



**+ HEALTH & CARE**  
WELLBEING THROUGH LIGHT

**energy**light  
knowledge | solutions





# LIGHT & WELLBEING FOR HEALTH & CARE

Contemporary healthcare must go beyond 20th century hospitals and evolve in health, empowering the patient to heal.

Whether working in hospitals, senior care centres, emergency wards, medical centres, dentists, or veterinary practices, Energylight have lighting and control solutions to match your requirements.

Energylight has successfully worked with the Ministry of Health and collaborated closely with architects and engineers to deliver Human Centric Lighting solutions, that provide illumination of the highest medical standards for both staff and patients alike.

Well planned illumination can promote patient healing and efficiency of healthcare staff.

Optimised Human Centric Lighting (HCL) solutions can help to support a natural circadian rhythm and thereby achieve both a sense of comfort and greater caregiver effectiveness right through the day to night cycle.

Energylight's health solutions deliver efficient performance, longevity and superior colour rendition. We offer product solutions that when combined with HCL or BIOS technologies along with good design fundamentals can promote wellbeing and visual comfort in all areas of the healthcare setting.



Image: Energyline lighting installed at AstraZeneca offices in Sydney Australia.



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## PRODUCT CATEGORIES

Lobby & Waiting Rooms.....	14
Nurses' Station & Reception Areas .....	15
Patient & Exam Rooms .....	16
Psychiatric Care .....	17
Stairs & Corridors .....	18
Lab, Clean Rooms & Theatre .....	19
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Image: BIOS Lighting at Gary and Mary West Emergency Department corridor.

# WHAT IS BIOS LIGHTING?

BIOS communicates directly with our bodies at the cellular level to regulate our circadian rhythm, normalizing sleep patterns and improving overall health.

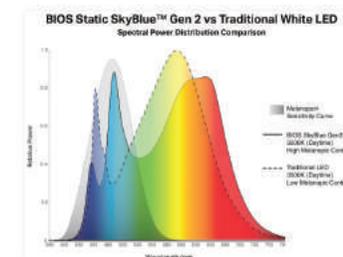
BIOS believe that everyone should have access to nutritional light. Synchronizing our circadian rhythm to the 24 hour day requires a specialized approach to lighting that goes beyond the visual. Understanding how and when light affects us at a biological level is an emerging area of interest and BIOS strives to bring clarity, expertise and innovation to projects in this space.

Light and its effect on our biology has in recent times made us evaluate how we use light in the built environment. Traditional standards and practices have commonly been geared toward visual acuity and energy efficiency. While both factors play an important role in buildings, human health and wellbeing has (until recently) not been largely understood.

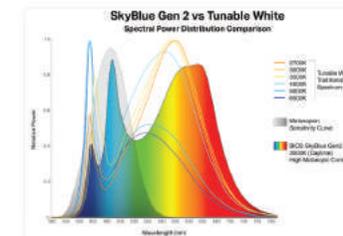
## How can BIOS elevate your project?

**Delivery** – To exhibit a true biological response from light we need to ensure we are delivering the right light to the right place at the right time. New metrics and measures are crucial to achieving this as well as understanding what areas within a project make the most sense. Energylight can identify what areas are crucial and how best to implement project specific solutions.

**Technology** – Energylight has partnered with global leading LED manufacturers that specialise in spectrally optimised LEDs. This enables us to deliver high levels of melanopic lux during the day at desirable Correlated Colour Temperatures (CCTs) (3500K+) without compromising colour quality or stability. The patented SkyBlue™ spectrum has the added benefit of control, allowing us to lower melanopic lux levels in the evening with virtually no impact on visual light, maintaining R9 values >90. BIOS can provide project specific solutions for both integrated and standalone applications.



Graph: Research has shown that our circadian system has its peak sensitivity in the 'sky blue' region near 490nm. BIOS SkyBlue™ spectrum targets this zone and includes a distinct peak at 490nm (the 'sky blue' region) which traditional white and tunable white LEDs do not.



BIOS SkyBlue offers 40% increase in circadian impact as compared to traditional white and tunable white LEDs. (source: bioslighting.com)





# STAFF & PATIENTS BENEFIT FROM BIOS

BIOS lighting implemented in the Gary & Mary West  
Emergency Department (UC San Diego Health)

UC San Diego Health has opened a state-of-the-art unit specialised in treating seniors requiring emergency healthcare. The Gary and Mary West Emergency Department at UC San Diego Health in La Jolla, is the first in California to treat qualifying patients over the age of 65 in a dedicated space customised for geriatric emergency care.

The accredited geriatric emergency department features architectural design elements for older patients, such as carefully calibrated lighting and improved acoustics, safety and comfort.

**‘Although we have been delivering specialised senior emergency care for more than two years, the new physical space allows older adults to be cared for in an environment that better meets their needs than a traditional emergency room setting. We are very excited to provide this unprecedented service to our senior patients and their caregivers’**

**VAISHAL TOLIA**

MD, MPH, medical director of the Department of Emergency Medicine at UC San Diego Health.

The BIOS lights implemented have improved patient and staff wellbeing in UC San Diego Health’s geriatric emergency department (GED) in two crucial ways... Firstly by adding a heightened amount of circadian signal that not only orients patients to the actual time of day; but provides alertness during the daytime hours to improve mobility and reduce fall risk. Secondly, by providing a unique wavelength of light dedicated to visual assessment of patients in the SECU patient rooms.

**‘Circadian entrainment is important to the GED staff for health and productivity, especially for those working longer or on overnight shifts. For short-stay, elderly patients, an important aspect of our lighting system is its unique wavelengths that enhance visibility of medical ailments, such as sepsis—a potentially life-threatening condition caused by the body’s response to infection.’**

**ROBERT SOLER**

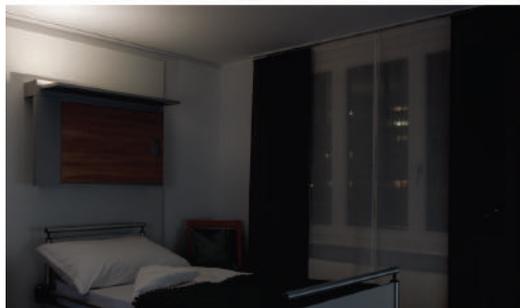
VP of Research at BIOS



Images: BIOS Lighting at Gary and Mary West Emergency Department: nurse station, consultation rooms and corridors.

# PATIENT ROOMS FOR RECOVERY

## ZERA BED Wall-Mounted Luminaire (Four Lights In One)

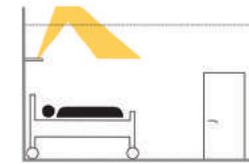


The wellbeing of patients and staff is paramount in health facilities across New Zealand, as is the complex demands of hospitals and the need to save energy and costs in this critical environment.

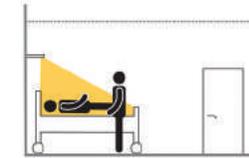
For many patients, hospitals can become their home-away-from-home so thought needs to be given to the design and lighting used in this space, both from a compliance standpoint and that best promotes healing and recovery.

An innovative free-form solution has been developed and tailored to aid in the day-to-day lives of patients, whilst decreasing the excessive need for traditional lighting that creates glare and deters alignment with circadian support for wellbeing. This wall-mounted luminaire is light level compliant with health examination room requirements and delivers a spectrum attuned to the Cyanosis Observation Index. The standard for ASNZS1680 ensures it is optimal for safe lighting in these situations.

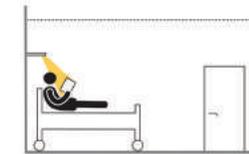
Established in the New Zealand market is the ZERA BED, a four in one solution to provide patients with four distinct luminary settings for their patient rooms that is both compliant whilst in-budget for hospital boards and associations.



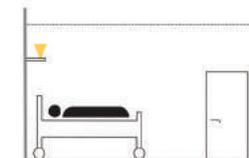
Homogeneous General Light - 3,000K



Rectangular Examination Light - 4,000K



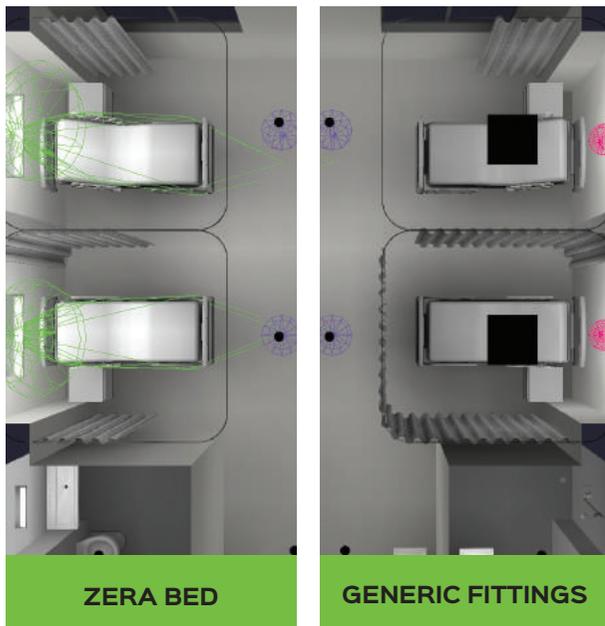
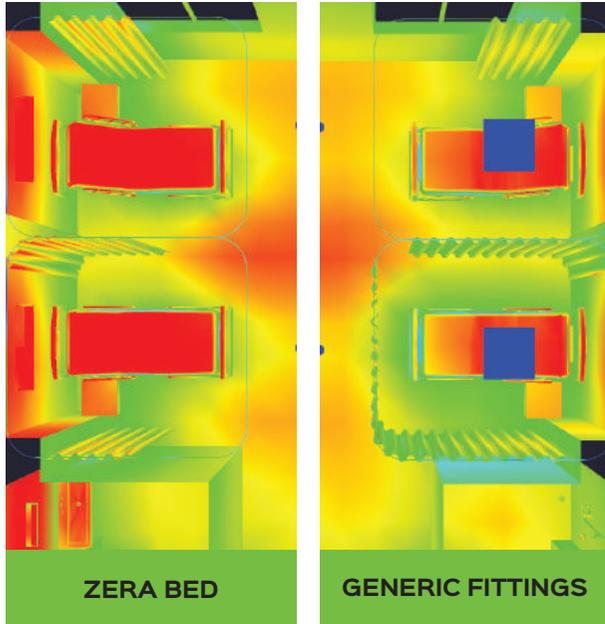
Glare-Free Reading Light - 2,700K



Soothing Night Light - 2,700K

Images: ZERA bed lighting providing patients with four lighting scenarios. From top; general light, examination light, reading light and soothing night light.

## ZERA BED vs Generic Fittings



## Patient Room Lighting

Image render top left shows even light distribution under the ZERA BED examination light setting (at 4,000K). The clearly delimited examination light provides uniform illumination from head to toe and avoids dazzling people in neighbouring beds.

Image render top right shows generic lighting currently in hospital settings with a reduced illumination across the bed. The blue squares indicate troffers which tend to give glare to patients as they are regularly positioned in their line of vision daily. These troffers often do not cover the full length of the bed underneath to adequate light levels for examination purposes. The ceiling troffer also comes at an additional cost to the hospital when one multi-function light such as the ZERA BED light would suffice for each patient.

# CYANOSIS OBSERVATION INDEX

## What is COI?

COI Stands for Cyanosis Observation Index. It is a unit of measure that has been used in Australia and New Zealand since 1997 (with the most current of the lighting standard AS/NZS 1680.2.5:2018) and defines the suitability of a light source in health care environments. In particular the index value describes a light source's suitability for visual detection of cyanosis in a patient. The test evaluates the colour appearance of fully oxygenated blood and oxygen-depleted blood under both a reference light source and then the light source under test.

Interior Lighting Standard AS/NZS 1680.2.5:1997 covers 'Hospital and medical tasks', and it introduces the concept of lighting to support the observation of cyanosis. It also establishes the Cyanosis Observation Index (COI) as a measure of the ability of a light source to aid the detection of cyanosis in a patient.

Full requirements are outlined in Section 7.2 of that standard, which includes: "Where it is decided" that cyanosis observation is necessary, the lighting should have a colour temperature of between 3300K and 5300K and a COI of 3.3 or less.

## Comparison Chart

	INSTALLED POINTS PER BED	ENERGY	USER COMFORT	MAINTENANCE	CONTROL	INSTALLED COST	CEILING SERVICE COORDINATION
GENERIC FITTINGS	Up to 4	>30%	Light in line of sight	Complex via ladder	Complex	> 40% (\$\$\$\$)	Complex
ZERA BED	Only 1	<30%	No light in line of sight	Easy via steps	Simple	< 40% (\$\$)	Simple

# DEVELOPMENT OF LIGHTING SOLUTIONS FOR PSYCHIATRIC CARE

## Introducing Salvalux by Energylight



At Energylight we innovate to solve problems which others have overlooked.

Developed from the need for more robust, modern, secure lighting that would surpass current healthcare codes and regulations; Energylight Salvalux was born.

Through collaboration with an engineering consultant and Energylight's in-house design team, the Salvalux anti-ligature lighting solution was created to pave the way for more welcoming lighting in the mental health sector.

Traditional psychiatric rooms for patients have been kept minimal with poor lighting, and often representative of a prison-like environment, not aligned with the state of the individual in care nor the appropriate setting for active recovery, often providing the basic function of visual light with no warmth, care or appeal.

Salvalux is a combination of two Latin words, Salva (which translates to save or rescue) and Lux (a measurement of light). Salvalux is

designed to provide a feeling of safety, security and comfort, much like someone might feel at home whilst also protecting them from accessing the fitting or causing harm to themselves. The overall mission of Salvalux is to improve that person's wellbeing when they are confined to their rooms and making this space as pleasant both aesthetically and biologically.

This takes us to our next point: Salvalux can be fitted with simple inclusions such as custom colours that work in settling patients through to custom BIOS lighting, providing brighter days and darker biological nights to help circadian entrainment and eliminate circadian disruption, which can lead to mood swings, insomnia and a host of other health issues.

Solving problems like this is part of our culture and we will continue to do so well into the future.



# WELL CERTIFIED BUILDINGS

## Improving Health and Wellbeing Through the Built Environment

### What is WELLS?

In October 2014, IWBI launched the WELL Building Standard – a performance-based system for measuring, certifying and monitoring features of the built environment impacting on human health and wellbeing through the concepts of air, water, nourishment, light, fitness, comfort and mind. For a building to be Well Certified, it must receive pass scores in every aspect, indicating that each feature meets the standard's requirements for human wellbeing. There are three levels of certification – silver, gold and platinum.

The standard's criteria are based on medical research exploring connections between buildings and the health and wellbeing of their occupants. Establishing a standard to measure this in commercial buildings mirrors a broader global trend in the notion of wellness or wellbeing. The payback is healthier people and increased business productivity.

### WELLS migration into Health and Care

If 2020 has shown the world anything, it's that our health and safety are directly linked to how we design and maintain the great indoors.

90% of our time is estimated to be spent indoors, therefore buildings have an undeniably profound impact on the health, happiness, and wellbeing of its occupants. It is known that medical employees are subjected to some of the worst health-performing criteria, from shift work to high stress.

The Well Standard in building is meeting a set of criteria which is achievable for the healthcare industry. Focus is placed on operational policies, maintenance protocols and emergency plans.

Organisations seeking to navigate the impacts of COVID-19 are faced with important decisions about when and how to restore their operations, how to support the safety of occupants and employees, and how to prepare for the inevitable changes to their facilities over the coming years. The WELL Health-Safety Rating is designed to help guide organisations to evidence-based best practices for operating through this crisis, as well as for long-term preparedness on other critical health and safety issues.

WELL philosophy is inviting people to look for their Health-Safety seal, so they feel confident knowing the space they are entering is putting their health first.



“The standard is all about making their environment physically better. I think that will drop right down to the bottom line, whether it means less errors at 2 a.m. or the ability to understand how we can recognise a symptom because their cognitive skills are sharper,”

**PHIL WILLIAMS**  
Former VP Of Building &  
Human Performance at Delos

Image: Eastfield Health Medical Centre with RZB Sidelite Eco installed in ceiling. (Content resources: [wellcertified.com](http://wellcertified.com); [healthspacesevent.com](http://healthspacesevent.com))

# LIGHTING PRODUCTS





### **PRODUCT CATEGORIES**

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Image: Waiting area at Christchurch Outpatients. Energyline 75S suspended lights with a black finish, creating a statement luminaire in contrast with the natural timber.

## LOBBY & WAITING ROOMS

Visual communication is achieved via an illuminance hierarchy, whereby we highlight what we want to see (such as reception seating). Energylight has solutions that help to warm/dim these spaces into the evening, while promoting wellbeing and cosiness linked to the outside ambient conditions.

Something to remember

Long life and glare-free luminaires are critical for lobby spaces due to the heightened operating hours.

	PRODUCT	BRAND
	VIFO	Energylight / BIOS
	Microprism	RZB
	SKIM	ERCO
	IKU	ERCO
	Compar Recessed	ERCO
	65	Energyline / BIOS
	Eclipse	ERCO
	Atrium	ERCO
	Triona	RZB
	Fabriccloud	Cooledge



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.



Image: Nurses' station at Ulster Hospital featuring ERCO Compar low-glare task illumination linear downlights.

## NURSES' STATION & RECEPTION AREAS

Healthcare staff are often situated in the core of a building with no benefit from natural daylight. This lack of daylight is the most detrimental impact to circadian entrainment and general wellbeing. Staff require well-lit task areas for reading and good vertical/cylindrical illumination in reception areas is ideal for healthcare staff to maintain a welcoming and approachable atmosphere for patients and visitors. Energylight can assist with providing brighter days and warmer nights.

Something to remember

**BIOS dynamic light engines should be considered for improving impact on circadian entrainment for clinical staff.**

	PRODUCT	BRAND
	VIFO	Energylight / BIOS
	VLIN	Energylight / BIOS
	65	Energyline / BIOS
	Microprism	RZB
	SKIM Downlight	ERCO
	IKU	ERCO
	Compar	ERCO



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.



Image: Exam room for treating patients at Eastfield Health Centre, Ashburton. RZB Parledo clean lighting with excellent glare control and IP65 rating; compliant for high hygienic requirements.

## PATIENT & EXAM ROOMS

Exam and patient rooms require lighting that aids personnel through their work and patients through recovery. Energylight's suite of products include the Derungs ZERA BED (ideal 4-in-1) lighting solution for patients and doctors, along with lighting from leading brands such as ERCO.

	PRODUCT	BRAND
	ZERA BED	Waldmann
	ZERA BATH	Waldmann
	IKU	ERCO
	Parledo	RZB
	EVALA	Energylight / BIOS



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.

Something to remember

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Improve care outcomes with evidence-based lighting that aligns with patients' circadian rhythm and is noted to improve mood plus the duration and quality of sleep.



Image: Sécurlite Senspot vandal-resistant LED light installed in healthcare facility in France.

## PSYCHIATRIC CARE

Aesthetic appearance, mechanical strength, anti-rip out and anti-ligature are all critical considerations in psychiatric care. Energylight has developed a tested solution Salvalux, along with VK rated products from Sécurlite.

Something  
to remember

Options for lighting in this space call on designers to apply robust logic with competent installation to contribute to a safe environment in common areas, connecting spaces, stairwells and rooms.

	PRODUCT	BRAND
	Soffite	Sécurlite
	Senspot	Sécurlite
	Salvalux	Energylight / BIOS
	Voila	Sécurlite
	Voila Asymmetric	Sécurlite
	Borgo	Sécurlite
	P600	Sécurlite
	Urbaline	Sécurlite



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.



Image: Corridor shown at Burwood Hospital Christchurch. Lighting used is Energylight Revalvo 300 which is recessed for a smooth finish.

## STAIRS & CORRIDORS

Energylight can deploy tuneable white, or BIOS enabled luminaires in these spaces to provide skyblue during the peak of the day and a warm light with minimal blue light at night. Additional solutions such as safety conscious dimmable/sensor specific luminaires can be installed along with specialist corridor double-wash lighting with low glare.

Something to remember

Consider human centric lighting solutions in corridors to emulate the natural day night cycle for shift workers providing care for patients.

	PRODUCT	BRAND
	EVALA	Energylight / BIOS
	VILINE	Energylight / BIOS
	Microprism	RZB
	SKIM	ERCO
	65	Energyline / BIOS
	Triona Recessed, Surface, Suspended	RZB
	Voila Asymmetric	Sécurlite
	Cylinder	Energylight
	Triona	RZB
	Ring of Fire	RZB



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.



Image: Laboratory facility with Energyline recessed lighting installed at Middlemore Hospital Harley Gray, Auckland.

## LABS, CLEAN ROOMS & THEATRE

Energylight's solutions for clean rooms include the Zeta, ideal for sterile environments as it meets IP54, IP65 ratings and uses antimicrobial treatment on all surfaces of the frontal frame of the luminaire in compliance with international hygienic-antimicrobial standards ASTM E2180 and ISO 22196:2007 against various bacteria, fungi and moulds. The treatment is safe for humans and guaranteed for ten years.

Something to remember

Shadow-free, uniform lighting should be considered here especially for highly focused tasks.

	PRODUCT	BRAND
	VILINE IP44	Energylight / BIOS
	Parledo IP65	RZB
	Zeta IP54	Castaldi
	Zeta IP65	Castaldi
	65	Energyline / BIOS
	108	Energyline / BIOS



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.



Image: Work consultation station at Christchurch Outpatients building, Christchurch.

## CONSULTATION & WORKSTATIONS

A balanced direct and indirect light output from functional but decorative luminaires can provide a harmonious visual impression for the staff. dimming control is important to consider in these spaces along with occupancy sensors to reduce energy when nobody is present in the space. Limited daylight access or night-time operation should consider wellbeing BIOS technology for brighter days and warmer low blue nights.

Something to remember

Where possible, consider wall washing in meeting rooms and low glare general downlighting.

	PRODUCT	BRAND
	VIFO	Energylight / BIOS
	EVALA IP5X	Energylight / BIOS
	VILINE	Energylight / BIOS
	Microprism	RZB
	SKIM Downlight	ERCO
	IKU	ERCO
	Compar	ERCO
	65	Energylight / BIOS
	Triona	RZB



Some lighting solutions in the categories above can be fitted with Bios lighting technology. This is mentioned in the 'BRAND' column.



## EXTERIOR FACADE & CARPARKS

Warm tone, visual comfort and uniformity of light assist with safety and orientation on arrival and departure from health care facilities. Energylight have installed exterior lighting for car parks, pathways that meet PC1 standards. Pathway lighting can be achieved using bollards to allow for comfortable navigation for those checking into or visiting a healthcare space.

Something  
to remember

Visual comfort and  
glare control contribute  
to better orientation  
safety and security.

	PRODUCT	BRAND
	FA100-W	ewo
	F System	ewo
	Cylinder Facade	ERCO
	Compact IP65	ERCO
	IN Series	ewo
	FA170	ewo
	Ledona IP65	RZB
	Midipoll	ERCO
	Castor	ERCO
	Voila	Sécurlite

Image: Ulster Hospital Belfast, implemented with ERCO lighting and controlled by Casambi wireless bluetooth-based lighting control system.



Image: Christchurch manufacturing facility for Energylight products.



## OUR NZ MADE STORY

Energylight strongly believe in brand 'New Zealand'.

We are well versed in the design and manufacture of quality lighting solutions. The technology has evolved but our values stay the same – support New Zealand.



We are well versed in the design and manufacture of quality lighting solutions. The technology has evolved but our values stay the same - support New Zealand.

The New Zealand FernMark License represents those products which are designed and built from the ground up in New Zealand.

These items are comprehensively supplemented by a variety of high-quality luminaires from our highly technical and dependable global partners.

We are fully engaged with the latest innovations of the world whilst encouraging ongoing investment in local manufacturing and employment.

The specialist engineering and manufacturing skillsets within our company and our local supply chain add to the vast talent and superb culture that the Energylight Group have exhibited from inception. We are constantly in awe of the brilliant ideas our fellow kiwis put forward to constantly improve efficiencies.

**'We are proud to support the NZ Health and Care market and design teams with robust and efficient solutions'.**

**CALEB KING**

Southern Sales Manager, Energylight



Image: Te Nikau Grey Base Hospital and Health Centre in Greymouth CT screening room with Energylight Evala high-grade lighting.

## WHAT WE PROVIDE



### **Compliant Lighting Solutions**

We only offer the best in compliant medical lighting with a focus on the latest ground-breaking human centric technology.



### **Technical Solution Specialists**

Our national team support the healthcare design community with lighting and control solutions.



### **NZ Local Support**

With offices in Christchurch and Auckland, our team provides on-ground support when needed.



### **Quality & Longevity of Products**

Sustainability within our supply chain carries through to the companies we partner with who share these values with a focus on quality recycled products.

Image: Christchurch Outpatients building, Oxford Terrace, Christchurch CBD.



**energylight**  
knowledge | solutions

**www.energylight.net** | [contact@energylight.net](mailto:contact@energylight.net)  
AUCKLAND: 504/150 Karangahape Road, CBD | 03 977 2034  
CHRISTCHURCH: 204 Cumnor Terrace, Woolston | 03 977 2034