



HOUGHTON C of E PRIMARY SCHOOL

DEXTRA LIGHTING'S LED SYSTEM
HELPS HOUGHTON SCHOOL MAKE THE
MOST OF FUNDING OPPORTUNITY

Dextra
LIGHTING

ABOUT THE CLIENT

Consider the situation. You're a proud headteacher of one of the top 50 highest performing state schools in the UK.

Your staff are working exceptionally hard to achieve the highest standards of education for the children.

Finally, to match your collective efforts, local authorities award you with over £1m in capital funds to reflect the wonderful teaching and learning that happens at your school. Due to your success, the local catchment area has become highly desirable for parents, leading to a housing developer to contribute an extra £235,000 to improve your facilities.

Cash is flowing - Pupil numbers will soon rise from 140 to 210 and the new extension is going to provide an excellent space to accommodate them.

Everything is going swimmingly! But with funding opportunities like this being few and far between, the pressure is on to spend the money wisely - demonstrating good practice in the management of funds and sustainability.

The challenge for educational providers, is not only to improve the quality of school buildings and facilities but ensure that they will also be cheaper, greener and easier to run in the long-term, especially as student numbers are rising on a national level.

The aim here is for schools to thrive and grow, not simply keep their heads above the water. With every pound of taxpayer money on the line - investments need to be secure, future-proof, and sustainable; guaranteed to bring about significant returns in terms of high quality education and revenue where possible.

Together with Cumbria County Council, Houghton Primary School found itself in this precise situation. The opportunity was unique - a lifeline to be seized amidst a time of rampant cuts and scarce resources in the public sector.

With a total of £1,4m at their disposal, the school was able to invest in a new extension with two new classrooms, a kitchen and an expanded school hall, as well as conduct significant planned maintenance work including full rewiring with new lighting and heating fitted throughout the premises.

Reputable engineering consultants, Pettit Singleton Associates were appointed for the project, and were instructed by the council to ensure value for money in each area of procurement, without compromising on the quality of the products and services used.

Having worked with PSA on a number of successful projects, Dextra Lighting were called in as the sole lighting provider for Houghton School. With a sizeable portfolio in the educational sector, Dextra Lighting has the knowledge, expertise, and a wide range of purpose-built products to cater for the specific requirements of modern schools. Vast manufacturing and design capabilities, a dedicated transport fleet and recycling service, allow Dextra Group's subsidiaries to collectively provide the right solution, at the right price, delivered on time and fully compliant without fail.



THE BRIEF

The new lighting system for Houghton School needed to:

- Reduce energy consumption by an average of 70% compared to previous fixtures and fluorescent/HID alternatives
- Minimise maintenance - Less costs. Fewer disruptions
- Give staff added control and flexibility to adjust light levels for different activities
- Integrate into the older architecture and conform to the interior design of new build areas
- Keep installation easy and cost-effective
- Sensor control where possible to maximise energy savings
- Improve light quality to help concentration, aid teaching, and generally create a comfortable and stimulating learning environment
- Adhere to CIBSE and British Standard design and safety guidelines
- Remove and recycle all old lighting fixtures in accordance with WEEE legislation
- Offer an attractive warranty package
- Provide automated emergency lighting

New lighting was to be installed in new and old classrooms, the extended school hall, indoor and outdoor circulation areas, kitchen and other amenities.

By choosing to incorporate high-quality LED luminaires and intelligent control systems included in the government's Energy Technology List, the school was able to cut their costs further, as products offer eligibility to the Enhanced Capital Allowance Scheme. The scheme offers a 100% tax levy for the first year of purchase making investment in energy-efficient technology far more accessible for schools across the UK.

Once installed, sensor-controlled LED lighting will significantly reduce the school's carbon footprint, allowing it to access multiple streams of funding in the form of interest-free loans (repayable though the energy savings made), government-sponsored grants, and improve its performance in the Carbon Reduction Commitment scheme for further tax benefits.

By combining energy-efficiency, low-maintenance and tax benefits, Dextra Lighting's LED solutions are highly affordable and sustainable investments, which will allow schools to free up revenue to improve other facilities or areas of service.

Mrs Lindsey Slater headteacher at the schools enthusiastically stated that:

"We are thrilled with our new extension which has almost doubled the size of the school. The skilfully designed 21st century classrooms have created an inspirational space in which children can reach their potential. The drab, awkwardly designed school hall has been transformed into a bright, multipurpose hall with state-of-the-art kitchen facilities."

THE PRODUCTS

The Runway Continuous/Suspended & Rubix Flush/Suspended - New School Hall Extension & Classrooms

The brand-new school hall needed a versatile and lighting solution to support a number of tasks and activities whilst providing premium performance and efficiency.

Both products ranges offer wide selection of customisable options to give designers maximum flexibility to tailor each installation. The Runway is available in output packages of 8711lm to 42441lm in two luminaire lengths, but can be configured in either continuous runs or standalone format. Opal or microprism diffuser options (for glare reduction) and bi-directional distributions are also available to tailor light quality and coverage to suit the application.

The Rubix Flush on the other hand, can be supplied in outputs ranging from 15911lm to 35941lm across four different body sizes and cell configurations. The metal surround can be easily modified to suit a range of ceiling types in unusual sizes including, 300 x 300mm, 500 x 500mm or 750 x 750mm. The luminaire's cells can be decorated with an optional coloured surround in either, blue, orange or red, creating an appealing halo effect to match the interior's colour scheme and decor.

The Runway's slimline anodised aluminium housing (available in black or white finishes) paired with the Rubix's aesthetically pleasing arrangement of light cells and smooth white finish, brought an attractive minimalist aesthetic to the modernised hall and classrooms.

Both luminaires use the latest LM80-verified Lumileds LED sources offering 90% lumen maintenance for the first 60,000 hours of operation. Installation were therefore able to minimise maintenance compared to conventional lighting by eliminating the need to frequently change failed or rapidly depreciating lamps. These high-performance sources paired with efficient optical designs, allow both ranges to offer high light output ratios whilst consuming 70% less energy than fluorescence or LED equivalents.

From an architectural point of view, a 1500mm version Runway Suspended and a 600 x 600mm Rubix Flush were selected to adapt to the ceiling type and shape whilst utilising the most efficient luminaire spacings. For the slanted areas of the ceiling, the Runway standalone luminaire was supplied complete with adjustable suspension cables, installation kits and 6 core 1.5mm through wire looms, to match the incline effectively and speed up the fitting and wiring process. To save time and money during installation, the Runway's gear tray features quick-release clips for a fast and easy connection into the trunking system supplied. At the centre and front of the hall, the Rubix Flush was provided in a lay-in format (pull-up also available) to facilitate installation within the exposed T ceiling system.

The combination of these two highly efficient luminaires featuring very different optical designs, allowed the installation to provide selective coverage in different parts of the hall, giving further options for different tasks and events. For example, during performances, the Rubix Flush above the stage can be set on full output whilst the Runway can be dimmed to a minimum in the seating areas. However, when the projector is in use, the lights can be switched off at the front of the hall and dimmed to a comfortable level over the seating to ease viewing.

Being composed of nine cells with semi-specular aluminium reflectors and opal frame acting as a cluster of spotlights, the Rubix Flush is well-suited to bring focus to particular areas of a room such as the stage - offering precise optical control for a direct and controlled light distribution and wide luminaire spacings of up to 3 x 3m. The Runway's optional bi-directional distribution on the other hand, produced reflectances on the slanted ceiling creating a modern and elegant lighting effect as well as brightening up the rest of the hall.



THE PRODUCTS

The Rubix's 2899lm output package used here is compliant to the BSEN 12464 3000 candela glare limit and UGR 19 - supporting the use of computers and other monitors during presentations. Combined with a 3990lm standalone version of the Runway, the installation was able to comfortably achieve the recommended default light level of 500lux for multi-purpose halls. BSEN 12464 compliant versions were also utilised in the classrooms to achieve the 300lux and the uniformity levels required for maximum visual comfort and clarity for reading, writing and other general learning activities.

The Runway and Rubix are compatible with a wide range of dimming and sensor controls which allowed the new system to provide appropriate task illumination in both the hall and the classrooms. For the purposes of this project both luminaires were supplied with DALI (Digital Addressable Lighting Interface) drivers which were controlled by accurate and user-friendly Helvar lighting controls. By means of a 7-button scene plate, staff can now easily switch to different lighting pre-sets depending as required. Scenes can be programmed using a dedicated digital interface which can be operated by staff without incurring call-out fees for specialised technicians.

Designed for arduous environments, the IP65-rated IMPR LED recessed luminaire was installed in the kitchens - achieving the recommended average of 500lux for food preparation and cooking areas. The luminaire is hygienically sealed, protecting its electrical components from dirt, dust and water ingress and will allow staff to wash the optic panel on a regular basis.



THE PRODUCTS

Amenity Decorative / Amenity Plus / Discalo LED / Avalon Wallpack - Indoor / Outdoor Circulation Areas & WC Facilities

The Amenity Decorative LED bulkhead was selected for stairways and corridors and was fitted with an integral Reacta 25E microwave sensor offering an on / off function for presence and daylight detection. From a range of four outputs, 1234lm and 1636lm versions were installed offering a light output ratio in excess of 80% whilst operating at efficiency of 122Llm/w. The luminaire is also compatible with Switch, DALI, 1-10v Analogue and DSI dimming options. The IP20 Amenity Decorative is manufactured from injection moulded polycarbonate with an opal diffuser and can be customised with a range of optional coloured ring attachments and semi-recessing kits.

Manufactured in durable polycarbonate, the IP65-sealed Amenity Plus LED was installed in the WC facilities areas requiring added protection water, dust and dirt ingress. Integral sensors were also provided for further energy savings. The luminaire is available in either circular or square body types in various sizes, in either black or white to suit the practical and aesthetic purposes of the design.

The Discalo LED was both wall and ceiling-mounted in various stairways offering the efficiency, functionality and low-maintenance of the Amenity LED range but with an added decorative touch with its attractive white halo effect (also available in blue). The luminaire was also offered with an integral microwave sensor for presence detection and a bright-out function. The sensor can now be set to an on / off mode, or with a bi-level dimming function to dim the LED to 10% output, proving continuous background lighting in accordance with health and safety guidelines and to reassure pedestrians.

The robust and efficient, IP65-rated Avalon Wallpack was wall-mounted around the perimeter of the new extension, illuminating the surrounding playground area and main entrance.

Emergency

Most luminaires in Dextra Lighting's LED range are available with integral three-hour emergency lighting in either standard, self-test or auto-test variants. Integral options save the time and costs of installing standalone emergency units around the building. The Rubix Flush was installed with an integral auto-test option which economised on the time, money and inconvenience of manual procedures by signalling faults on to a dedicated user-friendly digital interface. Once installed, these hassle-free systems ensure each luminaire's emergency functions meet BSEN 5266-1 emergency lighting requirements with accuracy and ease. In addition to the integral emergency lighting, the efficient and low-maintenance Hanging Blade LED luminaire, provided clear emergency signage to safely and clearly lead occupants to the nearest exit.



FEATURED PRODUCTS



RUNWAY CONTINUOUS
SURFACE/SUSPENDED



RUNWAY RECESSED



AMENITY DECORATIVE
LED



AMENITY PLUS LED



DISCALO LED



AVALON WALLPACK LED



RUBIX FLUSH



RUBIX SUSPENDED