Mid Group's Net Zero work.

One of our most significant projects that displays our Net Zero work is Greatfields School Zone 2 which was delivered to net nil carbon in construction, in partnership with Forest Carbon.

The outcomes of this project were enabled by careful consideration of the similar project 1 which we learnt from to exceed its outcomes. The project encompassed pre-construction design that led to post construction benefits including the reduction of carbon and sustainability of the school. A significant reduction in carbon emissions is demonstrated from the improvements from the first phase to the second in which outcomes included:

- Building emission rates reduced from 9.62 kgCO2/m2/yr to 5.55 kgCO2/m2/yr.
- Reduction in energy usage from 73.15/m2/yr to 55.24/ m2/yr. This is a 27% saving against anticipated rates.

To achieve this, the school was designed to be thermally efficient which allowed the removal of the heating system and therefore gas from the building, drastically reducing carbon output. To overcome the need of hot water an Air Source Heat Pump is used and to offset the impact of air-conditioning PVs were installed. In addition, rather than using traditional bricks, necessary to meet local planning requirements, we used brick extrusions. Brick extrusions need less time in a gas fired kiln, significantly reducing carbon output.

The school s designed for the addition of post construction benefits, including a 'green buffer' of hedges between the school and adjacent road, in addition to the planting of mature trees on site, this allows for the reduction of the impacts of local pollution and improved air quality of the school.

Post construction analysis has shown the energy efficiency, and therefore reduced carbon output, of this school. We collaborated on research with The University of Cambridge, in which we provided data from our projects to allow them to quantify the benefits of offsite construction. From this study Mid Groups Greatfields project was found to be the most energy efficient school from all the data they had collected. In addition, the in-use data has shown that the anticipated energy usage was achieved and that the building has a reduced EPC rating of 21 (phase 1) to 10 (phase 2).

Working with Carbon Forest allows us to offset any carbon emitted during the construction phase of projects and Greatfields is an example of a project we have learnt to try and implement the logic and significant improvements to future projects.