

Zero Carbon Taskforce

Robin Nicholson CBE

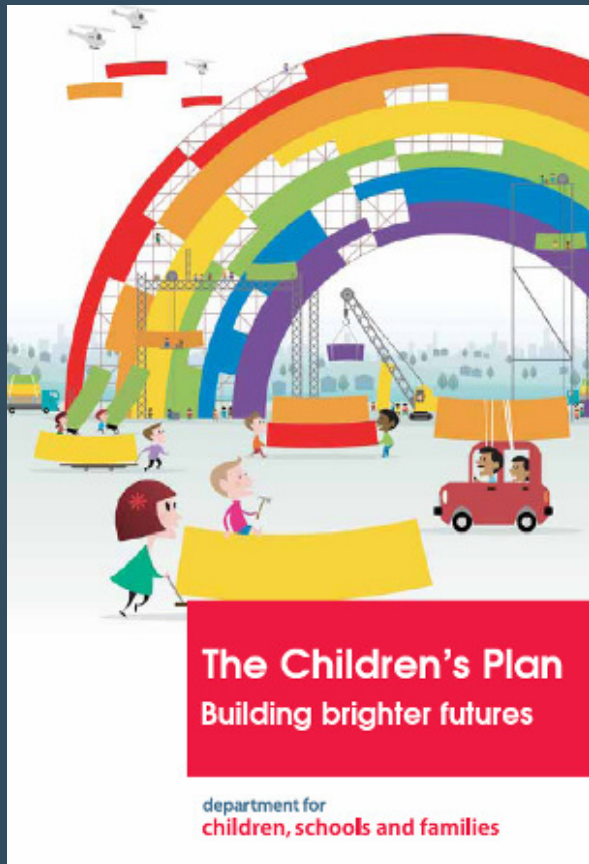
Edward Cullinan Architects

This presentation represents the views of Robin Nicholson and do not necessarily represent the views of the DCSF.



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The Children's Plan



DCSF has...

- “set an ambition for all new school buildings to be zero carbon by 2016.”
- “We are appointing a taskforce to advise on how to achieve zero carbon schools, whether the timescale is realistic and how to reduce carbon emissions in the intervening period”

(December 2007)



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The Taskforce:

- Established April 2008
- Chaired by Robin Nicholson CBE
- Expert membership drawn from various sectors:
 - Government officials – DCSF, Pfs, CLG, SDC, CABE, BECTA, LEA
 - Designers – architects, engineers
 - Contractors – Willmott Dixon
 - Researchers – Usable Buildings Trust, BRE, Buro Happold



The Taskforce:

“This will be the most ambitious design and building initiative the school system has ever faced. This expert task force drawn from the construction, sustainability and education sectors will help us overcome the technical, design and construction challenges over the next eight years. “

Ed Balls,
Secretary of State
Dept for Children Schools and Families



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We aim to:

- Develop a roadmap to zero carbon for all schools by 2016 with clear targets and milestones along the way
- Recommend the best way of implementing this through BSF, Academies and non-BSF schools
- Identify exemplary developments and explore their potential for roll out
- Explore the educational impact of zero carbon design
- Examine carbon emissions from existing schools and scope potential reductions through refurbishment
- Identify where zero carbon cannot be achieved



We are not going to consider :

- Carbon emissions beyond those attributable to the energy used in the buildings
- Broader sustainable schools issues, not related to reducing carbon emissions
- The potential for offsetting or links with schools overseas



Timetable of activities (2008):

Apr 08	1 st mtg	Task Force Established			
May 08		Key issues identified			
Jun 08	2 nd mtg				
Jul 08		Young persons' consultation	Call for Evidence		
Aug 08					
Sep 08	3 rd mtg			Task Force research into Issues / sub-Issues	Identify exemplar projects
Oct 08	4 th mtg				
Nov 08					
Dec 08	5 th mtg				
Jan 09		Publish Interim Report			



DCSF Capital Programme

- Building Schools for the Future (BSF) is the biggest ever school buildings investment programme – it aims to rebuild or renew nearly every secondary school in England over 15 annual ‘waves’ of investment.
- The Academies programme targets secondary schools in areas of inadequate educational attainment and opportunity. The Prime Minister has set a target of 400 Academies and more than 200 Academies were open or planned in 2008.
- The Primary Capital Programme (PCP) aims to renew and refurbish at least 50% of all primary schools in the next 14 years



DCSF Capital Programme - Sustainability

- All major new-build and refurbishment projects should be subject to a BREEAM assessment and we expect these to achieve at least a very good rating (Targeted Capital Fund letter, 23 Feb 2005)
- We want all newly built schools to reduce carbon emissions by at least 60 per cent (The Children's Plan, December 2007)



It has taken a while to get this far...



St George's
County
Secondary
School
Wallasey
1961



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but



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and



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and what does the future look like?



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What are some of the barriers?

- 'Rising' expectation for temperature variation
- Default to on – 'thin clients'?
- Poor and difficult to use lighting and other controls
- It's someone else's problem – globally and industrially
- Little consumer feedback
- No performance measurement – LSC + EPCs
- Poor design – low skill levels all round
- Poor construction – air tightness etc
- Caretaking not facility management

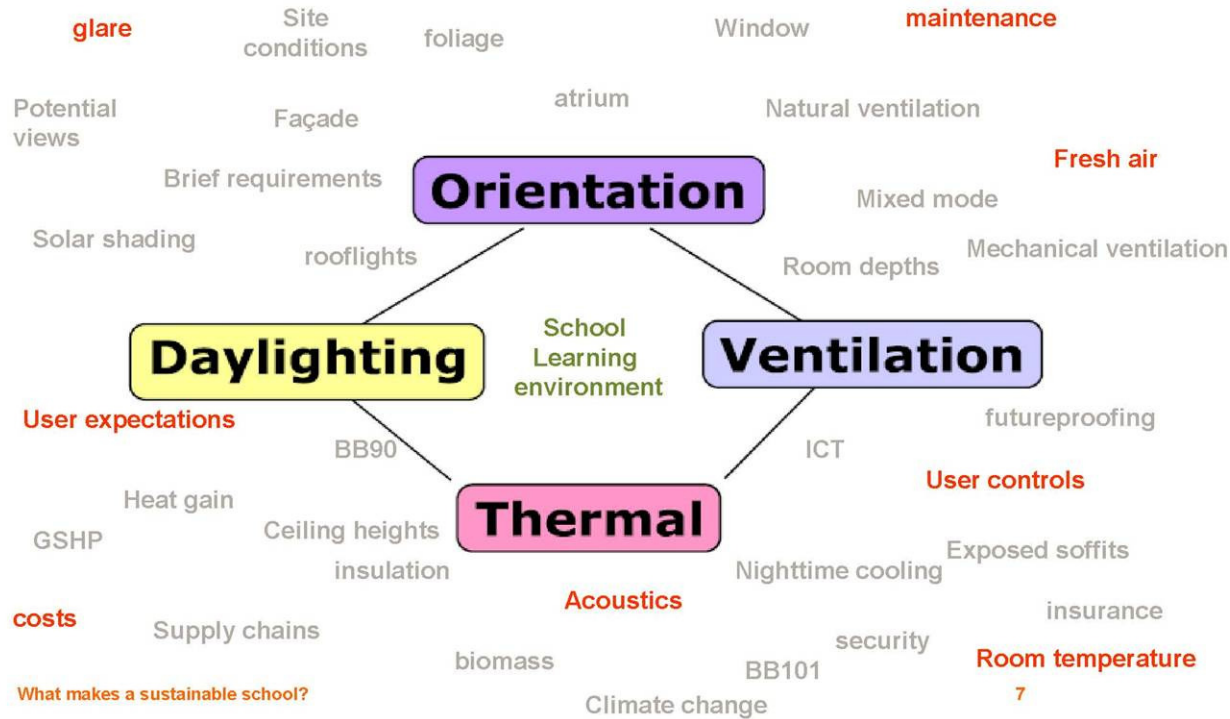
So

- **Keep it simple, do it well and only after that... be clever**



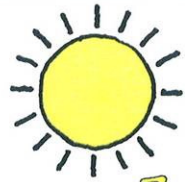


Aspects of Environmental Performance

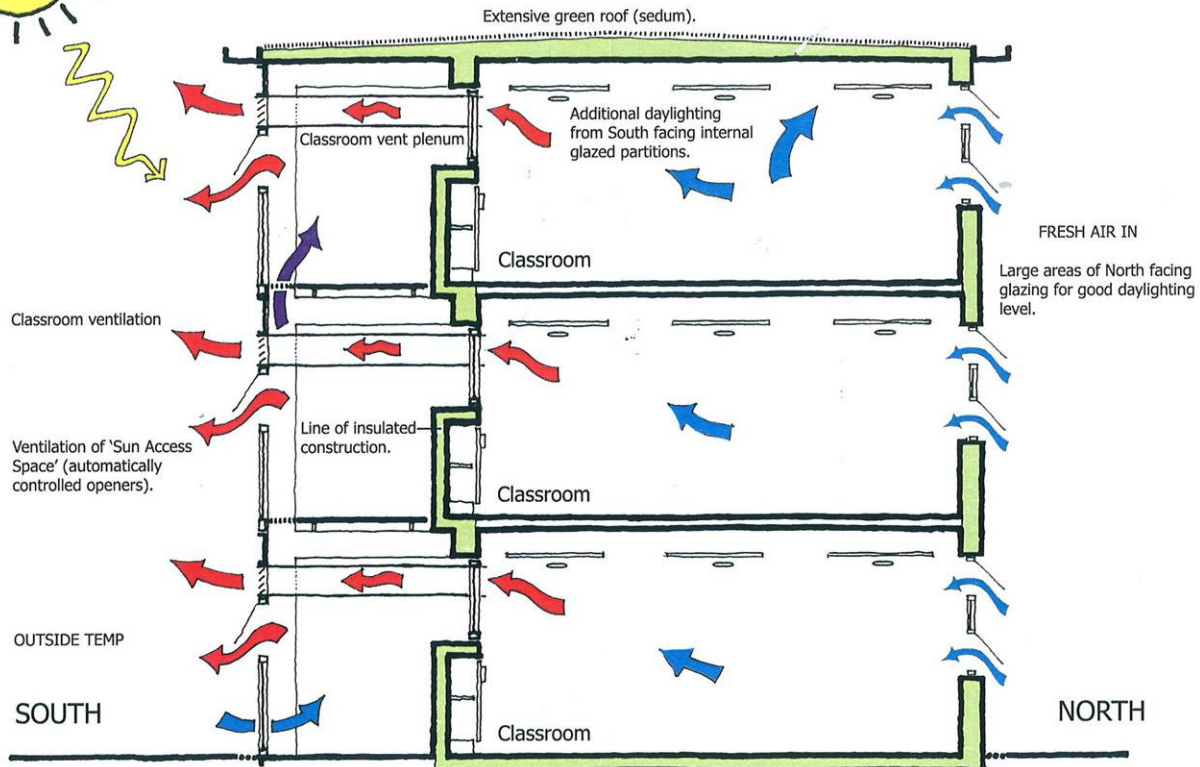


(based on CABE's Design Review of 154 designs for 53 BSF schools)





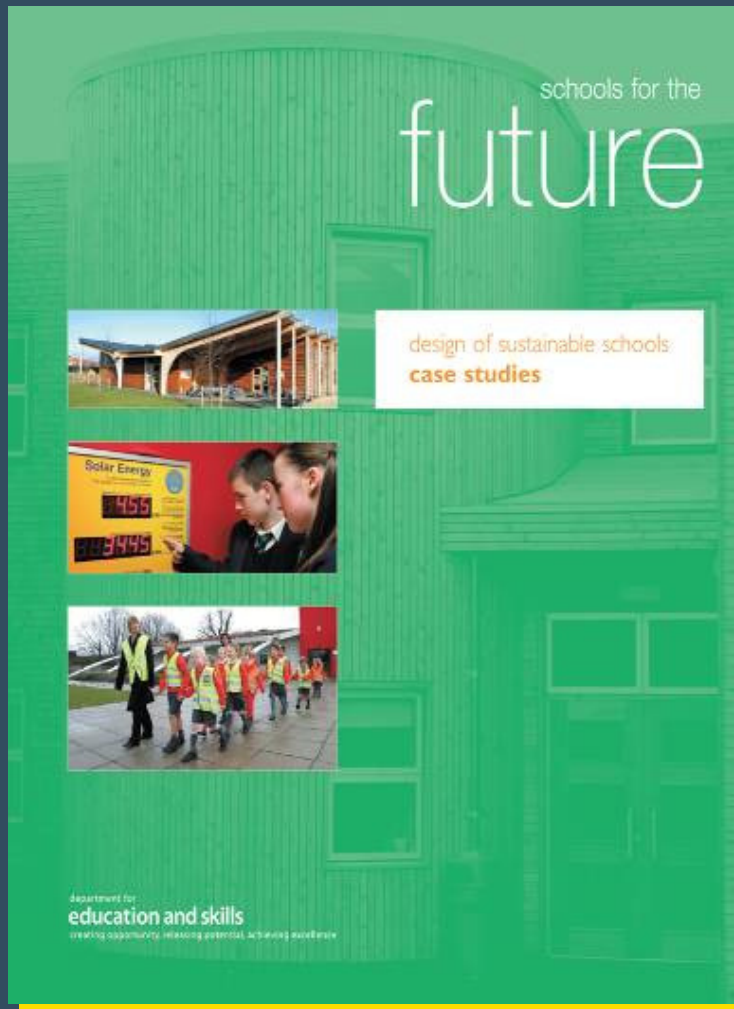
SUMMER - DAY



Bideford
College
Winner of
2008 Most
Sustainable
School Design



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- 12 case studies of new and existing primary and secondary schools, and one academy

Occupant satisfaction surveys of five schools, using the Building Use Studies methodology

- Measured energy consumption against DFES benchmarks and design targets (where available)



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Facts & Figures:

- ~23,000 maintained schools in England (with 7.5 million students in primary or secondary education)
- total school floor area ~60,000,000m² with a replacement value of £130 billion (land area =54,000Ha)
- annual spend = £1.5 billion on maintenance/cleaning, £420 million on energy (2006/07)
- Age/type profile of school buildings:

Pre 1919	13%
Inter-war	9%
1945 - 1966	26%
1967 - 1976	23%
Post 1976	24%
Temporary	5%

