

SILENT
DESIGN



Kingston Grammar School wireless
emergency and LED upgrade project



The upgrade of the lighting at KGS consisted of three main parts:

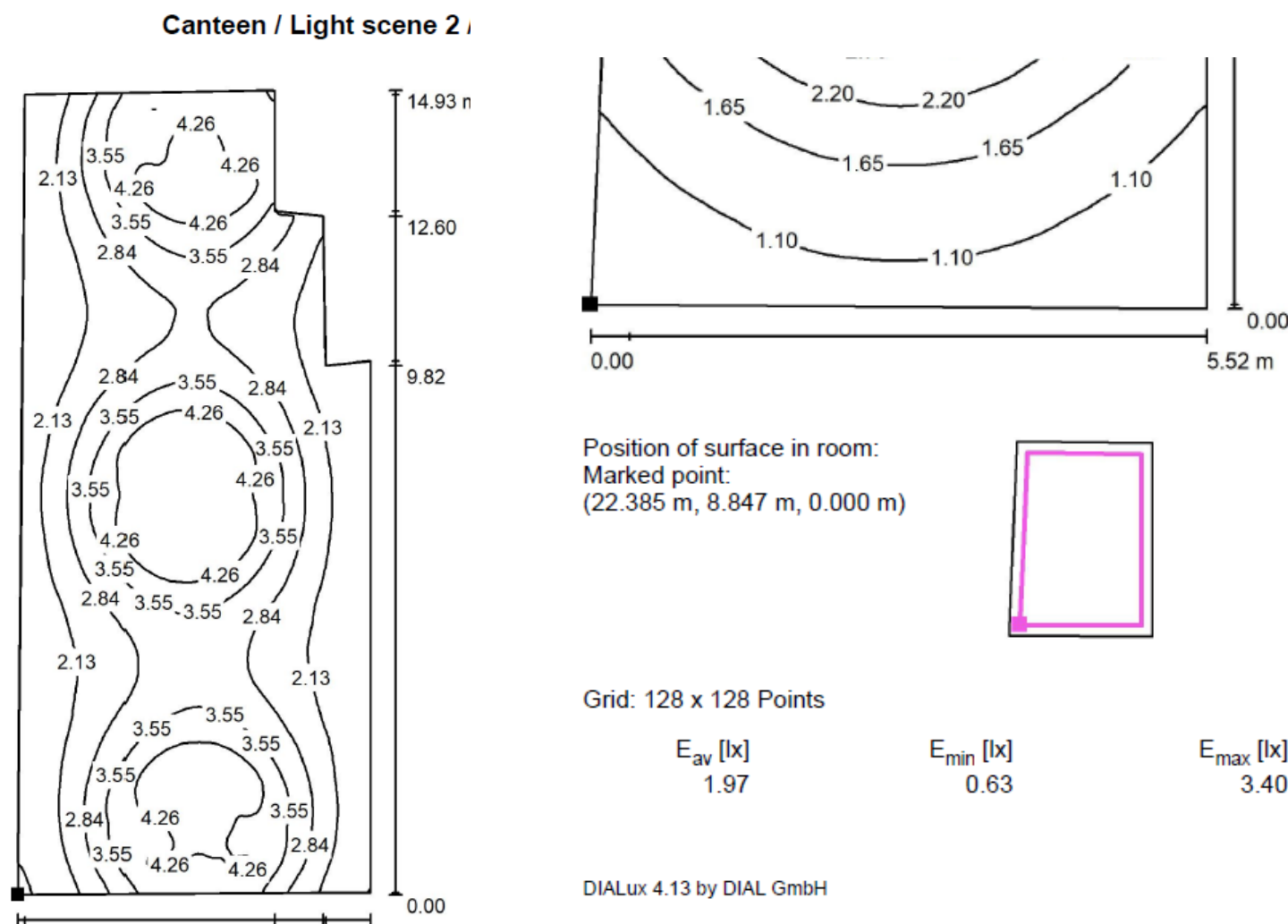
1. Exterior lighting upgrade from metal halide to colour change RGBW LED in the front façade and to the rear courtyard
2. Install completely new emergency lighting along with a wireless emergency monitoring system to three separate buildings with over 400 wireless devices.
3. Retrofit of fluorescent lights in the Art block and the main Hall to LED and wireless controls



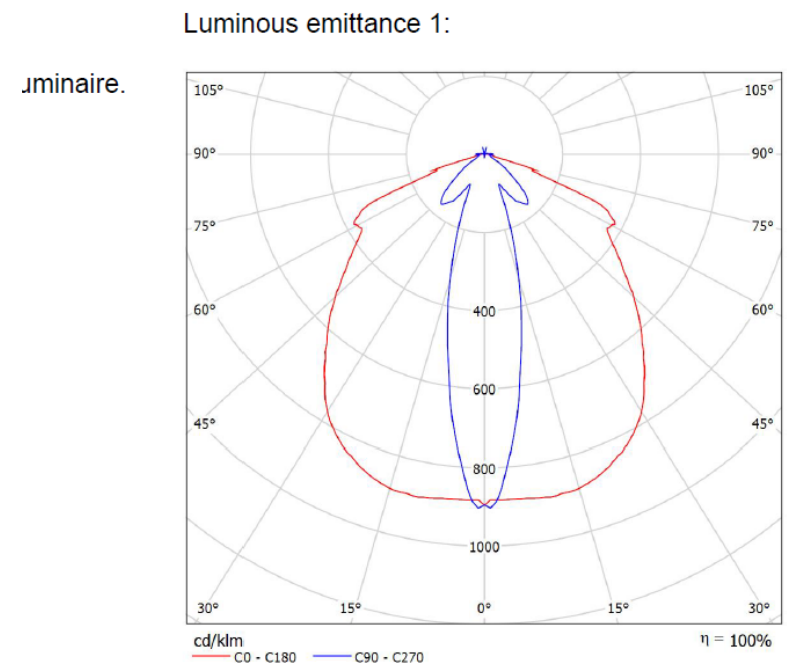


We were fortunate enough to design and supply the lighting and the wireless controls. This allowed us to provide everything in a planned out manner to minimise setup time on site.

1. The design was done after site surveys of the school. Emergency lighting was sourced from the likes of Tridonic to fulfil the various requirements of each space.
2. Lighting calculations were undertaken in Dialux software to get the require emergency illumination levels required under BS5266.

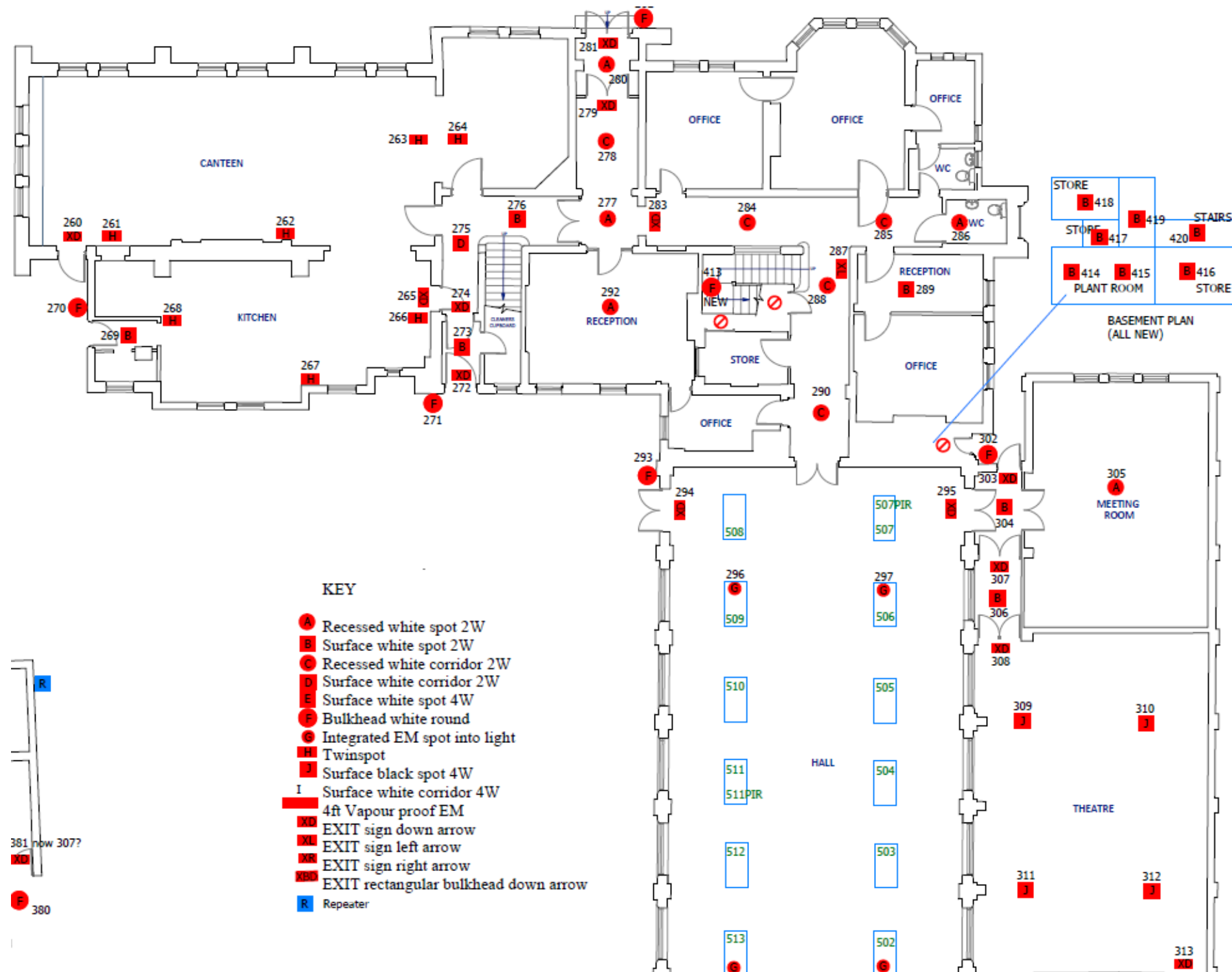


Tridonic 2W Escape Route / Luminaire Data Sheet



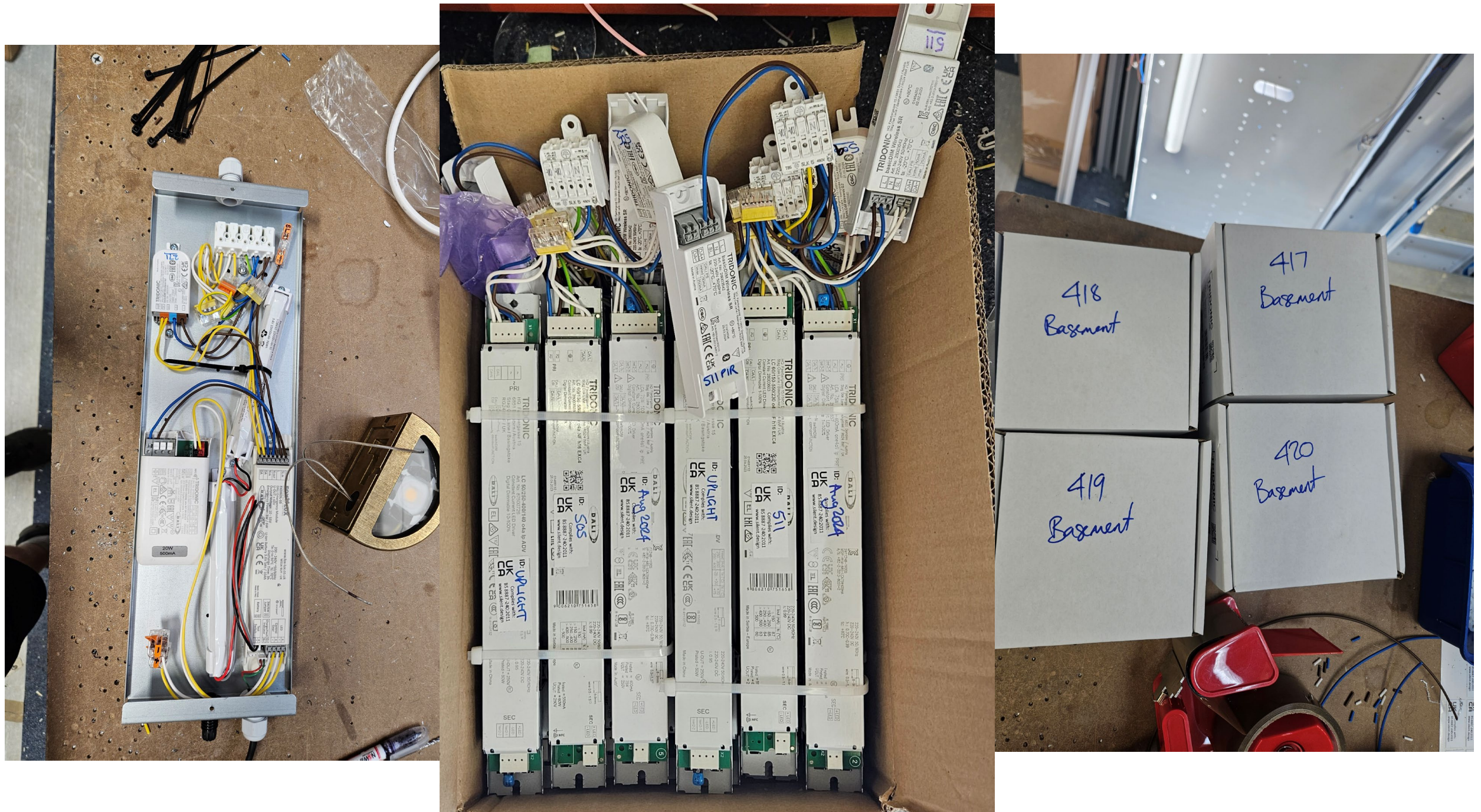


Once the calculations were done the lighting layouts were drawn up and each light was given a number. This number would be the Casambi ID for the wireless controls.



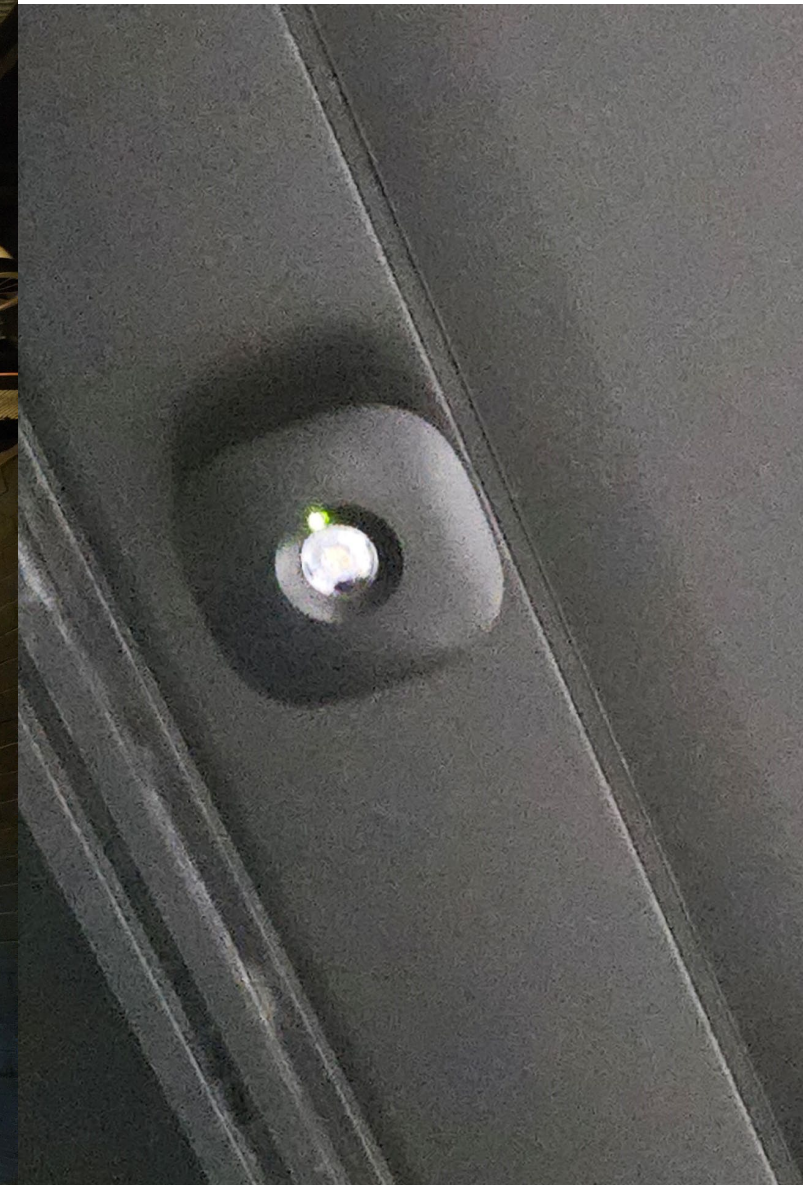


Taking the drawings we then powered up all the wireless nodes and added them to a wireless network with their ID to avoid spending time on finding the devices on site. The devices were then placed into the emergency lights which consisted of Twinspots, bulkheads, surface spots, recessed spots, EXIT signs and exterior lights. The outside of each box, the outside of each light and the nodes were all labelled with their correct number to ensure the correct and easy install on site.



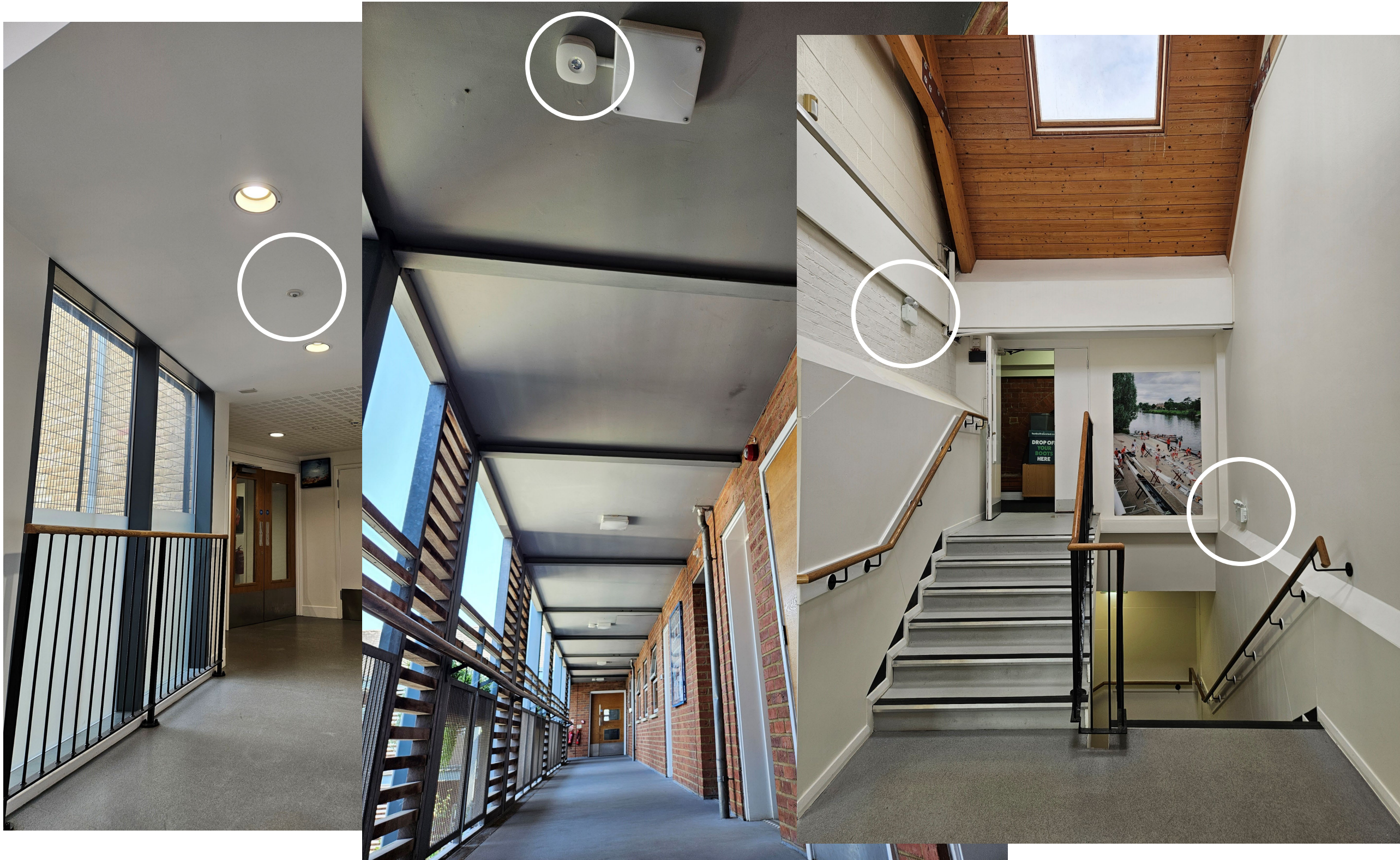


In site meetings and ongoing discussions with the electrical contractor ensured all lights went into their correct places. Images are of the Theatre where we supplied black surface spots, twinspace, and non maintained EXIT signs.



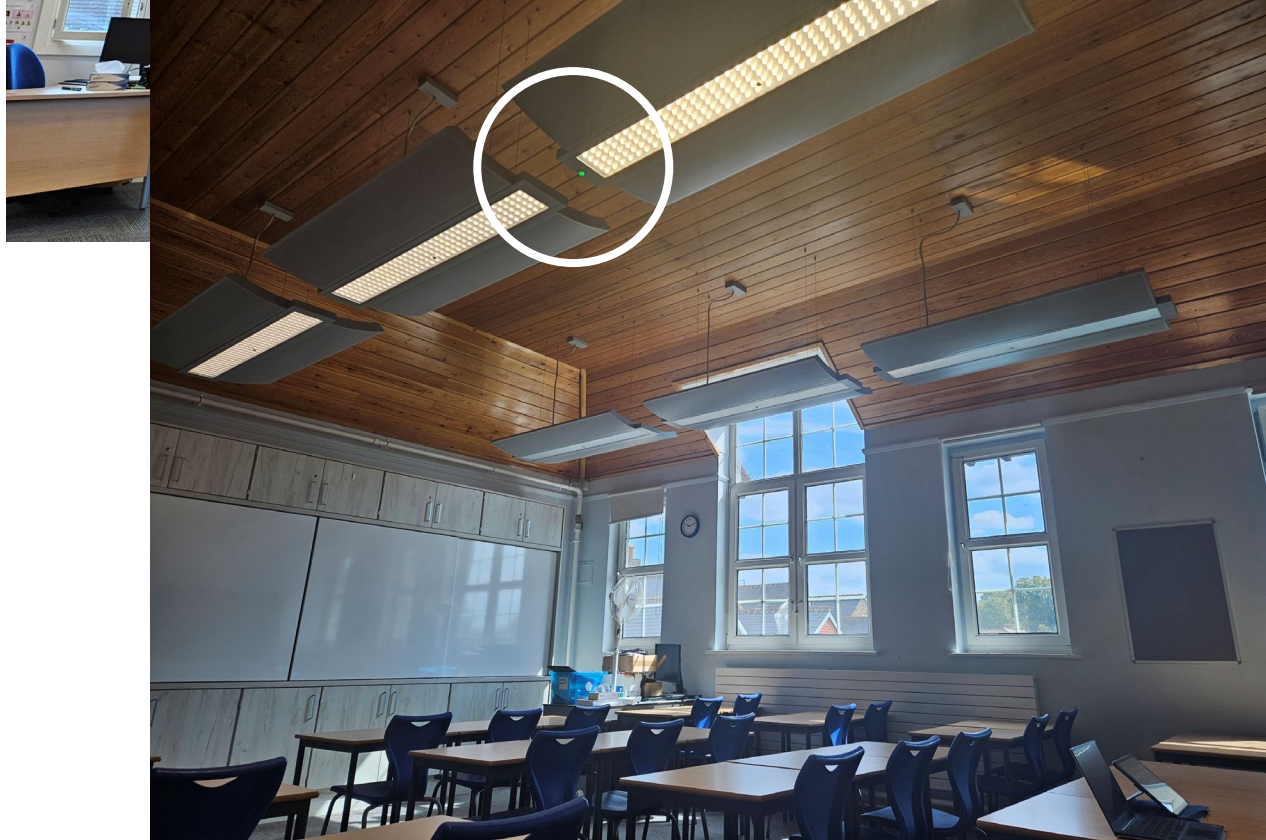


Other images of the school where we supplied emergency lighting to such as these corridor areas.
Twinspots, surface and recessed emergency spots and all illuminated EXIT signage



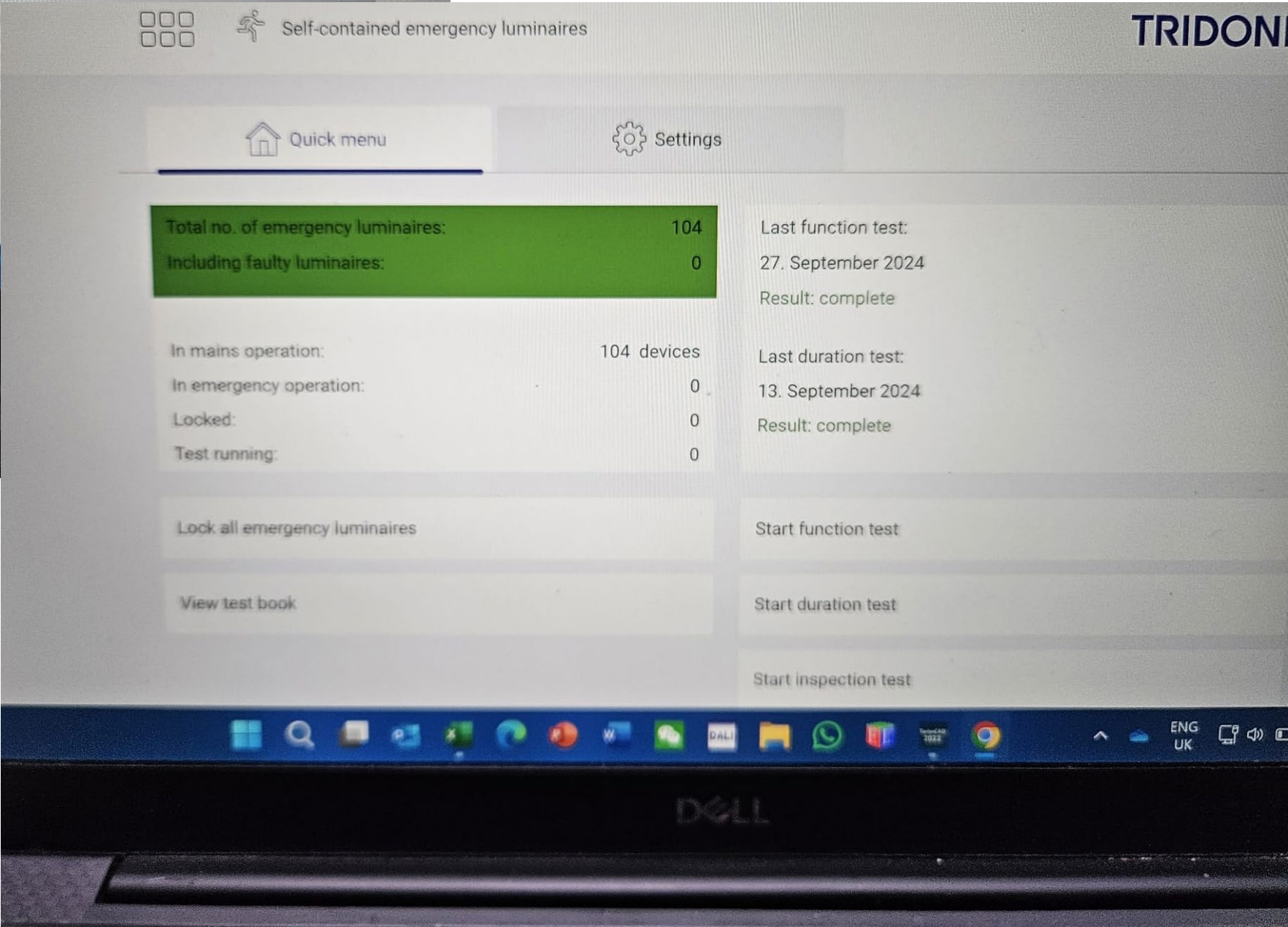
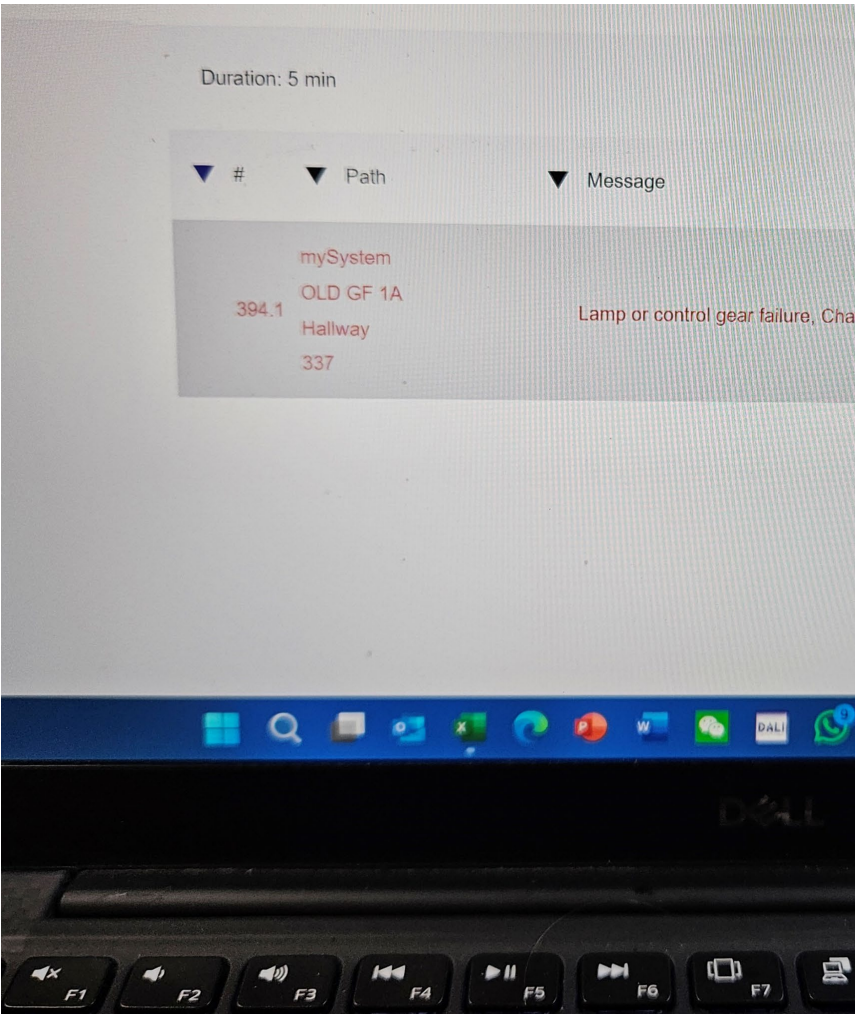


There were many well thought out solutions for emergency lighting in the classrooms. Surface spots for the technical rooms, recessed spots for the standard classrooms and integrated spots into areas where there were suspended lighting.





The front end DALI software from Tridonic performs automated tests for duration once a week at your time of choosing. It also performs yearly 3 hour tests as per BS5266 standards and reports any faults. See below for an example. As you can see it directs you to the building, the area and the numbered fitting ID, so it can be serviced quickly.





In parallel with the emergency monitoring project, there were several lighting retrofit opportunities to be rolled out. The Art block and the Main Hal both required upgrading. A solution was designed for both areas and manufactured locally. We then shipped the upgrade packages to site where tech talks were undertaken with the contractor so they could be installed correctly and tested. Wireless lighting controls with daylight and presence sensors were all installed to provide the scheme with even more energy savings.



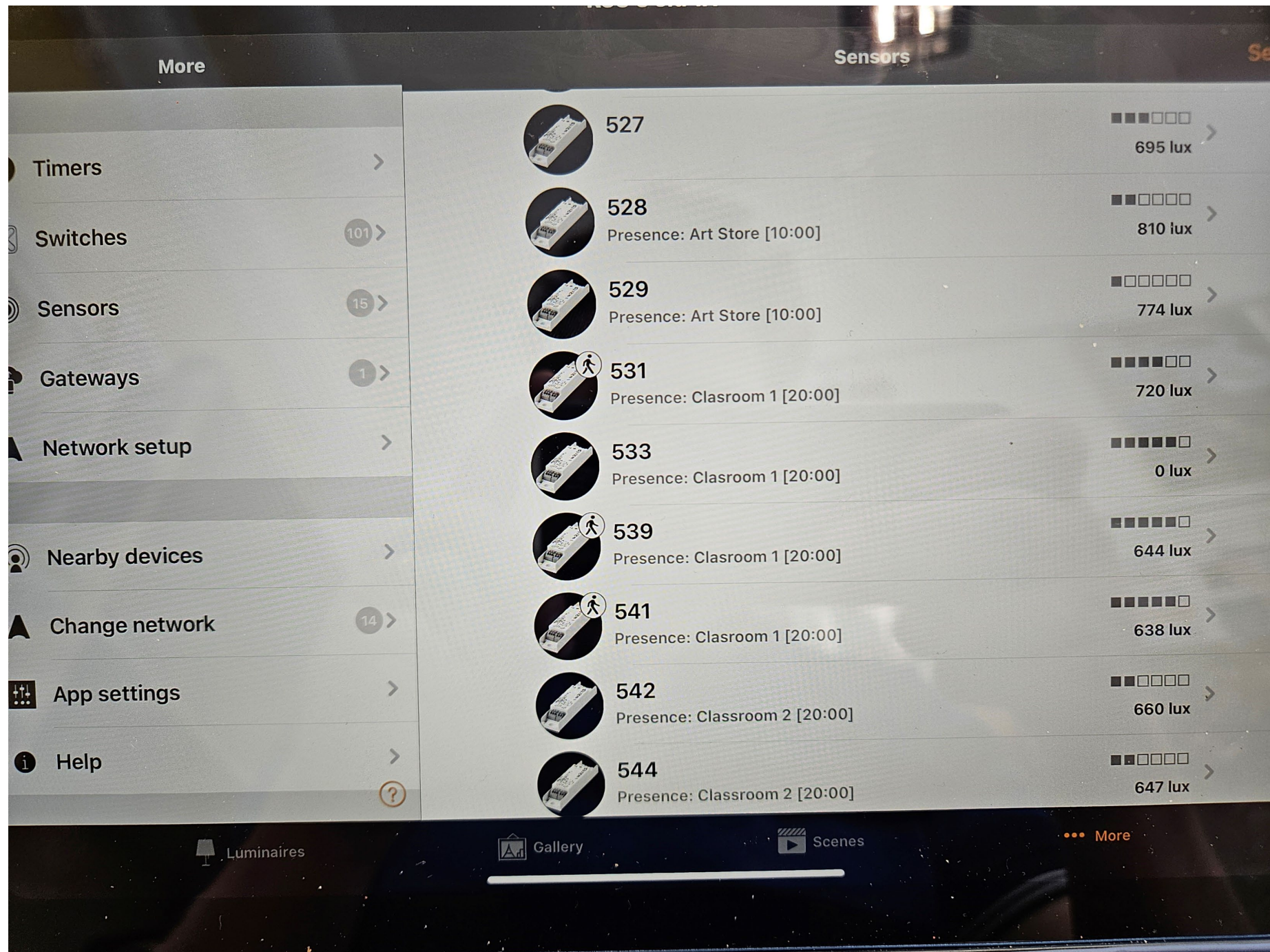


Main Hall and Art block with upgraded LED retrofits and wireless controls. DALI2 sensors provide presence and daylight dimming control, along with manual APP control from phones or wireless scene select switches.





For the wireless controls it is easy to set up in the APP for phones or tablets. On the screen below we can see that the numbered controllers (which match the numbers on the floorplan layout) activate scenes when presence is detected. These scenes are programmed in with a daylight sensor to allow for precise lux level control for further energy savings. The little walking man icon even shows you when presence has been detected by the sensors.





The exterior of the main building has been upgraded from metal halide lighting to new colour change RGBW uplighting. The courtyard was also given new RGBW wall lights and a wireless controls upgrade. This is all controlled via built in timers and a phone APP.

