

CASE STUDY - EPR Architects American Express, Brighton

KEY FACTS

Project name: **American Express Brighton Development**
Location: **Brighton, UK**
Classification: **New build, commercial building.**
Client: **American Express**

KEY STAKEHOLDERS

Architect: EPR Architects
Project Management: CBRE
Developer/Main Contractor: Sir Robert McAlpine
MEP Contractor: NG Bailey
Sustainability Consultant: Hoare Lea
Services Engineer: Hoare Lea
Fit-Out Contractor: Wates Construction
Structural Engineer: Buro Happold
Other: Brighton & Hove City Council, American Express employees, local residents, Carlton Hill Primary & Nursery School

PROJECT SUMMARY

American Express has operated in Brighton since the mid 1970s and is the largest private employer in the city. The main driver for the development was the existing offices reaching the end of its life expectancy and their neighbouring site available for redevelopment.

The new building holds 3000 staff that caters for customer care throughout Europe. As such the building has a high degree of servicing included within it to support their operations, and has inbuilt flexibility by way of quarter floor plates for servicing, so it may adapt to changes in their working patterns over time.

The original site, known as Edward Street Quarter, was designated by the council for regeneration, and as such the client and project team worked closely with the council to establish a new masterplan for the area. This project is in essence the first phase of that masterplan.

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Brighton and Hove City Council is seeking to regenerate the Edward Street Quarter to provide an employment led scheme. It is intended that a 'campus' type facility will be created, making a more full and efficient use of the land and forming a landmark in terms of urban design and sustainability. The redevelopment of the Edward Street Quarter will form part of a wider regeneration scheme addressing current townscape problems in both the site and the surrounding area. This concerns the existing limited permeability through the site and lack of active edges.

Brighton & Hove City Council, Local Development Framework SPD 04



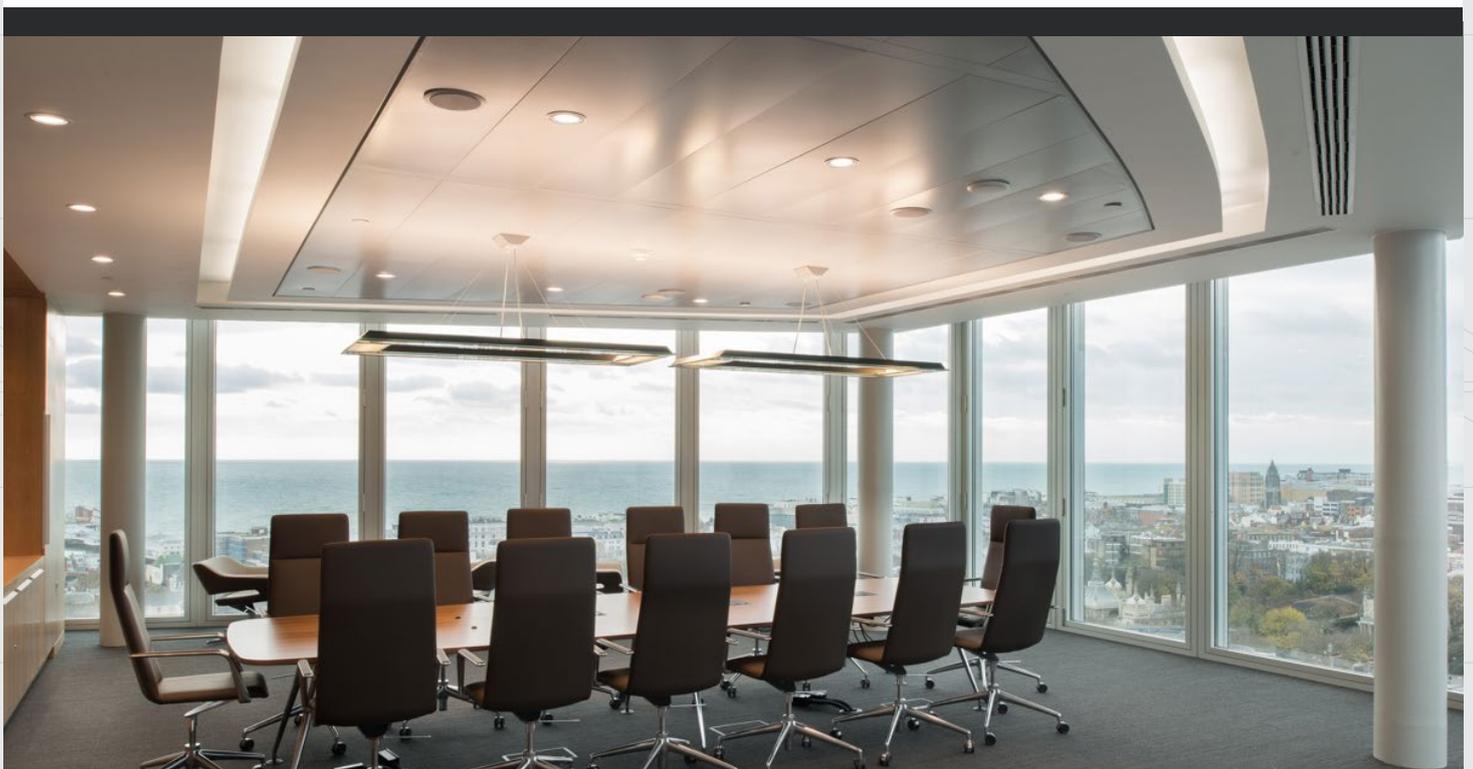
The sustainability aims set by Brighton & Hove City Council as part of their Local Development Framework (LDF) for this area has a 40% improvement rate over Part L based on a standard building design, and a BREEAM Excellent score of at least 70 credits, with at least a score of 60% within the water consumption section.

The sustainability aims of the Project Team also fed into the design of the building.

Other initiatives from the LDF included:

- improvements to the local primary school boilers and playground areas;
- use of local labour as part of the construction process.

Additionally, guidance from the British Council of Offices (the BCO Guide to Specification) was referred to which added to the sustainability objectives and future proof the building.



ACTIONS AND MEASURES UNDERTAKEN

Energy & Carbon:

- The initial carbon emissions target was for a 40% reduction, in line with the Brighton & Hove SPD.
- A gas fired Combined Heat & Power (CHP) plant is included within the operations building, sized to support in part the future masterplan development for the Edward Street Quarter area of Brighton, and is used in combination with a highly efficient services plant throughout the building.
- A detailed thermal model was undertaken to maximise the performance of cladding systems, and how these work in connection with the buildings' services. In this case a combination of active and passive façade types have been used to maximise natural light, and limit solar gains. These façade treatments include:



- Motorised vertical brise soleil positioned on the east facing elevation to maximise shading when the sun is lower in the morning sky;
- Motorised blinds within ventilated cladding cavities to maximise shading to the south-west and west facing elevations;
- Fixed horizontal brise soleil to the south facing elevation
- Coloured fritting to a number of elevations which is used to greatly improve the shading qualities of the facade;
- The façades to each elevation are deliberately different to suit the solar shading necessary, but also to help break-down the overall scale of the building so it may be read more as a grouping of buildings, each with its own architectural language to suit the surrounding context;

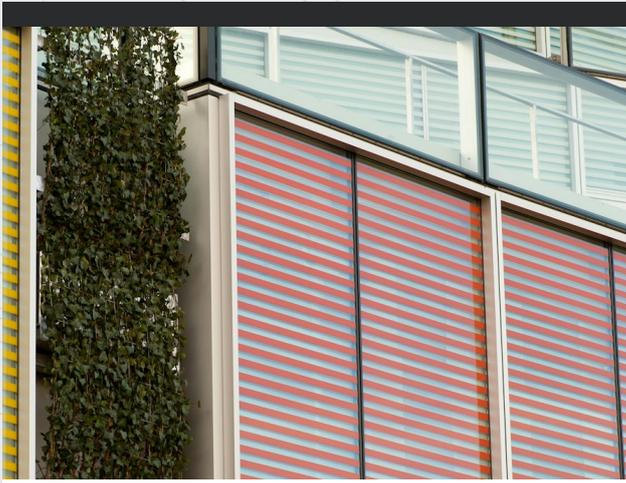
- 200 sqm of PV panels are located at roof level.

Water:

- Rainwater is harvested within attenuation tanks, and recycled for toilet flushing to specific areas;
- Low flow aerated sensor taps and low volume dual flush toilets are used throughout the building.

Waste:

- Prefabrication of elements such as cladding, washrooms, and M&E components was used to improve quality, reduce waste and support an optimistic construction programme. The size of the building allowed the main contractor to commence fit-out works to the core areas as a stand-alone activity so washroom mock-ups and prefabrication of these spaces was vital for co-ordination of the works;
- 45,000 cubic metres of chalk were removed from site. The boreholes had identified that the chalk was of excellent quality and therefore became a more valuable asset for offsite use. To divert from landfill, 200 trucks per day were taken to 15 different locations, particularly to local farms due to chalk's drainage qualities. It was also used in an area near the airport where the ground needed raising for future housing. In this instance, mixed chalk and rubble was transported rather than the "pure" chalk;
- All waste created within the office is separated into various waste streams, with all recyclable waste collected in segregated bins located within core areas and teapoints. Individual bins are not allowed at workstations to help reduce unnecessary waste.



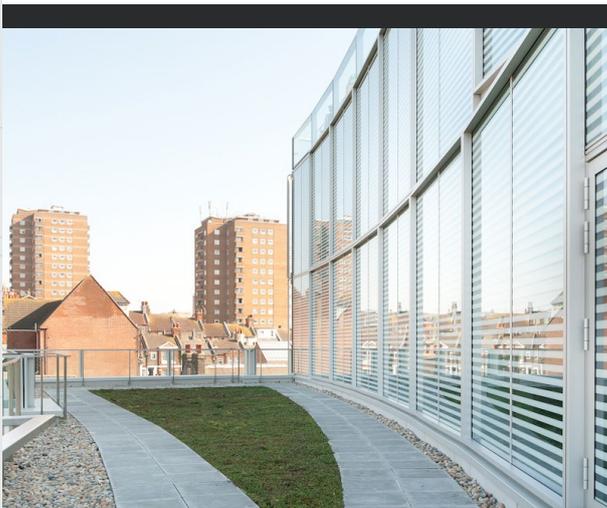
Biodiversity:

Green roofs and living walls are located in a number of locations, some of which were a request by the planners, and these include green walls which can be easily seen from street level. The roof areas include 15 bird boxes in specific locations. 20 new semi-mature trees have been planted within the site and neighbouring school grounds as part of an improved biodiversity and ecological target. The site prior to the building works contained at grade car parking and two small scale buildings, and an ecological survey found no presence of bats or other protected species. Monitoring will be carried out by the FM team once in full occupation.

Transport:

A green travel plan has been implemented for the project and this includes American Express' own 'parking policy' which promotes the use of public transport, especially for employees residing within a short distance of the building, as well as car pooling and car parking dedicated to staff with specific access needs first.

Cycle parking is located in two locations, one of which is a secure enclosed facility designed to mimic existing terrace houses. Changing and shower facilities are included within the staff gymnasium. Covered and secure cycle racks total 172 spaces with a further 46 cycle spaces within the newly landscaped street which forms part of the future masterplan.



Decentralised Energy/Community:

The neighbouring Carlton Primary School's boilers were replaced with new energy efficient boiler plants as part of the overall sustainability strategy for the development, which also included a contribution to the council for future public transport improvements and overall way-finding within the surrounding area.

Local Employment:

According to the Brighton & Hove City Council SPD, developers should implement a local workforce agreement to employ a local labour force as far as is possible and offer apprenticeships and training opportunities. A target of 15% of jobs created on site during construction was set by the council as part of a local employment initiative. This was exceeded in 13 months out of 28. On a monthly average, local employment was 17% of the total workforce.



This office development presented a number of design challenges to overcome before reaching a solution. We have been delighted with the collaborative approach adopted by the team. Their architects and designers worked very hard within the site constraints to achieve an outstanding design solution which respected the locality and its neighbours. This approach was exemplified by the bike store, created to look like the Victorian terraced houses it adjoined.

We were able to meet and exceed many of the City's sustainable building requirements despite it being a building which would be in operation 24 hours a day. As part of the community benefits secured by the Council, American Express contributed towards a new energy efficient heating system at the adjoining primary school to replace the old oil burning system.

Martin Randall, Brighton and Hove City Council Head of Planning and Public Protection



OUTCOMES

- The Operations Building achieves 26% improvement over Part L 2006. The Brighton Council Supplementary Planning Document (SPD) required a 40% improvement on Part L, however given the high servicing levels of the building, planning approval for the design was granted. This was considered the highest possible score achievable for such a highly serviced building.
- Third party certification achieved: BREEAM Very Good, with a post-completion rating of 70.18% which is technically BREEAM Excellent, however in this instance modified for the occupant density.
- BCO Awards: Shortlisted for two BCO Awards 2013, "Corporate Workplace" and "Fit Out of Workplace".

LEARNING POINTS

Occupation density

The building is designed to be occupied at a high density of 1 person / 6sqm, but if it were to be occupied at 1 person / 10sqm, which is typical of most office buildings it would achieve an Excellent BREEAM rating. The occupancy density also affected the EPC rating. The score achieved was 52 placing it in Band C (51-75). However, if the occupancy density were to be reduced then this would possibly score within Band B (26-50). This demonstrates one of the limitations of EPC ratings for certain types of commercial buildings and the need for EPCs to respond to the functional requirements of a building type.

Thermal modelling

Regarding energy data and how to estimate carbon savings, the data makes it difficult to draw comparisons for new builds. Thermal modelling was a useful tool, however, on new builds there are few buildings which can be taken as standard against which other projects can be benchmarked. A comparison of the new building against the original 1970s building would not be a meaningful comparison.

Onsite Renewables

Onsite renewable energy sources formed part of Brighton & Hove City Council's SPD for Edward Street Quarter which requires a minimum target of 15% of onsite renewable generation. The panels generate around 0.3% of the energy required for such a highly serviced building and it may have been more effective to make a contribution to offsite renewable energy.

Decentralised Energy

The building is located in an area where new residential buildings, student accommodation, commercial buildings and the local primary school are all located within a short distance. Such a diverse cross section of energy needs makes an energy centre project viable. A CHP centre within the building that would supply surrounding homes and businesses was considered. However, turning a private commercial enterprise into an energy supplier was a large risk and therefore the CHP plant within the project was designed to enable it to connect into a future energy centre when it is developed.

“ American Express has a long-standing connection with Brighton. Our business has been a fixture of the Sussex landscape for over 40 years and we are delighted with this new development, a move which underscores our commitment to the local economy and community.

We have worked closely with Sir Robert McAlpine and EPR Architects to create a contemporary building that will serve the current and future needs of our business whilst being as environmentally responsible as possible.

Seamus O'Loughlin, Vice President Global Real Estate & Workplace Enablement - EMEA

“ Carlton Hill Primary School pupils thoroughly enjoy using their new playground, developed using funding from the American Express Development. The carefully planned and high quality new learning environment significantly supported the school in gaining the “Green Flag” ECO school award in 2012.

Pupils, staff, parents and governors worked alongside EPR Architects and Sir Robert McAlpine to design a natural play area which met the schools needs. This included a new entrance, covered seating areas, outdoor lighting, a multi use games area and a “walk through different environments” incorporating a meadow, pond, butterfly garden, farm & allotments, beach, picnic area, berry hill, slide and tunnels.

Parents, carers and pupils often choose to stay on at the end of the school day to further enjoy the facilities. Many new families now state the playground as a major deciding factor when choosing the school.

The school considerably benefitted from the installation of a new gas boiler, also funded through the American Express Development. This has not only greatly reduced carbon emissions but also the annual cost of heating the school too.

Louise Willard, Head Teacher, Carlton Hill Primary School

CONCLUDING STATEMENT

The building is still in the process of undergoing seasonal commissioning and is not fully occupied. As such a post occupancy evaluation is pending, and results of energy, water and biodiversity monitoring are not available.

“This investment by American Express underlines their long-term commitment to their staff, and to Brighton. Their collaborative approach to this development far exceeds what might be thought possible on a challenging site, and one would feel now sets a very high benchmark for all other developments within Brighton and the South-Coast. They have allowed their professional team to expand upon an already exciting brief, and supported every approach taken. For their staff, the development will be a new and exciting place to work, complete with all the facilities expected of a high quality development, and with some special touches for their enjoyment. This building could have been located anywhere in the UK, away from view, but instead American Express have taken up the challenge and delivered a product which is unique, and dynamic. It is a truly contextual response to its surroundings.”

EPR Architects