

# HOWE DELL SCHOOL IHT DEMONSTRATION

## LEAD ORGANISATION

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## PARTNERS

Icax Ltd  
Fulcrum Consulting  
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## COST AND DURATION

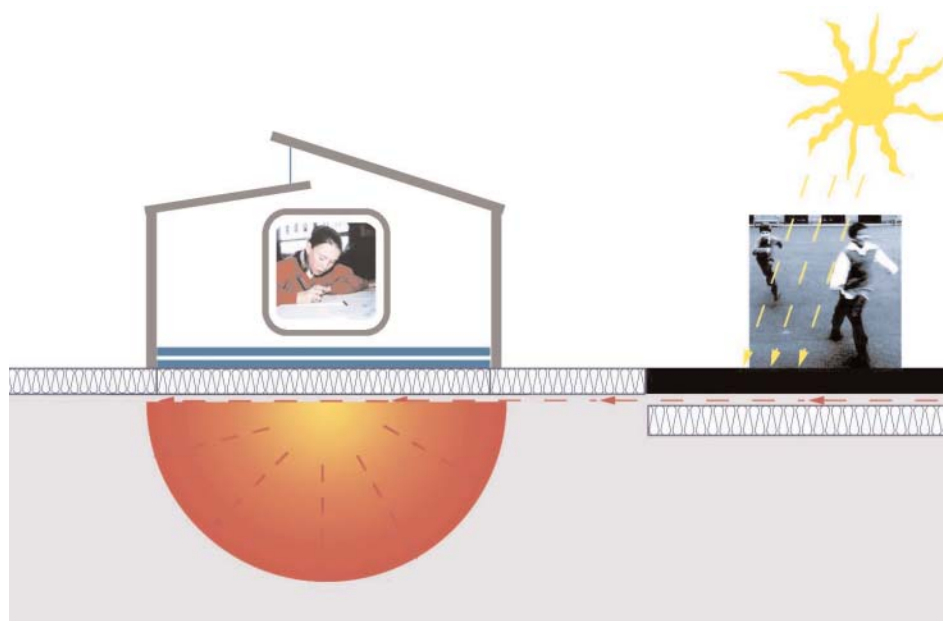
The Carbon Trust contribution towards this project is £244,325. The project started in March 2004 and is due for completion in May 2006.

## PROJECT REFERENCE NUMBER

2003-12-296



Making business sense  
of climate change



Interseasonal Heat Store using the Icax™ system: In the summer, solar energy is collected from surfaces such as the playground or carpark. This is transferred to a store in the ground beneath the building.

## OBJECTIVES

To demonstrate that buildings can be heated and cooled without burning any carbon fuel by capturing surplus (non-carbon) freely available heat in the summer and retrieving the heat on demand in winter. Cooling is by storing energy in the ground for use on demand.

Specifically, the objectives are:

- to prove that hard play/traffic surfaces can be used as efficient large-scale solar collectors
- to show that interseasonal heat transfer (IHT) can be achieved by surface treatment of the ground and shallow ground thermal storage without construction of expensive contained heat stores.
- to provide an exemplar for active solar heating and interseasonal cooling of buildings capable of widespread replication.

## SUMMARY

The project includes the design, installation and monitoring of a heating

and cooling system for a new Exemplar Sustainable Primary School using IHT.

IHT is a process by which heat energy is collected and balanced between periods of supply and demand. Heat energy from the sun is collected during the summer and stored for use in the winter. Energy for cooling is collected during the winter and stored for summertime use. This significant new technology is able to meet major energy demands without further depleting carbon fuels or causing environmental damage.

Computer modelling is being undertaken in parallel with system monitoring. This will be refined and checked against sensors in the installation and the system will be refined using results of the modelling. This combination of modelling and monitoring ensures that the demonstration is thoroughly checked and verified and can therefore be a reliable and impressive platform for bringing IHT to wider attention and ensuring successful replication.