

**THORN**  
LIGHTING

# BROUGHTON PRIMARY SCHOOL

Case Study



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Working on a brief to create the perfect environment for the pupils and staff, Thorn Lighting has supplied a variety of luminaires for use throughout Broughton Primary School in Edinburgh refurbishment project. Using five different types of luminaire including the innovative IQ Wave luminaire with BasicDim wireless technology, Thorn supplied the lighting throughout the project, providing a low maintenance, energy efficient solution.

The school was originally built between 1905 to 1908. The main school building is a traditional Edwardian school but has undergone major building alterations and refurbishment programmes over the years.

Thorn's Suspended [IQ Wave](#) was chosen for the classrooms, with the integral bluetooth connectivity communicates wirelessly with sensors and switches to provide absence detection and daylight linked

dimming with manual override. It's easy to use with the ability to control single luminaires or combine them as a group, use pre-set lighting scenes or adjust the light to your needs. This can be achieved by a free downloadable APP on your phone or tablet or a wireless (battery operated) scene plate/switch that can be positioned anywhere in the room. At Broughton Primary School the existing switches were linked to a bluetooth receiver in order that the switches retained the same simple aesthetic (power supply was derived from the existing lighting circuit).

Chosen for its elegant design, IQ Wave provides light to support comfort, alertness and happiness in schools by taking in to consideration the variety of different functions, forms of communication and physical nature of modern learning spaces. The ideal classroom light distribution, in particular the high cylindrical illuminance, is achieved with the help of a special reflector and ensures perfect lighting for





various tasks, the general space and the different forms of personal communication between teachers and pupils. A range of integrated control systems such as daylight, presence and absence detectors with PIR and microwave sensors, support further energy savings and empower users to manage their own lighting scenes. IQ Wave achieves a unified glare rating of <math><19</math>, in line with the EN 12464 standard on workplace lighting.

The extremely robust [HiPak PRO LED](#) has been used to provide the perfect illumination in Gym Hall. Utilising dedicated optics for precise light control and providing significant energy savings when compared to traditional HID fittings, an on board thermal management system ensures the LEDs performance and lifetime. HiPak Pro LED is up to 45% more efficient than 250W/400W alternatives, combining high efficiency (50,000-hour lamp life) and low maintenance. Dedicated individual optics provide precise light control for high level mounting applications. The introduction of dimming control allows the luminaires to be controlled and dimmed in banks, particularly useful for school shows and functions that are staged in the multi-function Gym Hall.

Simple to install, use and maintain, the IP66-rated [Aquaforce Pro](#) has been installed in the stores, plant areas and within the swimming pool, using cutting-edge light transmission technology with refraction prisms to create a scattering effect, providing

smooth light without sharp corners, and a maximum light levels. This robust luminaire is built to resist ambient temperatures ranging from  $-20^{\circ}\text{C}$  to  $35^{\circ}\text{C}$ , and its clever drip-edge design avoids dust depositing on the light output surface, so that any accumulation of dirt has minimal impact on performance.

[Glacier](#) a very high performance (76-107 Llm/W) decorative luminaire is providing illumination in the central Atrium and entrance hallway to provide an excellent quality of light in an attractive, pendant fitting. Glacier offers an efficient alternative to traditional HID pendants with energy savings of over 27% and dimming options to further enhance energy saving opportunities. Precision-designed LED bulkhead [Piazza LED](#) has been installed around the external perimeter of the school to provide security and way finding lighting, with the use of a precise directional LED light source. Piazza offers optimal light distribution with a minimal upward light ratio of less than 2.5% (ULOR), efficacy of over 106lm/W, excellent light quality with a colour temperature of 4000K and a CRI of 80 and a lamps life of 60,000 hours, thus reducing maintenance.

The result is a perfect environment for pupils and teachers alike that uses extremely efficient luminaires to achieve maximum energy savings through the use of luminaires wirelessly linked to sensors. Up to 75% of the energy consumed by lighting can be saved in functional buildings by making optimum use of daylight.



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