



St. Peter's College, Oxford University

Lighting Project



Working with ADIAN, St Peter's:

- 1) Improved the effectiveness of the lighting scheme in their library;
- 2) Reduced the library's annual energy consumption by an estimated 48%;
- 3) Reduced the library's carbon emissions by some 7 tonnes per annum.

St Peter's is one of the 36 constituent colleges of the University of Oxford. It was founded as a Permanent Private Hall in 1929, acquiring college status in 1961.

St Peter's occupies a site that for 600 years has been a home to students, a continuation of the medieval Halls that preceded it.

The project team:

Richard Gordon
Bursar, St Peter's College

Dr David Johnson
Librarian, St Peter's College

Dr Huw Dorkins,
Fellow Librarian, St Peter's College

Lidia Hemmings
Facilities Officer, St Peter's College

Timothy Monk
Consultant, ADIAN Consulting

Robert Gevargiz
Director, ADIAN Consulting



The story...

Room for improvement

The library at St Peter's was using outdated energy intensive surface-mounted luminaires, with manual on / off switching. The electro-magnetic ballasts in the switch start controls were resulting in a high energy loss. In addition, the manual nature of the controls meant that lights were being left on regardless of occupancy levels, resulting in energy waste and financial overspend. Furthermore, the limited capability of the controls meant that the luminaires could not dim to respond to daylight levels. Overall, the quality of the light output was poor and the light fittings were unreliable in operation.

ADIAN further identified that the non-maintained emergency fittings were unlikely to provide adequate lighting in the event of a power cut.

"The fact that ADIAN sought opinion from different people across the College during the design stage was very important, as it ensured the end product was meeting requirements and expectations. The scheme was well prepared and the delivery phase was carried out very smoothly. The disruption to both Library staff and users was kept to a minimum, as the Library re-opened without any delay."

- Lidia Hemmings, Facilities Officer, St Peter's



Changes

ADIAN worked with St Peter's to design and install a new lighting scheme, which focused on:

- Suspended lighting providing indirect and direct illumination of the working planes as necessary;
- Daylight dimming of the fluorescent lamps;
- Presence-based lighting controls featuring automatic on/off switches;
- Higher temperature fluorescent lamps with virtual daylight quality;
- Improvements to the emergency lighting arrangements.

At each stage of the process, ADIAN consulted with members of the College to ensure that the scheme delivered on the above without compromising the integrity of the building and, wherever possible, improving the aesthetics of the library.

ADIAN analysed the optical performance of a range of light fittings from various manufacturers. This approach ensured that light fittings offering the best quality light level, limited glare, optimum energy efficiency and an affordable price were identified. Again, ADIAN worked closely with St Peter's to ensure that the fittings, once identified, were installed on a timetable that was convenient to the College.



Results...

Now installed, the new lighting scheme has many benefits:

- Better light output quality throughout the library;
- Reduced annual energy consumption (kWh) by an estimated 48%;
- Significant improvements to the library's aesthetics;
- Lower maintenance – the new luminaires have a lifespan which is at least 100% greater than the lifespan of the previous luminaires;
- Improved emergency lighting cover and performance.

The final reduction in the connected electrical load (kW) resulting from the new scheme is calculated to be some 31% lower than the old scheme.

ADIAN therefore delivered a scheme that not only increased energy efficiency but also improved the quality of the light output. It is projected that the new lighting scheme will reduce carbon emissions by some 7 tonnes per annum.

”The light level is better and more even. There aren't the dark areas which we had before.”

- Dr David Johnson, Librarian, St Peter's



Key insights:

- When working with historical buildings, it is important not to compromise their integrity and to find ways to improve the existing aesthetics wherever possible.
- Luminaire selection can be challenging. However, taking the time to analyse what is available ensures that the most suitable product is selected and the best possible results in terms of energy efficiency, light output and cost savings are obtained.
- Working closely with the client, a consultant can design a scheme that delivers on multiple levels and is suited to the space being redesigned. An installation timetable that does not obstruct day-to-day activities can also be agreed.



For further details, contact Robert Gevargiz, Director, ADIAN Consulting on 01908 306 018 or email robert@adian.co.uk

www.adian.co.uk