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TITLE: Earth science Building at Shrewsbury Sixth Form College

PROJECT DATE (YEAR): 2013

SCOPE OF WORKS:

Full architectural services from inception to completion including obtaining planning permission, and building regulations approval, obtaining tenders and administering contract.

PROJECT BRIEF:

Shrewsbury Sixth Form College is located within the river loop of Shrewsbury Town. The Priory site is the major college site which is adjacent to Victoria Avenue overlooking the River Severn. Further facilities are located in the 'Learning Centre' – a converted Builders Merchant office and warehouse on Barker Street. The Sixth Form College also leases accommodation at Cirrus House – at the bottom of Claremont Bank.

The new teaching block, called the 'Earth Studies Building' is located on the Priory Site. The major existing building on this site is referred to as the Priory Building. Built in 1910-11 in the William and Mary Style to the design of Architects Frank Shayler and JA Swan. Between this building and the river sits the original house (used by the college as an administration centre and staff room) and a teaching block constructed in 1985 and 1989 by the county Architects Department. All of the existing buildings are in different styles and from different periods.

The development site was previously occupied by two demountable classroom blocks. The site is elevated above the river, and is edged to the North with a retaining wall.

Shrewsbury Sixth Form College required a new building that comprised 4 new classrooms, a geography laboratory, a common area for students and a staff room. It was part of their brief that the building should demonstrate a concern for sustainability – this informed the choice of external materials.

SPECIFIC ENVIRONMENTAL MEASURES:

ENERGY EFFICIENCY / CARBON REDUCTION - The building is highly insulated and well-sealed. It utilizes a 300mm wide double frame timber frame construction with full fill insulation. This is a highly efficient form of timber frame construction with outer and inner studs separated to avoid cold bridging. The walls have a U value of 0.12W/m²K and the roof has a value of U 0.15W/m²K. The glazing is double glazed with low e glass in an aluminium frame. The building was pressure tested and achieved an air permeability of 3.8 m³/(h.m²) at 50 Pa.

The roof is a Sedum roof which helps bio-diversity and absorbs a large percentage of rainfall limiting the amount of surface water draining into the main sewer.

At the edge of the proposed building the roof cantilevers passed the eaves to provide shelter and shade to the external walls and glazing on the south side of the building to avoid overheating in summer. In the morning passive solar gain warms the east orientated corner common room. The building is naturally ventilated

throughout with ventilation at both high and low level. Ventilation and light funnels run across the corridor at high level, ensuring the classrooms receive good cross ventilation and south light.

SUSTAINABLE MATERIALS - The building incorporates the principles of sustainable design – the proposal is timber framed – which has low embodied energy and is a sustainable material. All materials used in its construction are low maintenance. The exterior is clad in untreated cedar. The roof is in sedum. The windows are aluminium.

CLIMATE RESILIENCE – The building is highly insulated to prevent overheating in the summer and loss of heat in the winter. It is shaded to prevent overheating during the summer months.

BIO-DIVERSITY & LOCAL ENVIRONMENT – The existing indigenous planting to the boundaries of the site was retained where possible.

MONITORING:

No monitoring has been carried out beyond statutory requirements.



Picture taken by Baart Harries Newall ©