

Examining the Impact on Projects of ECOstruct 检验ECOstruct对项目的影响

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Measure of Sustainability

可持续性的衡量

- 1990 – UK Government pioneered with BREEAM the Building Research Establishment's Environmental Assessment Method which evaluates the environmental performance of a broad range of new and existing buildings

1990年-英国政府率先使用建立研究机构环境评估方法，这是个评估新建已建的建筑物环境方面表现的方法。

- Historically, sustainability encouraged innovation in design and construction.

历史上，可持续性鼓舞着在设计和建造上的创新。

- Concerns about costs.

对成本的考虑

Coverage by different assessment techniques

	BREEAM (Offices)	LEED 2.2	GBC 2002	ISO 21931 (Mandatory)	ISO 21931 (M + extra options)	CSH (Minimum)	CSH (Extra)	SEEDA	Heriot Watt Framework	Kingston Sust. Property Tool	EVA Tool
SITE, ECOLOGY, LAND USE & TRANSPORT											
Site											
Ecology											
Land Use											
Transport											
Impact on local Environment											
BUILDING CHARACTERISTICS											
Adaptability							*				
Innovation											
ENERGY, MATERIALS, UTILITIES											
Energy											
Materials & Resources											
Water								**			
WASTE AND POLLUTION											
Pollution								**			
Waste											
MANAGEMENT											
Management											
Quite broad sometimes includes surface water run-off, sometimes commissioning, construction waste											
SOCIAL											
Health and Well Being								**			
Customer satisfaction											
Community Development											
ECONOMICS & BUSINESS											
Value Added											
Return on Investment											
Brand Strength											

NOTES

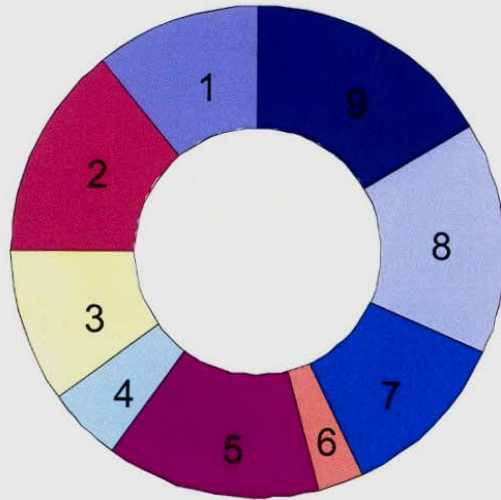
 Issue covered under another heading

* = Life Time Homes + Security by Design

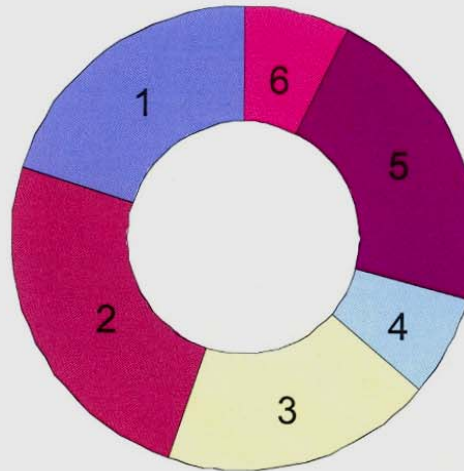
** Through BREEAM

Issue count by topic heading

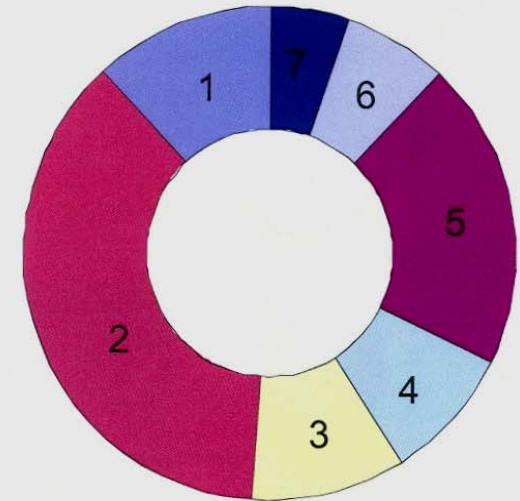
BREEAM



LEED



GREEN GLOBES



KEY to Diagrams

BREEAM

- 1 TRANSPORT
- 2 ENERGY
- 3 MATERIALS
- 4 WATER
- 5 HEALTH AND WELL BEING
- 6 LAND USE
- 7 ECOLOGY
- 8 POLLUTION
- 9 MANAGEMENT

LEED

- 1 SUSTAINABLE SITES
- 2 ENERGY & ATMOSPHERE
- 3 MATERIALS & RESOURCES
- 4 WATER EFFICIENCY
- 5 INDOOR ENVIRONMENTAL QUALITY
- 6 INNOVATION AND DESIGN PROCESS

GREEN GLOBES

- 1 SITE
- 2 ENERGY
- 3 RESOURCES
- 4 WATER
- 5 INDOOR ENVIRONMENT
- 6 EFFLUENTS AND OTHER IMPACTS
- 7 PROJECT MANAGEMENT

Comparative Assessment 相对的评估

		Good Practice	Best Practice	Innovative	Pioneering	
		良好的实践	优秀的实践	创新的	超前的	
Choice of Site		[Green bar: 1/4, Hatched bar: 3/4]				
对场地的选择		[Green bar: 1/4, Hatched bar: 3/4]				
Use of Site		[Green bar: 5/8, Hatched bar: 3/8]				
对场地的利用		[Green bar: 5/8, Hatched bar: 3/8]				
Building Form		[Green bar: 2/4, Hatched bar: 2/4]				
建筑的形式		[Green bar: 2/4, Hatched bar: 2/4]				
Use of Materials		[Green bar: 6/8, Hatched bar: 2/8]				
建筑用料		[Green bar: 6/8, Hatched bar: 2/8]				
Functionality		[Green bar: 6/8, Hatched bar: 2/8]				
功能		[Green bar: 6/8, Hatched bar: 2/8]				
Indoor Environment		[Green bar: 1/4, Hatched bar: 3/4]				
内部-环境		[Green bar: 1/4, Hatched bar: 3/4]				
Energy, CO2 & utilities		[Green bar: 7/8, Hatched bar: 1/8]				
能源, 二氧化碳, 水电煤气		[Green bar: 7/8, Hatched bar: 1/8]				
Construction & Handover		[Green bar: 4/8, Hatched bar: 4/8]				
营建和竣工		[Green bar: 4/8, Hatched bar: 4/8]				
Performance in Use		[Green bar: 3/4, Hatched bar: 1/4]				
使用的效率		[Green bar: 3/4, Hatched bar: 1/4]				

Outcomes

结果

- Greenhouse gas (GHG) reduction is the objective.
- 温室气体的减排是目标
- UK Building Regulations demand a 25 % reduction in GHG's emissions. This is typically measured as a 'carbon reduction'

英国建筑行业规则规定温室气体25%的减排要求。

- In addition, some countries are beginning to implement a 10-20% renewable energy obligation.

此外，一些国家已经开始尽10-20%使用可再生能源的法定义务。

- A low carbon masterplan is required upon which to base design.

在设计中要求有低碳的总体规划

The Fossil Fuel Energy Issue

传统能源的课题

- Crude oil price +160% more expensive in UK since 2003
原油价格+160%，2003年以后在英国价格更高
- Chinese crude oil imports were +30% higher Sept '06 than Sept '05. Oil supply is stretched on the demand side
- 中国原油进口06年9月价格比05年9月价格高30%。需求方面，原油供应紧张
- Increases in energy demands are driven by urbanisation of the population. In China, for example, 19m are moving every year from the countryside (where they use little energy) to the cities (where they use a lot of energy)
- 城市化也加大了能源的需求。例如，在中国，1千9百万人口从乡村（能源耗用很少）迁移到城市（能源耗用很高）

Innovation

创新

- Aerospace Industry achieves more than 60% reductions in fuel burn and emissions and 75% reduction in noise since the early 1970's (Ron Van Manen – VP Civil Aeronautics, Qinetiq)
航空行业减低了60%的燃料燃烧和排放并且降低了75%的噪音
- “Green Taxes are set to rise to help pay for tax cuts from businesses and families”. £21bn has been indicated
环保税收的建立也帮助减低对非污染的商业和家庭的税收。现已达到210亿英镑

Innovation

- Institutional investors are increasingly taking climate change more seriously. In Oct '06 investors with assets of £850bn pledged to use their collective financial strength to help reduce greenhouse gas emissions
机构投资者对环境的变化越来越认真地对待。06年10月份，投资者汇集了8500亿英镑来帮助降低二氧化碳的排放。
- Manufacturers and EU to invest £1.1bn in joint research programme to find ways to reduce the impact of aviation on the environment. “Clean Sky Technology Initiative”
欧盟和一些制造业投资11亿英镑进行共同调研项目以找到解决航空对环境的影响。“清洁天空技术的开始”

Actual vs. Predicted

事实VS预计

In theory, theory and practice
are the same; in practice
they aren't

理论上，理论和现实是一致
的，事实上，他们是不同的

- Santa Fe Institute

三塔非机构

Actual vs. Predicted

事实VS预计

- BRE say : 60% of new houses and 30% of new commercial buildings fail to meet existing standards of air tightness
BRE声称：60%的新房屋和30%的新商业楼没有达到现有空气密闭标准
- In another BRE study of 100 new houses, 50% failed to meet one or other parts of the existing standards (eg. Loft insulation or boiler controls)
BRE的另一项对100座新房子的调查中，50%没有达到现有标准准则。（阁楼的空气流通和锅炉控制）

Extra Costs

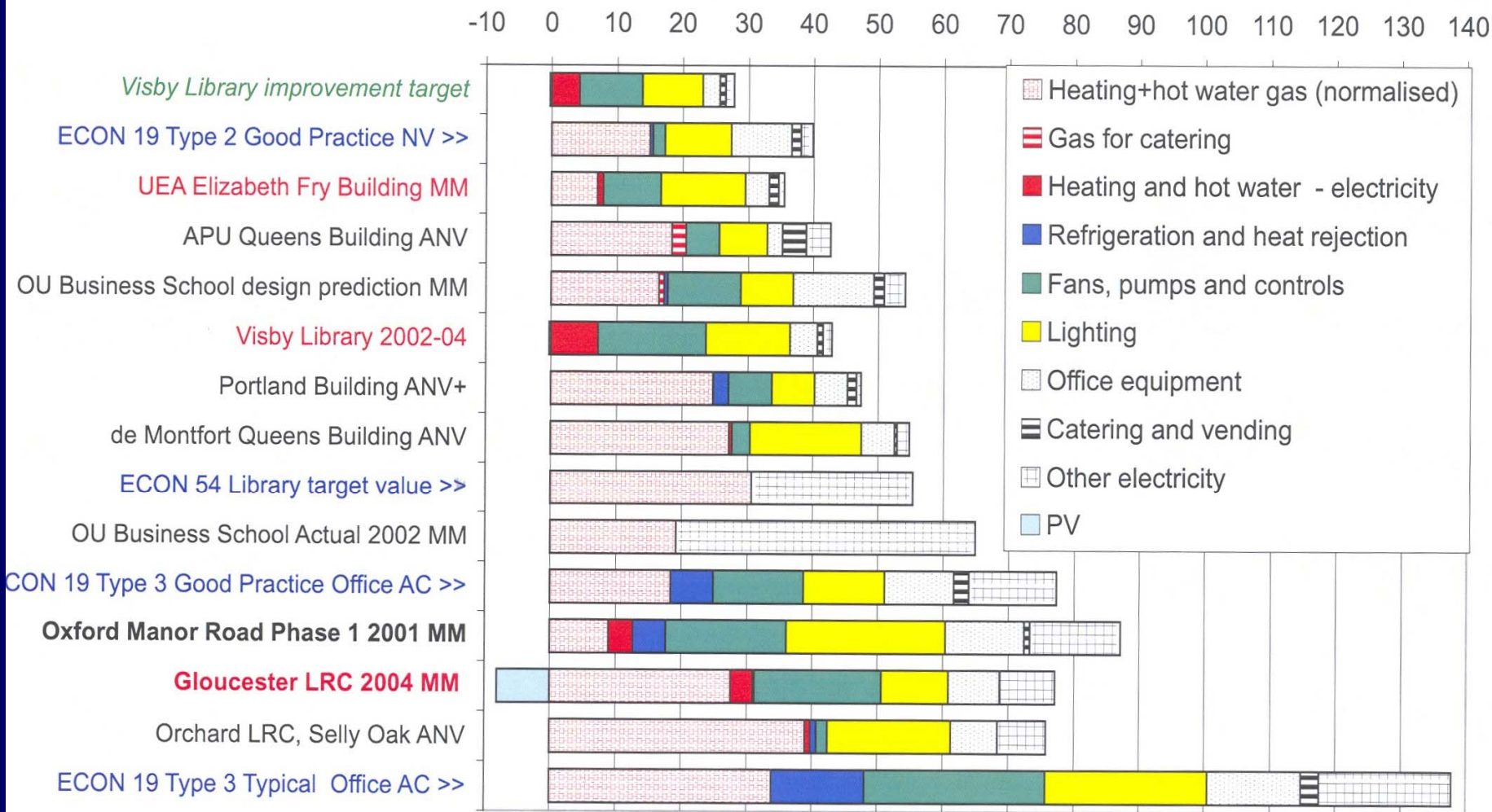
额外的成本

- Davis Langdon (Lisa Matthiessen and Peter Morris) research published in 2004 studied LEED Rated buildings

威宁谢(丽萨·马蒂森和彼得·摩瑞斯)的研究发表在2004 LEED的建筑排名调查中

- Secret is an integrated process where low carbon masterplanning is the initial activity on the project
项目的低碳计划是整合过程中的第一步
- Homes can achieve 50% reduction in carbon emissions on this basis
家庭可以减低50%的温室气体排放

Annual CO₂ emissions from university buildings (kg/m² Treated Floor Area) at UK CO₂ factors of 0.19 for gas and 0.46 for electricity



Shanghai's & China's role in rising to the challenge of climate change

中国在迎接气候变化挑战中的角色越来越重要

An opportunity to show world leadership

一个向世界展示中国的领导地位的机会

Energy efficient design

能源效率设计

Energy efficient build

能源效率建设

Energy efficient management and operation

能源效率的管理和运用

Renewable sources and development

可再生能源以及发展

Integrated low carbon planning

综合的低碳规划

Thank you!谢谢!
