



# SUSTAINABILITY IS NOT JUST A CHECKLIST

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DELIVERING SCHOOL SPACES - 29 JUNE 2016





# CHARTERED INSTITUTION OF BUILDING SERVICES ENGINEERS (CIBSE)



**It is the professional body that exists to:**

‘support the Science, Art and Practice of building services engineering, by providing our members and the public with first class information and education services and promoting the spirit of fellowship which guides our work.’

Safe

Design standardisation

Comfortable

Reduced cost

Stimulating

Shortened procurement

Flexible

Demanding carbon/energy targets





# CIBSE TM57: INTEGRATED SCHOOL DESIGN

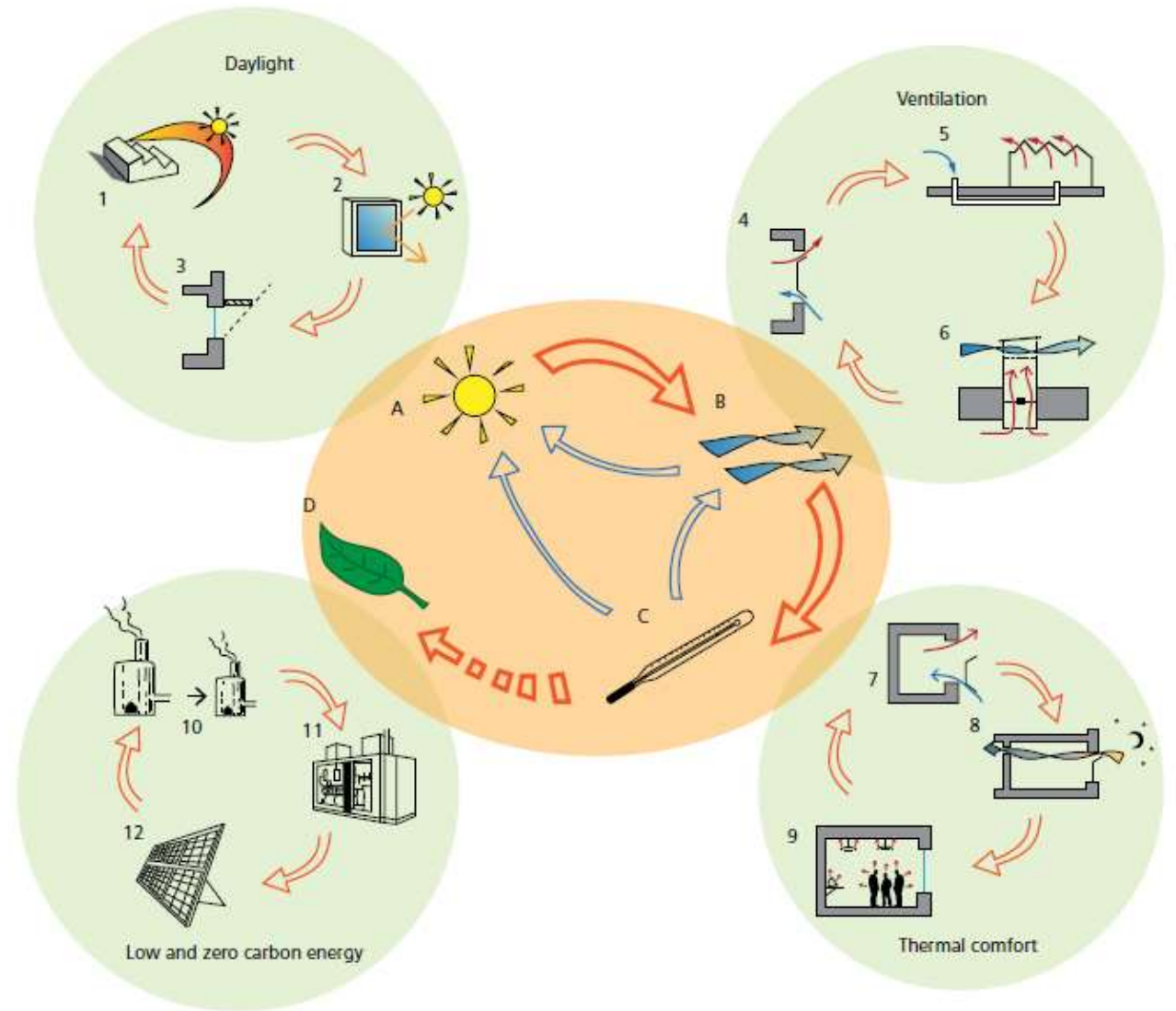
- Focus on environmental parameters of successful learning spaces.
- Identify conflict between individual parameters.
- Performance in use, rather than design intention is the best test of success.

Integrated school design



# INTEGRATED DESIGN PROCESS

- Acoustics
- Daylight
- Ventilation
- Thermal comfort
- Low and zero carbon energy



Key

A: Daylight

B: Ventilation

C: Thermal comfort

D: Low and zero carbon energy

1. Size/orientation/position  
2. Type of glazing  
3. Solar shading

4. Simple natural ventilation  
5. Complex natural ventilation  
6. Mechanical (assisted) ventilation

7. Thermal mass  
8. Night cooling  
9. Base gains

10. Energy efficiency  
11. Low carbon technology  
12. Renewables

Figure 3 The design process for new school buildings, showing how the individual aspects are interrelated

# INTERLOCKING BRIEFS

- Overarching brief
- Educational brief
- Technical brief
- Operational brief
- Community brief





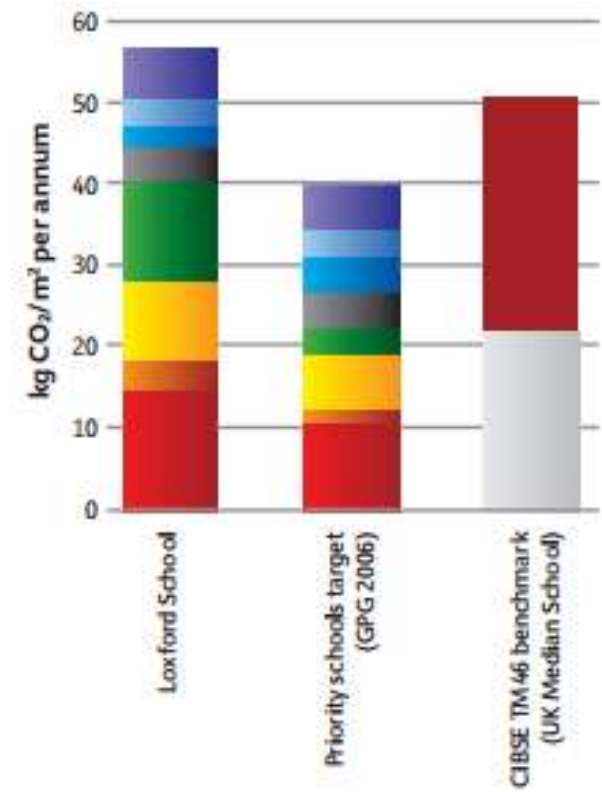
PEOPLE





# PERFORMANCE IN USE

- Training
- Documentation
- Building optimisation and control
- Metering
- Monitoring and targeting



CO<sub>2</sub> conversions factors:  
- gas: 0.19 kgCO<sub>2</sub>/kWh  
- electricity: 0.55 kgCO<sub>2</sub>/kWh

Total energy performance of Loxford School in 2011 compared to benchmarks; the operation targets set out for the Priority School Building Programme are based on post-occupancy evaluations carried out on post-2006 schools so could be used as good-practice benchmarks for Loxford School (EFA, 2012)

# CREATIVITY





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## SCHOOL DESIGN GROUP

# ABOUT THE SCHOOL DESIGN GROUP

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## ABOUT THE SCHOOL DESIGN GROUP

The Group aims to foster knowledge exchange and partnership between stakeholders working on sustainable school design, construction and maintenance.

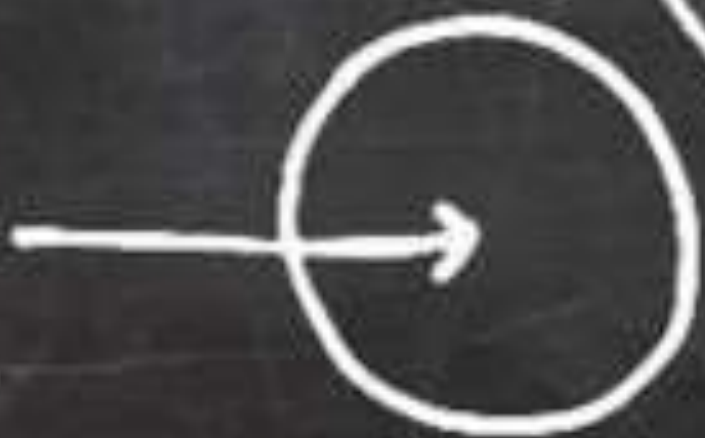
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Your  
comfort  
zone



Where the  
magic happens