The Brighter Choice

LIGHTING IN **EDUCATION**

THE BEST SOLUTIONS FOR THE BRIGHTEST MINDS

CONTENTS

WHAT'S SPECIAL ABOUT **LIGHTING A SCHOOL?**

We have many years of experience lighting schools and colleges, and we find a few themes recur on almost every project.

Energetic kids

Children run about and yes, sometimes balls get kicked and things get unruly.

That means lighting, especially in communal areas, or areas where there is less supervision, needs to be robust enough to take some knocks. At the same time, we don't want lighting that makes corridors and changing rooms look like the inside of a prison.

We have a range of products that combine good looks and high functionality with a level of robustness that will withstand stray footballs and rucksacks.

Avoiding distractions in the classroom

Holding the attention of pupils is one of the biggest challenges teachers face today.

We can help.

Lighting in a classroom should be unobtrusive and functional. In particular, it should deliver the required amount of light on desks and blackboards without causing glare and without making it difficult for the teacher and pupils to make eye contact.

Low running costs

Our lighting will rarely be the cheapest on the market, but it is likely to offer the lowest overall running costs because we are focussed on three things:

- **Energy efficiency**
  - o The light fitting itself. For every application, from changing rooms and multi-purpose halls to class rooms and kitchens we have fittings that are amongst the best in class in terms of light output (lumens) per watt of power consumed.
  - o Appropriate use of lighting controls. We have both stand-alone and fully networked lighting controls so that daylight can be effectively harvested and lights dimmed down or turned off altogether when they are not required.

- **Reliability**
  Our 7-year, unlimited hours warranty is evidence of our confidence in our products and the track record they have earned over many years.

- **Automation of emergency testing, recording and reporting**
  Emergency lighting is obligatory in all schools, but the monthly costs of testing, and then recording and reporting the test results, is often overlooked at the design stage.

  We have automated emergency lighting test systems that can eliminate entirely the monthly costs of testing, recording and reporting.

ENERGY EFFICIENCY

RELIABILITY

AUTOMATION

INSIDE A SCHOOL

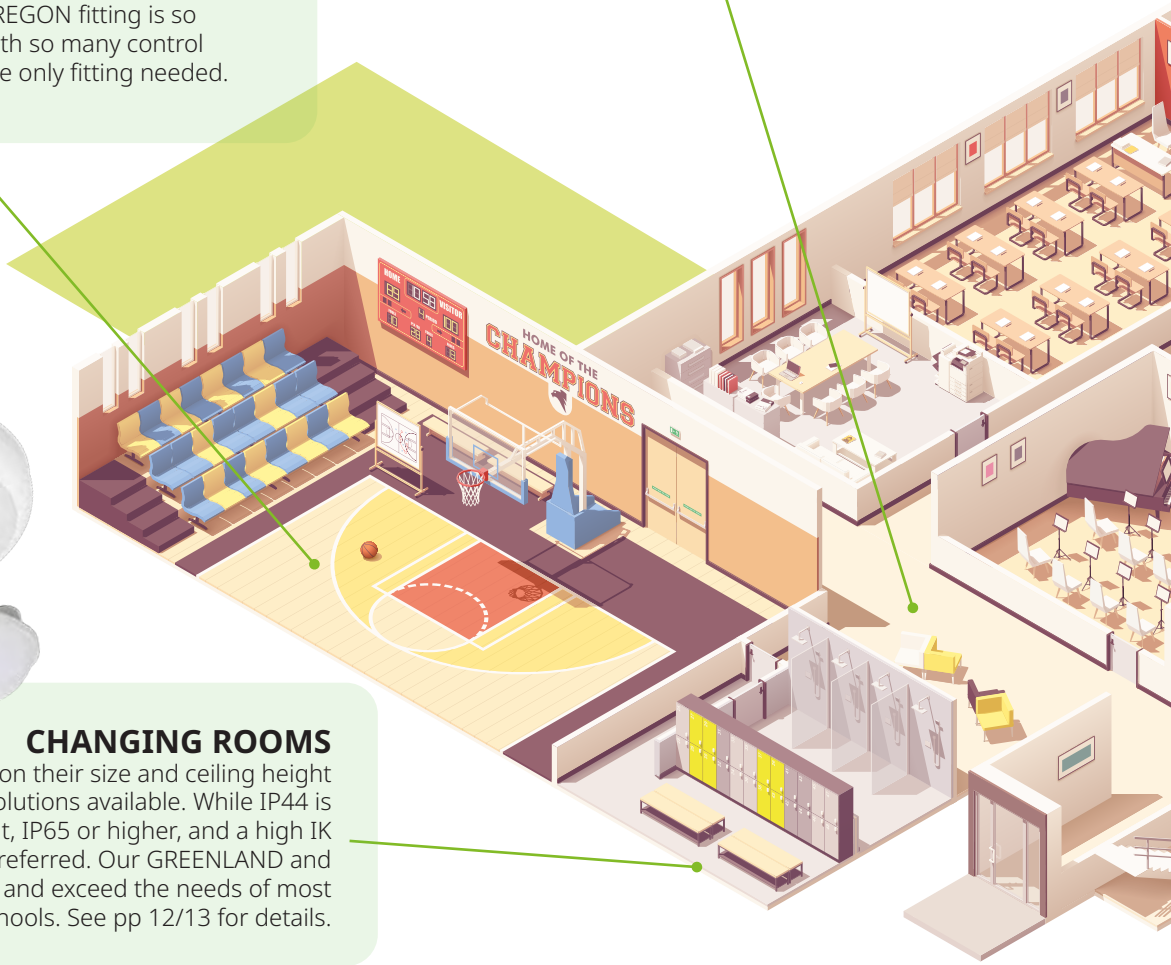
Schools are complex buildings, hosting multiple types of activity both indoors and out. We have the experience, technology and product range to be able to offer comprehensive solutions for an entire school or campus.

RECEPTION

This space often has a high ceiling and cries out for a light fitting with an aspirational and creative aesthetic. Our DALLAS PRO suspended fitting can be an excellent choice. They can be joined together in multiple shapes and can be spray painted to the colour of your choice.

MULTI-USE HALL

Lighting a single space that will be used for school concerts, PTA meetings and basketball is a challenge, but our OREGON fitting is so versatile, and available with so many control options, that it is often the only fitting needed. See pp 14/15.



CHANGING ROOMS

Depending on their size and ceiling height we have a range of solutions available. While IP44 is the minimum requirement, IP65 or higher, and a high IK (impact) rating might be preferred. Our GREENLAND and PRESTON ranges meet and exceed the needs of most schools. See pp 12/13 for details.

LOW RUNNING COSTS

Good lighting cuts running costs in three ways:

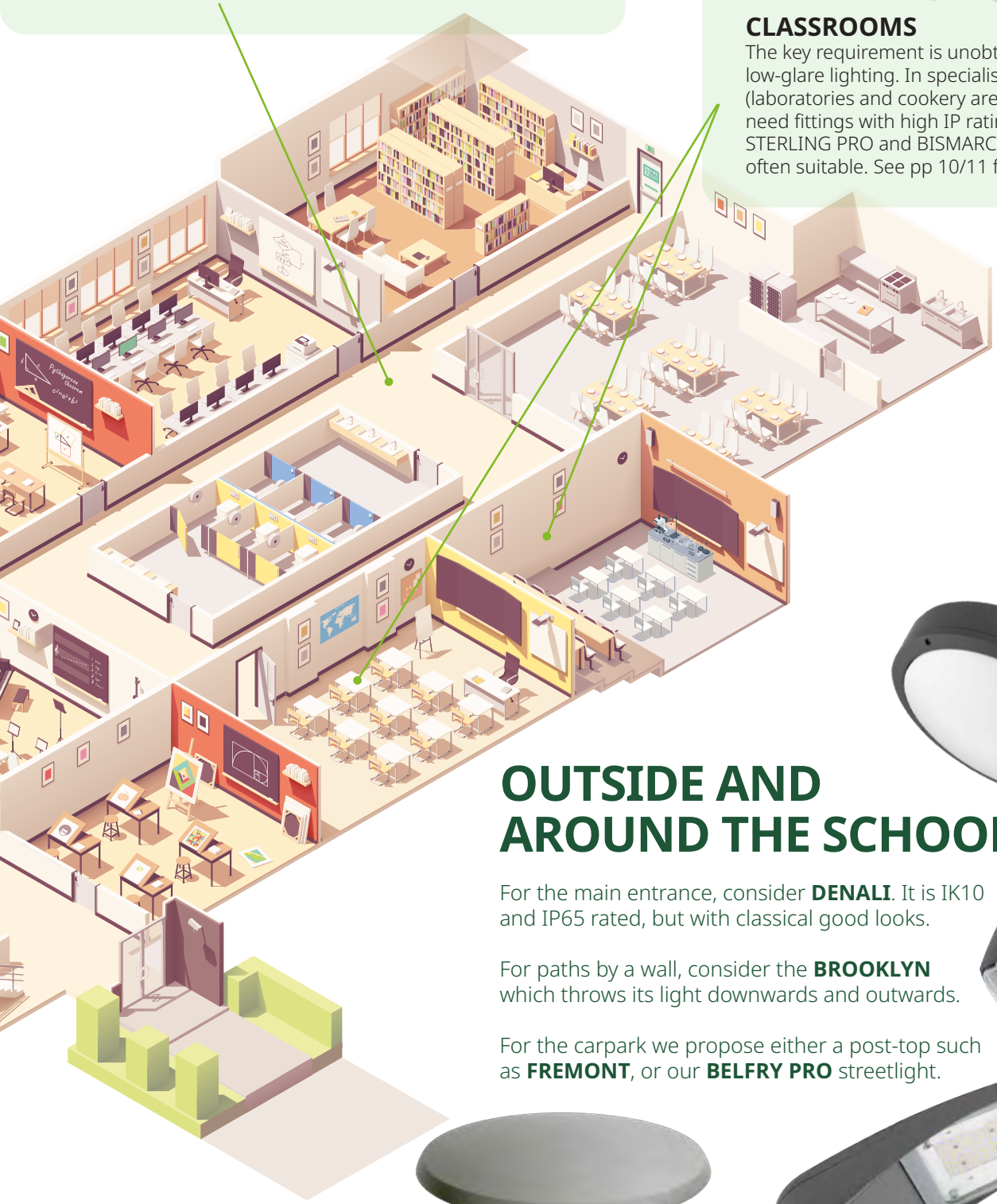
- **High reliability** – all the fittings proposed here are warranted for 7-years
- **Low energy consumption** – cost-effective lighting controls cut electricity bills
- **Zero emergency testing costs** - emergency testing is expensive if it's done the old, manual way. Automated test systems eliminate monthly testing costs.

CORRIDORS

These are heavily trafficked, often unsupervised and intermittently occupied. Our YALE PRO is just one potential solution. See pp 8/9.

CLASSROOMS

The key requirement is unobtrusive, low-glare lighting. In specialist rooms (laboratories and cookery areas), we will need fittings with high IP ratings. Our STERLING PRO and BISMARCK ranges are often suitable. See pp 10/11 for details.



OUTSIDE AND AROUND THE SCHOOL

For the main entrance, consider **DENALI**. It is IK10 and IP65 rated, but with classical good looks.

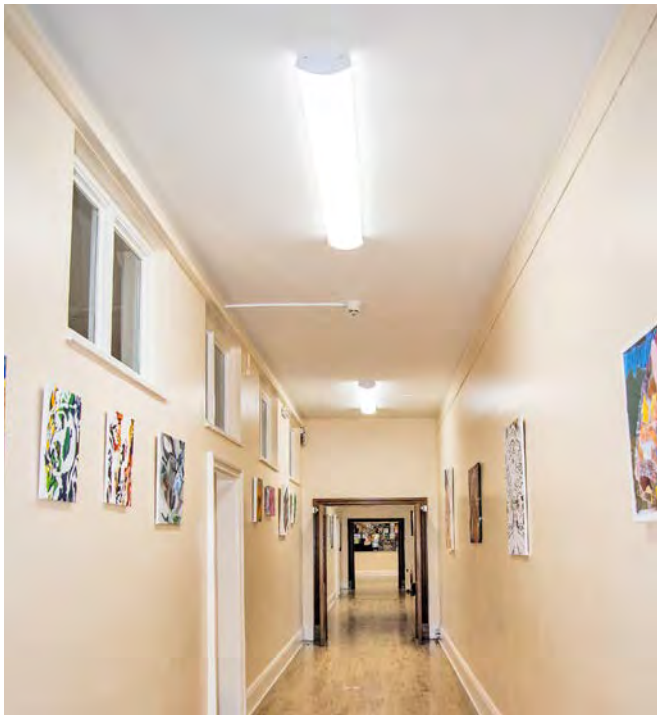
For paths by a wall, consider the **BROOKLYN** which throws its light downwards and outwards.

For the carpark we propose either a post-top such as **FREMONT**, or our **BELFRY PRO** streetlight.

LIGHTING FOR **SCHOOL CORRIDORS**

Corridors can be a challenge to light well.

- **Variable height and width.** Long and narrow, tall and wide – they come in all shapes and sizes, even on a single site. This required fittings with a wide range of lengths and wattages.
- **Bustling spaces.** When classes end there is always the chance of rowdy behaviour when balls are kicked and bags thrown. Light fittings need to be able to withstand that.
- **Intermittent occupancy.** When classes re-start the corridors empty, so there is an opportunity for energy saving with suitable controls to dim the lights, or turn them off altogether.



DIP SWITCHES on non-dimming drivers allow 4 different power settings to be selected

YALE PRO
made for school corridors

- **Multi-wattage adjustable output**

  YALE PRO is available in 3 lengths. Each length is power adjustable with dip-switches, so you can select exactly the right output for every installation.

- **IK10 impact rated**

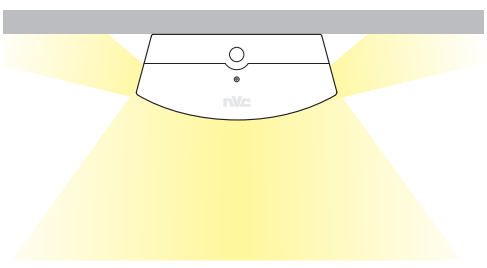
  YALE-PRO is stuffed full of features that enable it to survive and thrive in a school corridor.
  - o Steel body
  - o End-caps secured on captive screws
  - o Polycarbonate controller

- **Available with microwave sensor fitted**
  - o Fitted inside the body – safe and protected
  - o No additional wiring required
  - o A simple, energy-saving retro-fit solution

Did you know?

YALE-PRO's light distribution is perfect for classrooms too.

With 12% uplight, YALE-PRO puts light on the ceiling. This prevents having dark, gloomy ceilings and it reduces glare – usually to below UGR 19 – so it's a great solution for classrooms too.



YALE PRO's light distribution is perfect for classrooms

CLASSROOMS

The key requirements are:

MINIMUM GLARE

Glare hinders concentration and can contribute to headaches, stress and absenteeism.

HIGH UNIFORMITY

Evenly distributed light with minimum shadowing aids concentration and removes distractions.

CONTROL

Lighting controls enable a teacher to adjust the lighting to suit the lesson and save energy through daylight harvesting.

We have 3 standout fittings for classrooms:

STERLING PRO

- Great for suspended ceilings
- Achieves UGR<19 in almost all situations
- High CRI versions are ideal for art rooms

YALE PRO

- Great for surface mounting on a solid ceiling
- Up/down light distribution delivers UGR<19 in almost all situations
- IK10 robust construction

BISMARCK

- For pull-up installation in plasterboard ceilings
- IP54 rated
- Designed for school laboratories and domestic science rooms

YALE PRO is a great low-glare solution for classrooms with a solid ceiling

STERLING PRO
a popular choice for classrooms

STERLING PRO is popular for classrooms, and it's easy to see why:

- **Low glare**
STERLING PRO with a microprismatic controller delivers UGR<19 in almost any situation.

- **High uniformity**
It can be a challenge to achieve high uniformity AND low glare with some ceiling heights and luminaire spacings. STERLING overcomes this with its low, medium and high output options.

- **Full range of control options**
STERLING is available with a full range of control options, including HubSense wireless, so lighting can be tuned to suit each lesson, and even dimmed automatically if the sunlight is streaming in.

3 SPECIAL CONSIDERATIONS

01 HIGH COLOUR RENDERING FOR ART ROOMS

Colour rendering index (CRI) is a measure of the quality of light with respect to how accurately it enables colours to be distinguished. In most areas of a school CRI>80 is perfectly adequate, but in art rooms CRI>90 is recommended.

STERLING PRO is available in CRI>80 and CRI>90. When specifying the art room lighting, be sure to pick STERLING PRO CRI>90.

02 SPECIALIST FITTINGS FOR SCIENCE LABS AND COOKERY CLASSES

Steam, dust and fumes are a feature of these areas.

BISMARCK is IP54 rated and designed for laboratories, clean rooms and kitchens.

03 UNOBTRUSIVE EMERGENCY TESTING

Emergency lighting has to be tested every month. This is disrupting for classes if done in normal hours and manual testing is a significant cost overhead.

Testing is **scheduled**, to suit the school timetable, **automated**, so the cost is zero and test results are logged automatically at **no cost**.

See p 18 for details

CHANGING ROOMS

Two key requirements stand out when we consider lighting in changing rooms

- **Protection from water ingress** - so high IP ratings are required. IP44 is the minimum, but IP65 is preferable.
- **Protection from impact** – because these spaces are often unsupervised. IK10 is the standard to aim for.

IN TOILETS AND CHANGING ROOMS, DON'T OVERLOOK THE HIDDEN COSTS

Emergency testing, when it's done manually every month, is expensive. Access can also be difficult to arrange.

An addressable test system is fully automatic, so the running cost is zero, and no access needs to be arranged. See pages 16/17 for details of the Hub-Sense addressable emergency lighting test system.

Lighting controls save money.

The simplest, stand-alone, occupancy sensor can just turn the lights off automatically after the last person has left.

For example, GREENLAND and PRESTON can both be supplied with an occupancy sensor ready fitted. The extra installation cost is zero and the sensor is protected from moisture and impact because it is located inside the fitting, behind the cover.

PRESTON

- **IP65** – full protection from splashes from all directions
- **IK10** – the highest impact rating available, providing protection from footballs, hockey sticks and cricket bats.

PRESTON is a great solution for toilets and smaller changing rooms. With its pleasant halo effect it is equally well suited to both wall and ceiling mounting.

GREENLAND

- **IP66** – no amount of splashing will penetrate GREENLAND from any direction
- **IK10** – the highest impact rating available, providing protection from footballs, hockey sticks and cricket bats

GREENLAND is a premium solution for changing rooms. With a wide range of lengths and wattages, there is a GREENLAND solution for the largest of changing rooms

MULTI-PURPOSE HALLS

When a single space can be used for events as varied as basketball, amateur dramatics and a PTA meeting, the lighting has to be particularly versatile. With many years of experience lighting multi-purpose halls we find the key demands are usually:

1. ENERGY EFFICIENCY

These are large spaces with high ceilings used for long hours, so the running costs will be high if the fittings are not highly efficient.

2. HIGH OUTPUT

In a large space, high-output fittings are required to avoid having multiple luminaires with accompanying high installation costs.

3. CONTROLABILITY

Switching from morning assembly to sports and then to a school concert is best done with some simple scene-setting or manual dimming.

Each LED is individually lensed so we can provide wider and narrower light distribution to suit your project.

OREGON

a multi-purpose fitting for multi-purpose halls

Efficient

Delivering up to 184 luminaire lumens per circuit watt, OREGON is amongst the most efficient fittings, of any type, on the market today.

Versatile

- Variants are available from 12,000 lumens up to 32,000 lumens. This means that OREGON will be a like-for-like replacement (if that's your requirement) for almost any fitting in a multi-purpose hall.
- Wide or narrow beam light distribution. Depending on the mounting height and application, we can recommend the most suitable lenses for your project.
- Wire guard for sports hall applications. If there is a risk of impact a wire guard can be fitted. This raises the impact rating to IK10.

Available with optional wire guard to achieve IK10 rating

Controllable

Integral sensors, manual dimming or networked controls are all available with OREGON.

EMERGENCY LIGHTING

Emergency lighting is mandatory throughout a school.

LITHIUM only

7-YEAR WARRANTY

ICEL CERTIFIED

INTERMITTENT CHARGE CYCLE

ENVIRONMENTAL PRODUCT DECLARATIONS (EPDs)

We have dedicated emergency luminaires and signage to cover every eventuality.

We also have plug-in kits that enable any of our panels and downlights to be converted to emergency operation on site.

Emergency lighting has high running costs if it's not automated.

By law, every emergency luminaire must be tested each month, with the results recorded and reported to a "responsible person". We offer 4 test solutions:

MANUAL TESTING

This uses key switches. In schools, manual testing has several drawbacks and it has the highest running costs.

- High cost of monthly testing
- Onerous manual record keeping
- Testing is often skipped during holidays
- Access may be hard to arrange for restricted areas

SELF-TEST

Each emergency luminaire performs its own test and reports the results with a flashing LED or buzzer:

- Zero testing cost – it's automatic, but...
- Record keeping and reporting is still manual

This can be a suitable solution for some areas in a school.

HubSense WIRELESS ADDRESSABLE TEST

Using an app and Bluetooth technology, each emergency fitting tests itself to a pre-arranged schedule and reports the results back to the responsible person.

- Zero testing cost – it's automatic
- Zero recording and reporting costs – they are automatic too
- Full records kept for 5 years
- Testing is scheduled to avoid disruption to classrooms and theatres

HubSense is a great solution for schools. It ensures complete compliance and, because it is wireless, the installation cost is low.

DALI WIRED ADDRESSABLE TEST

Using a DALI wired network rather than Bluetooth, this solution shares many of the HubSense features:

- Zero testing cost – it's automatic
- Zero recording and reporting costs – they are automatic too
- Full records kept for 5 years
- Testing is scheduled to avoid disruption to wards and theatres

This is a great solution for schools, especially if a DALI network is already in place.

LIGHTING CONTROLS FOR SCHOOLS

Schools need lighting controls - here's why

ENERGY SAVING

Schools abound in energy saving opportunities. Here are two of them:

- **Daylight harvesting in classrooms**. Many class rooms have a whole wall of windows. Savings of more than 50% can be achieved if the lights dim down automatically when natural light is streaming in.
- **Intermittent occupancy.** Classrooms, corridors, changing rooms and toilets have periods of busy use, followed by periods of no use at all. Kids are not famed for turning lights off, so simple occupancy sensing is a certain way to save energy – often more than 40%.

MANUAL DIMMING & SCENE SETTING

- **Classrooms** need different light levels for different lessons. Raising and lowering the light level enables a teacher to create the best environment for watching a video, experimenting in physics or having some quiet time after lunch.
- **Multi-purpose halls** often benefit from more sophisticated scene setting, with pre-set light levels for different activities.

LIGHTING CONTROL SOLUTIONS FROM NVC

Our lighting control solutions fall into two main categories:

Simple, stand-alone solutions

Many of our fittings can be supplied with a sensor ready fitted. This can be for on/off occupancy sensing, dim-to-10% for corridors and toilets or daylight harvesting for classrooms – or a combination of all three.

Especially in a minor refurbishment or retro-fit project, this is often the lowest cost, but most cost-effective, way to achieve energy savings and a rapid payback.

A fitting supplied with a sensor ready fitted is often the quickest and most cost-effective route to impressive energy savings.

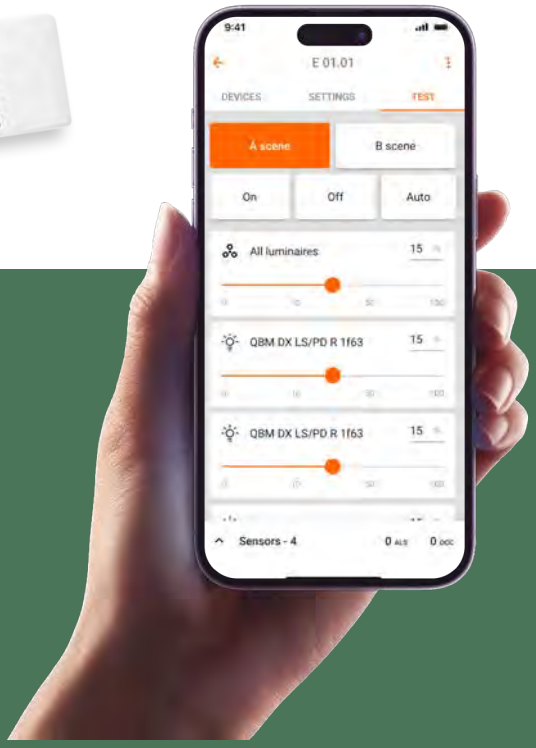
COMPREHENSIVE NETWORKED SOLUTIONS

In many larger projects the HubSense lighting control system is an ideal solution.

HubSense uses Bluetooth technology, an intuitive app for commissioning and a cloud-based service for security back-up to deliver comprehensive, building-wide lighting control.

In fact, HubSense is two solutions in one:

LIGHTING CONTROL
- On/off occupancy sensing
- Daylight harvesting
- Time-based controls
- Groups and sub-groups
- Scene setting



EMERGENCY LIGHTING TESTING

All schools need emergency lighting, but the monthly testing, recording and reporting is an expensive overhead.

Not with HubSense.

HubSense automates the entire process.
- Tests are always completed on time – never missed or skipped
- A record is kept for 5 years
- The responsible person is notified of any tests that failed and the location and nature of the fault.

HubSense is available across our product range, enabling us to offer comprehensive lighting control and emergency lighting testing for an entire building, both as a new-build and in retro-fit.

Call our technical team on 0121 456 6340 **or email** technical@nvcuk.com **for a discussion**

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EXPLORE THE FULL RANGE

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