Consulting Engineers on another school project within the Vale of Glamorgan with experience of one of the earliest Sustainable Application Body (SAB) applications for education projects in Wales. This means that our proposed masterplan for Barry Waterfront already takes potential sustainable drainage solutions into consideration, and the team are well prepared for the consultation process with the approvals body.

The Full-SAB Application is intended to be made in tandem with the Planning application so both approvals are obtained at the same time – Both are required to be approved prior to start on site. There is a risk that the SAB will insist on further changes to be made to the scheme following submission during the consultation period.

The Orientation of the building, facing the road, offers a southeast facing roof for a PV array, and northeast clerestory windows for a consistent light into the central learning resource area.
The building's proportions, with the classrooms limited to 7.2m deep, allow natural light to penetrate each classroom, and maximise the use of single-sided natural ventilation. The central learning resource areas benefit from natural light from above, and the void also offers a connection between the pupils and staff in these spaces.

Previous experience has shown that a hall smaller than 180sqm is too small to accommodate enough pupils for dining and assemblies. Therefore the studio has been undersized, to allow the hall to be oversized at 180sqm. This is based on the size of a 1FE primary school, but with twice the number of sittings. This approach has been taken for other 2FE schools in the Vale of Glamorgan. We note that the FFE schedule within the briefing pack also refs to a hall of 180sqm.

The classrooms benefit from some of the float allocation to increase their size over the BB99 minimum, which allows for more flexibility in internal layouts. The remainder of the float is used to create the central learning resource spaces on both floors.

Internally, the partitions are robust enough to withstand the rigours of a school environment. These stud partition types have been used on multiple education projects, with each wall tailored to the acoustic requirements of the various spaces. Using stud rather than block work internally also allows them to be removed in future, without affecting the overall structure, should an open-plan environment be required in the long term. Short-term, the junior classrooms have double-doors connecting them in pairs, allowing for free-flow activities or team teaching. In the lower school, this is achieved through the shared group rooms connecting pairs of classrooms.

The proposed external finishes of brick and metal cladding reflect both the industrial heritage of the dockside and railway buildings nearby, and the new residential area. They are chosen for their robustness to withstand the marine climate, and to prevent vandalism. Brick is a robust, low maintenance material, so this has been proposed to the whole of the ground floor. Standing seam cladding offers the same finish as the roof, and is restricted to the upper floor to avoid direct impact.

The school building is designed in collaboration with Midas, Cambria Consulting and McCann & Partners to be a low maintenance, energy efficient cost effective solution that meets the requirements of the Building Bulletin guidance. Thermal performance of the building envelope is set as part of the M&E strategy and U Values for the building elements are considerably better than the limiting values of Part L2 of the Building Regulations. These have been reflected in the external envelope proposals. As part of the sustainability strategy the school will include a roof mounted PV array. The electricity generated will be utilised within the school, and during periods of low electrical demand, such as holidays and weekends, the generated electricity will be exported back to the grid. The area of PV panels will be determined in the next stage of the design. The use of PV will also count towards the reduction of CO_2 emissions from the building and achieve credits towards to satisfy ENE 01 towards gaining a BREEAM Excellent certificate.

Specialist facilities including IT & the LRC and have been designed as separate rooms, according to BB99. However, given the constant advances in portable technology, these rooms have been placed adjacent to each other, so a wall could be omitted to combine them into a larger more flexible resource base if required, without affecting the overall design.