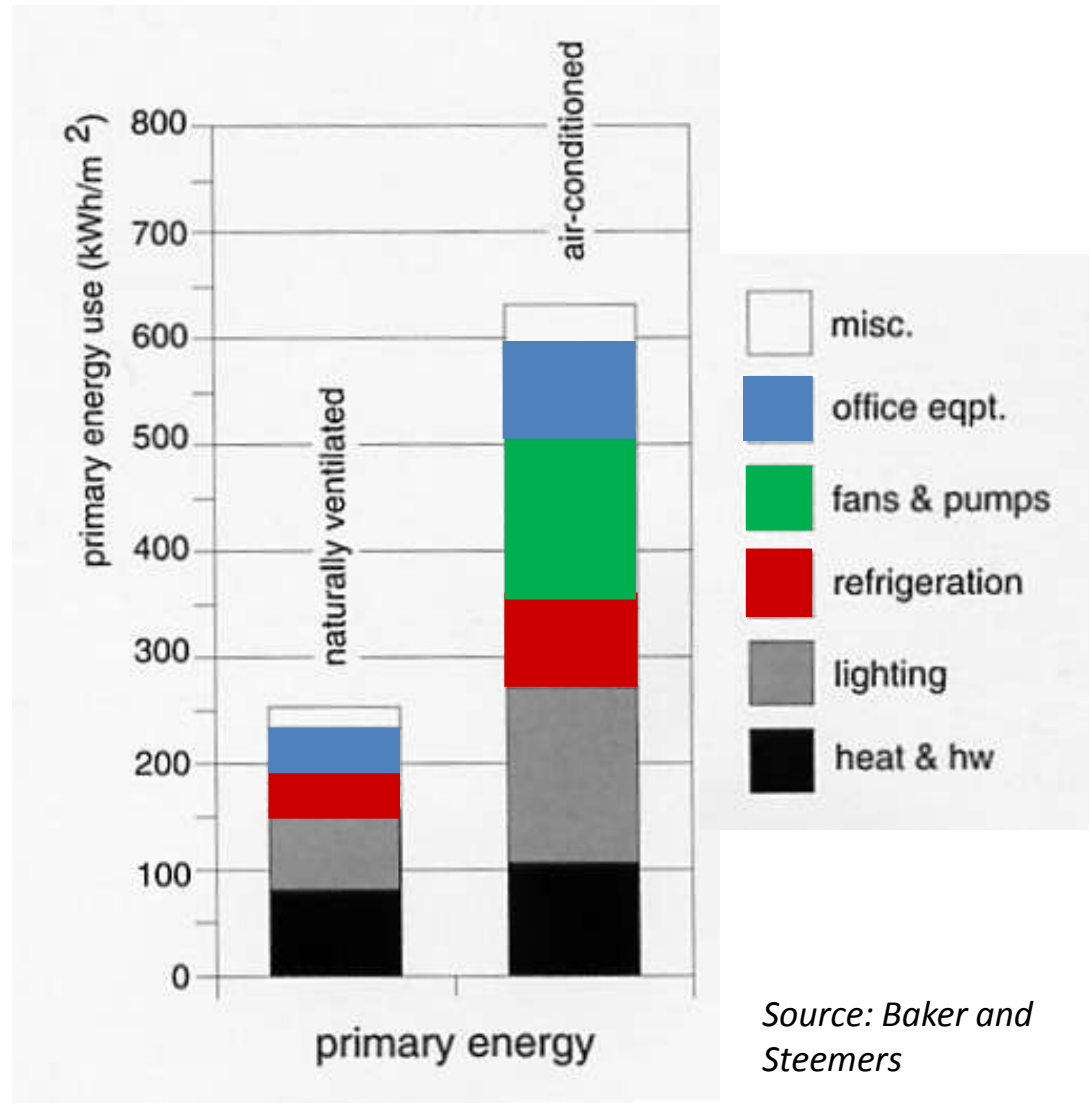
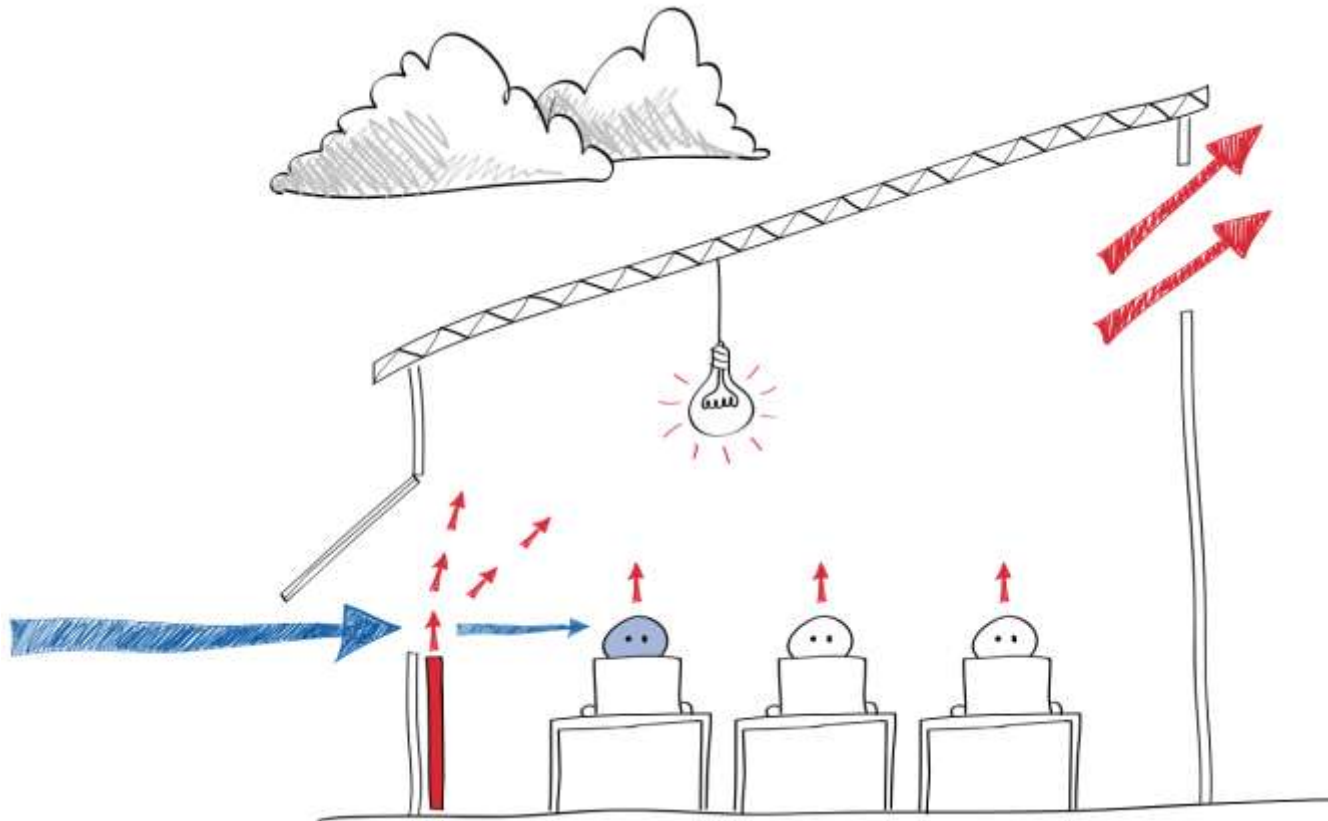




# Energy Use In Buildings

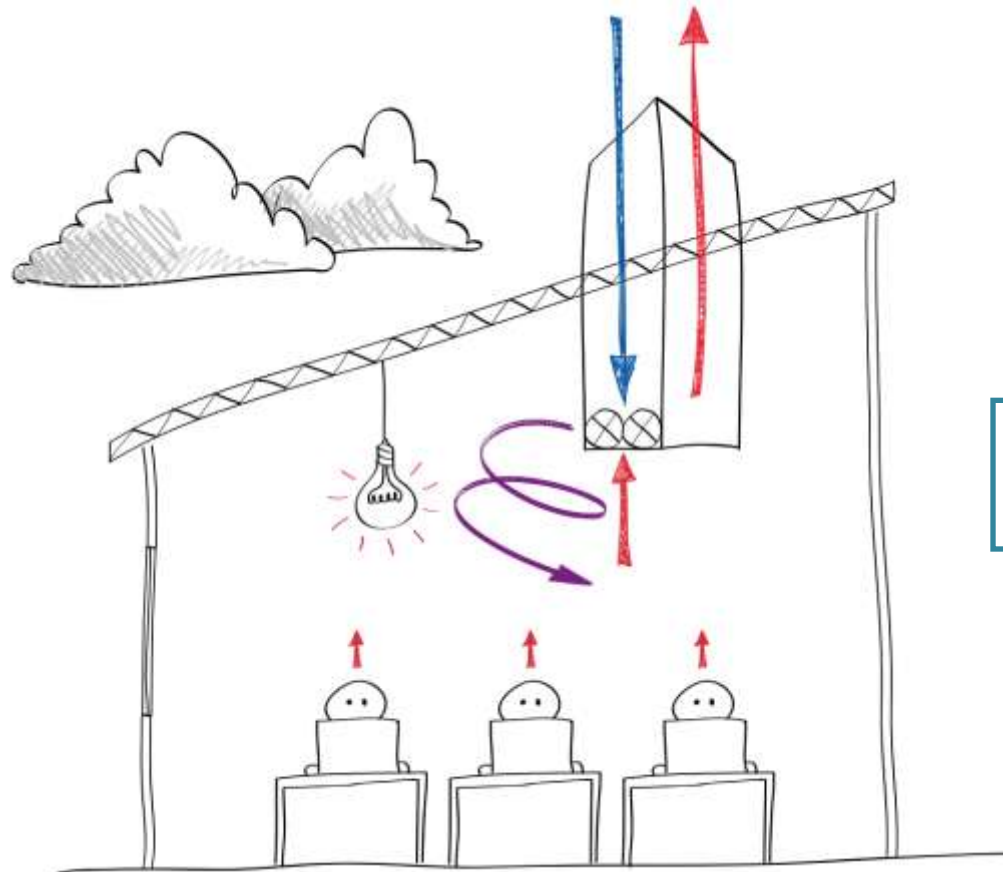


# Conventional Natural Ventilation



Winter – Upwards displacement ventilation

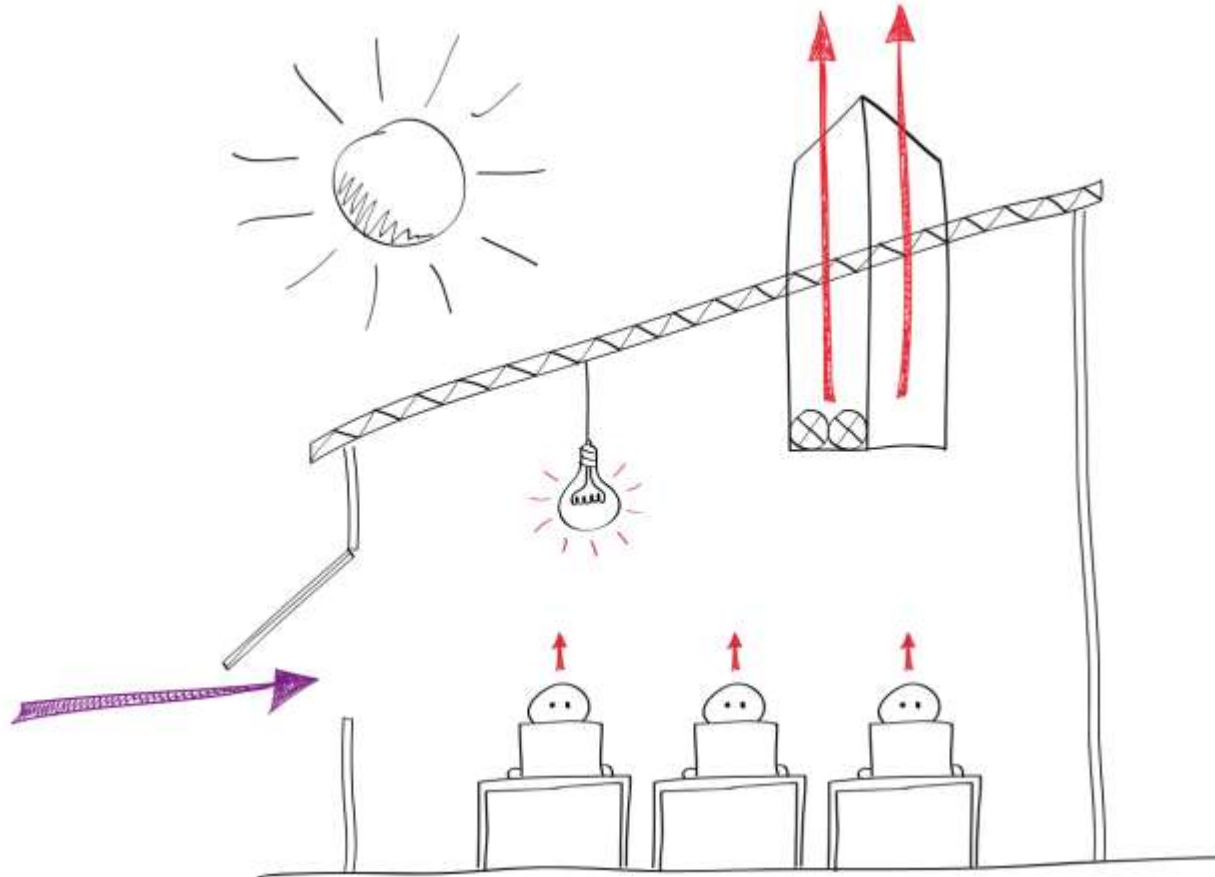
# e-stack System: Winter



University of  
Cambridge patent

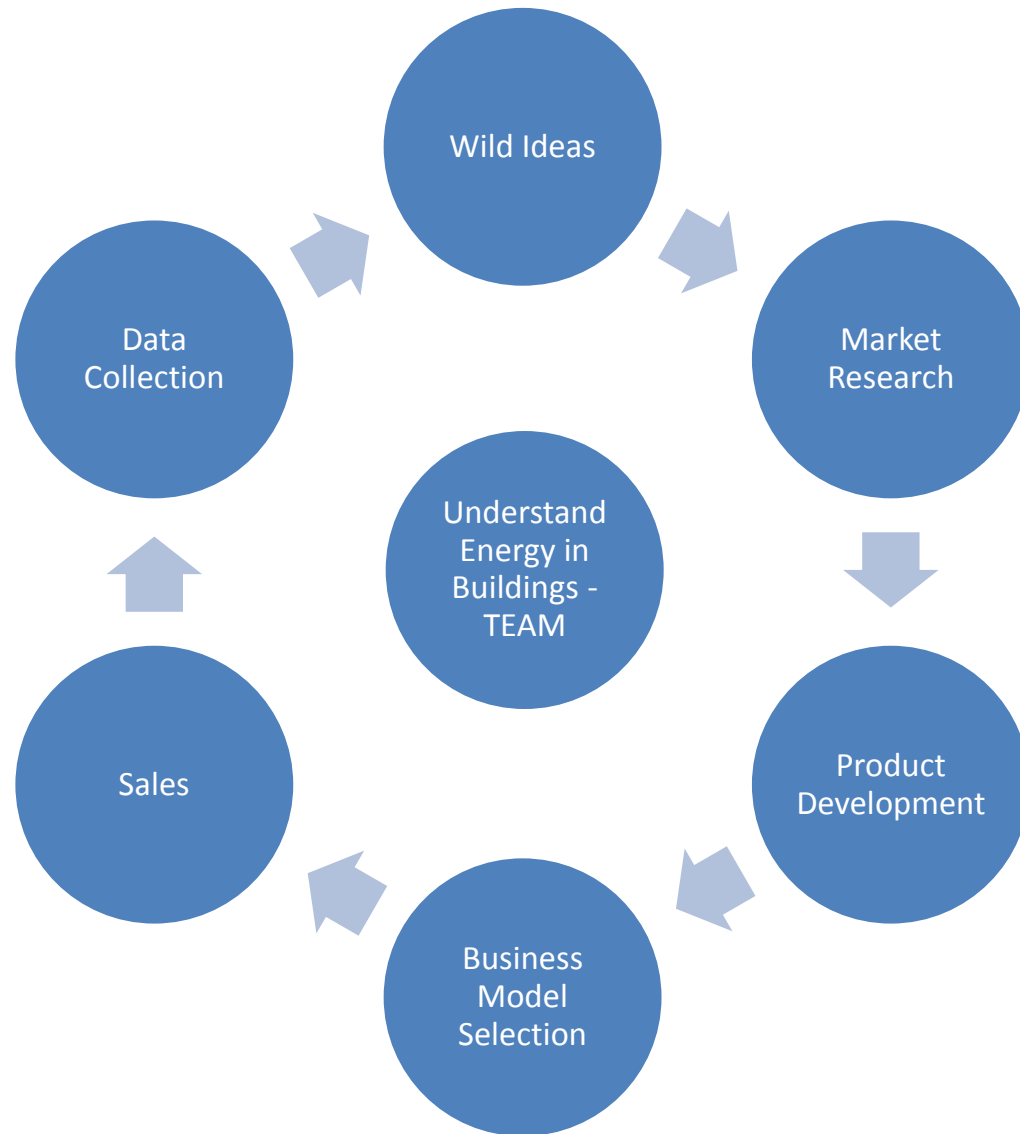
Winter – Mixing ventilation

# e-stack System: Summer



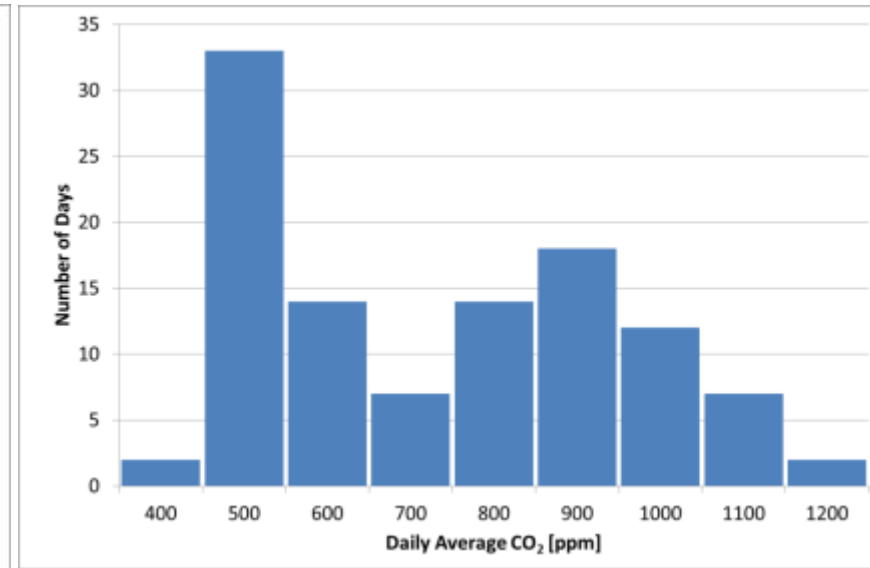
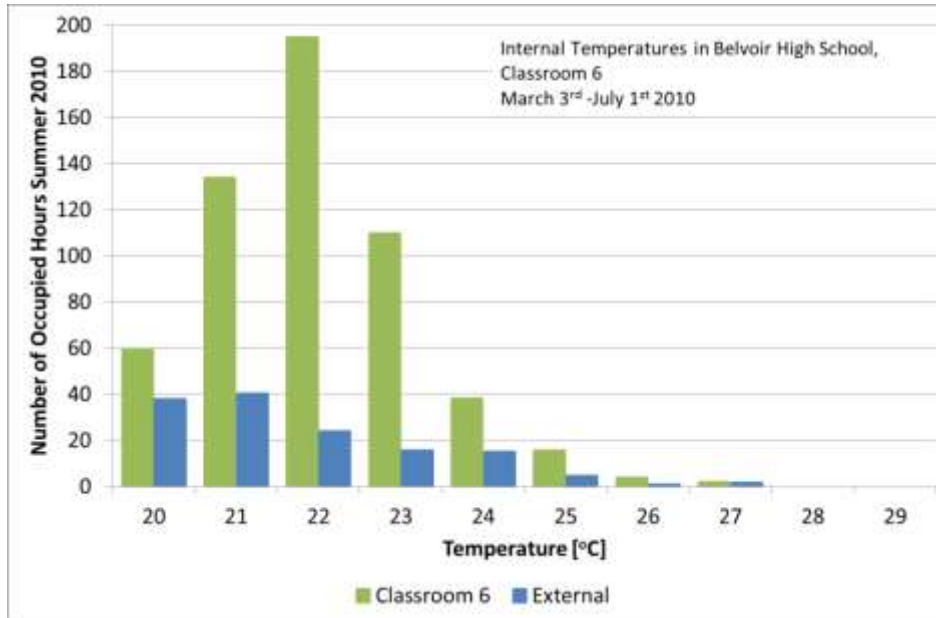
Summer – Upwards displacement ventilation

# Strategy



# Internal Climate

## Case Study – Belvoir High School



Daily average CO<sub>2</sub> never exceeds 1500ppm

### BB101 Standards

**120** hours for which  $T_{\text{room}} > 28^{\circ}\text{C}$

$(T_{\text{room}})_{\text{max}} = 32^{\circ}\text{C}$

$(T_{\text{room}} - T_{\text{external}})_{\text{max}} = 5^{\circ}\text{C}$

### Actual Performance

**0** hours for which  $T_{\text{room}} > 28^{\circ}\text{C}$

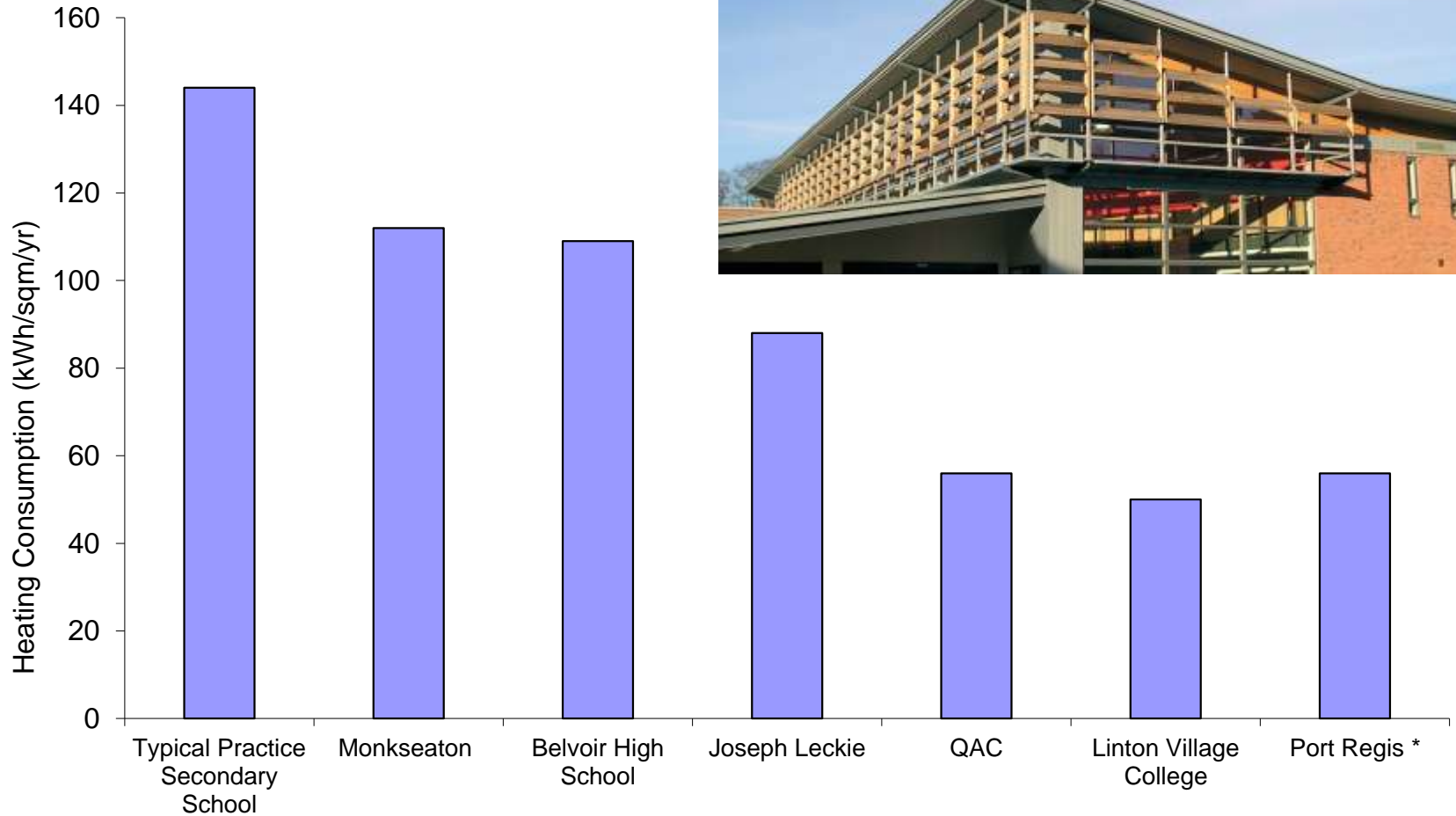
$(T_{\text{room}})_{\text{max}} = 27.5^{\circ}\text{C}$

$(T_{\text{room}} - T_{\text{external}})_{\text{max}} = 2.3^{\circ}\text{C}$



# Energy Savings

QAC, Birmingham



# Visit projects for comparisons

Queen Alexandra College,  
Birmingham



St James the Great, Kent



Monkseaton School, Newcastle



# Sample Projects

Delivered 2008	Delivered 2009	Delivered 2010/2011
St Neots	Linton VC	Budmouth
Rochester	Burnly SJT	Barnfield
Port Regis School	Joseph Leckie High School	Burrough Green
Walkergate School	Dorset QE	University of Bedfordshire
Burnley Campus	Llandrillo	Holte Mayfield Lozells
Helsby School	Swan Theatre (Retrofit)	Stockland Green
Bently Wood	Peninsula Dental School	Sir Robert Woodard
Belvoir	Hill Top School (Retrofit)	Asda Langley Mill
East Malling	Monkseaton	John Innes Centre
	Bottisham VC	University of Hertfordshire Law School

# Future

- UK Partnerships



- Sector expansion



- Overseas



- Innovation

