

Case Study: King's Church gets approval to 'sing out loud'



Two-storey auditorium, 400-capacity church acoustically designed to nestle sociably amongst residential neighbours

From 1784 until last year, Amersham's Baptists had worshipped in a Grade II listed building in the Old Town. Over the years, as the congregation grew, several attempts were made to expand the church, but because of its listed status, only minor adjustments could be made, and a wholesale increase in capacity had proved impossible. So when the Church leaders were approached by Cala Homes to jointly apply for planning permission to build a completely new church on an available piece of community land alongside Cala's proposed new housing estate, they jumped at the chance.



The newly built King's Church, Amersham on the Hill

However, as the site for the new church was immediately adjacent to Cala's new residential scheme it was essential the design of the church, including its large auditorium, provided high levels of sound insulation. One of the early key design issues was that the church should not produce a level of noise from its Sunday morning (and other) worship sessions and community events that would affect nearby residents. As a consequence, AAD was commissioned to specify and design the acoustics for the new building.



The acoustically designed auditorium keeps music and worship sound in and external disturbances out

AAD Consultant, Lise Tjellesen, first determined the levels of noise being produced by the worshippers by monitoring their activities at their existing church in the Old Town. "With this data, we could then calculate how much sound insulation would be required for the external building fabric of the new church," reported Lise. "In large spaces where speech is important for the usage, such as the huge 400-capacity auditorium of the new King's Church, it's desirable to control reverberation and ensure good speech intelligibility, and that can only be achieved by adding sound absorbing materials in the right places within the space."

In cooperation with the architect, we therefore specified a range of suitable internal surface materials and provided guidance as to where these should be placed to optimise their effect."

As well as the two-storey auditorium, the church was designed with a range of other spaces for a variety of functions, including a large foyer and coffee shop, meeting rooms, a kitchen and servery, a children's room, a youth room, a dedicated prayer room and a suite of church offices. "Much of our work was around designing to keep the noise of music and singing in; we also had to look at sound insulation of the internal building fabric to ensure that what was happening in one room didn't disturb activities in other areas of the church", explained Lise.

Similarly, there were a number of mechanical services, such as the heating and air handling systems, noise levels of which needed to be kept as low as possible to prevent interference with church services, so AAD also set out the criteria relating to that, ensuring that the internal noise levels from these systems were kept at an acceptable level. Analysis was also conducted on the external background noise at the site of the new church, such as noise coming from the road and the nearby business/industrial estate, in order that criteria could be set to ensure that this would not adversely impinge upon any of the internal activities.

Construction began in October 2012 and the building was handed over in November 2013. Mike Peters, Church Elder and Project Lead for King's Church, reports that since the church opened they have held full-capacity events and have had no adverse reaction from their residential neighbours.

Additionally, he says, it has become a real local landmark building. "We already had good relationships in the local church community such that the local Methodists have asked to use it for a 400-Minister conference that they're holding, and the local Catholic church are interested in holding their afternoon masses at King's Church whilst their own building is being refurbished. We have also had a recent booking for a 40-piece orchestra who wish to use the building for a fund raising concert!"

Mike also reports that the quality of the acoustics is even better than they could have imagined: "The acoustic advice from AAD was always timely and apt," he enthuses. On the strength of this project, AAD was recommended to do the same thing for another church.



Internal acoustic design within King's Church permits a variety of functions to be held at the same time

Team

Client: Trustees of King's Church Amersham
Architect: Byrom Clark Roberts
Services Engineer: Silcock Dawson & Partners
Structural Engineer: Colin Toms and Partners
Interior Design: Igloo Interiors
Contractor : Jarvis Contracting Limited