



STRATHCLYDE UNIVERSITY

PIONEERING DRUGS RESEARCH
CENTRE UPGRADED WITH
ADVANCED LED SYSTEM.

Dextra
LIGHTING

ABOUT THE CLIENT

The University of Strathclyde in Glasgow upgrades its world-class biomedical research centre and teaching facilities by investing in Dextra Lighting's precision-engineered LED luminaires and lighting controls.



The University of Strathclyde is a top ranking technological University situated in Glasgow's city centre. As part of an ongoing redevelopment project launched in 2010, the university has been building the new and refurbishing the old, to provide the best facilities for its students and compete in today's educational market. Lately, it has focused its efforts on two key locations at the John Anderson Campus in Glasgow's city centre, namely the SIPBS and Graham Hills buildings.

Dextra Group was selected for the project by appointed building consultants, Pick Everard, for its excellent track-record in the educational sector. Over the years Dextra Group has used its extensive manufacturing, design and logistics capabilities to deliver high-quality sustainable lighting solutions to institutions nationwide, within budget and strict deadlines.

LED IN EDUCATION

The higher education sector has long been subject to funding crises. With universities under pressure to perform the unending juggling act of updating their facilities within shrinking budgets, every investment is dealt with extreme caution. Nowadays, high-quality, sensor-controlled LED lighting fits neatly into this scenario, as it offers significant reductions in energy use, carbon emissions with the prospect of fast returns on investment.

This financial and environmental incentive makes LED an immediate solution to higher education's sustainability predicament also because funding for energy-efficiency projects is often sponsored by the government and easy to obtain, whilst reduced carbon emission can lead to further financial benefits from the CRC scheme.

THE BRIEF

The SIPBS building's Biological Procedures Unit (BPU) required clean and fully sealed panel lighting that met specific performance and IP protection criteria. High Lux levels and uniformity were crucial to the design in this area to ensure maximum visibility during test procedures.

Classrooms and teaching areas needed a solution that would comply with BSEN 12464 glare limitations to support the use of computers and offer maximum visual comfort for students and staff.

To create a safe, comfortable and inviting atmosphere in the circulation areas, luminaries needed to provide superb light quality and efficiency without neglecting aesthetic appeal.

In addition to meeting the required Lux levels in all locations, light control modules were to be incorporated in the design to harvest daylight savings and allow staff to dim the lights as needed.

Full emergency coverage was to be provided according to the relevant building regulations.



“Dextra Lighting’s LED products utilise high-performance Lumileds LEDs offering between 60 and 70% reductions in energy consumption compared to fluorescent equivalents, with an added 30% when lighting controls are incorporated”

Biological Procedures Unit – Impervia 65.

The Impervia 65 (IMPR65) was selected for the BPU lab areas as it is one of the most durable, IP65-rated recessed luminaires in Dextra Lighting's LED range of products. Its steel housing, ABS frame and polyurethane gasket are manufactured to endure arduous environments, with its polycarbonate panel offering the final tier of protection against water, dirt and dust ingress. The long-life and reliability of its Lumiled LEDs and IP65-sealed body, minimise the need to frequently replace lamps or clean the luminaire itself, making the IMPR65 a low-maintenance and cost-effective solution for such areas.

From a range of lumen packages of up to 15,200 across 3 sizes, a 4500lm version in a 600mm x 600mm body was supplied to meet the required Lux levels, whilst adopting the most efficient luminaire spacings.

By combining the use of its advanced optic panel offering 93% transmission and excellent diffusion of its high-efficiency Lumileds LEDs, the luminaire provided bright and uniform coverage to maintain maximum visibility for drug handling and testing procedures. At 4500lm the luminaire operates at 104 Llm/w with a high light-output-ratio, comfortably satisfying the efficiency criteria specified by the university's energy consultants.

Available in a range of dimming options, the luminaire was installed with DALI dimming drivers and controls to allow lab users to accurately adjust the lighting. The IMPR65 can also be used in conjunction with a range of standalone sensors for daylight and presence detection to maximise energy savings.

A pull-up version of the luminaire (also available in lay-in format) to provide suitability to the BPU's plasterboard ceilings.



THE PRODUCTS

Classrooms – MODLED Office.

The MODLED Office was installed in five large classrooms in the Graham Hills building to upgrade the existing T5 fluorescent lighting. The luminaire was supplied in 4400 and 5500 lumen packages to provide the recommended 400 Lux average for each classroom whilst abiding with the existing luminaire points.

The MODLED Office is designed to combine glare control and optimum performance, for maximum visibility and comfort in areas where computers are in use. Its dual optic design features a central microprism panel with a polycarbonate high-transmission opal diffuser to offer compliance to BSEN 12464 3000 candelas per sq. m glare limitation, whilst providing excellent diffusion of its high-output Lumileds LEDs.

For new-build applications, therefore, the 400 Lux average for offices and classrooms can be achieved using spacings as wide as 3m x 3m, maintaining compliance to ECA, L2 and BSEN 12464 requirements.

The luminaire is available in a lumen outputs of up to 11,000 across 3 sizes (600mm x 600mm, 1200mm x 600mm and 500mm x 500mm), in both lay-in, pull-up and surface mount formats, to offer flexibility from design through to installation.

Compatible with most mainstream dimming functions, the luminaire was supplied with DALI dimming drivers working with its integral R25D passive infrared sensor to offer daylight regulation. This control system ensured optimal light levels throughout the day whilst harvesting energy savings.



THE PRODUCTS

Circulation Areas and WC Facilities – Protec LED Downlight.

The Protec LED offers total design flexibility with its wide range of customisable options. The luminaire was provided in both a 1100 and 2000 lumen output with both specular and semi-specular reflectors, to offer the most efficient and uniform distribution of light in each corridor, depending on its size and existing luminaire spacings.

White and grey custom bezels were provided alongside colour attachments producing attractive blue and white halo rings onto the ceiling to conform.

Emergency Lighting.

Integral 3-hour emergency lighting was provided with both MODLED Office and Protec LED luminaires. These emergency packages are also available in auto-test variants, offering a digital monitoring system which produces periodic status reports of the entire network of luminaires. This practical and highly cost-effective automated system allows building owners to abide with Fire Precautions Regulations 1997 & BS5266 part 1 regulations that require regular testing and servicing schedules, without the expense of calling technicians to manually test the luminaires. Instead, with minimal training, staff can manage the system and identify any faults using a user-friendly digital interface.

To support the general lighting's emergency functions, a range of BS EN 60598.2.22 compliant, self-contained (standalone) emergency luminaires were installed in strategic locations for optimal coverage.



Amongst these, versions of the IP42 surface-mounted OEZ LED emergency bulkhead were supplied with both a reeded diffuser and an adhesive directional legend for emergency exits. A hanging emergency blade design is also available for clear, maintained exit signage to suit both practical and aesthetic requirements. LED control technology makes this product an energy-efficient solution which requires minimal maintenance to run.

The energy-saving LED3 module also allowed selected light fixtures to be converted into emergency luminaires. The module's lensed high-power LED allows for greater spacings to be achieved, using fewer luminaires with lower charging current than the integral emergency packages for a more cost-effective and efficient emergency system.

The LED3 was also provided in both an Open Area and Corridor emergency variant, to offer optimal luminaire distributions across the entire installation.

FEATURED PRODUCTS



LED3



OEZ LED



IMPR LED



MODLED OFFICE



PROTEC LED