



## **Briefing Note: Sustainability (PV)**

### **Application Reference: S.19/1122/REM**

#### **1.0 Introduction**

- 1.1 The application was debated at the October Development Control Committee, where members opted for delegated approval subject to PV / solar panels being provided on the new school building. The LPA has subsequently highlighted Policy ES1 to the applicants. The application has been brought back to the Committee as for various reasons outlined below PV / solar panels are not possible in this particular instance.
- 1.2 It is important to note that Policy ES1 was current at the time the outline planning consent for the site was granted. The need for the school was determined as part of the outline consent. Therefore if PV was a requirement of the LPA, it should have imposed a suitably worded condition to this effect as part of the outline planning permission. No such condition applies to this development and therefore seeking to ensure PV is installed now could be deemed as derogating from the outline planning permission.
- 1.3 Notwithstanding the above, the applicant and design team involved in this project recognise that Stroud District Council has declared a Climate Emergency since the outline consent was granted and have therefore taken measures to ensure the proposed school is sustainable and seeks to reduce carbon emissions. The principles applied to the design and sustainability were discussed with planning officers from the LPA and agreed as part of the pre-application meeting for the proposed school.
- 1.4 It is fully recognised that this will be a key community building in the central hub of the development. However, there are a number of constraints that the Committee need to be aware of detailed below that have led to the proposals submitted and the conclusion that PV / solar panels are not feasible in this instance.

## **2.0 Constraints, Key Events and Design Details**

- 2.1 The school site itself is defined by existing well established hedgerows which are predominantly to remain. The school area has been formally agreed with Gloucestershire County Council pursuant to the legal agreement and is wholly in accordance with the Masterplan for the development as a whole. It is therefore not possible to relocate the school to another part of the site.
- 2.3 Under the legal agreement for the provision of the school, certain requirements need to be met to ensure suitable internal and external spaces are achieved. This ensures that classrooms, playing fields etc. are sized accordingly and function well. Given the school site shape, being triangular, this severely limits options with locating the actual building to achieve the necessary areas, particularly for external zones, and yet still present a strong frontage to the school site entrance as it will be a key landmark building.
- 2.4 A further constraint is the topography of the site and trying to orientate the building to facilitate the potential for a future school extension should it be required. The building has been positioned such that it follows the contours as closely as possible. In doing so, the designs as a whole limit the amount of cut and fill on the site, ensuring that material that needs to be potentially exported off the site is substantially reduced. This in turn means vehicle movements, and in particular HGV movements are significantly reduced as well, offering a sustainable design solution.
- 2.5 As detailed above, the school building position has therefore been set to address the above constraints and achieve the necessary internal and external areas. The design team has assessed various positions in terms of physical construction to limit HGV movements needed when trying to achieve finished levels. The submitted proposal is the most effective in limiting cart-away of materials. It provides a strong building frontage to the road, in keeping with the landmark status of this community facility. It is orientated to facilitate the potential for future expansion if needed, and ensures that any such expansion can be achieved as economically as possible for the Council moving forwards.
- 2.6 All of the above was discussed in detail with the Planning Officers from Stroud District Council at a pre-application meeting and the Officers commented on how well the design team had looked to position the building according to the constraints of the site.
- 2.7 The result is that the building orientation is such that the inclusion of PV on the school roof would prove inefficient. It would also impinge on the proposed roof lights, which are providing natural light and ventilation to the class rooms, ensuring a bright and comfortable learning environment for the future pupils. Again, this was discussed at the pre-application meeting with Stroud District Council and was acknowledged by the Planning Officers. It was therefore agreed that a fabric first approach to the building would be the best way forward.
- 2.8 With the above in mind, Quattro Design has developed the school building with the following measures to ensure low energy usage, reduce the carbon footprint and provide a sustainable design solution:
- High levels of insulation, above building regulation requirements to reduce the energy required to heat the school.

- Large windows providing high levels of natural light to teaching spaces, with solar shading to limit any overheating.
- High build quality and detailing that will reduce energy loss through air leakage.
- Natural ventilation using windows and rooflights or roof terminals to create controlled airflow.
- Openable louvres provide purge ventilation or secure night-time cooling.
- Temperature and CO<sub>2</sub> monitoring equipment in each classroom to give teachers control of their internal environment without wasting energy.
- Highly efficient lighting and control systems. These will automatically turn off lights when spaces are unoccupied or when natural light reaches a certain level.
- Zoning the building such that the hall and lettable areas can be heated, without wasting energy heating the whole school.

### **3.0 Conclusion**

- 3.1 The proposed school has been in development for some considerable time and well in advance of the climate emergency being declared by the District Council. Notwithstanding this, the design team acknowledges the importance of sustainability.
- 3.2 The design process has involved both the Planning Authority (Stroud District Council) and the Education Authority (Gloucestershire County Council), with the latter signing off the designs as part of the legal agreement process prior to the planning application being submitted. The designs therefore meet all the necessary requirements of the legal agreement for the provision of the new school.
- 3.3 The constraints that have led to the building's position and orientation are such that it offers the most sustainable and practicable solution for the delivery of the school and potential extension whilst still ensuring a key landmark building fronting the access road.
- 3.4. The position and orientation of the school and the fact that this would prevent PV use was discussed with Stroud District Council at the pre application meeting and it was agreed that a fabric first approach to the building would be utilised instead as the physical constraints of the site severely limit options for positioning the building elsewhere.
- 3.5 In this particular instance due to the constraints of the site, it simply would not be efficient to install PV which would potentially hinder other key aspects of the school such as natural light and ventilation.
- 3.6 The designs have ensured a sustainable and energy efficient building through the use of fabric first approach as detailed above.
- 3.7 The applicant is committed to delivering this school for the new development and the wider community as a whole. It is hoped that after assessing the above and understanding the processes and rationale applied to the design, together with previous discussions / agreements with the District Council, the committee will approve the new school which will still enable its construction to begin to meet with the programmed opening in September 2021.