

# FÖS

l i g h t i n g

SCIENCE & EDUCATION

[foslighting.com.au](http://foslighting.com.au)

# FOS Lighting

## THE FOS EXPERIENCE

FOS Lighting has an experienced engineering and design team who understand the architectural landscape of the lighting sector and its clients, while a dedicated manufacturing team brings cutting edge solutions to market. With quality and experience, FOS Lighting manufactures and distributes a complete selection of quality luminaires and lighting control systems to the following sectors:

- Office & Communication
- Science & Education
- Art & Culture
- Industry & Engineering
- Transport & Environment
- Adverse & Custodial
- Living & Lifestyle
- Retail & Presentation
- Care & Health
- Leisure & Entertainment
- Sports & Recreation
- Experience & Advertising
- Urban & Architecture
- Wellness & Hospitality



## FOS QUALITY

FOS Lighting is a proud manufacturer and exclusive distributor of cutting-edge luminaires within Australia and New Zealand. With our integrated distribution and manufacturing facilities in Melbourne and Brisbane, we can provide a lighting solution from concept to delivery. FOS Lighting is known for its outstanding workmanship, quality, and getting the job done - its International ISO 9001:2015 accreditation is testament to this.

FOS  
lighting



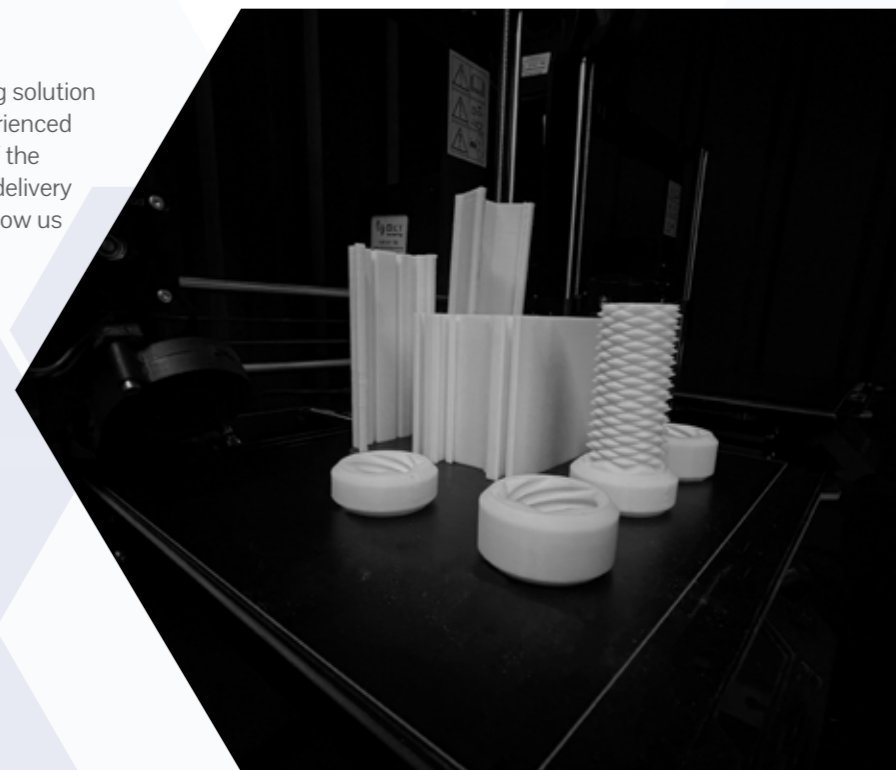
## THE FOS WAY

FOS Lighting is a solutions driven, innovative lighting and controls business using in-house experience and engineering coupled with manufacturing facilities in Australia. Working closely with key account customers, its project lighting solutions business is based on innovative lighting concepts using leading edge technology to generate new levels of impact in both design and function.

FOS Lighting is highly regarded in the market for its knowledge of the lighting industry, this is made possible with its committed, highly talented and motivated team members, that continuously strive to provide the highest quality of product and service in the Australian and New Zealand market.

## FOS - WE DELIVER

FOS Lighting is dedicated to achieving the desired lighting solution for all lighting requirements. The combination of our experienced research and development teams leveraging the power of the latest technology in 3D modelling programs, and reliable delivery of materials from our trusted and dependable suppliers allow us to meet client expectations and deliver on time.





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# Solution Centre

When it comes to Science and Education Environments, it encompasses Primary Schools to Tertiary Education institutions. Lighting within these areas serves to promote safety as well as create the most suitable environments for pedagogic pursuits. In addition to the pursuit of academia, sport is an important part of the educational experience and serves an essential role in creating social cohesion and shared values.

FOS Lighting have a variety of luminaires which will enhance the purely educational pursuit in addition to the provision of an environment suitable for extra curricular activities.

## Janitorial Spaces



## Paths & Walkways



## Physical Education Spaces



## Parking



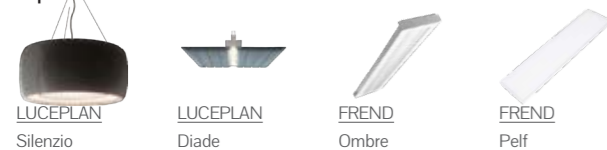
## Building Facades



## Lecture Venues



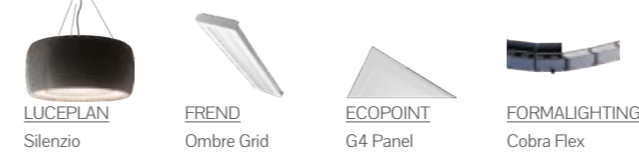
## Specialist Class Rooms



## Communal Areas



## Administration



## Halls & Corridors



## Healthcare Rooms



## Libraries



## Amenities



## Class Rooms



## Labs & Research



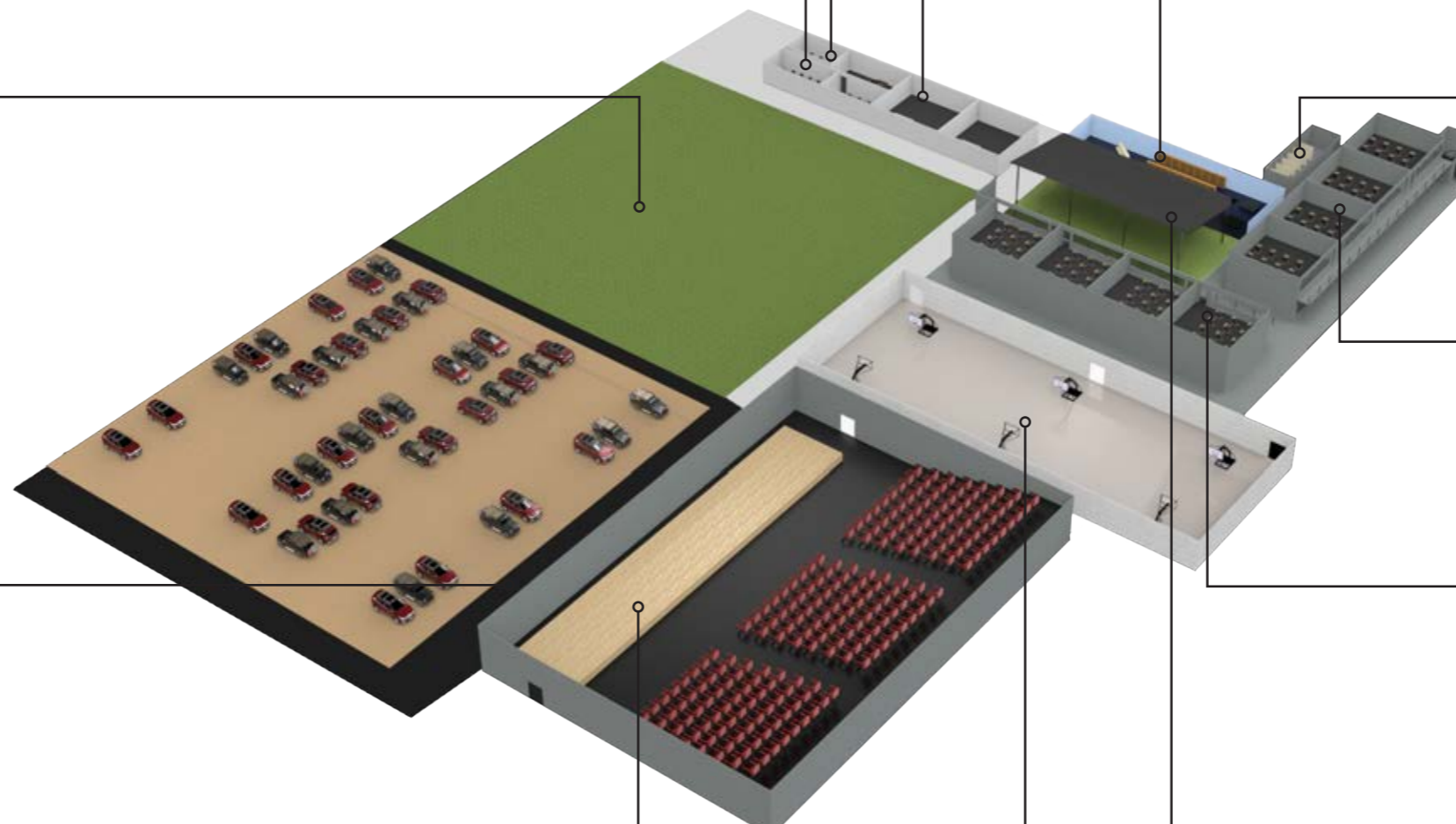
## Campus & Landscaping



## Halls



## Food Services



# Illuminate to Learn

Budget conscious, sustainable, with advanced controls

Educational institutions provide a central function in society; as places of learning and personal and community development. From primary schools to universities, high quality LED lighting can improve the pedagogic endeavour, by affecting the environment in a number of ways, amongst others, improving campus safety, enhancing a school's identity and standing in its community. FOS Lighting can create environments that support learning, adapt to the specific learning needs of learners and students while supporting the objectives of the overall syllabus, both academic and sporting/social.

FOS Lighting's LED luminaires provide energy savings thanks to the cutting edge LED technologies we associate with. Additionally, controlling light levels and 'scenes' via smart sensors 24/7 optimises energy use while providing ideal lighting outcomes for the occupants of the space when required.

The ability to provide different lighting "scenes" provides adaptive illumination suited to different activities on campus, within the same spaces, be they class/lecture rooms or sports halls, helping to provide visual and emotional stability.

Lighting outcomes can also strengthen the school identity (brand) through improved living and working conditions for staff and students, delivered via technologies which enhance the educational experience and support natural circadian rhythms, helping to manage stress

The use of FOS Lighting variable white luminaires in classrooms means that teachers have the ability to adapt the lighting to provide the ideal support for the activity taking place in the space at that time.

- \* Using the light to assist with concentration and boosting activity levels.
- \* Providing lighting scenes that assist with group work.
- \* Comply with specific school or learning-space lighting design standards.
- \* Support energy efficiency via the use of occupancy sensor technology.



# Full Spectrum Illumination

## Focus on spectral coverage and Melanopic Ratio

Colour rendering is a direct function of the spectral composition of the light. Commercial LED natively emits in the blue part of the spectrum, and so phosphor layers within the LED package are used to absorb some of this light and re-emit it in other parts of the spectrum to produce what we know as 'white' light. Those phosphors have typically been configured to produce white light with maximum efficacy, but that efficacy is achieved at the expense of spectral coverage — especially at the red end of the visible spectrum.

The New Zealand Ministry of Education - TE TĀHURHU O TE MĀTAURANGA - updated their lighting specification "Designing Quality Learning Spaces - Lighting and Visual Comfort" which requires LED fittings to achieve  $R_a \geq 80$  colour performance as a prerequisite to be considered for implementation in school projects. It is to be used for new builds, including extensions, pre-fabricated, new contracts for modular buildings, and re-furbishment of existing school buildings, including significant alterations. FOS Lighting has a range of luminaires, current and proposed, that meet and exceed these requirements.

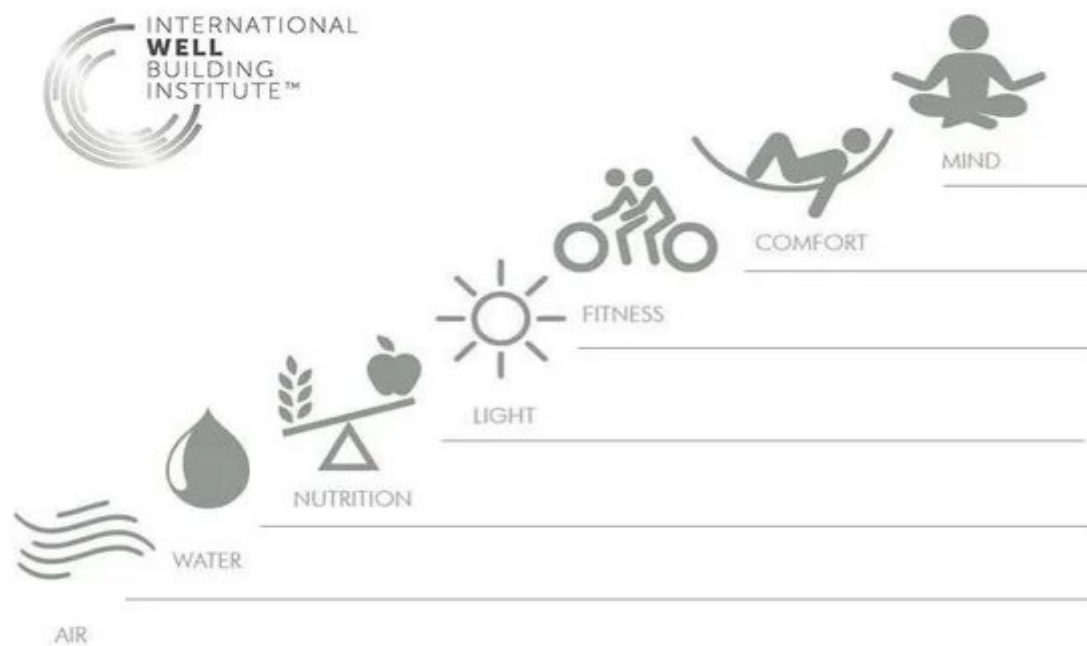
FOS Lighting carries several brands that provide Colour Rendering Performance of  $R_a \geq 95$  and  $R_g \geq 75$  indicating exceptional colour performance in relation to natural daylight.

With the increasing understanding of the biological impacts of our artificially-lit environments on general health and wellbeing, lighting design, especially within the educational sector is focusing on more than just task-based illuminance requirements, lighting deployments are being asked to support good circadian health and minimise disruption to the body's normal day/night cycles. The WELL Building Standard is one of the standards that are encouraging that artificial illumination in commercial office spaces deliver illumination that performs in terms of the Melanopic ratio.

Research into the photoreceptors in the eye and their linkages to hormone secretion demonstrates that the body responds particularly strongly to light in a relatively narrow part of the spectrum (with a peak sensitivity around 480-490 nm), which —perhaps unsurprisingly — corresponds to sky-blue hues. The response is linked to the production and suppression of melatonin, which itself is a key factor in sleep and alertness cycles.

The content of light available to trigger these responses — the melanopic content — is described by a parameter called the Melanopic Ratio, and the higher this ratio the greater ability that light has to support good daytime circadian health.

FOS Lighting can offer a number of products that provide Melanopic Ratios of 0.7 and higher (for 4000K or higher colour temperatures). These products are ideal to assist with the circadian lighting targets of the WELL building standard in addition to the standards released by the NZ Ministry of Education for school lighting in relation to spectral performance. As an added bonus, these luminaires typically provide a useful amount of 'plant-usable' light that provides Photosynthetic Photon Flux – essential for keeping green walls and similar displays healthy and growing. Further contributing to creating a natural environment for users of these spaces.



# Illuminate to Play

## Sports Illumination

As a means to encourage a less sedentary lifestyle, the ability to improve the conditions at sports facilities for both the athletes and the supporters is becoming increasingly critical. For schools and tertiary institutions to ensure that they provide a well rounded educational and social experience for learners and students, access to safe, high quality sports facilities is essential. FOS Lighting provides a range of lighting solutions, both indoor and outdoor that can meet and exceed the relevant standards as set in AS 2560 series.

Energy efficient illumination, which in the case of outdoor sports, where possible, meets the requirements of limited light pollution, and incorporates optics and cut-offs that limit illumination to the total playing area. This ensures that it minimises the impact on surrounding residential and commercial spaces. In addition, having access to a range of lighting plans and associated controls that can adapt to usage and the state of play in multi-use facilities thanks to programmable smart systems.

Lighting designs that ensure uniform illumination and colour contrasts over the playing area, improving conditions for visibility and minimise glare to ensure maximum comfort for players and spectators.

Indoor sports require illumination that meets all the same criteria while being in some ways more challenging as they are suspended from the roof of facilities increasing the probability of producing glare that may affect the athletes or spectators. Having an enclosed facility does mean that controlling lighting levels is arguably easier as would be creating various lighting 'scenes' for different events held in the space, as it helps control some environmental variables such as wind rain and snow.

Some types of indoor facilities such as swimming pools also require that luminaires be able to provide resistance to humid environments as well as robust resistance to chemical cleaning agents and, if required, pressure cleaning equipment.

FOS Lighting carries a range of luminaires and controls that can provide the correct amount of illumination in all of the above sports applications as well as the knowledge of the appropriate lighting standards which will ensure that the products provided meet and exceed the requirements for the facility that is under development or being retrofitted to the latest standard.



Courtesy of: Ecopoint  
Project: Fairfield College Gym



Courtesy of: Ecopoint  
Project: 185 The Terrace

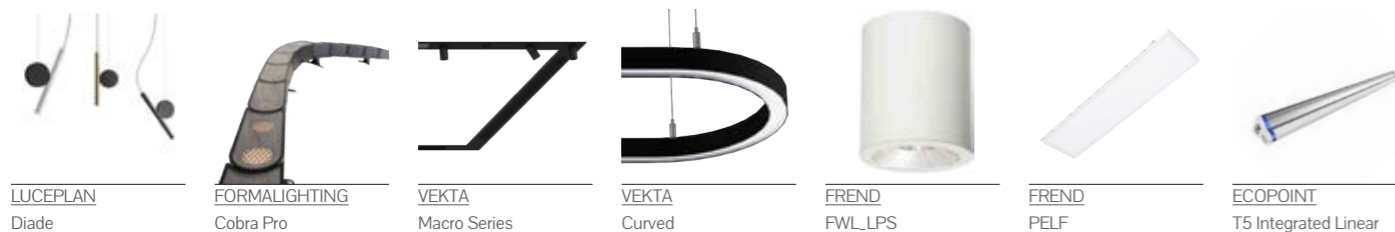
# Administration

## First contact

The space that creates expectations and serves to present the public face of the institution. It is also the space where administrative tasks will be completed. It is essential that it be welcoming and serves to manage the stress of parents and learners/students when dealing with new or stressful experiences. It needs to consider the fact that there is a significant variation in the environmental susceptibility between people.

To assist those who are easily overwhelmed, it is recommended that the area be able to provide safe spaces and quiet zones. This can be achieved using luminaires that double as acoustic baffles such as the Silenzio range by Luceplan. From paperwork to long hours on the computer, these areas require luminaires and lighting designs that minimise the effect of glare, that being from the light source or the reflection from reflective surfaces. FOS Lighting represents several brands that provide the right type of illumination suited to these spaces.

A Combination of linear illumination from VEKTA and Formalighting, can provide exceptional light performance while matching the buildings architectural curves and shapes, while the range of optics will provide the ideal lighting solution for any administrative space.



LUCEPLAN Diade    FORMALIGHTING Cobra Pro    VEKTA Macro Series    VEKTA Curved    FREND FWL\_LPS    FREND PELF    ECOPOINT T5 Integrated Linear

## LUCEPLAN - Silenzio

Silenzio is the ideal collaboration between good lighting design and materials. The fabric used allows for the light shade to minimise noise pollution, while also adding to the decor of its environment.



### Features

- Reduces noise pollution.
- Available in 90, 120 & 150cm diameter fittings.
- Suspended fitting.
- Custom textile colours available on request.

## FREND - OMBRE

OMBRE is a high performing luminaire designed with a multi functional embossed diffuser that achieves exceptional balance between efficiency and visual appeal.

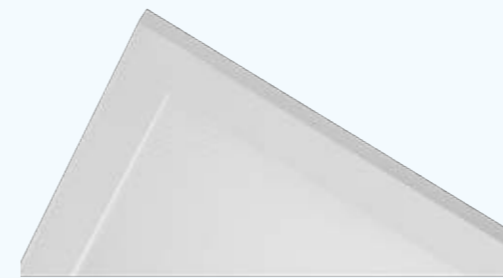
### Features

- CRI >80
- IP44 from below, IP30 from above
- L90/B10 > 60,000 Hours
- 5 Year warranty
- 3000K or 4000K options



## ECOPOINT - G4 Panel SOLUS

Flexible high CRI, panel solution with selectable power ranges to suit all needs.



### Features

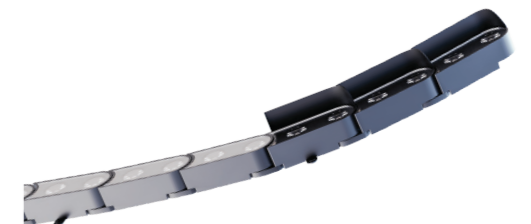
- CRI > 97
- UGR < 19
- PMMA Light Guide Plate & Diffuser
- L90 @ 50,000 hrs, L80 @ 100,000 hrs (25° C)

## FORMALIGHTING - Cobra Flex

Modular system that ensures that the gap between LED modules remains constant ensuring even lighting.

### Features

- Fixed and adjustable mountings available
- CCT: 2700K, 3000K, 3500K, 4000K
- Available with honeycombe and louvre options
- Black Powder coat finish on aluminium body componentry







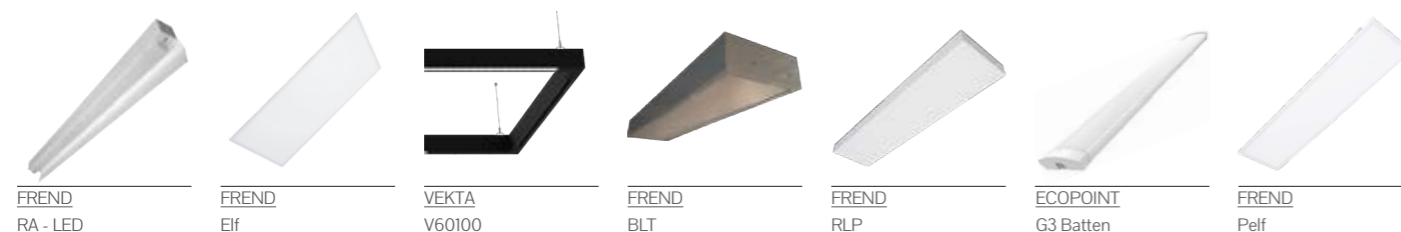
# Class Rooms

## Flexible and interactive spaces

Classrooms are the most occupied spaces in schools, the new methodologies in education mean that these spaces need to be flexible in their usage. Classroom designs have also changed with regards to illumination - relying on natural light during the daylight hours, which is complemented by high CRI artificial light (where specified) that can be adapted to different uses during daylight hours and when natural light is diminished.

To maximise the opportunities inherent in these developments the switch to LED provides opportunities to not just cut energy requirements but to provide increased control of distribution, colour temperature (if required) and levels of illumination thanks to advanced control systems that permit the creation of programmable 'scenes'. These scenes match the requirements of the applications that the rooms are to be used for, be it small group activities, more traditional demonstration or Multimedia and IT based teaching and learning.

FOS Lighting can provide not just the luminaires but also a range of control and management solutions to allow the luminaires to serve multiple roles in numerous ways.



## ECOPOINT - G4 Panel SOLUS

The high CRI panel available in a range of form factors, has exceptional longevity, in addition they are provided with selectable power drivers to suit all needs.



### Features

- CRI > 97
- UGR < 19
- PMMA Light Guide Plate & Diffuser
- L90 @ 50,000 hrs, L80 @ 100,000 hrs (25° C)

## FREND - OSIK

High Performance LED Troffer with Cyanosis compliance option available.

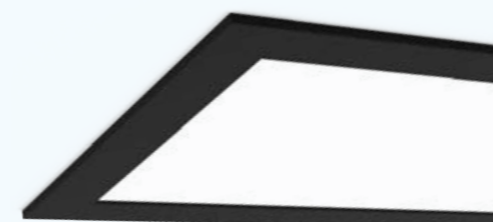
### Features

- Optional rod or wire suspension
- Available in Plaster Recessed, Surface Mount, Suspended, T-Bar
- L80 70,000 hrs
- Self cooling zhaga boards



## VEKTA - Recessed

Linear recessed linear fitting that can be made to custom length with an assymetrical optic, ideal for lighting whiteboards etc.



### Features

- Even light distribution
- IP55 on request
- Various power options
- Various dimming options
- Tunable white on request

## FREND - Ombre

OMBRE is a high performing luminaire designed with a multi functional embossed diffuser that achieves exceptional balance between efficiency and visual appeal.

### Features

- CRI >80
- IP44 from below, IP30 from above
- L90/B10 > 60,000 Hours
- 5 Year warranty
- 3000K or 4000K options





# Lecture Venues

## Multiple uses illumination

Unlike classrooms, lecture venues tend to be rigid in terms of their functional layout. The use of the space calls for a very structured lighting solution that covers the needs of various types of presentations. The lighting design must permit the provision of even light at the work surface level throughout - even if the physical design means that the work surface is different for each row of seating. With the introduction of laptops and tablets as the primary tool for note taking, lighting needs to be designed in such a way as to minimise reflections and glare from adjacent rows' luminaires.

In the case of Multimedia presentations, the lighting needs to adapt to a theatre layout, minimising lighting on the working surfaces of the audience while providing spotlighting/under counter lighting for the presenter to permit control of the equipment involved in the presentation.

When involved in the provision of video conferencing type presentations the audience needs to be lit to provide the opportunity to interact with the presenter. All these alternative 'scenes' need to be programmable and easily accessible to users of the facility with minimal training. This simplicity of use requires highly sophisticated management and control interfaces. In addition to these tasks, lighting also needs to be available to indicate emergency exits and guide occupants safely in the event of a disruption.



VEKTA V60100

MEGABAY Osirion

ECOPOINT Wayfinder

FREND FLE-Mkl

PIXON TECHNOLOGY LED Screen - various

FREND KATO - E

ECOPOINT Deep Downlight

## FORMALIGHTING - Optiwall 3

Wall recessed wayfinding luminaire available in a number of form factors.



### Features

- #s 1 - 3 non stainless steel, 4 - 6 in Stainless Steel
- CRI>80
- CCT: 3000K & 4000K
- Only available with non dimming driver option

## VEKTA - V60100R

VEKTA V60100R provides a breath of opportunity for lighting creativity with its wide variety of options and customisation features recessed into the ceiling of a space.

### Features

- Emergency options available on request.
- Welded joints on request.
- Available optics include Opal Diffuser, Linear Lenses, Track, Louvered & Mini Spots.
- IP55 on request



## AQUA CREATIONS - Te Pendant

A pendant light constructed from a laser-cut lampshade structure that is sprayed with a webbed polymer.



### Features

- Aqua uses natural materials for their lampshades that compliment the organic shapes and sculptural design of their lamps.
- Encloses 3 LED lamps
- Dimmable
- Customisable to client spec

## FORMALIGHTING - Polaris

A surface mounted luminaire with the light body in extruded aluminum inclusive of integrated diamond faceted no-dazzle louvre insert made of thermoplastic.

### Features

- Available with multiple dimming options.
- CCT: 3000K & 4000K
- CRI: 90
- Other CRI, CCT and Tuneable White options available on request
- White and black body options
- UGR < 16





Courtesy of: FRENED LIGHTING  
Project: Stanthrope Civic Center

# Halls

## The heart of the institution.

The quality and flexibility of an assembly hall is related to the quality and adaptability of the illumination. The assembly hall is the central meeting place of an educational institution. To support general-use activities, AS/NSZ 1680.2.3 requires 160 lux illuminance, while illuminance for social events can reduce to 80 lux. However, as a venue for examinations, meetings/conferences and teaching activities, a higher illuminance of 240 lux is required. Effective lighting is a key requirement for an assembly area with the possibility of the room being split into two sections, one for the audience and one for the stage.

The many uses of this important space must be reflected in the flexibility of the lighting. The basic lighting of the room requires consistent, pleasant, glare-free light that not only offers visibility but sets the tone as well. Combining different groups of luminaires to create different lighting effects makes the hall appear even more distinguished. Tunable white and RGBW luminaires further assist with creating ambiance while track mounted spotlights add to the creation of focal points as required for a variety of events. These options, when combined with a suitable management and control system, permits the rapid reconfiguration of the lighting to the multitude of uses the space gets used for.



FRENED LIGHTING MR    FRENED LIGHTING ONYX 2    FRENED LIGHTING ECB-LED    SECURLITE Viola    ECOPOINT Longbay G2    ECOPOINT Highbay G3    ECOPOINT Linear Highbay

## FRENED LIGHTING - ONYX 2

UFO style Industrial High Bay with wide angle beam dispersion, switchable power driver.



### Features

- CRI >80
- 300mm round x 173mm
- 5 Year warranty
- Up to 30000lm
- 4000K or 5000K options
- 110° Beam angle

## SECURLITE - Viola

Viola is a robust, elegant luminaire from an eco-design philosophy.

### Features

- CRI > 80
- IP55
- IK10
- 340mm round x 105mm
- L80B10 / 72,000 Hours
- 5 Year warranty
- 3000K or 4000K options



## ECOPOINT - Linear Highbay

A high output LED linear alternative to standard metal halide or T5 high bays.



### Features

- Ra > 90
- IP65
- IK10
- L80B10 >125,000 Hours
- 5 Year warranty
- 3000K, 4000K, 5000K & 6500K options

## ECOPOINT - Long Bay G2

Ecopoint's LED Long Bays are high output luminaires with a comfortable diffused appearance ideal for applications where wide distributions and wall washing is required.

### Features

- 600 mm to 1200 mm luminaires.
- 15,700 lumens output from 200W.
- L90 @ 59,000 hours.
- IP65
- IK10 across all variants
- SOLUS version: 4000K, Ra ≥95, R9 ≥90.





Courtesy of: Ecopoint  
Project: Oranga Tamariki

# Specialist Class Rooms

## Ensuring a trigger-free environment.

When dealing with students with disabilities such as being on the ASD spectrum or suffering from epilepsy, the environment becomes a very important variable in assisting with creating an enabling space for the educational endeavour. Light sensitivity takes on numerous forms and various issues can act as triggers, certainly near the top of that list would be flicker.

In LED lighting flicker occurs as a result of modulating the current to electric light sources. Even though the human visual threshold is about 50Hz, if a light source is flickering faster than 50 times per second, this sub-stroptic flicker can still have a negative impact on health, wellness, and productivity.

Most FOS Lighting luminaires offer low-flicker operation providing you with the confidence to place the luminaires in the Special Education spaces. When comparing fittings with other manufacturers we recommend that you check the drivers associated with them for flicker.



ECOPOINT  
OptaSoft

LUCEPLAN  
Diade

FREND LIGHTING  
PELF

FREND LIGHTING  
OMBRE

FREND LIGHTING  
ELF

ECOPOINT  
Panel G4 SOLUS

ECOPOINT  
Deep Downlight

## LUCEPLAN - Silenzio

Silenzio is the ideal collaboration between good lighting design and materials. The fabric used allows for the light shade to minimise noise pollution, while also adding to the decor of its environment.



### Features

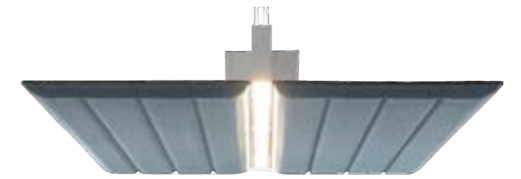
- Reduces noise pollution.
- Available in 90, 120 & 150cm diameter fittings.
- Suspended fitting.
- Custom textile colours available on request.

## LUCEPLAN - Diade

A linear LED lamp that is a component in an modular architectural feature capable of both horizontal and vertical orientation.

### Features

- 3 fabric colours available
- Available in 120 cm and 180 cm variants
- Direct and direct and indirect lighting versions available



## FREND LIGHTING - OMBRE

OMBRE is a high performing luminaire designed with a multi functional embossed diffuser that achieves exceptional balance between efficiency and visual appeal.



### Features

- CRI >80
- IP44 from below, IP30 from above
- L90/B10 > 60,000 Hours
- 5 Year warranty
- 3000K or 4000K options

## FREND LIGHTING - PELF

The PELF Panel has a micro-prism diffuser delivering UGR<19 illumination.

### Features

- IP40
- Non dimmable and DALI dimming options
- L70 50,000 hrs
- 17W, 32W or 50W
- Mounting types include wire suspension, surface mount, plaster and T-bar.





Courtesy of: Unsplash

# Healthcare Rooms

## Diagnostic and recovery support

When dealing with ill learners or students, the environment becomes a very important variable in assisting with diagnosis. Ideally the diagnostic space should have access to illumination that is compatible with the Cyanosis Observation Index. These luminaires should ideally also be flicker free as flicker:

- \* Can induce seizures in people with photosensitive epilepsy.
- \* Can contribute to headaches, eye strain, and fatigue impacting on learning.
- \* Is a visual trigger that studies show can account for 38% of reported migraines.
- \* Can negatively impact individuals with autism due to their visual hypersensitivity, with lighting triggers heightening symptoms

All of which could complicate the process of diagnosis and treatment. FOS Lighting has an extensive range of products developed with the needs of the healthcare sector in mind.



## ECOPOINT - G4 Panel SOLUS

The high CRI panel available in a range of form factors, is Cyanosis compliant and has exceptional longevity, in addition they are provided with selectable power drivers to suit all needs.



### Features

- CRI > 97
- UGR < 19
- PMMA Light Guide Plate & Diffuser
- L90 @ 50,000 hrs, L80 @ 100,000 hrs (25° C)

## FREN LIGHTING - SMS

Sealed surface mount troffer with a heavy duty neoprene gasket that ensures dust, insect and splash proof seal.

### Features

- L80 70,000hrs
- Self cooling, zhaga cetified LED boards
- Inverted diffuser in screw fixed frame
- Available in DALI dim or switch dim



## FREN LIGHTING - FWL Series

The FWL Series is a high quality, high colour rendering downlight, available in recessed and surface mounted versions.



### Features

- Cyanosis option available
- High quality reflector
- Tamperproof and vandal resistant options
- Multiple IP ratings available (Fitting Dependant)

## FREN LIGHTING - ROB LED

ROB-LED is a wall mounted, direct/ indirect over bed light. Separately switched, the uplighter component gives general illumination while the direct provides task lighting.

### Features

- Rated life = 70 000 Hours
- Separate switching for the direct and indirect light
- A range of prismatic and opal diffusers





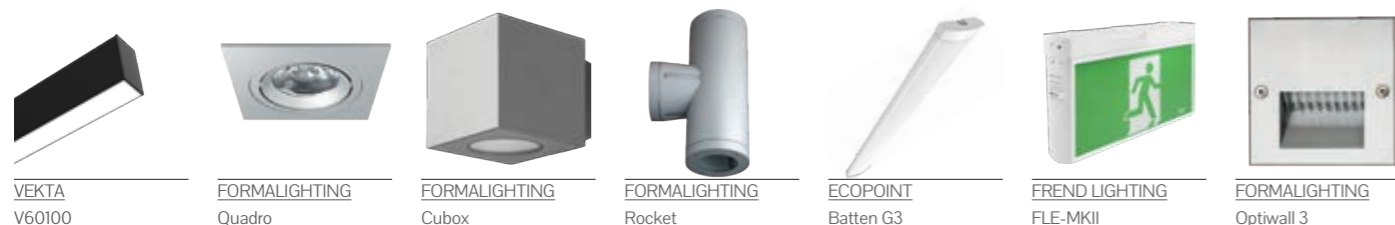
Courtesy of:  
Project: Mary MacKillop Leongatha

# Halls & Corridors

## Wayfinding under all conditions

Public circulation spaces require lighting that permits ease of movement, identification of features, trip hazards and signage as well as emergency lighting for ease of egress in case of natural or man-made disasters. In New Zealand the Ministry of Education has determined the minimum quality of the lighting permissible in schools. FOS Lighting and its New Zealand subsidiary, Ecopoint, has several families of products including; battens, panels, High Bays and downlights that meet these standards. The company also represents several brands that meet and exceed the standard which can be used in display cases and to light reception areas etc.

In addition, all the Emergency Lighting options available via FOS Lighting conform to the requirements as set out in the relevant AS/NZS documentation.



## ECOPOINT - Edge-Lit Panel 150mm x 1200mm

High CRI panel fully Cyanosis compliant.



### Features

- $R_a \geq 97, R_g \geq 95, R_l \geq 95, R_g \geq 100$
- Diffuser type: Micro-prismatic, UGR<19
- L80 @ 70,000 hrs
- 5 year warranty

## FREN LIGHTING - Ombre Grid

OMBRE is a high performing luminaire designed with a multi functional embossed diffuser that achieves exceptional balance between efficiency and visual appeal.

### Features

- CRI >80
- IP44 from below, IP30 from above
- L90/B10 > 60,000 Hours
- 5 Year warranty
- 3000K or 4000K options



## VEKTA - V60100

The most flexible of the Vekta form factors, suitable for multiple applications thanks to the range of accessories compatible with the model type.



### Features

- Emergency options available on request
- Plug and Play
- Welded Joints available on request
- IP55 - only on diffused optics on request
- Various CCT options including Tunable White on request

## FREN LIGHTING - Starlight MK II

LED Emergency unit fully approved to AS2293 standards, meets classification: CO: D40, C90:D40

### Features

- Non-maintained emergency system
- Optional surface mounting box
- Lithium battery
- 2W LED





Courtesy of: Ecopoint  
Project: Lincoln University Library

# Libraries

## The knowledge hub

Central to any education institution is the library - even in these days of digital storage of information the library remains the repository of accessible knowledge. As multi-function spaces, lighting designs for libraries need to satisfy a range of requirements, which are laid out in AS/NZS 1680.2.3.

Within the library there are different requirements for illumination related to the tasks at hand. Recommended illuminance varies between 160 lx (audio listening) and 320 (Cataloguing, Carrels and similar, Book repair and binding) and lighting arrangements should have good glare control (UGR<19) throughout. When using screen-based equipment the usual considerations regarding reflection and glare management apply. In addition to purely providing illumination, luminaires can also double with the management of acoustics within a space. FOS Lighting provides a range of luminaires and lighting controls that are compatible with all the requirements of libraries.

### VEKTA - V60100

The most flexible of the Vekta form factors, suitable for multiple applications thanks to the range of accessories compatible with the model type.

#### Features

- Emergency options available on request
- Plug and Play
- Welded Joints available on request
- IP55 - only on diffused optics on request
- Various CCT options including Tunable White on request



### LUCEPLAN - Silenzio

Silenzio is the ideal collaboration between good lighting design and materials. The fabric used allows for the light shade to minimise noise pollution, while also adding to the decor of its environment.

#### Features

- Reduces noise pollution.
- Available in 90, 120 & 150cm diameter fittings.
- Suspended fitting.
- Custom textile colours available on request.



### FREND - R6 - LED

A high performance luminaire that can be adapted to providing air supply and air return with baffles available in a surface and plaster mounted option.

#### Features

- 26 cell aluminium parabolic louvre or lay-in prismatic panel
- Powder coated white metal body - 0.7mm
- Suitable for mounting end to end in metric T-bar ceiling
- Other diffuser options available upon request



### FORMA - Zero Zoom Low Voltage

Track mounted 48V low voltage spotlight with lighthouse and arm in cast aluminium. Designed for passive cooling to ensure longevity.

#### Features

- Integrated track adapter, compatible with different models of Stucchi low voltage track system.
- Beam Angle manually adjustable through ring rotation, from 10° to 35°.
- Versatile aiming angle tiltable vertically 0°-90° and rotatable horizontally 360°.
- Dimming Options: 0-10V, DALI, Casambi.





Courtesy of:  
Project: St Joseph's Warragul

# Communal areas

## Free to use

The need for social interaction and an opportunity to unwind is central to the design of communal spaces. As the objective of lighting has moved from purely task orientated to a more holistic approach focused on Health and Wellbeing and the creation of a space that people wish to visit, as opposed to have to attend for work, lighting in communal areas does not necessarily have to conform to the requirements of operational spaces (aside from where specified by the NZ MOE), however, depending on the nature of the space, and what it contains, it may require high CRI illumination for assisting with plant growth etc.

FOS Lighting has a wide range of luminaires that can help you create the ambiance that you require in the communal spaces within your educational property as well as the management and control systems to adapt this lighting to the specific needs of the users for the specific outcomes required.



VEKTA V60100    FRENED LIGHTING OSIK    VEKTA Recessed Wall Washer    FRENED LIGHTING ELF    ECOPOINT Batten G3    FRENED LIGHTING PELF    FORMALIGHTING Gimbal

## FRENED LIGHTING - KATO E

KATO E is a family of architectural lights which come in a range of mounting options, finishes, and outputs.



### Features

- Mounting options include Recessed Downlight, Surface Mounted, Pendant, Wall mounted Up or down.
- 250, 400 & 600mm tube options for surface mounted, pendant and wall mounted options.
- Black and white as standard colours (custom colours available on request).

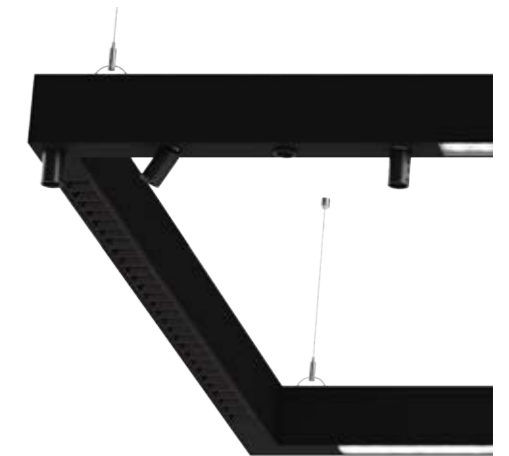


## VEKTA - V60100

VEKTA V60100 provides a breath of opportunity for lighting creativity with its wide variety of options and customisation features.

### Features

- Emergency options available on request.
- Welded joints on request.
- Available optics include Opal Diffuser, Linear Lenses, Track, Louvered & Mini Spots.
- Available mounting options include Surface, Suspended, Recessed & Wall mounted.



## ECOPOINT - Edge-Lit Panel G4

Exceptional LED Panel available in 600x600, 300x1200, 150x1200 options.



### Features

- L90 50,000 hrs.
- UGR<19.
- R a >80.
- IP 20/IP 40.
- IC4.
- Selectable power.

## FORMA - Low Voltage TikTok 75

Energy-saving, track mounted on a 48V low voltage track system, with integrated driver in the track adaptor - the focus is on eco-friendly design and modularity.

### Features

- Toolless, interchangeable LED module facilitates design flexibility and ease of on-site maintenance.
- Versatile aiming angle tiltable 0° - 70° and rotatable 360°.
- Casambi or DALI control options.
- Wide range of accessories available to control light and manage glare.







Courtesy of: Ecopoint  
Project: Lincoln University Labs - Science North.

# Labs & Research Spaces

## S.T.E.M. Environments

Research and experimentation are a core aspect of scientific education. Laboratory spaces need to be flexible in especially Secondary and Tertiary education institutions. FOS recommends that the illumination in these spaces offer enhanced colour rendering performance and broad coverage of the full colour spectrum as possible. This helps with identifying colour variances in experimental solutions and other experiments that rely on colour differentiation as well as offering sufficient flux to suit the high illuminance requirements of detailed work (AS/NZS 1680.2.3 recommends 320lx as a minimum). These luminaires are available in a range of IP ratings to suit the application. In addition, FOS provides luminaires suited to biological applications such as chlorophyll activation thanks to their exceptional colour reproduction.

Tertiary education institutions have speciality laboratories, for instance for training high current electrical engineers – these spaces require exceptional illumination as the Health and Safety of the students and instructors needs to be assured. In addition, all these spaces require emergency lighting that will help with the safe evacuation of the space in case of natural or man-made disaster.

FOS Lighting can provide luminaires that meet and exceed both the Legislative and Standards requirements in this regard.



FREND LIGHTING PBS-LED    FREND LIGHTING SMS-LED    FREND LIGHTING TBS-LED    FREND LIGHTING VPBS-LED    FREND OSIK 44    ECOPOINT Recessed Spotlight    ECOPOINT Compact Downlight



### FREND - OSIK 44

Sealed LED troffer with high CRI and clinical observation options available on request, ideal for laboratory environments.

#### Features

- IP 44 ingress protection
- DALI dim or switch dim
- L80 @ 70,000 hrs
- Available in plaster recessed and surface mount
- Future proof replaceable gear tray

### FREND - VPBS - LED

Plaster recessed, vandal resistant IP 65 rated sealed troffer luminaire.

#### Features

- High impact 6mm polycarbonate lens panel and diffuser in sealed metal frame fixed with security screws
- Heavy Duty neoprene gasket ensures positive diffuser frame seal - suitable for hospitals, laboratories etc.
- L80 @ 70,000 hrs
- Future proof replaceable gear tray
- Available in DALI dim or Switch dim
- Wide choice of diffusers available



### ECOPOINT - G4 Panel SOLUS

The high CRI panel available in a range of form factors, is compatible with biophyllic applications and has exceptional longevity, in addition they are provided with selectable power ranges to suit all needs.

#### Features

- CRI > 97
- UGR < 19
- PMMA Light Guide Plate & Diffuser
- L90 @ 50,000 hrs, L80 @ 100,000 hrs (25° C)



### FREND - SMS - LED

Surface mount sealed LED troffer with High CRI and clinical observation options available upon request.

#### Features

- Suitable for fixing directly to ceiling or suspended with rods
- L80 @ 70,000 hrs
- Heavy duty neoprene gasket ensures dust, insect and splash proof seal suitable for clean rooms
- 0.7mm Powder coated white metal body - other colours available upon request.





Courtesy of: Ecopoint  
Project: Fairford College Gym Refit

# Physical Education Spaces

## Ensuring eye-hand co-ordination

FOS Lighting carries several ranges of luminaires and controls that can provide the requisite illumination for sports applications as well as the knowledge of the appropriate lighting standards (AS/NZS 2560.2.2) which will ensure that the products provided meet and exceed the requirements for the facility that is under development, both indoor and outdoor.

This includes weatherproof flood lights for exterior applications as well as a range of high IP luminaires suitable for use in indoor facilities where there is likely to be high levels of humidity such as swimming pools etc. FOS Lighting also provides luminaires with high quality optics that permit lighting designs that provide targeted, even illumination of the requisite level on the field of play while limiting light spill onto adjacent properties. Luminaires for indoor sports environments should control glare and minimise flicker, to avoid dazzling or 'strobing' which would make it difficult for competitors to track the path of moving balls, shuttlecocks and other items used in the sport under review. The indoor luminaires of a multipurpose sports arena should also be able to provide different lighting levels for recreational and training and competition activities - the exact levels determined by the sporting code. In addition, the luminaires may also need to support specific lighting requirements for broadcasting or recording.



ECOPOINT  
Longbay G2

ECOPOINT  
Highbay G3

ECOPOINT  
Linear Highbay

ECLATEC  
Keris 5 & 6

FORMALIGHTING  
Orbit

FREND LIGHTING  
SMHF-LED

FREND LIGHTING  
Onyx



## ECOPOINT - High Bay G3 SOLUS

The SOLUS High Bay G3 Full-Spectrum provides high output lighting of exceptional colour quality.

### Features

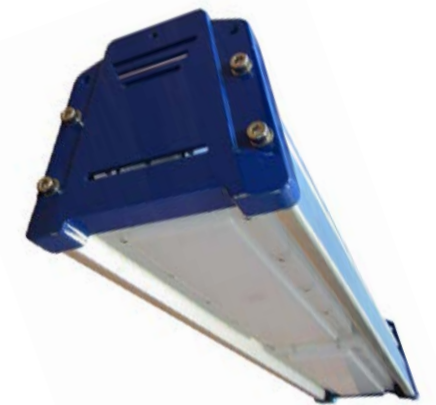
- Available in Suspended or Surface Mount.
- $R_a \geq 95$ ,  $R_g \geq 94$  /  $R_f \geq 93$ ,  $R_g \geq 104$ .
- 150Watts or 200 Watts (5700K).

## ECOPOINT - LINEAR HIGH BAY G2 SOLUS

A high output LED linear alternative to standard metal halide.

### Features

- 19,400 lumens output.
- L90 @ 59,000 hours.
- Microlens (various).
- $R_a \geq 95$ ,  $R_g \geq 90$ .
- Suspended or surface mount.

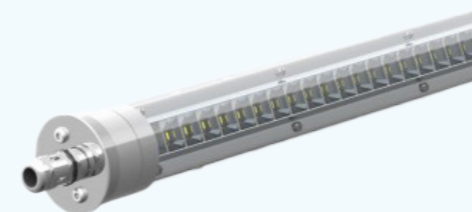


## SECURLITE - Fila 2

High-efficacy version of the FILA luminaire, resulting from our policy of eco-design and continuous performance improvement.

### Features.

- Sealed vandal-resistant striplight
- Opal or clear diffuser for optics and louvres.
- Polycarbonate body, 2 mm thick.
- ISO M20 nickel-plated brass IP67 cable gland at one end.



## ECOPOINT - Long Bay G2 SOLUS

Ecopoint's LED Long Bays are high output luminaires with a comfortable diffused appearance ideal for applications where wide distributions and wall washing is required.

### Features

- 1200 mm luminaire.
- 15,700 lumens output from 200W.
- L90 @ 59,000 hours.
- IP65
- IK08.
- 4000K,  $R_a \geq 95$ ,  $R_g \geq 90$ .





Courtesy of: Chris Oaten from Insight Visuals  
Project: Lot Fourteen

# Paths & Walkways

## Welcoming, visible & secure

Providing well-lit pathways between building entrances and hubs are essential components of a safe campus, guiding users. It underlines and elevates the first impression of the facility. Light also has a signalling effect in the illumination of obstacles, such as stairs or individual steps. FOS Lighting provides several streetlights and urban lighting poles that provide well designed optics to provide safe movement across campuses. In addition, FOS Lighting represents the i-Core range of Smart City light solutions. These poles in addition to providing Dark Skies compatible targeted illumination, also serve as IoT hubs that can provide a range of Smart City type services to a campus. From addressing matters as simple as charging stations and WiFi connectivity for smart devices, to providing a secure location for an integrated weather station i-Core can deliver, in addition, it provides monitoring the movement of people, cyclists and motor vehicles and providing adaptive illumination suited to the mode of travel.

FOS Lighting ensures that all the solutions provided are compatible with the requirements of AS/NZS as well as meeting the relevant Dark Sky and obtrusive light limitations.



## iCore - Urban Poles

An enclosed, integrated pole system capable of providing secure & supplier agnostic SMART CITY infrastructure solutions for use in parks and on academic and industrial campuses while providing 360° pedestrian illumination solutions.

### Features

- Supports a range of IoT equipment
- Provides smart interactive lighting via sensors
- Provides support for video surveillance of pedestrian traffic
- Supports 3-5G communications infrastructure and mesh networks
- Design isolates power and data feeds preventing interference
- Design permits ease of maintenance and upgrades

## ECLATEC - Keo

Available to mount on top of a pole as well as with a wall mounted bracket option, the Keo designed by Agence Michel Tortel delivers 360° illumination from a unique design.

### Features

- Two-material polycarbonate opal and clear bowl, with Led backlight
- as an option: white or other colours on request
- Finish: polyester powder coating, any colour available
- IP66, IK10
- Adjustable power supply up to 700mA
- DALI compatible with external sensor support
- Supports WIZARD CMS remote management system



## iCore - Street Poles

An enclosed integrated system capable of providing secure and supplier agnostic SMART CITY infrastructure solutions for use on streets and in vehicle access roads.

### Features

- Supports a range of IoT equipment
- Provides smart interactive lighting via sensors
- Provides support for video surveillance of vehicular traffic
- Supports 3-5G communications infrastructure and mesh networks
- Design isolates power and data feeds preventing interference
- Design permits ease of maintenance and upgrades



## ECLATEC - Xeon

Xeon is a family of pole mounted fittings that include LED spotlights, Cameras and Speakers in the same classic form factor.

### Features

- Body done in polyester powder coating, any colour
- IP66
- IK09 / IK10
- CCT: 2700K, 3000K, 4000K
- Adjustable power supply up to 700mA
- Range of mounting options





Courtesy of: MEGABAY  
Project: Victoria State Library

# Building facades

## Highlighting Architectural Features

Lighting building facades - whether it be to purely illuminate architectural details or produce multi coloured displays that promote your brand or make your structure stand out from the cityscape, FOS Lighting has the means to fulfil your vision. Facade lighting ideally has to combine sufficient flux to illustrate architectural details with a lighting design that minimises wastage or impacts on Dark Sky outcomes. This calls for exceptional optics and weather resistance in the design of the installation. FOS Lighting represents a number of brands that provide a range of facade lighting solutions, from basic to colour changing computer controlled projectors capable of adaptive lighting displays.



FORMALIGHTING  
Orbit Round



MEGABAY  
Viento



FORMALIGHTING  
Bullet



ECOPOINT  
Floodlight G3



FORMALIGHTING  
Fronteluze 90



YOUNGKONG  
Thor



FORMALIGHTING  
Rocket

## YOUNGKONG - Pencil

A compact linear luminaire using a high-quality LED light source. It is in a compact trapezoid shape bar which is specially designed for continuous linear light effects when connected in series.



### Features

- Clear or diffused polycarbonate lens
- 15° tiltable adjustable bracket available
- Protection class IP66
- CCT: 3000K, 4000K, 5000K, RGB or Tunable White available
- On/Off Switchable, DMX or DALI controlled

## FORMALIGHTING - Astra

Surface mounted luminaire with body in cast aluminum, inclusive of toughened thermal shock glass diffuser or focused glass lens, weatherproof silicone gasket and stainless steel screws.

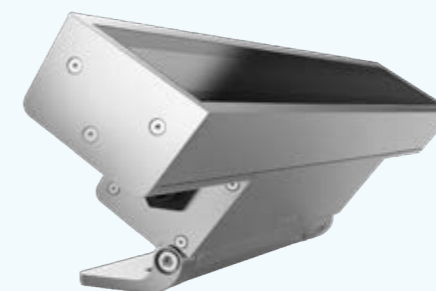
### Features

- 2 cable entries for through wiring
- Polyester powder coat
- Up/Down version offers special narrow beam light effect, while the floodlight asymmetric version provides high illuminance.
- Dimming Options: 0-10V Dim, DALI, Phase.



## MEGABAY - Viento

Viento is a powerful linear system, which emits uniform light. It combines exceptional quality, innovation, and technology.



### Features

- IP68
- Sleek anodised aluminium finish
- Selection of optics
- White or RGBW
- Quick installation

## FORMALIGHTING - Cobra Pro IP66

Surface mounted flexible modular system in extruded aluminum. Available in different length configurations based on a 83mm link (2 LED per link).

### Features

- IP65.
- CRI: 90 | R<sub>g</sub>: >50.
- CCT: 2700K, 3000K, 3500K, 4000K.
- Beam angle 17° / 29° / elliptical (15°, 50°).





Courtesy of: Pexels  
Project: Pixabay

# Janitorial Spaces

## Ensuring staff effectiveness

Schools and tertiary education facilities require substantial cleaning effort, especially in the current Covid epidemic due to the fact that children interact with each other and therefore the risk exists that cross contamination happens with the facility being a “hub” of sorts for the dissemination of disease. This requires that the janitorial services deal with products of a somewhat caustic and that possibly have an aerosol nature. It becomes essential that lighting in the spaces where these products are stored and mixed be of a high IP nature and permit staff to mix chemicals accurately. This means that the in addition to being sealed the luminaires also need to control glare and flicker.

FOS Lighting provides a range of options that meet these requirements and will ensure that janitorial services are conducted to the best possible standards.

### SECURLITE - Viola

Viola is a robust, elegant luminaire from an eco-design philosophy.



#### Features

- CRI > 80
- IP55
- IK10
- 340mm round x 105mm
- L80B10 / 72,000 Hours
- 5 Year warranty
- 3000K or 4000K options

### FREND LIGHTING - SMS

Surface mount sealed LED troffer with High CRI options available upon request.

#### Features

- Suitable for fixing directly to ceiling or suspended with rods
- L80 @ 70,000 hrs
- Heavy duty neoprene gasket ensures dust, insect and splash proof seal suitable for clean rooms
- 0.7mm Powder coated white metal body - other colours available upon request.



### ECOPOINT - Skleros Tri-Proof

A rugged construction with high protection ratings now has a modular design and tool-free installation to improve usability.



#### Features

- L85 @ 60,000 hrs
- Operating conditions: -200 to 400 C
- IP65, IK08
- End entry, through-wireable

### FREND - VPBS - LED

Plaster recessed, vandal resistant IP 65 rated sealed troffer luminaire.

#### Features

- High impact 6mm polycarbonate lens panel and diffuser in sealed metal frame fixed with security screws
- Heavy Duty neoprene gasket ensures positive diffuser frame seal - suitable for hospitals, laboratories etc.
- L80 @ 70,000 hrs
- Future proof replaceable gear tray
- Available in DALI dim or Switch dim
- Wide choice of diffusers available





Courtesy of: Pexels  
Project: Ella Olosson

# Food Service Spaces

## Lighting the full range of work surfaces.

In institutions where food preparation is conducted, it is essential that the luminaires installed in the kitchen areas provide high quality, even light on food prep surfaces and are capable of being cleaned using chemical detergents. The luminaires that provide light to stoves and other heat sources where steam and other updrafts can affect them have to be designed to be cleaned with pressure cleaning equipment and chemical detergents.

Cold rooms also require illumination, and it is essential that the luminaires used in these spaces can operate in a range of conditions down to -40°C and can handle varying degrees of moisture in the environment. FOS Lighting supplies several families of IP65+ products suited to kitchen applications and Tri-Proof type luminaires perfect for use in Cold Rooms.



VEKTA V60100    ECOPOINT Skelos Tri-Proof    VEKTA V1910IP    ECOPOINT Food Grade Highbay    FREND Osik 44    ECOPOINT Tri-Proof Plus    FREND MR Bulkhead

### FREND - MR Bulkhead

Vandal proof exterior bulkhead fitting, suitable for wall and surface mounting available in 2 form and power factors.



#### Features

- IP 65
- Die-cast aluminium body
- Polycarbonate diffuser
- Black powder coat finish, other colours available on request.
- Emergency version available

### FREND LIGHTING - SMS

Surface mount sealed LED troffer with High CRI options available upon request.

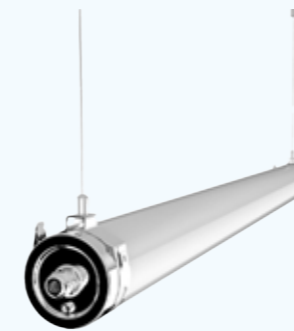
#### Features

- Suitable for fixing directly to ceiling or suspended with rods
- L80 @ 70,000 hrs
- Heavy duty neoprene gasket ensures dust, insect and splash proof seal suitable for clean rooms
- 0.7mm Powder coated white metal body - other colours available upon request.



### ECOPOINT - Tri-Proof Plus

Unique shaped luminaire available in a range of materials suited to use in kitchens and other spaces cleaned with caustic chemicals.



#### Features

- Easy clean profile and chemically resistant materials
- Wall mounted IP67; suspended IP69
- 316 grade stainless steel fittings
- IK09 (PMMA) 3 year warranty
- IK10 (PC) 5 year warranty

### FREND - OSIK 44

Sealed LED troffer with high CRI and clinical observation options available on request, ideal for laboratory environments.

#### Features

- IP44 ingress protection
- DALI dim or switch dim
- L80 @ 70,000 hrs
- Available in plaster recessed and surface mount
- Future proof replacable gear tray





Courtesy of: Frennd Lighting

# Amenities

## Environmentally Appropriate Illumination

An integral part of providing education spaces is the provision of ablution and refreshment facilities. FOS Lighting represents and manufactures several ranges of luminaires suitable for these environments. Ranging from vandal resistant to architecturally designed, FOS has luminaires that are compatible with a vast range of conditions that can be found across and even within individual campuses.



## ECOPOINT - Recessed Spotlight

Adjustable high spec spotlight.



### Features

- 350° rotating and 35° tilt-able housing
- 10W with 24° illumination angle (cut-out Ø 85-90 mm)
- 20W with 36° illumination angle (cut-out Ø 120-130 mm)
- 45W with 60° illumination angle (cut-out Ø 165-170 mm)
- L80 @ 81,000 hrs

## SECURLITE - Effice

High efficiency directed light luminaire.

### Features

- Polycarbonate base
- Diffuser: opal (General Lighting version) or clear (Corridor and Stairway versions)
- LED module with or without optics
- Side cable entry possible (with knockout)
- Captive, stainless steel vandal-resistant screws
- CCT 4000 K, CRI min. 80



## FORMALIGHTING - Aqualuce Round

An ideal lighting system for areas with water splashes or where condensation occurs.



### Features

- CRI: 90
- CCT: 3000K, 4000K
- IP54

## SECURLITE - Bang

An original luminaire ideally suited to environments subject to vandalism, thanks to its exceptional impact resistance, up to 50 joules IK10+

### Features

- Low-consumption vandal-resistant architectural luminaire
- Opal polycarbonate diffuser
- CCT: 4000K





Courtesy of: Eclatec

# Parking

## Ensuring safe movement

Parking complexes can be an unnerving and difficult environment to navigate, and even worse when at night. A well-designed lighting solution should offer ample light both day and night as well as maximise visibility when moving to and from a vehicle. In addition, individual sensors that rely on ambient light and motion detection can maintain a lower OpEx associated with the installation by increasing energy savings. FOS Lighting offer a range of exterior and under cover parking solutions, which are waterproof, reliable, and efficient.



FREND LIGHTING CWP    ECLATEC Pixel    FREND LIGHTING SMHF - LED    ECLATEC Stelium    FREND LIGHTING SPF - LED    ECLATEC Zelda    ECOPOINT Area Light G2

## ECLATEC - Stelium

Toolless entry luminaire available in 3 distinct models depending on client needs.



### Features

- Adjustable current
- Dimming via bluetooth or bottom of pole
- DALI protocol
- Smart Ready<sup>(R)</sup> configuration (ZD4i)
- Remote management via WIZARD CMS system

## SECURLITE - Duropark

A sealed strip light for public spaces.

### Features

- IP65
- IK10
- Polycarbonate gray body
- Opal polycarbonate diffuser
- Vandal-resistant locking clips



## ECLATEC - Pixel

Eclatec Pixel is a pole mounted luminaire designed for illuminating large open spaces, such as rooftop and outdoor car parks.



### Features

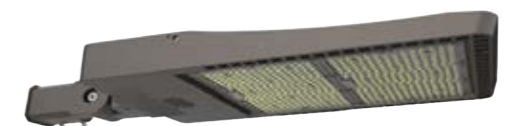
- IP66
- IK09
- Any colour finish available
- Extruded silicone gaskets

## FREND LIGHTING - Carbon

Carbon is a modern styled luminaire, designed for Parking lots, streets, outdoor sporting courts and fields as well as walkways and building grounds.

### Features

- IP66
- Streamlined modern design
- Variety of mounting options







Courtesy of: FRENED LIGHTING Project:

# Campus and Landscaping

## Wayfinding and Safety

Institutions can be ominous in the dark. Illumination that provides guidance and indicates access points, helps to alleviate the concerns that users may have after dark. In addition, the provision of illumination serves to discourage persons bent on anti-social behaviour and has the additional benefit of raising the profile of the brand. LED illumination has the further boon of providing illumination that is highly compatible with high-definition CCTV, permitting the identification of individuals who are loitering or alternatively engaged in criminal acts or vandalism. FOS has a range of exterior luminaires that are weather resistant and meet the standards set for this type of lighting.



VEKTA Flex



YOUNGKONG Woody



MEGABAY Accento



ECLATEC Xeon



YOUNGKONG Thor Nano



ECLATEC Keo



YOUNGKONG Fire

## SECURLITE - Viola

A very robust, elegant luminaire expressing an eco-design philosophy.



### Features

- Low consumption architectural luminaire
- Recycled polycarbonate base
- Opal polycarbonate diffuser
- Captive, stainless Steel vandal-resistant screws
- IP55 / IK10

## SECURLITE - Duropark

A sealed strip light for public spaces.

### Features

- IP65
- IK10
- Polycarbonate gray body
- Opal polycarbonate diffuser
- Vandal-resistant locking clips



## FRENED LIGHTING - MR

Flexible vandal proof exterior bulkhead luminaire



### Features

- IP65
- Die-cast aluminium body, polycarbonate diffuser
- Available with a security grill for extra protection
- Black powder coat finish, other colours available on request

## YOUNGKONG - Brick

Brick is a surface mounted wall luminaire developed to brighten the night and outdoor building facade available in either downlight or up-and downlight options.

### Features

- High-performance LED module
- Frosted tempered glass
- Cast aluminum
- Dark gray (powder-coated) color
- Protection class IP65



# FOS Projects

## Australia

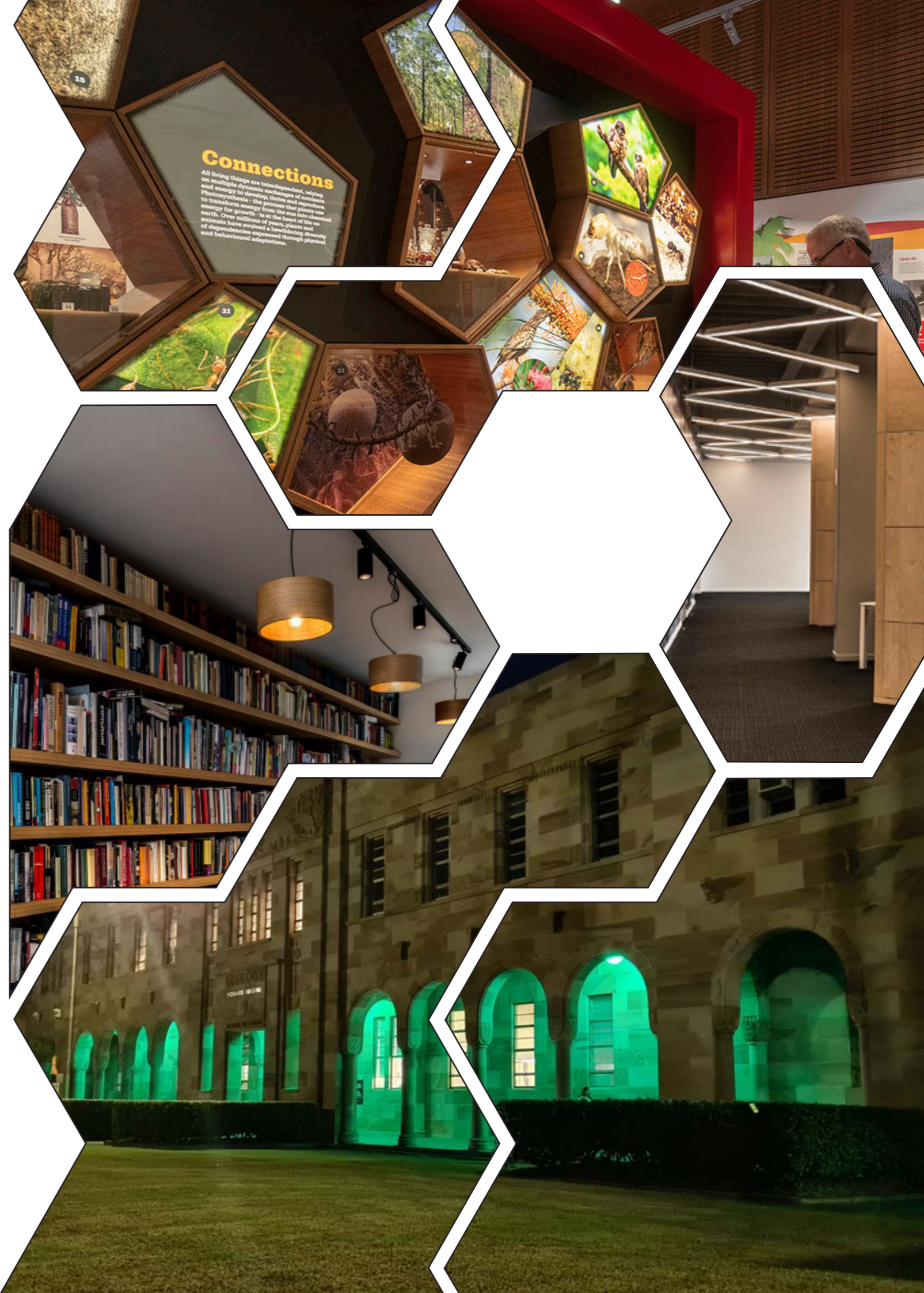
AGNES WATERS STATE SCHOOL  
ALL HALLOWS  
BATEMANS BAY AQUATIC CENTRE  
BELLBIRD PARK STATE SECONDRY COLLEGE  
BUNDABERG CHRISTIAN COLLEGE  
CARDIJIN COLLEGE  
CLAIRVAUX MACKILLOP - SCIENCE BUILDING  
COMMA MARKETEERS LIBRARY  
CURRAJONG STATE SCHOOL  
DEAKIN UNIVERSITY VICTORIA  
DECA  
DENMAN PROSPECT CHILDCARE  
ELANORA STATE HIGH SCHOOL  
FLINDERS UNIVERSITY - BIOLOGY  
GEORGE BROWN DARWIN BOTANIC GARDENS  
GLEN INNES MUSIC & ARTS CENTRE  
GRIFFITH SCHOOL  
GRIFFITH UNIVERSITY GOLD COAST, NATHAN, MT GRAVATT &  
SOUTHBANK CAMPUSES  
HEATLEY & WULGURU SCHOOLS  
IPSWICH GRAMMAR SCHOOL  
ISLAMIC COLLEGE  
KAWANA WATERS STATE COLLEGE  
KIRWAN STATE HIGH SCHOOL  
LOT FOURTEEN  
LOWOOD HIGH SCHOOL  
MACGREGOR STATE SCHOOL  
MONASH UNIVERSITY  
MONTESSORI SCHOOL CABOOLTURE  
NEW FARM STATE SCHOOL  
NOBBY STATE SCHOOL

NORTHERN GOLD COAST SPECIAL SCHOOL  
OAKLEY HIGH SCHOOL  
ORAN PARK ANGLICAN COLLEGE  
OUR LADY'S CATHOLIC PRIMARY SCHOOL  
PIMPAMA STATE SCHOOL  
PLC SENIOR CLASSROOM & OFFICE REFURB  
PLC SENIOR STAFF  
QUT  
RAAF AMBERLEY POLICE TRAINING SCHOOL  
REDLANDS COLLEGE  
SCHOOL OF ARTS BUILDING  
SOUTHERN CROSS CATHOLIC SCHOOL  
SPINFEX STATE SCHOOL  
ST AUGUSTINE COLLEGE  
ST JOSEPHS NUDGEE COLLEGE  
ST PETERS COLLEGE  
STANTHORPE STATE HIGH  
STATE LIBRARY MELBOURNE  
TAMBORINE MOUNTAIN COLLEGE  
THE LAKES COLLEGE  
TRINITY BAY STATE HIGH SCHOOL  
UNDURBA STATE SCHOOL  
UNIVERSITY OF QUEENSLAND (UQ)  
VICTORIA PLANTATION STATE SCHOOL  
VINCENT STATE SCHOOL  
WEIR SCHOOL  
WONDAI SCHOOL  
WULGURU STATE SCHOOL  
YARRABILBA STATE SCHOOL  
YARRILEE STATE SCHOOL  
ZILLMERE STATE SCHOOL

## New Zealand

ARA INSTITUTE  
EPUNI SCHOOL  
FAIRFIELD COLLEGE  
GRACEFIELD SCHOOL  
KHANDALLAH SCHOOL  
LINCOLN UNIVERSITY  
MANIAPOTO SCHOOL  
MASSEY UNIVERSITY  
MAUNGARAKI SCHOOL

NAENAE COLLEGE  
NEWTOWN SCHOOL  
OTAGO UNIVERISTY  
OUR LADY OF KAPITI  
PARAKAI SCHOOL  
THORNDON SCHOOL  
UNIVERSITY OF CANTERBURY  
VICTORIA UNIVERSITY  
WAIKATO UNIVERSITY





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