley John M., Doing Well by Doing Good? An Analysis of the Financial Performance of the Green Office Buildings in the USA. March 2009 (Maastricht and California Universities)*
- The Energy Star® or LEED® certified buildings have on average a 3% higher rent, a 6% higher rental revenue (rent multiplied by the occupation rate) and a 16% higher resale price.

2/ Green value: definition and first evidences

- *Eichholtz Piet, Kok Nils, Quigley John M., "The Economics of Green Building". September 2010*

- During the real estate crisis: September 2007 - October 2009.
- Rents decreased in two years on average by 5.4%.
- Certified buildings resist more and maintain an advantage but the difference is reduced: it is of 1.2% for rents and 2.4% for rental revenues.
- For resale prices, the difference is on average 13% in favor of certified buildings.

2/ Green value: definition and first evidences

•*Fuerst Franz, McAllister Patrick, New Evidence on the Green Building Rent and Price Premium. April 2009 Henley Business School (Reading University).*

- Beginning of 2009
- They find a higher difference in rent, equal to 6%
- Their figures are more surprising for resale values: over 31% for Energy Star buildings, over 35% for LEED buildings.

2/ Green value: definition and first evidences

- *Miller Norm, Spivey Jay, Florance Andy, Does Green Pay Off? 2008 (San Diego University, CoStar Data Basis)*

- 2005-early 2008 period
- Resale price difference over 6% for Energy Star, plus 10% for LEED.

2/ Green value: definition and first evidences

- *Pyvo Gary, Fisher Jeffrey D. "Investment returns from Responsible Property Investments: Energy Efficient, Transit-oriented and Urban Regeneration Office Properties in the US from 1998-2008". March 2009. (Research on Energy Star® label only)*

- The net revenue per square foot is on average greater by 5.9% for Energy Star buildings. This difference is explained by a 4.8% higher rent, a 0.9% higher occupation rate and a 9.8% lower fluid expense.
- The market value is greater by 13.5%.
- The capitalization rate is 0.5% less.
- The change over time of the market value of Energy Star buildings is not greater
- The overall efficiency (revenues and sale price capital gain) is comparable for Energy Star buildings and non certified buildings.

2/ Green value: definition and first evidences

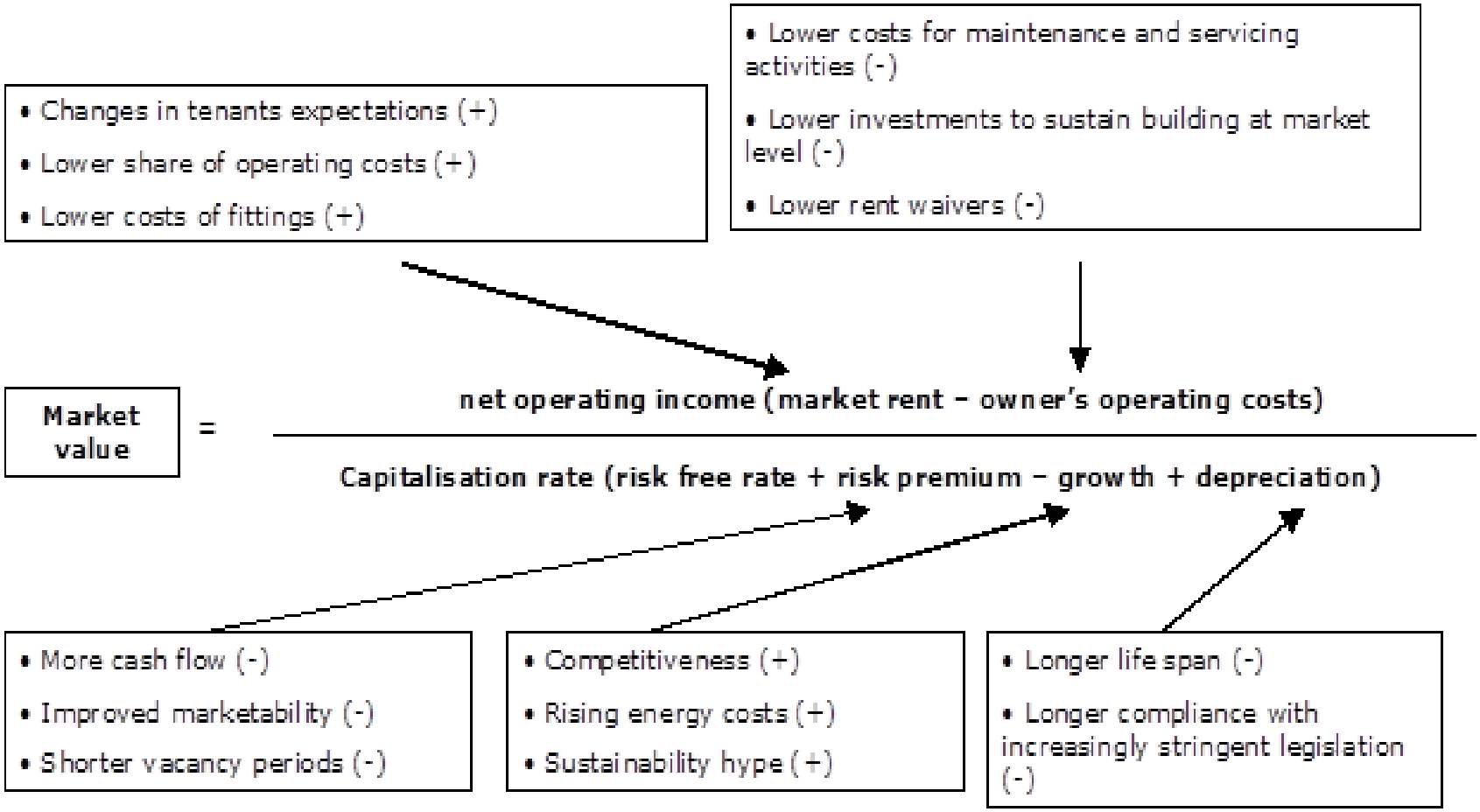
- *Kok N., Maarten J.. The value of Energy Labels in the European Office Market. Maastricht University, RSM Erasmus. May 2011.*
- 1100 transactions 2005-2010
- Rents of Dutch offices with D to G Energy Certificate are 6,5% lower than rents of similar offices (location, size, comfort…) with A to C Energy Certificate
- Other interesting sustainable indicator: a 13 % decrease of the rent per each kilometer further away from public transport station.

2/ Green value: definition and first evidences

- *Chegut A, Eichholtz P, Kok N. The Value of Green Buildings New Evidence from the United Kingdom. Université de Maastricht. July 2011.*
- A bit astonishing: rent premium of 21% and resale price premium of 26% for British BREEAM certified offices compared to non certified similar offices.

3/ Value and environmental characteristics

Components and potential environmental determinants of the market value of rental property



Source D.Lorentz in Bullier et alii. Assessing Green Value, a Key to Investment in Sustainable Buildings. June 2011

3/ Value and environmental characteristics

Potential for positive differentiation in favor of green buildings

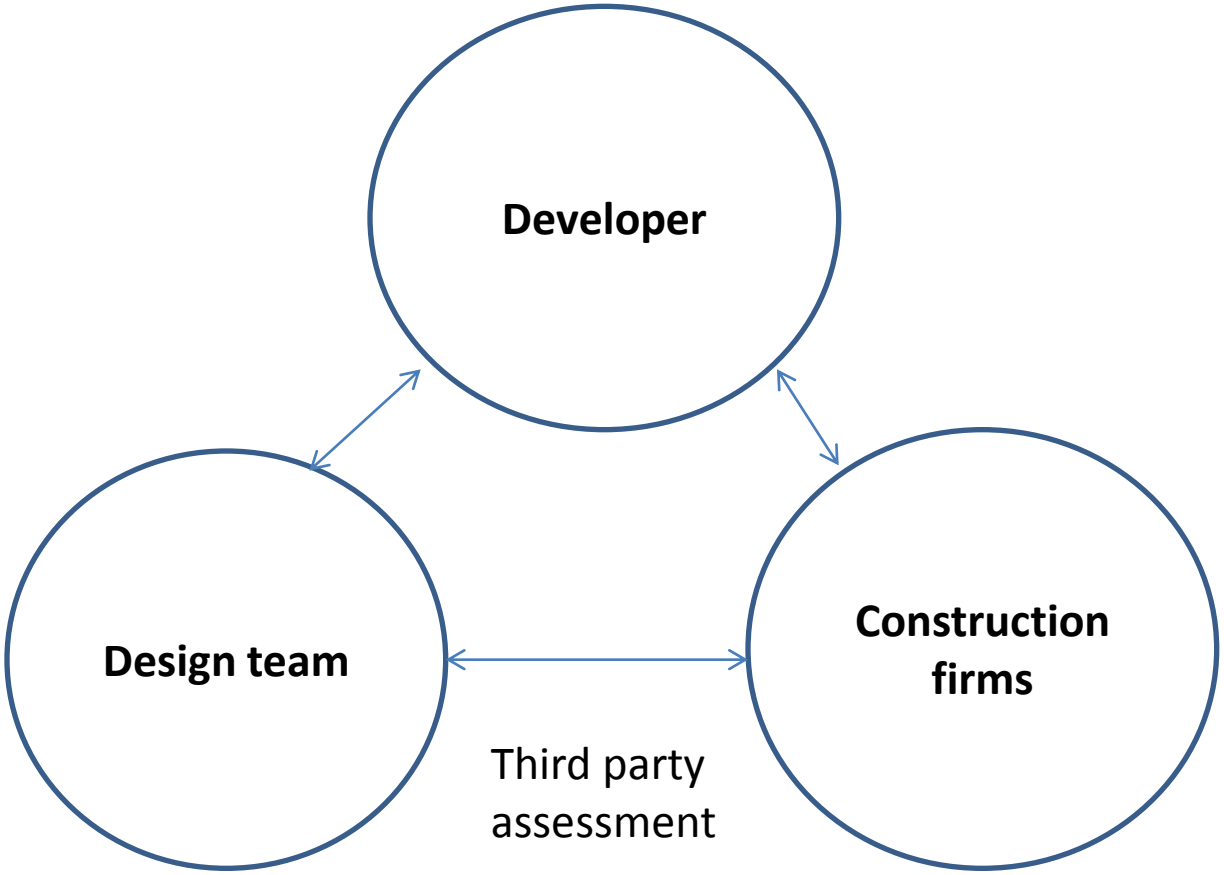
Components of market value (impact on value)	Impacted (+) Upward (-) Downward	Impacted by:	Impact level			
			Rental Housing		Rental Office	
			Short term	Medium term	Short term	Medium term
Market rent (+)	+	Sustainability expectations of demand	→	↗	↗	↑
	+	Lower rental charges	↗	↑	→	↗
	+	Less works for new tenants	→	→	→	→
	+	Health of occupants	→	↗	↗	↑
	+	Productivity of workers (offices only)	/	/	→	↑
Owner expenditures (+)	-	Major maintenance & repair	↗	↗	→	→
	-	Costs for upgrading and refurbishment	↗	↑	↗	↑
	-	Maintenance of performance	→	↗	→	↗
	-	Deductibles and rent discounts	/	/	↗	↑
Risk premium (-)	-	More cash flow	→	↗	↗	↑
	-	Faster commercialisation time	↗	↑	↑	↑
	-	Anticipated compliance with regulations	↗	↑	↗	↑
Growth of owner income (+)	+	Competitiveness, attractiveness	→	↗	→	↗
	+	Energy costs	↗	↑	→	↗
	+	"Sustainable" image	→	↗	→	↗
Depreciation (-)	-	Longer lifespan	↗	↑	↗	↑
	-	Longer compliance with regulations	↗	↑	↗	↑

→	Little or no influence on the difference of property value
↗	Significant influence on the difference of property value
↑	Important influence on the difference of property value
/	Not relevant

Source: Bullier et alii. Assessing Green Value, a Key to Investment in Sustainable Buildings. June 2011

4/ Keeping performance and value over time

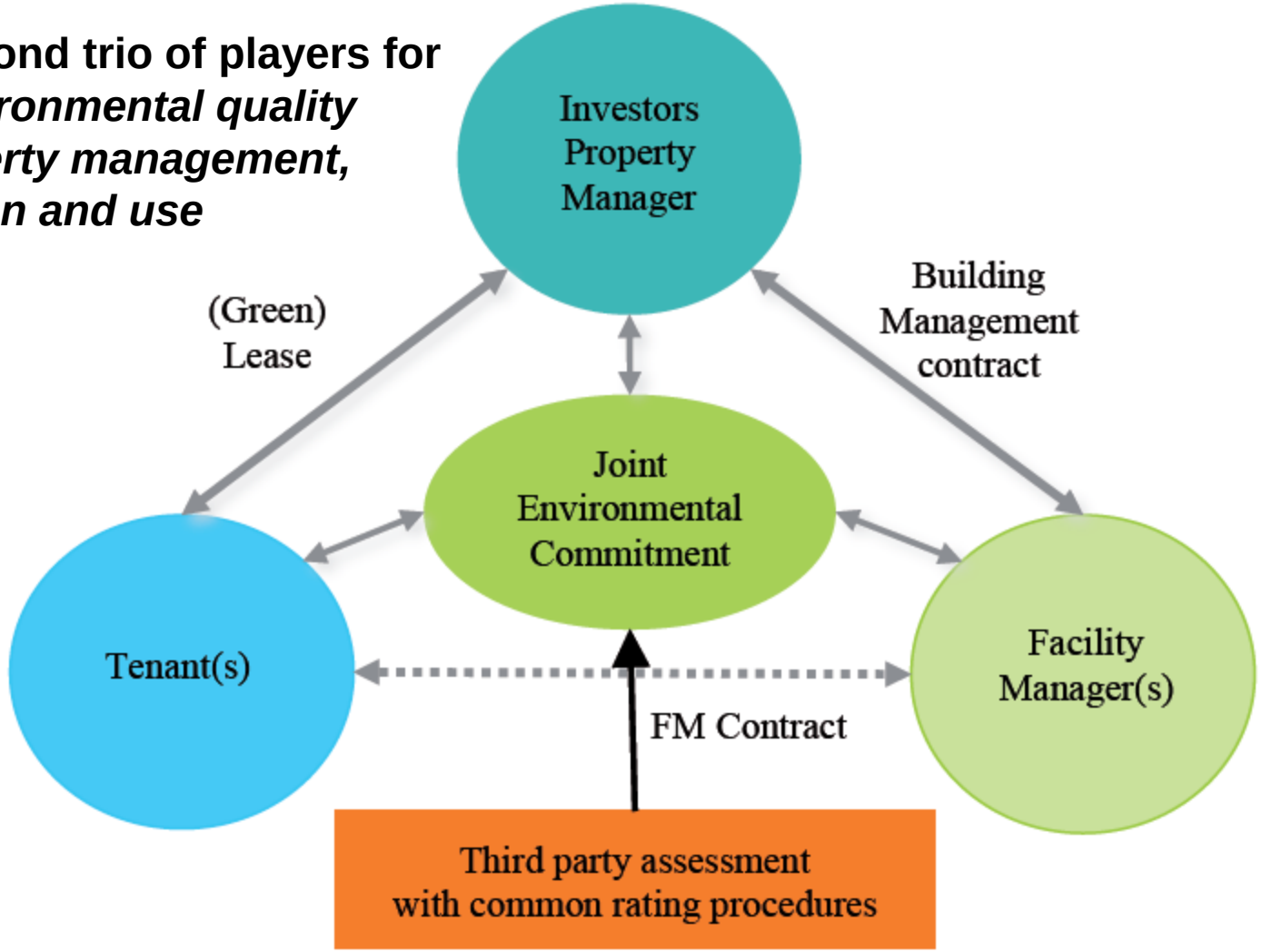
- **New construction or refurbishment: The first trio of players for the *environmental intrinsic quality* of the building**



HQE® certification

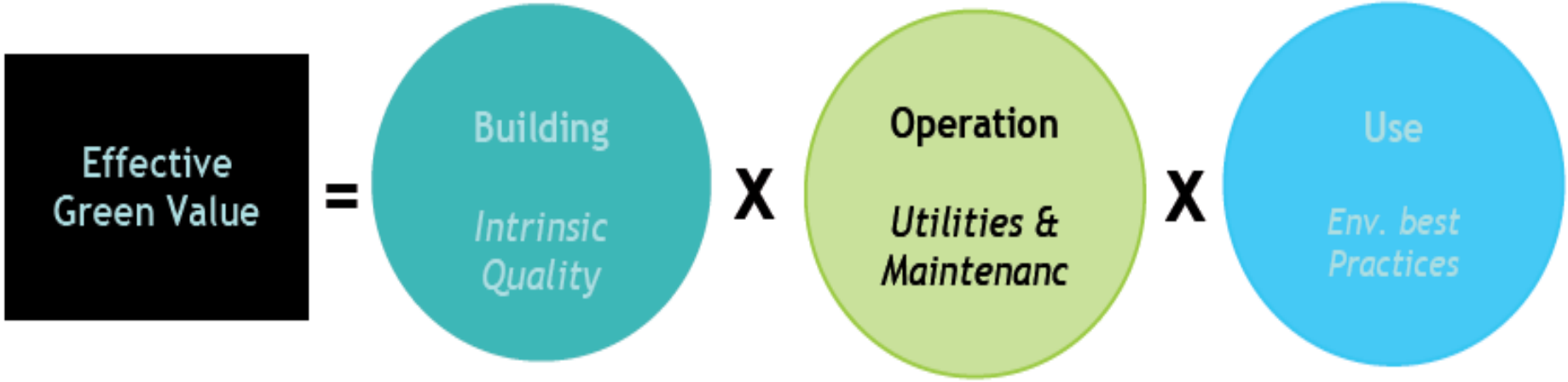
4/ Keeping performance and value over time

The second trio of players for the *environmental quality of property management, operation and use*



4/ Keeping performance and value over time

Performance and Value over time



Thank you

All quoted researches are available at the bilingual blog dedicated to Sustainable Real Estate

www.immobilierdurable.eu

(Cost and Profitability item)