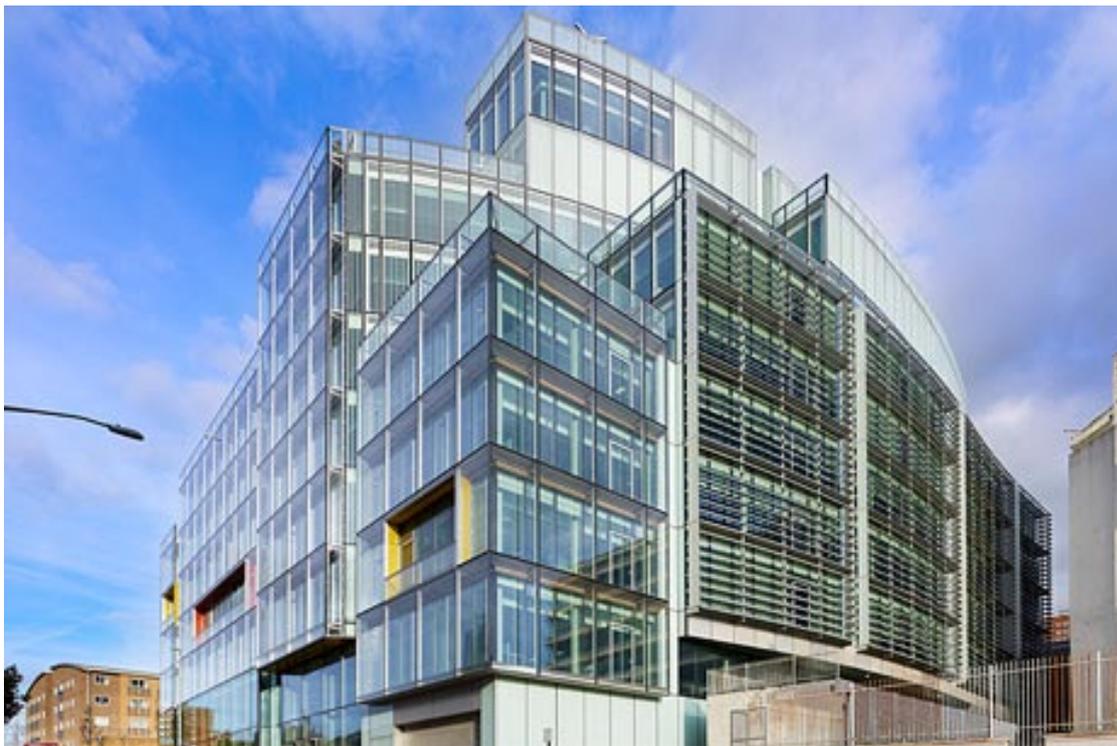


Case Study: Prestigious £100m new 365,000 ft² operations centre in Brighton for American Express



“This has to be one of the technical achievements of which I’m most proud.”
Mark Bishop, Director, AAD

American Express is, without doubt, Brighton’s biggest employer, with 3,000 staff working at this South Coast operations centre. With a building no longer fit for purpose, something clearly had to be done. Fortunately, the company had some land at the back of its existing building and was able to buy some more, giving it enough space to build a brand new office development, at a cost of £100m immediately behind. The difference with this new building is that, apart from being modern and fit for purpose also has its own data centre adjacent to the main offices.



The new American Express building, right in the middle of Brighton town centre

The contractors, McAlpine, had a stringent set of employer’s requirements to meet and bought AAD on board to help them design the building such that the requirements would be met. The planning process was finished before McAlpine took on the contract with AAD on board; AAD Director, and project manager on this job, Mark Bishop, explains: “When McAlpine and AAD picked it up we were left with the added problem of having to put our workable solution into a building design that had already been granted planning permission and couldn’t be changed.”

The office part of the building, the largest physically, was reasonably straightforward; an attractive modern glass office, with no more than the usual challenges of keeping the services quiet. However, the data centre element of the building was the interesting, and challenging, factor. To keep all the computers cool a significant amount of services plant for the chillers was required.

Because data centres obviously need to run 24/7, the cooling load on them never changes and so the plant on the roof serving the chillers has to be running continuously. Consequently, AAD firstly had to show the planning authorities that they could make the building work whilst meeting the stringent noise level requirements, and then make sure that it did work. The plant, which basically comprises three very large chillers and associated generators and extractor fans, all had to meet extremely stringent criteria at a very close receiver point. This was a complicated mechanical services job; AAD worked closely with McAlpine, the equipment suppliers and the architects as a team, to come up with a scheme that would deliver what was required.



Data centre: running 24/7 only 15 mts from residential property

The process involved procuring and factory-testing chillers that had an extraordinary amount of noise control, and which then had to be shoe-horned into the very limited building space. AAD worked alongside architect in designing the building fabric to enhance noise control. Between them, the team reached a situation whereby when the building was commissioned over the summer, AAD's Mark Bishop was there at 3 o'clock in the morning with the plant services running, and not a sound could be heard. Mark described it as "one of the highlights of my career!"

Another major project challenge was that because there was a noise 'budget' that was almost all taken up by the data centre chillers and services, this meant that all the other noise had to be that much quieter. This had a knock-on effect on the main building because all of its general roof plant had to be significantly attenuated so that it was essentially completely silent.

One of the factors that differentiate AAD's acoustic consultants from others is their knowledge of how this type of plant and equipment works. "The reason we worked so well as a team with McAlpine and the contractors," comments Mark, "is that we talk their language and make things work, technically. We fully understood the complications involved in this project were able to work with the team to get around those complications."

Architect: EPR

Main Contractor: Mc Alpine

MEP Consultants: Waterman

MEP Contractors: NG Bailey