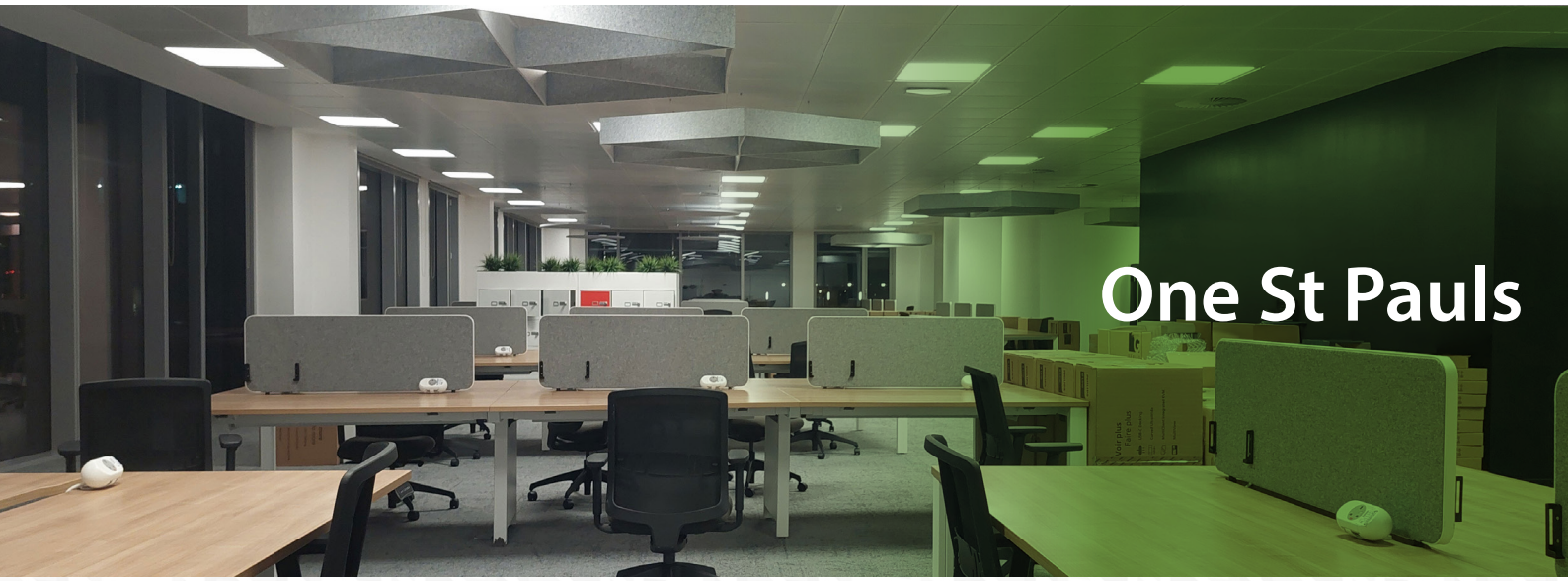
KELLWOOD LIGHTING

Scottish Engineering

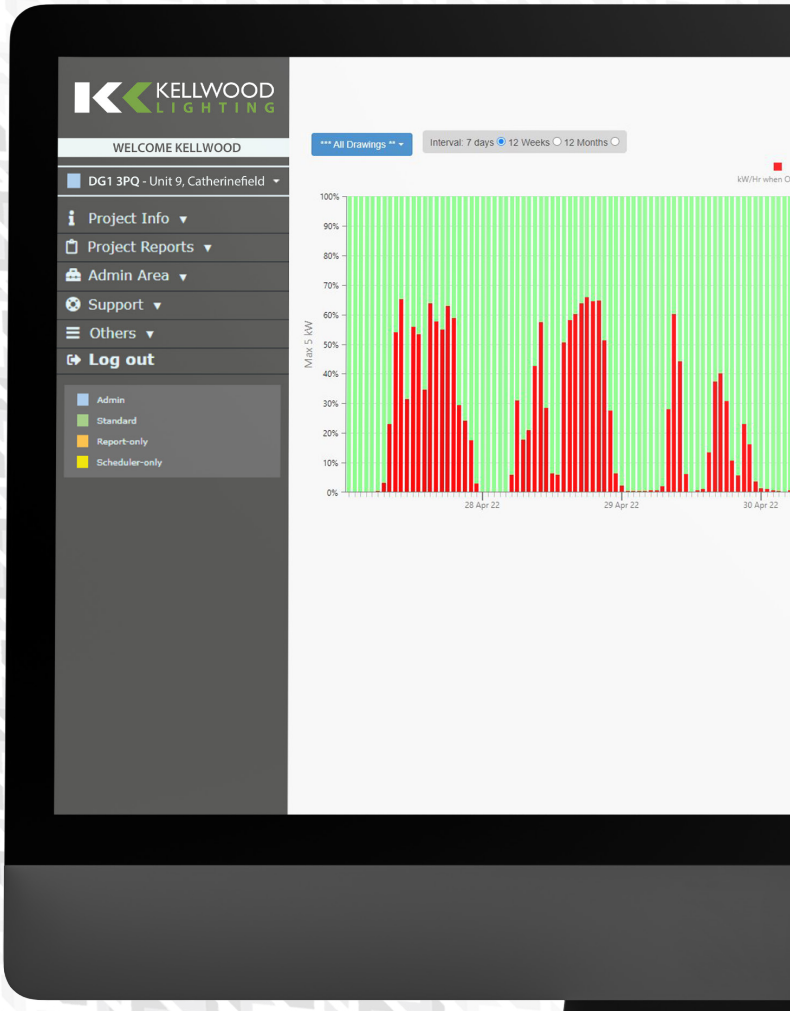


One St Pauls

Located in the heart of Liverpool's Business Quarter, **One St Pauls** provides premium office space. As part of an office refurbishment, **Kellwood Lighting** was approached to provide the lighting solution.

THE CHALLENGE

- A **compliant lighting scheme** to achieve lux levels and uniformity for various applications
- Reduce **emergency lighting** inspection and maintenance costs
- Products must be in-keeping with a high-end business space
- **Reduce energy** and operating costs to aid a path to **Net Zero**
- Integration of Feature Lights with General Lighting



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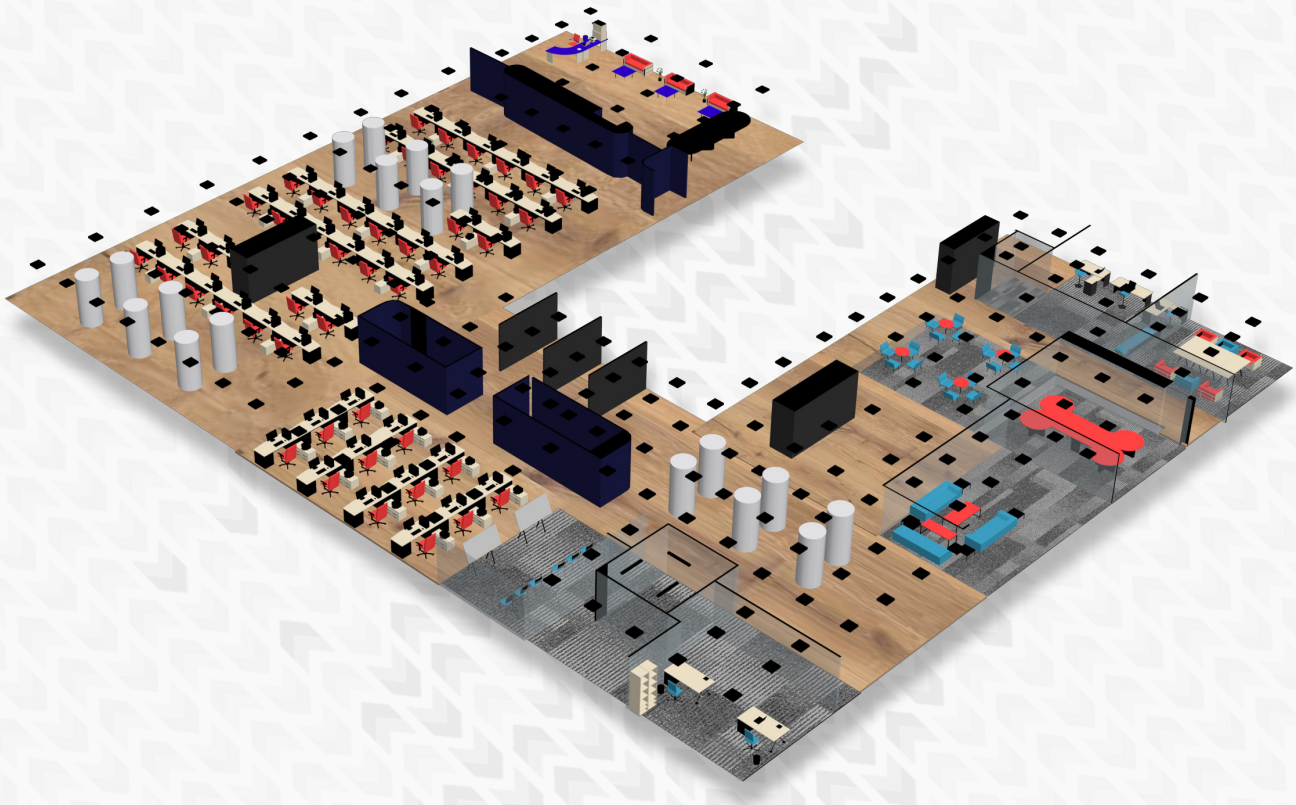
DESIGN PROCESS

Working in conjunction with the project's M&E consultant, Kellwood's in-house design team prepared a lighting product and control package. CIBSE guides and the client's energy philosophy informed the following targets and Kellwood's control recommendations:

Area	Average Lux Targets	Design	Control Recommendation
General Office Lighting	>400lux	UGR<19	Occupancy and Day Light Harvesting
Meeting Rooms	>500lux	UGR<19	Occupancy and Day Light Harvesting c/w Scene-Switch Over-Ride
Reception and Breakout Areas	<300lux	UGR<19	Occupancy and Day Light Harvesting
Emergency Lighting	>1lux	-	Remote Monitoring and Reporting

Kellwood's **Marshall Series** LED panel was selected as the main product for the general lighting. Its TP(a) fire-rating, low glare diffuser, premium DALI2 Tridonic control gear, and compatibility with the proposed metal ceiling grid made it well-suited for the project.

Kellwood created a 3D model of the offices. Lighting simulations confirmed compliance with the project lux and uniformity targets. Designs included both general and emergency simulations.



LIGHTING CONTROLS

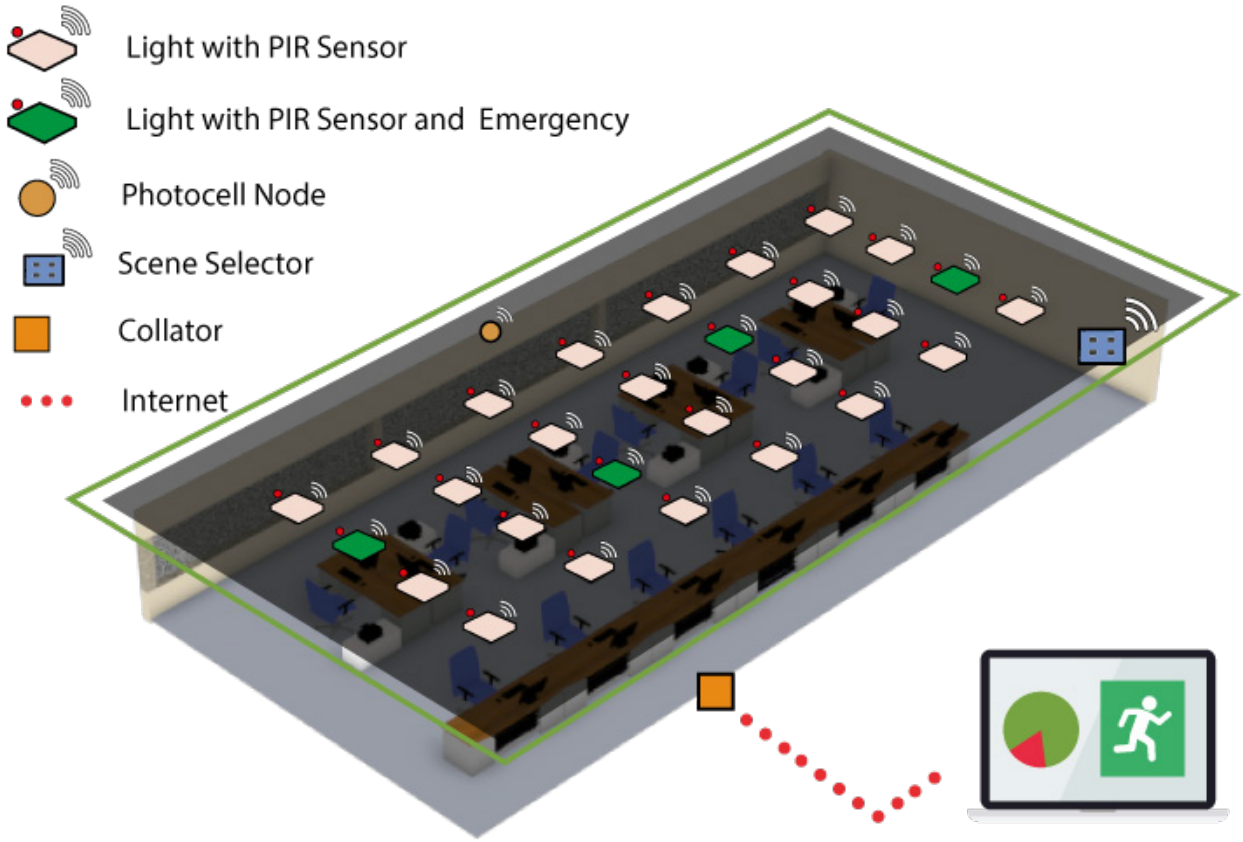
It was clear from the start that the project would benefit from Kellwood's Wireless Pro lighting controls. Wireless Pro can boast energy management and emergency reporting amongst its many features. Pre-assembled in series with each light fitting's driver, and requiring only a permanent power supply to each fitting, Wireless Pro is simple to install (no low voltage data cables are required), so presented a very cost-effective solution to meet the project requirements.

ENERGY REDUCTION

- All general lighting included a wireless node and DALI2 driver. Nodes were wirelessly linked to other nearby nodes ensuring that logical groups of lights turn on/off and dimmed together. Additional use of PIR sensors ensured that any lights within a certain distance from it always come on when triggered. A "background" dimmed level and gradual fade created a pleasant working environment (i.e. lights do not abruptly turn off), while providing significant energy savings

- Strategically placed photocells and nodes were mounted near large office windows. They were wirelessly linked to nearby lights, dimming them gradually to reduce the energy consumption when there was plenty of natural light.

- Scene switches were installed in meeting rooms, allowing light settings to be recalled. Users can override occupancy control to dim lights for power-point presentations.



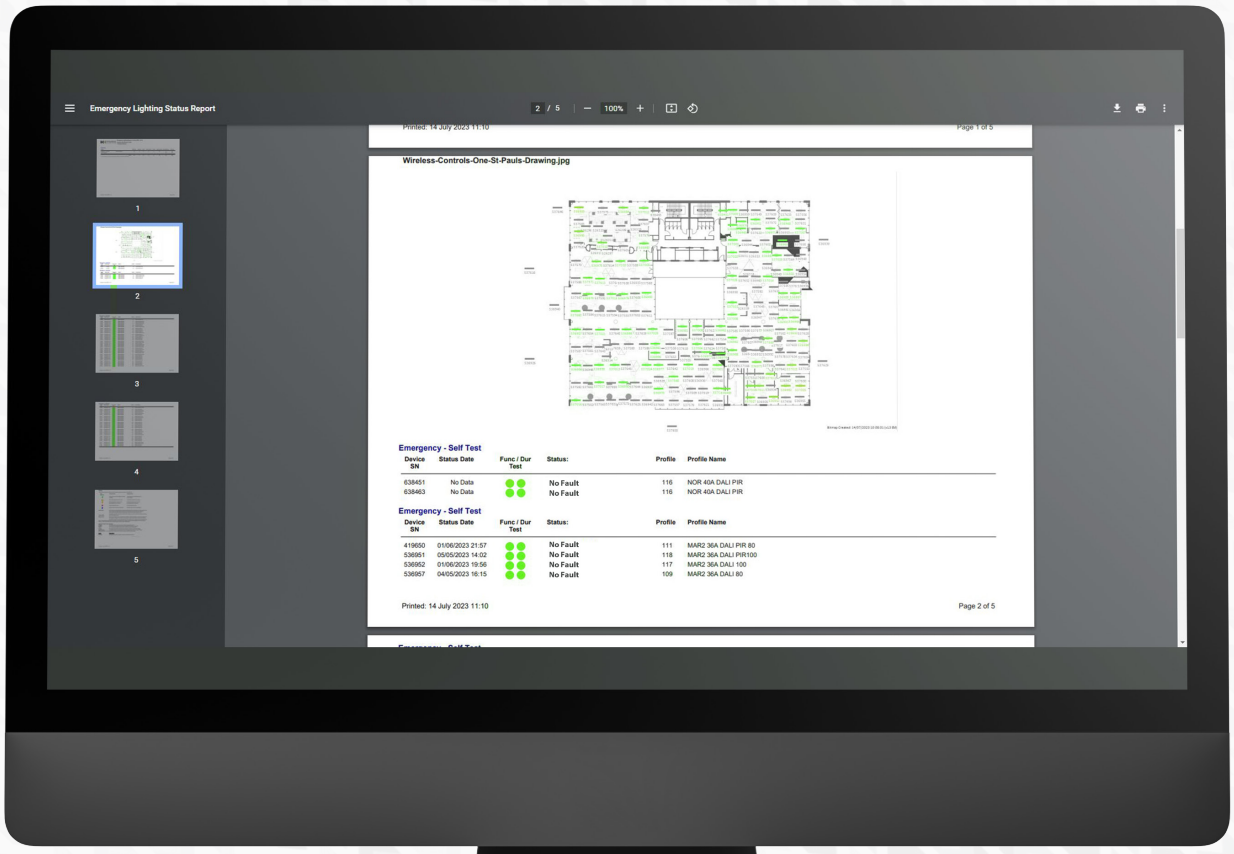
EMERGENCY LIGHTING AND MONITORING

- A combination of maintained and non-maintained fittings minimised the number of emergency products, while also providing illuminated escape routes and visible exit signs.

- All products included LiFePO4 batteries. These provide extended lifetime and therefore lower maintenance costs compared to traditional NiCd batteries.

- DALI Self-Test emergency control gear (meeting the 62386-202 DALI standard) ensure that the emergency lights perform regular automatic function tests, and full discharge tests.

- Connected through a collator, Wireless Pro regularly monitors the status of each individual emergency light. Emergency reports can be emailed to maintenance teams demonstrating compliance with monthly and annual inspections. Reports will highlight individual faults (e.g. low battery voltage), should they occur. This saves significant time and money on physical inspections.



FEATURE LIGHTS

- Feature lights could be integrated into the system using wireless High Power Relay nodes and wirelessly linked to nearby lights with sensors.

THE RESULTS – ROUTE TO NET ZERO

Kellwood commissioned the lights and carried out lux level checks with the client. Light levels achieved were aligned with simulations. Emergency Monitoring and Energy Savings are predicted to provide significant carbon reductions and long term commercial benefit for the new tenant.