



# Improving sustainability of the construction industry – an UK perspective

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# Outline of this session

- What is sustainability?
- Why should we bother?
- What is green building?
- Is green building the complete solution?

# What is sustainability?



Bruntland Report 1987

UK Department of the Environment, Food and Rural Affairs 2008

‘The goal of sustainable development is to enable all people to satisfy their basic needs and **enjoy a better quality of life,** without compromising the quality of life of future generations’

Sustainability is really a balance.....



Is this the only reason for becoming sustainable ??

I DON'T BELIEVE IN  
GLOBAL WARMING

I DON'T BELIEVE IN

GLOBAL WARMING



# Other reasons to become sustainable



- Reduce adverse environment impacts from the construction, operation and decommission of construction projects.
- Improve the quality of life for ourselves and our next generations.
- Avoid our future generations - 'paying for our past' .

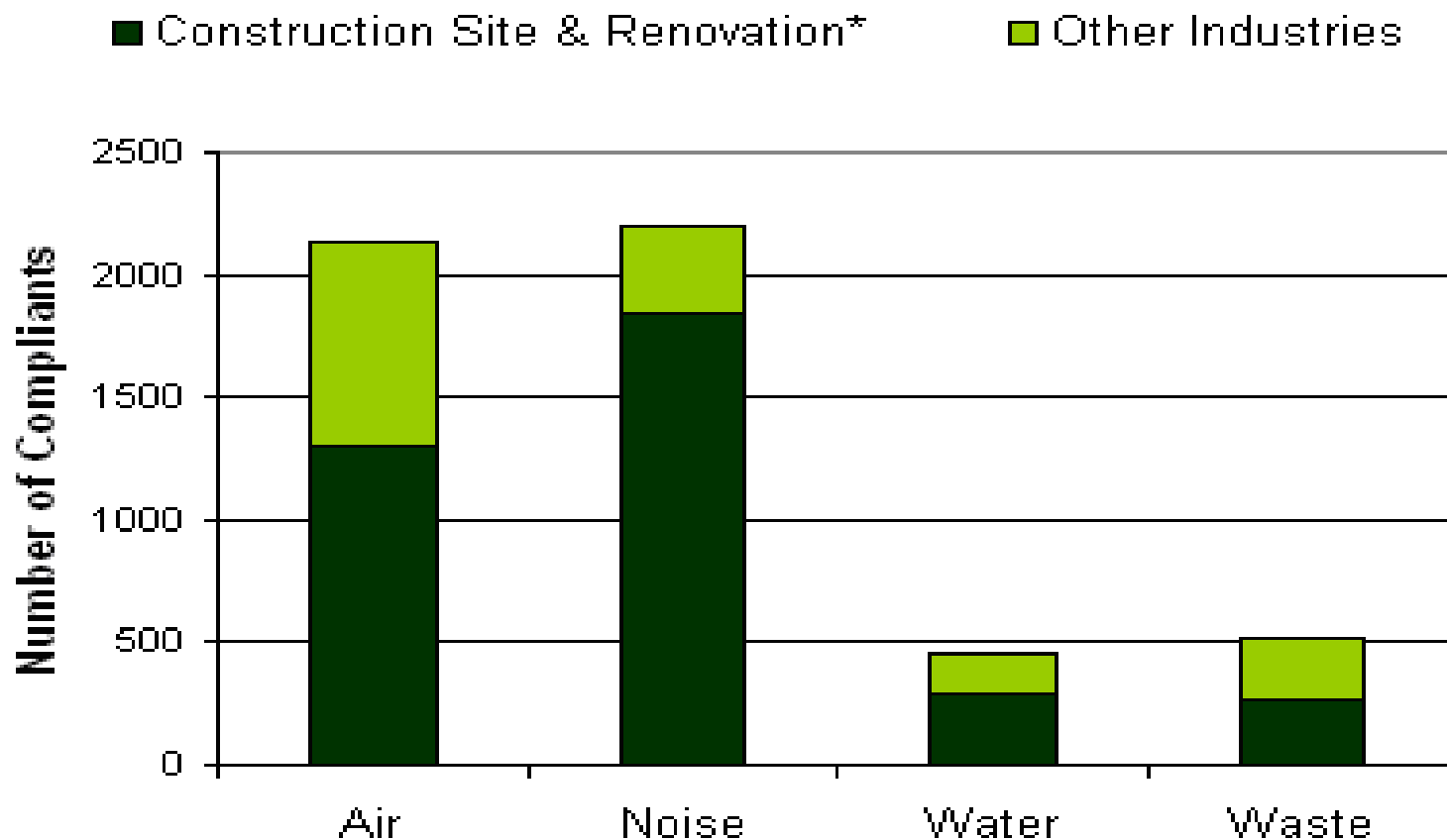
# Other reasons to become sustainable



- Comply with forever more stringent environmental policy and regulations (nationally and internationally).
- Avoid prosecutions – save money and improve PR.
- Improve relationships with share holders and local communities.
- Adopt a more cost effective and socially acceptable to plan and implement projects

# The bad boy industry – construction

## Pollution complaints by different types of trade in HK (2003)





# Construction industry UK and HK - positive contributions



## UK

- contribute 8.5% in 2008 GDP, rising to 10% overall when the entire value chain.
- consists of 300,000 firms and employ over 3 million people in UK (8% of employment).

## HK

- construction sector accounted for 6.5% of GDP.
- December 2007, the sector employed over 50,000 site workers (2.2% of the workforce).
- 2010 Budget HK\$100 millions to support the industry.
- 10 major infrastructure projects in the next 10 years.

Is just turning green means sustainable?



NO!!!!

Don't forget...



Is green building the complete solution?



NO!!!



# What is green building?

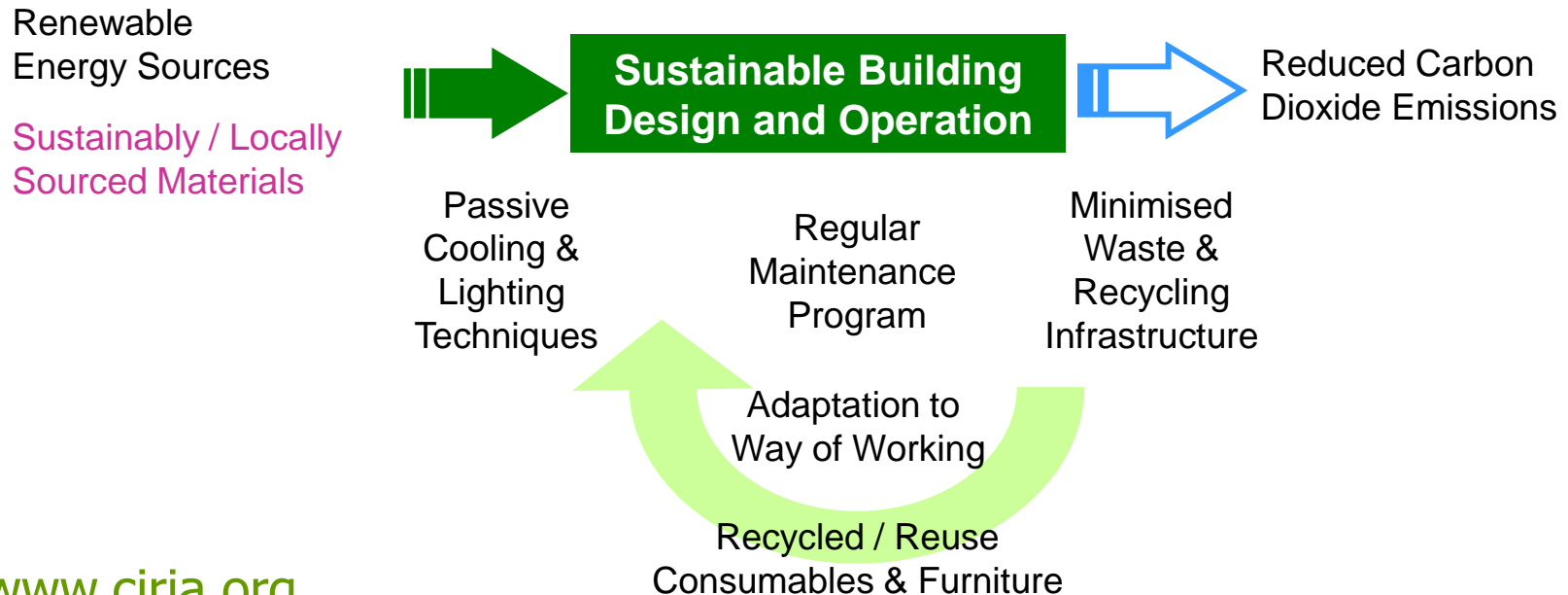


Buildings that are designed, built, renovated, operated and decommissioned in an ecological and resource-efficient manner to:

- protect occupant health
- improve employee productivity
- use energy, water, and other resources more efficiently
- reduce the overall impact to the environment.



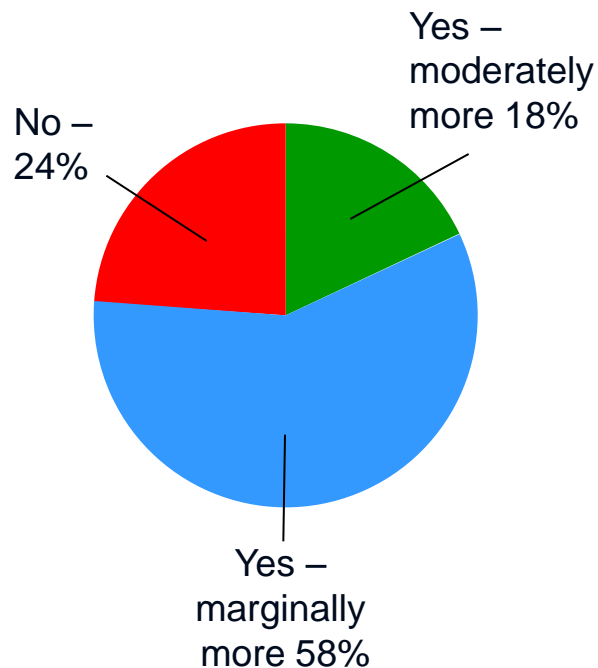
# “Sustainable buildings’ not ‘green buildings’



# Financial implications to become 'green'



Would you pay more to occupy an environmentally friendly building



Source:  
GVA Grimley Survey of Property Trends  
"Green" Issues Summer 06

The financial benefits of going "green" for the property market:

CASE STUDY												
	A	B	C	D	E	F	G	H	I	J	K	AVERAGE
Rent	4	-	1	3	-	3	-	2	-	-	-	2.6
Yield (rate of return)	5	-	1	2	-	5	-	2	2	-	-	2.8
Marketing success	1	-	1	5	-	4	-	-	4	-	-	3.0
Level of absorption of space/units	1	-	-	5	-	4	-	-	4	-	-	3.5
Operating cost	-1	-	-	3	4	1	-	-	3	2	1	1.9
Initial construction costs	-4	-	1	1	1	-2	-	-	-4	-1	-1	-1.1
Ongoing maintenance costs	-4	-	-	3	4	3	-	-	4	-2	-2	0.9
Tenant allowances	1	-	-	-2	-	-1	-	-	-	-	-	0.0
Turnover of space (vacancy)	1	-	-	3	-	1	-	-	4	-	-	2.3
Reduction in internal fit-out costs (churn)	1	-	-	4	-	-4	-	-	-	-	-1	0.0
Level of occupancy	1	-	-	-	1	-	-	-	✓	-	-	1.0
Average score	0.5	-	0.4	2.4	0.9	1.5	-	0.4	1.5	-0.1	-0.3	

Top 4 benefits across 12 case studies in the US and Canada were:

- 1) Rate of take up
- 2) Marketing
- 3) Yield
- 4) Rent

# Beddington Zero Energy Development (BedZED)



- UK's first large-scale 'carbon neutral' (not adding to the atmosphere's carbon dioxide) **community**.
- In Wallington SW London.





# What is so special?



- Zero energy—The project is designed to use only energy from renewable sources generated on site.
- Energy efficient—The houses face south to take advantage of solar gain, are triple glazed, and have high thermal insulation.
- Water efficient—Most rain water falling on the site is collected and reused.

# What is so special?



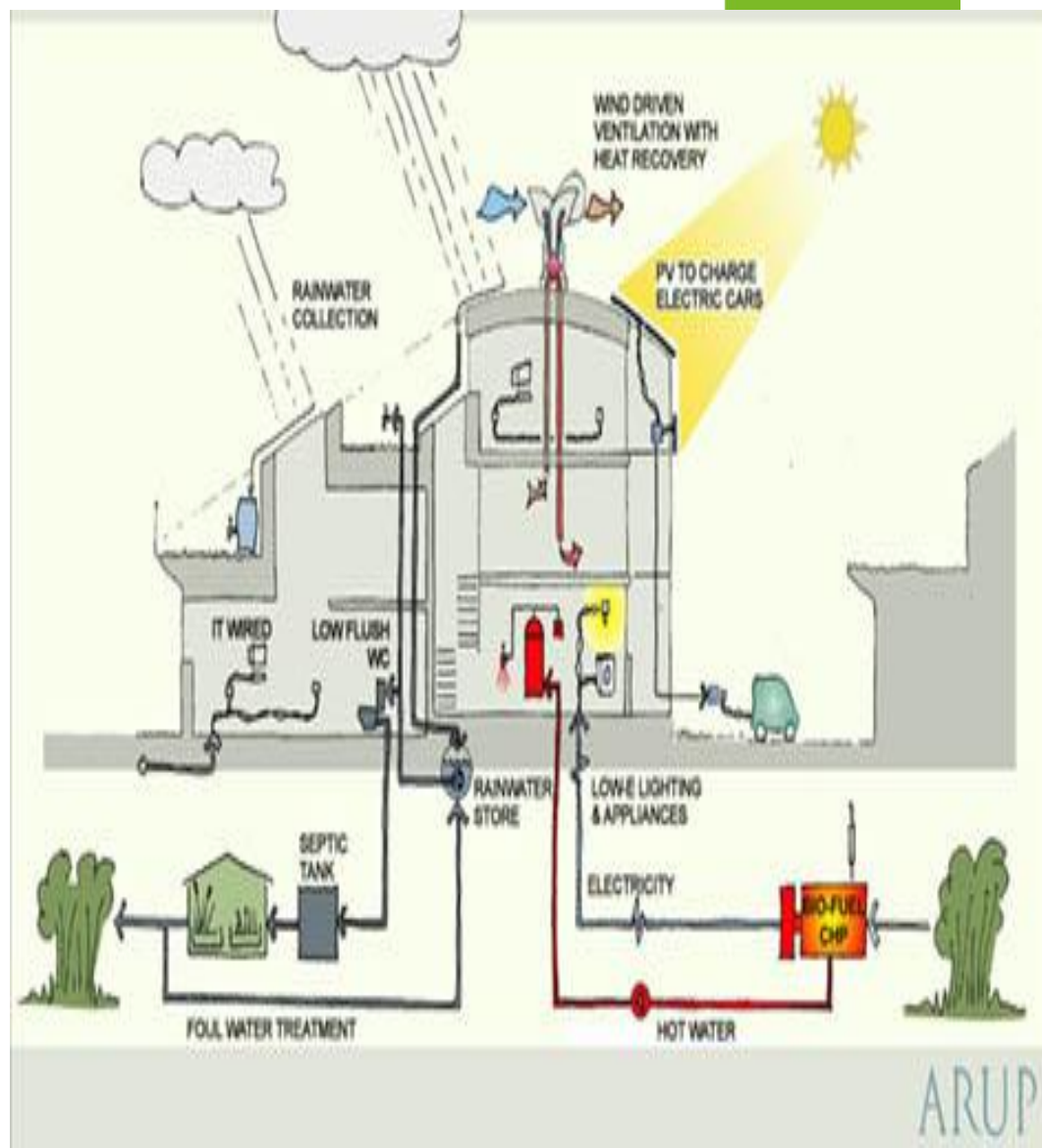
- Low-impact materials—Building materials were selected from renewable or recycled sources within 35 miles of the site.
- Waste recycling—Refuse-collection facilities are designed to support recycling.

## BedZED vs UK averages

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- Space-heating requirements were 88% less.
- Hot-water consumption was 57% less. Mains-water consumption was reduced by 50%,
- The electrical power used, was 25% less than the UK average.

[www.ciria.org](http://www.ciria.org)



# What else is needed to make projects sustainable?



## Innovative clients!!



iPod – you are a loser if you don't have one.

[www.ciria.org](http://www.ciria.org)

# Clients need to be brave!!



Photo: Todor



# Clients need good suppliers!!

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# This is nothing new??



- Inexpensive 平
- Pretty 靚
- Good 正
- Quickly 快



# Thank you for listening



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[www.ciria.org](http://www.ciria.org)

Some useful web pages

<http://www.bis.gov.uk/policies/business-sectors/construction/sustainable-construction>

<http://www.berr.gov.uk/files/file52843.pdf>

[www.ciria.org](http://www.ciria.org)