



## Landywood Primary School

**location:**  
Holly Lane, Great Wryley  
Staffordshire

Rebuilding of the key stage 2 teaching accommodation was required following an accidental fire at Landywood Primary School.

### Introduction

Following the loss of key stage 2 classrooms in an accidental fire, the School Headteacher was adamant that the new building would reflect the changing face of education with a sustainable development far in excess of a basic replacement.

The brief required the provision of four class bases, open learning/ICT teaching areas, a library, toilets, break out study rooms and ancillary accommodation. There was also a need to address accessibility to the new building and to the existing school which were at different levels and to minimise circulation space. There was also a desire to accommodate community use during and outside normal school hours whilst ensuring the safety and security of the pupils and school buildings.



### Design process

The design concept was to optimise energy efficiency through maximising natural light and ventilation and to provide an exciting and stimulating learning environment.. The client was adamant that corridors would need to be designed out and that every area should be designed for flexibility in use.

Organised around an atrium which accommodates the ICT teaching area, library and break out spaces as well as dispersing natural light, classrooms are located facing south and link directly with external learning areas and views over playing fields. The atrium also provides controlled access to the new accommodation and existing facilities and passive surveillance at the point of entry.

Materials were assessed on a whole life basis and embodied energy. Aluminium roof decking and fascias for low maintenance and cedar wall cladding for it's low embodied energy. All floors have a hard vinyl finish to minimise dust and for ease of maintenance. Upper level ceilings follow the line of the monopitch roof with self finished powered coated acoustic lining panels.

Energy efficiency and environmental control through design was key from the outset. Low grade underfloor heating is supplied from solar thermal condensing boilers powered by solar panel collectors.



Low emissivity glazing minimises heat loss while maximising the daylight in class bases. Heat gain is prevented by deep overhanging eaves to the roof. The building is ventilated naturally through displacement. Specialist roof mounted ventilators combined with sun pipes ventilate the internal areas and displace warmer air upwards and out of the building. The sun pipes introduce natural day light to internal zones.

Building on the site of the former classrooms and over two levels has reduced the building footprint. It has also preserved the existing soft landscape area at the rear of the school; maintaining the existing wild life habitats and extending the landscaping into a former brown field site.

The cost limitations based upon the loss adjustor's settlement presented a major challenge for this project. Equivalent accommodation incorporating the client's high aspirations was able to be provided through the imaginative use of circulation space and flexible spaces.

## Evaluation

Solar energy use is recorded and displayed on a pc monitor linked to the boilers. It has been calculated that this system will reduce CO2 emissions attributable to the boiler by 7-10 tonnes per year. The volume of rainwater harvested is also monitored and displayed on a plasma screen mounted within the atrium. Information from both these systems is used as part of the teaching curriculum.



An interesting aspect of the design process was the introduction of a 'mock press conference' with the prospective Key Stage 2 pupils facilitated by a Times Educational Supplement journalist whereby the architect presented the initial design to the pupils prior to a question and answer session and general feedback. This session was also used to reinforce to the pupils, the importance of sustainable design and to explain how some of the sustainable features worked ie; solar panels, reduction of waste during construction etc. This process continued after the building was completed through educational features incorporated within the design such as the rainwater harvesting display panel and a bespoke computer programme devised by the project engineer to measure and calculate the savings achieved through the solar thermal installation.

## **Key design features to look out for**

- Deep overhanging eaves to the roof to prevent heat gain.
- Classroom areas accessed from the entrance atrium which also disperses light to the internal areas
- Rainwater harvesting system
- Renewable energy systems
- Flexibility of use
- Passive surveillance
- End-user consultation

## **Link and downloads**

- [www.staffordshire.gov.uk](http://www.staffordshire.gov.uk)
- [www.landywoodprimary.co.uk](http://www.landywoodprimary.co.uk)

## **Contact for further information**

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### Clients

Staffordshire County Council

Landywood Primary School. Headteacher: Alan Stockley.

### Design Consultants

Staffordshire County Council, Development Services Directorate, Design Consultancy.

Architect: Ian Bakewell

Quantity Surveyor: Phil Sherratt

Structural Engineer: Vanessa Hurley

Mechanical Engineer: Tony Peskett

Electrical Engineer: Tony Sloane

CDM Co-ordinator: Mark Ward

### Constructor

Thomas Vale Construction PLC.

Commercial Manager: Ian Coombes

Contract Manager: Neil Elsmore