



**BAART HARRIES NEWALL**  
Chartered Architects  
1 Wilderhope House  
Pountney Gardens  
Shrewsbury  
SY3 7LG

Tel: Shrewsbury (01743) 361261  
Fax: Shrewsbury (01743) 364944  
Email: [studio@bhn.co.uk](mailto:studio@bhn.co.uk)  
Website: [www.bhn.co.uk](http://www.bhn.co.uk)

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**TITLE:** Fordbridge Community Primary School

**PROJECT DATE (YEAR):** 2015

**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:**

Fordbridge Community Primary School, in Chelmsley Wood, North Solihull is a new 2.5 form entry Primary School (for 540 children) with a school nursery, a Full Day Care Centre and community provision. The school is organised into 3 distinct teaching phases, with classrooms arranged around shared activity hubs. As the new school replaced an existing 1960's system build school the opportunity existed to build a close relationship between the design team and the end users.

Solihull MBC (along with the North Solihull Partnership) was the client. They were fully committed to a full engagement with both the school and the local community. This enabled the design team to work very closely with both client and users in formulating the brief and the building design. Throughout 2011 and 2012 design workshops and consultations were held with the various clients, users, parents, children and the wider community. The design of the school has evolved through a very careful development of the design brief followed by detailed participation and consultation.

The new school is in one of the 10% most deprived areas in England. The wider community is characterized by high levels of deprivation, unemployment and low aspirations. Solihull is generally thought of as a prosperous area, however north Solihull has major health and economic inequalities in relation to the south of the Borough - 17.2% of people in Chelmsley Wood live in overcrowded houses.

The client vision is for 'a creative and innovative school; that serves all of it's children, families and local community.' The school provides a community focus and a range of extended community facilities including adult learning. Provision is offered for babies and toddlers, along with a 'wraparound' out of school club. 'Our school will be a community hub that enables all members of the community to engage in lifelong learning, The school is seen as a safe and supportive haven that will be instrumental in developing community cohesion.' (Client Brief).

**SPECIFIC ENVIRONMENTAL MEASURES:**

ENERGY EFFICIENCY / CARBON REDUCTION – No renewables were used, by undertaking the thermal model early in the design process we were able to implement sufficient passive measures into the building design to reduce energy demand of the building. Passive measures included a highly insulated building with 225mm masonry cavity walls providing 0.16W/m<sup>2</sup>K U-value, standing seam metal roofs having a value of U 0.15W/m<sup>2</sup>K coined with low air permeability rates to reduce building heat loss. The building is naturally ventilated with array of

high and low level openings throughout combined with high levels of daylight. The glazing is double glazed with low e glass (considering both U-Value and G-Values for performance) in thermally broken aluminium frames that provide excellent light transmission properties. The school has high thermal mass to regulate internal temperatures and help future-proof against climate change. Low pitched roofs with overhanging eaves to provide shade to the extensively glazed classrooms and offer sheltered teaching and external play for the children.

Energy consumption is reduced by specifying high efficiency lighting system which included lighting controls. The central heating plant was also efficient in design with high efficiency boiler plant, designed for condensing operation, variable speed pumping systems and a domestic hot water system which utilised a plate and buffer configuration. This ensured that minimal hot water was stored on site to reduce 'standing losses'. The heating system utilised an underfloor heating solution throughout operating at low temperatures with low associated pumping and auxiliary energy demand.

This holistic low energy design strategy allowed the scheme to satisfy the requirements of the building regulations without the need to use a 'bolt on' renewable energy solution. The design team were focused on reducing the actual energy demand of the building as opposed to satisfying a higher need for energy with on-site renewable energy generation. This approach should result in greater life cycle savings in energy usage and CO2 emissions.

**SUSTAINABLE MATERIALS** – The building incorporates the principles of sustainable design, majority constructed in brick and aluminium (roof and curtain walling) for the materials excellent life cycle performance, energy efficiency, and low maintenance properties. Masonry walls, concrete ground bearing slab and first floor pre-cast concrete slabs offering the high thermal mass.

**CLIMATE RESILIENCE** – The building has a thermal mass as the core to regulate internal temperatures and help future-proof against climate change. Low temperature underfloor heating with low associated pumping and auxiliary energy demand. The school is heavily shaded to prevent overheating during the summer.

**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.