IESANZ Light in Focus Event

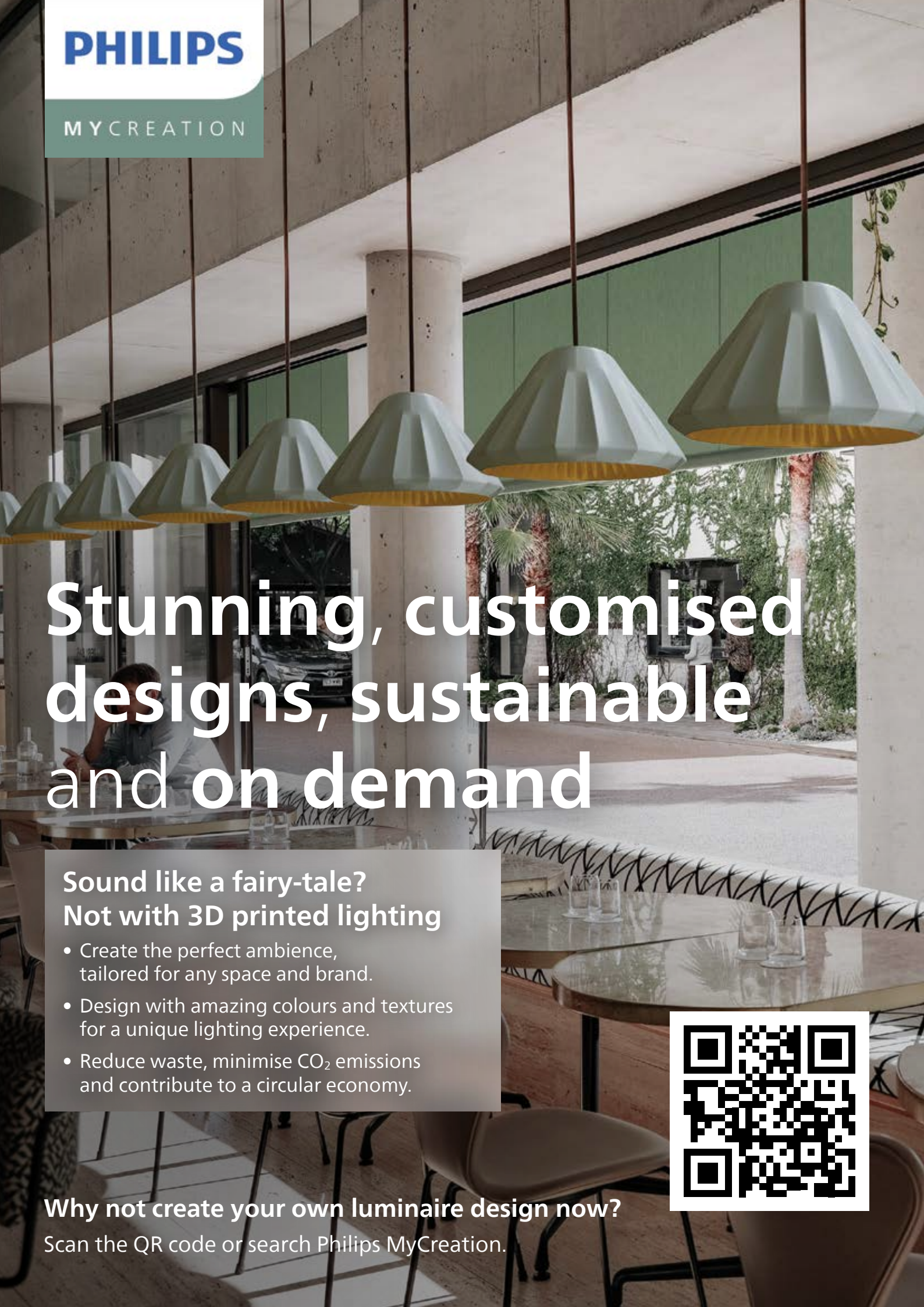
WATT'S NEXT in Lighting

Wednesday 7th – Thursday 8th June 2023

Doltone House, Jones Bay Wharf, Pyrmont, Sydney

CONFERENCE PROGRAM

www.iesanz.org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WELCOME FROM PRESIDENT AND CHAIR

After a four-year hiatus we are excited to bring you the IESANZ Light In Focus event for our valued members and industry partners.

This event provides attendees with the opportunity to see "WATT'S NEXT In Lighting" through our:

- 20+ exhibitors who are industry leaders in their field.
- 15+ high calibre expert speakers from Australia and around the globe.
- Recognition of the Best of the Best – presenting the IESANZ International Lighting Awards at the International Lighting Awards Dinner.

Our **Conference** program features lighting industry experts delivering thought-provoking content covering technical and design aspects of lighting. Our speakers will be interesting and engaging and offer you the chance to participate through a Q&A session. A panel discussion featuring our speakers from the day will provide a further opportunity for topical discussion.

Our **Exhibition** will feature displays of what's now and what's next in lighting. It will be an opportunity for you to visit the displays and talk to representatives from these companies truly making an impact in the lighting world.

In addition to the Conference and Exhibition we will be hosting **Networking Drinks** from 4.45-5.45pm, followed by a **PechaKucha** session on Wednesday 7th June.

On the evening of Thursday 8th June, we will be hosting the separately ticketed IESANZ International Lighting Awards Dinner. The Awards Dinner includes drinks, a three-course meal, Awards presentation and a cruise of Sydney to view the VIVID installations from the harbour aboard the Starship Sydney.

We want to take this opportunity to firstly thank the hard-working Organising Committee in bringing this event together and the Board who have been supportive of the work involved.

However, we could not have produced such a high-quality event without the support of our amazing Sponsors and Exhibitors who stuck by us through the COVID forced postponement and have committed to making this event worth the wait.

Finally, our industry friends, we welcome the participation of visitors who have made their way to our event, locally and overseas.

We would like to encourage everyone to take advantage of all the benefits this event presents – expert speakers, high quality displays and the networking opportunities.

Thank you and we look forward to welcoming you to the IESANZ Light In Focus Event.

Vessi Ivanova
BE(HONS) ELEC, MIES,RLP
Conference Convenor

Greg Williams
MIES, MEngNZ, GDipBus(EngMgt), BE (E&E), NZCE (Electrical)
IESANZ President

PROGRAM AT A GLANCE

Exhibition and Conference

The exhibition and conference will be held over two days Wednesday 7th and Thursday 8th June 2023 at Doltone House Jones Bay Wharf Pyrmont.

A networking event will be held on the evening of Wednesday 7th June from 4.45pm followed by a PechaKucha session 5.45pm.

DAY ONE	
9:00am	**WELCOME** **Smarter Lighting Systems: Towards Autonomous Control** *Professor Robert Karlicek, Electrical Engineering & Center Director, Rensselaer Polytechnic Institute (USA)*
	The New CIE Standard LED Reference Spectrum for Photometer Calibrations *Tony Bergen, Managing Director, Australian Photometry and Radiometry Laboratory*
	Creating Healthy, Resilient, Positive Buildings and Places – Lighting in the Context of Green Star *Gabrielle Pavicic, Technical Advisor and Deejan Ferrao, Manager Future Focus Rating Tools - Green Building Council of Australia*
	The Future of Data in Lighting Installations *Peter Duine, Global Segment Manager, Signify*
	LUNCH
1:20pm	**Lighting Design of Things Smart From the Start** *Martin Klaasen, Founder and Principal, Klaasen Lighting Design*
	Protecting the Environment from Unnecessary Artificial Light Intrusion – Moving Forward *Tim Shotbolt, Principal, light & the biosphere*
	Biodynamic Lighting: Capturing the Spirit of 'Life-Centric Lighting *Dr Amardeep Dugar, Principal and Founder, Lighting Research and Design (India)*
	Panel Session *Speakers from today's program moderated by Vessi Ivanova, Lighting Design Manager, Signify*
4.45pm	**HAPPY HOUR**
5.45pm	**PechaKucha** *moderated by Rino Brindisi, Partner, iGuzzini*
7.30pm	**Close**

DAY TWO	
9:00am	**The Lighting Design Objectives (LiDOs) Procedure** *Dr Christopher (Kit) Cuttle, Independent Consultant (NZ)*
	AS/NZS 1680: A Brief History of the Interior Lighting Standard's Updates *Professor Emeritus Warren Julian, University of Sydney*
	Creating Lighting Installations for VIVID *Simone Chua, Director, Amigo & Amigo*
	Lighting Control, Past, Present and Future *Allan Organ, Project Manager, zencontrol*
	LUNCH
1:00pm	**Clinical and Occupational Applications of Non-Visual Dynamic Lighting Interventions: From the ICU to ISS** *Dr Steven Lockley, Associate Professor of Medicine, Harvard Medical School (USA)*
	Light, Human Health and WELL: Local and International Trends *Jack Noonan, VP, International WELL Building Institute (IWBI)*
	What Constitutes Good Lighting Today? *Dr Peter Boyce, Independent Consultant (UK)*
	Panel Discussion *Speakers from today's program moderated by Yeon-Woo Cho, Principal Specialist Lighting Lead, Mott MacDonald – Panel Moderator*
Please note: The opinions expressed in these presentations are solely those of the presenters and not necessarily those of the IESANZ – The Lighting Society. The IESANZ does not guarantee the accuracy or reliability of the information provided therein.	
IESANZ INTERNATIONAL LIGHTING AWARDS DINNER *Aboard the Starship Sydney* **5.45pm for a strictly 6pm departure from Casino Wharf**	

DETAILS

Conference and Exhibition Venue

Doltone House Jones Bay Wharf is a unique heritage venue situated on a restored finger wharf on the foreshore of Sydney Harbour's Pyrmont. A spectacular decking area offers outstanding views of the Harbour Bridge, city skyline and Darling Harbour. The event will be held on **Level 3, 26-32 Pirrama Road, Pyrmont.**

A map can be found **here**

International Lighting Awards Dinner

As part of the IESANZ Light In Focus Event 7th and 8th June 2023 the IESANZ will host the National Design Awards Dinner coinciding with VIVID Sydney. The Awards Dinner will take place aboard the Starship Sydney on the evening of 8th June, and include a three-course dinner, Awards presentation and a cruise to view the VIVID lights from beautiful Sydney harbour.

Your MC for the night is comedian, Joel Ozborn, who will provide entertainment and run the Awards presentations.

Dress Code is Smart Business.

Guests must assemble at Casino Wharf by 5.45pm for a strictly 6.00pm departure. The event will conclude at 10.00pm.

SPONSORS

A big thank you to our sponsors who make a crucial contribution to this event, enabling the IESANZ to deliver a high-quality event, engage expert speakers and provide an overall benefit to the lighting industry.

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PROGRAM

Exhibition and Conference

The exhibition and conference is on Wednesday 7th and Thursday 8th June 2023 at Doltone House, Jones Bay Wharf Pyrmont.

A networking event will be held on the evening of Wednesday 7th June from 4.45pm followed by a PechaKucha session 5.45pm.

DAY ONE Wednesday 7th June 2023

9:00am **WELCOME**

Welcome to Country, Opening Address

Vessi Ivanova, Conference Convenor, IESANZ

President's Welcome

Greg Williams, President, IESANZ

9:10am **Smarter Lighting Systems: Towards Autonomous Control**

Professor Robert Karlicek, Electrical Engineering &
Center Director, Rensselaer Polytechnic Institute (USA)

An unrealized promise of LED lighting involves developing lighting control systems that always place the "right light where and when it is needed." Good lighting control has never really been easy, and as lighting systems add spectral tunability and circadian management features, lighting control will move outside of the capabilities of mere mortals to control. Part of the problem is that lighting systems simply don't know where building occupants are or what they are doing, but this information is not only critical for "smart lighting", but increasingly necessary for energy efficient buildings.

This talk explores how smart lighting systems can be combined with evolving sensing platforms, novel control methods, and machine learning to create autonomous lighting control methods that recognize how to "sculpt" lighting spectral and spatial distributions that dynamically and autonomously optimize illumination based on the control system's ability to sense occupant location and activity. We propose that, with continued development of occupancy/light sensor systems with embedded intelligence, future lighting systems will be able to control themselves for better lighting and improved building systems operations.

PROGRAM

10:10am **The New CIE Standard LED Reference Spectrum for Photometer Calibrations**

Tony Bergen, Managing Director, Australian Photometry and Radiometry Laboratory

Calibration of illuminance meters and luminance meters (photometers) has traditionally been performed using a gas-filled tungsten filament lamp operating at a correlated colour temperature of 2,856 K. This was because at the time that photometer calibrations were first being standardised in the early 20th century, filament lamps were the most stable and reliable sources available, and they could be designed with clearly defined reference planes.

Photometers are typically designed based on the spectral response of the human eye in daytime conditions, represented by the well-known V (λ) function defined nearly 100 years ago. If the spectral response of the photometer does not perfectly match the V (λ) function, then spectral mismatch errors can arise if the spectral distribution of the source being measured differs from that used to calibrate the photometer. This has become particularly important with the predominance of LED lighting technologies.

The CIE has recently published CIE 251:2023 "LED Reference Spectrum for Photometer Calibration". The development of this publication has involved studying thousands of white LED spectra (as well as other white light sources such as fluorescent and daylight sources) and hundreds of real photometers ranging from high quality laboratory photometers to cheap hand-held commercial luxmeters.

This presentation will outline the history of how the incandescent source came to be standardised and how it has evolved over the years; how the LED reference spectrum has been designed, and how practical implementation of the LED reference spectrum can be achieved.

10:50am **MORNING TEA**

11:20am **Creating Healthy, Resilient, Positive Buildings and Places – Lighting in the Context of Green Star**

Gabrielle Pavicic, Technical Advisor and Deejan Ferrao, Manager Future Focus Rating Tools - Green Building Council of Australia

Lighting is an integral part of the built environment and how we experience places, and hence great light quality is an important attribute of a Green Star rated building. As a minimum, project teams seeking a Green Star Buildings rating are required to align with or exceed the requirements of Australian Standards and must provide evidence to support their claims. However, as a holistic, voluntary rating scheme, Green Star also addresses the impacts of lighting beyond lighting comfort and quality.

In this discussion, we will explore the holistic approach of Green Star and the considerations which involve lighting when defining healthy, resilient, positive buildings and places. We will discuss beyond lighting comfort and draw attention towards how lighting ties into the broader conversations about issues which will define the next decade. We will highlight considerations regarding daylight, energy use, responsible products, life cycle impacts, and biodiversity and light pollution.

Green Star provides tools to assess sustainability across the full built environment life cycle- from design, to construction, to operational performance. Benchmarks are set high to drive truly sustainable outcomes, and lighting has an important role to play.

11:50am **The Future of Data in Lighting Installations**

Peter Duine, Global Segment Manager, Signify

It is evident from surging IWBI/WELL-scores, WiredScore certifications and Green Star ratings, that building health and sustainability remains a primary industry topic. This presentation discusses how remote operation and data monitoring creates sustainable value for building stakeholders (the 'E' in ESG), as well as functional value for occupants (the 'S' in ESG.) Through this, amenity rich buildings are thriving, and we will demonstrate how data from lighting can form the basis of a wireless mesh network that can bring about energy savings and health & well-being.

12:20pm **LUNCH**

1:20pm **Lighting Design of Things Smart From the Start - The convergence of the IoT with architectural lighting design**

Martin Klaasen, Founder and Principal, Klaasen Lighting Design

The lighting market is radically changing and so are the demands for lighting design. We now live in a world where everything is connected and where data is the new king. The lighting world as we know it is being disrupted by the convergence of smart building technologies and lighting. All this is happening against a backdrop of increased demands for sustainability, the emergence of as-a-service models for nearly everything, the rise of artificial intelligence, virtual reality, blockchain and crypto currencies. All these "disruptions", work on data platforms that need to be integrated somehow in the architectural fabric of buildings, with lighting fast becoming the number one choice for this integration as lighting infra-structures are present in every space that humans occupy or use. Add to that the increased demands for personalisation, customisation and enhanced privacy and security it becomes clear that any lighting design needs to be smart from the start.

In his presentation Martin will touch upon all these disruptions and the potential impact they might have on lighting and lighting design. The question that needs to be answered is whether lighting designers just need to keep doing what they are doing or whether they should embrace these disruptions and prepare themselves for the future by being smart form the start.

2:15pm **Protecting the Environment from Unnecessary Artificial Light Intrusion – Moving Forward**

Tim Shotbolt, Principal, light & the biosphere

The status quo: current documents, practice, and potential issues. A look at the difference between Standards and Guidelines and why both are important. Moving forward - the need to work together focussing on protecting our future and the environment regardless of differences of approach and challenges imposed by economic developments.

2:40pm **AFTERNOON TEA**

3:10pm **Biodynamic Lighting: Capturing the Spirit of 'Life-Centric Lighting**

Dr Amardeep Dugar, Principal and Founder, Lighting Research and Design (India)

The term 'biodynamic lighting' is proposed as a term to capture the true aspiration of 'life-centric' lighting: good outcomes for all life forms on earth driven by good design for all life sustaining behaviours. While academics remain sceptical about the term 'biodynamic', which they argue was not developed through scientific methodology but through mysticism, this lecture conversely argues that with appropriate use, the term can comprehensively capture this aspiration. While future studies are necessary to consolidate this aspiration, the immediate potential for lighting to better support planetary health is clear. As widespread exposure to artificial-light-at-night (ALAN) is perturbing many aspects of animal, human and plant behaviour and survival, the lecture provides an overview of how the various life forms use light information in a way crucial for their development, growth and survival: phototropism, phototaxis, photoperiodism, and synchronization of circadian clocks. Potential problems at the level of individual species and populations are examined, and the debate is extended to the consequences for entire ecosystems. The lecture then proposes a design approach for an inclusive lighting design that cares for as many life forms as possible, which include animals, birds, humans, insects, plants and everything in between. Holistic consideration of life-centric lighting should look beyond altruism and romanticism by firmly rooting itself into pragmatism about long-term considerations for planetary health. The lecture endeavours to consolidate and synthesize key references that will be useful for lighting professionals, with the goal of supporting knowledge translation into pragmatic lighting strategies.

PROGRAM

3:50pm	**Panel Session** *Moderated by Vessi Ivanova, Lighting Design Manager, Signify*
4.45-5.45pm	**NETWORKING DRINKS**
5.45-6.45pm	**PechaKucha** *Moderated by Rino Brindisi, Partner, iGuzzini*
7.00pm	**Close**

DAY TWO Thursday 8th June 2023

9:00am **WELCOME**

9:05am **The Lighting Design Objectives (LiDOs) Procedure**

Dr Christopher (Kit) Cuttle, Independent Consultant (NZ)

The development of a fully successful lighting solution invariably involves a variety of factors to be resolved that extends beyond merely ensuring compliance with lighting standards and requires attention to the specifics of the application. The LiDOs Procedure is a practical tool for routinely devising application-specific lighting solutions. It guides lighting practitioners towards selecting and specifying lighting design objectives for how lighting may influence the appearance of a lit space, after which application of the LiDOs spreadsheet leads to the development of a specification for how luminous flux may be most effectively directed within the volume of the space to achieve the chosen objectives. This direct flux specification enables practitioners to select luminaires, mounting locations, and controls with confidence that their chosen lighting design objectives will be achieved. A live demonstration of application of the LiDOs Procedure will be included in the presentation.

10:05am **AS/NZS 1680: A Brief History of the Interior Lighting Standard's Updates**

Professor Emeritus Warren Julian AM, University of Sydney

What is now the AS/NZS 1680 series of Interior Lighting has grown from the Australian wartime emergency Standard AS(E) CA501 – 1942, developed to assure good seeing conditions for essential military and other manufacturing to minimise accidents and maximise productivity. That was eventually revised and redesignated AS 1680 – 1976 and after a major revision in 1990, it became *Interior and workplace lighting Part 1: General principles and recommendations* of an evolving series of interior lighting Standards. Following an agreement between Standards Australia and Standards New Zealand. In 2006 it became a joint Standard prepared by a joint technical committee. As can be seen from the Standard's title, Part 1 forms the basis upon which the Part 2 series of Standards relating to particular tasks and applications were developed as additions to the chapters of Part 1. These "additions" could be expansions or contractions of the generic recommendations of Part 1.

AS/NZS 1680.1 has proven to be a remarkably robust Standard, with almost no requests for interpretations and revisions being made by users to the Standards organisations. It is now 17 years old and in need of review due to changes in technology, design methods and possibly, recent understandings of people's responses to the lit environment. A revision may also see the Part 2 series being reunited with Part 1 obviating the possibility that some (many?) users may not read the detail of Part 1.

This paper will present the foundations of the Standard by discussing its basis and its evolution as a humancentric Standard. It will also be an opportunity to comment on the upcoming revision of the Standard, since the speaker is the Chair of LG-001, the Joint Technical Committee considering the Standard's review.

10:45am **MORNING TEA**

11:15am **Creating Lighting Installations for VIVID**

Simone Chua, Director, Amigo & Amigo

In 2012, Simone Chua founded Amigo & Amigo with the desire to create art that brings joy to public spaces. Her passion for building community has enabled Amigo & Amigo to expand, bringing on some of Australia's leading creatives and engineers. The diversity and talent at Amigo & Amigo has skyrocketed the studio's success, seeing their projects being realised internationally throughout Australia, Asia, South America, USA, Europe, and the Middle East. The Amigo & Amigo spirit lives in the simple (yet often technically challenging) pursuit of transforming static spaces into dynamic environments saturated with sensory experiences, inviting real audience interaction, and inspiring a collective sense of play, wonder and memory. This year, Amigo & Amigo is presenting four new artworks at VIVID: Dandelion, Night Whisper, Night Walkers and Wave. In her presentation, Simone will share with the audience the conceptual origins of each artwork, and draw out some of the unique, cross-disciplinary and technical features across the collection, which highlight well the artistic-industrial niche in which Amigo & Amigo's practice resides.

11:45am **The Future of DALI Lighting**

Allan Organ, Project Manager, zencontrol

An educational session covering changes in the lighting control technologies over time and the introduction of DALI-2 As one of the experts responsible for the development of the AS/NZS 62386 standards Allan can provide an insight to how lighting control works and how it is used in our buildings. In this session we will cover a background on DALI lighting and lighting control and introduce newer technologies such as DT8 colour changing, emergency lighting and wireless networks.

12:15pm **LUNCH**

1:00pm **Clinical and Occupational Applications of Non-Visual Dynamic Lighting Interventions: From the ICU to ISS.**

Dr Steve Lockley, Associate Professor of Medicine, Harvard Medical School (USA)

Light has multiple 'non-visual' effects including directly improving alertness and cognitive function, improving sleep, and maintaining synchronisation of the circadian (24-hour) clock. These responses are mediated primarily by the photopigment melanopsin, located in the ganglion cell layer of the eye, and is different from the rods and cones we use to see. Melanopsin is most sensitive to short-wavelength (blue) light (peak ~480 nm). In multiple laboratory and real-world studies, we and others have shown that enhancing exposure to blue, or blue-enriched white light, can improve alertness and cognition and that minimizing blue light exposure before sleep increases sleepiness and promotes sleep onset. Demonstrated real-world benefits of better daytime and evening light exposure, depending on the environment, include better sleep and less fatigue in office workers, improved concentration in schools, improved workplace productivity and safety, reduction in ICU medical errors and reduction in falls in care home residents, among others.

With the increasing implementation of solid-state lighting systems for energy efficiency, there is an enormous potential to gain additional health, wellness and cost benefits by exposing people to the right light at the right time of day. Unfortunately, many retrofits are not taking these benefits into account which is a hugely missed opportunity. Improved education for lighting companies, lighting designers, and clients is needed to realise these gains and cut through the misinformation which has dogged the field to date.

1:55pm **Light, Human Health and WELL: Local and International Trends**

Jack Noonan, Vice President, International WELL Building Institute (IWBI)

Our eyes are not just for seeing. They respond to environmental cues impacting our productivity, engagement, and circadian rhythms. The light around us impacts our health and wellbeing every day and with the physical and social environment being the number one determinant of our health, taking an evidence-based approach is critical. The built environment can - and should - be a public health intervention.

This presentation will provide an introduction to the Light Concept - one of ten categories - in the WELL Building Standard. In a short period of time, WELL's adoption has been exponential and is being used as a framework by more than 20% of all commercial office space in Australia and more than 20% of the global Fortune 500. The presentation will explore the drivers that have led to a greater focus on healthy buildings and spaces, and the return on investment from this approach.

2:35am **AFTERNOON TEA**

3:05pm **What Constitutes Good Lighting Today?**

Dr Peter Boyce, Independent Consultant (UK)

In the last two decades lighting practice has changed. Lighting technology has changed. The nature of work has changed and the impacts of exposure to light have expanded. But lighting standards remain largely unchanged. They still consist of a recommended illuminance across a task plane at a minimum uniformity, supplemented by advice on light source colour properties and a maximum glare limit. Such standards are applied via the lumen method, a method that requires the lighting equipment to be chosen before finding out what it will deliver. This approach has largely eliminated bad lighting but often it results in indifferent rather than good lighting.

To achieve good lighting, it is necessary to recognize that the lighting of the space is as important as the lighting of any task. Further, there exist new methods, metrics and recommendations to help deliver good lighting. The first step is to identify the objectives of the design. Once these are set the required direct luminous flux distribution can be determined. Then the appropriate lighting equipment can be selected, and conventional illuminating engineering techniques used to deliver the specified light distribution. As for colour properties, there are new metrics for colour fidelity and colour gamut giving a detailed picture of the colour appearance of the space. If you are interested in the non-visual effects, there are recommendations made for the light exposure required to ensure circadian stability. Such an approach is more likely to result in good lighting than simply following current standards.

4:00pm **Panel Discussion**

Moderated by Yeon-Woo Cho, Principal Specialist Lighting Lead, Mott MacDonald – Panel Moderator

4:40pm **Conference Closes**

IESANZ INTERNATIONAL LIGHTING AWARDS DINNER
Aboard the Starship Sydney
5.45pm for a strictly 6pm departure from Casino Wharf

SPEAKERS

The Light In Focus event is the lighting industry's flagship event of the year. It brings together experts from within and beyond the lighting industry to share ideas, share knowledge, discover what is new and next and provides an amazing opportunity for networking.

Tony Bergen, Managing Director, *Australian Photometry and Radiometry Laboratory*

Tony is a physicist who has been working in the field of photometry and radiometry for over 25 years. He is Technical Director of Photometric Solutions International, an Australian company which designs and manufactures testing and measurement equipment; and Managing Director of the Australian Photometry and Radiometry Laboratory, an ISO 17025 accredited calibration and testing laboratory formerly called Steve Jenkins & Associates. He is an internationally recognised specialist in photometry, radiometry, and colorimetry with specific expertise in goniophotometry, spectroradiometry, laboratory practice, visual ergonomics, and measurement uncertainty.

Tony is highly active in the International Commission on Illumination, better known as the CIE from its French name Commission Internationale de l'Eclairage. He currently serves as President of CIE Australia and Director of CIE Division 2, which is the division of the CIE that deals with physical measurement of light and radiation. In September 2023 he will become CIE's Vice-President Technical. Tony is chair of two CIE Technical Committees: TC 2-77 "Fundamental concepts" and TC 2-78 "Goniophotometry of lamps and luminaires" and has been a co-author of over 20 CIE publications. He was a member of CIE TC 2-90 "LED Reference Spectrum for Photometer Calibration", which wrote the publication CIE 251:2023 "LED Reference Spectrum for Photometer Calibration" which defines the LED reference spectrum to supplement the standard incandescent lamp for calibration of illuminance meters and luminance meters, and which forms the basis of Tony's presentation.

Closer to home, Tony serves on three Standards Australia committees: LG-001 "Interior and Workplace Lighting", LG-002 "Lighting for Roads and Public Spaces" and LG-006 "Road traffic signals". He is also President of the Metrology Society of Australasia; serves as Chair of the NATA's Calibration Accreditation Advisory Committee; and delivers a Road & Public Space Lighting Workshop for the Centre for Pavement Engineering Education.

Dr. Peter Boyce, Independent Consultant (UK)

Peter Boyce has spent most of his career working in the field of lighting. From 1966-1990 he was a Research Officer at the Electricity Council Research Centre in England. There, he conducted research on visual fatigue, the influence of age on visual performance, visual problems associated with viewing computer screens, hue discrimination, safe lighting for emergency conditions, and security lighting. From 1990–2004 he was Head of Human Factors at the Lighting Research Center at Rensselaer Polytechnic Institute. There, he conducted research on visual performance, visual comfort, circadian effects, emergency lighting, perceptions of safety, and lighting for driving and directed lighting evaluations and product testing. From 2008 to 2019 he was the Editor of the journal "Lighting Research and Technology". He is a Fellow of both the Society of Light and Lighting and of the Illuminating Engineering Society of North America and has received awards from both bodies for his work. He is a recognized authority on the interaction of people and lighting, being the author of the classic text "Human Factors in Lighting", as well as numerous book chapters, papers and articles.

Simone Chua, Director, *Amigo & Amigo*

Simone Chua is an internationally exhibiting contemporary installation artist, and founding director of design studio, Amigo & Amigo. With a practice extending ten plus years, her and the studio's work explores the simple idea of capturing an audience's imagination, and bringing people together in public spaces.

Simone's expertise in lighting design and sculptural form has generated connections for collaboration with some of Australia's leading creatives - interactions that have further informed her development and desire to explore beyond lighting and deeper into areas of sensory experience.

Amigo & Amigo exhibits internationally - throughout Australia, Asia, South America, USA, Europe, and the Middle East. The studio currently has four new artworks on display throughout VIVID Sydney.

Always scared she's not learning enough, Simone is excited to be part of this opportunity to share ideas about creative leadership, the relationship between creative process and running a small business.

Dr Christopher (Kit) Cuttle, Independent Consultant (NZ)

Christopher "Kit" Cuttle, MA, PhD, FCIBSE, FIESANZ, FIESNA, FSLL, is a lighting educator, designer and author. During a long career, he has held the positions of Head of Graduate Education in Lighting at the Lighting Research Center, Rensselaer Polytechnic Institute, Troy, New York; Senior Lecturer at the Schools of Architecture at the University of Auckland, and the Victoria University of Wellington, both in New Zealand; Section Leader in the Daylight Advisory Service, Pilkington Glass; and Lighting Designer with Derek Phillips Associates (now DPA Lighting Consultants), both in the UK.

In addition to more than 150 published papers and articles, he is author of three books: *Lighting by Design*, Architectural Press, 2008 (2nd edition); *Light for Art's Sake*, Butterworth Heinemann, 2007, and *Lighting Design: A perception-based approach*, Routledge, 2015.

His recent awards include the Illuminating Engineering Society of North America 2019 Medal, the Society of Light and Lighting 2017 Lighting Award; the Professional Lighting Design 2013 Lifetime Achievement Award, and the SLL 2013 Leon Gaster Award for his Lighting Research & Technology paper, A New Direction for General Lighting Practice.

Peter Duine, Global Segment Manager, *Signify*

Peter Duine is Global Segment Manager for the Office market of Signify's systems and service business. Based in Eindhoven, NL, he joined Philips 25 years ago as an engineer in the Research Laboratories. He joined the lighting division 15 years ago as an optical engineer and was a pioneer in developing LED light engines and drivers as systems for general lighting applications. He then moved to product management and was responsible for developing a product line of OEM components for connected lighting. Peter holds Masters and PhD degrees in Solid State Physics from Delft University of Technology. In his spare time, he enjoys running marathons and biking the tallest mountains all over the world.

Amardeep Dugar, Principal and Founder, *Lighting Research and Design (India)*

A trained architect and an advocate for all the elements of lighting – design, education and research – Dr. Amardeep M. Dugar is the founding principal of Lighting Research & Design. After completing a Masters degree in Architectural Lighting from University of Wismar/Germany, he pursued a Ph.D. from Victoria University of Wellington/New Zealand to solidify his academic and professional leadership role into a career at a higher level. His notable achievements include being named the Outstanding Young Scientist at the India International Science Fest 2016 and 40-Under-40 Hottest Lighting Designers of in the World 2017 by Lighting Magazine UK amongst others. Aside from working on high profile projects and teaching at several architecture schools, he has been instrumental in conducting lighting workshops educating students and professionals about the importance of lighting. Amardeep has presented at several international conferences such as the IES Annual Conference 2012, 2015, 2020 & 2022; IES Research Symposium 2016; Light Fair International 2014, 2020 & 2023; IALD Enlighten 2014, 2016 & 2019; Light Focus 2004 & 2006; and Professional Lighting Design Convention 2007, 2009, 2011, 2013, 2015, 2017 & 2019 to name a few. He is also the cofounder of an online platform for lighting called the Virtual Lighting Design Community.

Deejan Ferrao, Manager Future Focus Rating Tools, *Green Building Council of Australia*

Deejan is the Manager for the Future Focus Rating tools and ensures a smooth landing for all Future Focus tools by understanding industry challenges and needs when applying the Rating tools. Prior to joining the GBCA, Deejan has worked as a Sustainability consultant working on NatHERS, Basix and NABERS in Australia and a Site Engineer for residential development back in India.

Vessi Ivanova, Lighting Design Manager, *Signify*

Vessi Ivanova has over 30 years' experience in Lighting Design for Building Services industry.

Vessi has worked at independent lighting design consultancies in Australia before joining Philips Lighting, now Signify, in 2012. She has passionate interest in light and its powerful ability to convey and sculpt space and create atmosphere.

Throughout her career, Vessi has successfully provided innovative and efficient lighting solutions across various industry sectors, including Stadia, Commercial, Retails, Industrial and Landmark attractions.

Vessi has worked and has been Lead Designer on numerous projects that have received awards for Excellence in lighting design. This includes the International Supreme Brilliance award from IESANZ for Optus Stadium.

Vessi has supported the IESANZ for long time. She was NSW IESANZ President for a 3 year tenure and now is the NSW Board Director of the IESANZ, Australia.

Professor Emeritus Warren Julian AM, University of Sydney

Emeritus Professor Warren Julian is past-Dean and Director of Lighting Studies, Faculty of Architecture, Design and Planning, University of Sydney; Life Fellow of the Illuminating Engineering Society of Australia and New Zealand (IESANZ); Honorary Fellow of the Society of Light and Lighting (SLL, UK); past-President IESANZ; Editor, *Lighting*; past Vice-Presidents (Technical and Publications) CIE; Chair, Standards Australia's *Interior Lighting* Committee; Co-founder and Chair, Lux Pacifica; and author of over 250 scientific papers, articles, book chapters and books on lighting-related subjects.

His interests are all matters concerning light and lighting in Australia, the region and internationally. In 1979 he established the Master of Design Science (Illumination), the first graduate level lighting design program in English. His research interests are in how people respond to the lit environment and he has undertaken major studies in the gloom effect, discomfort glare and lighting for the partially sighted.

For his services to illumination engineering, particularly in education and research; to educational administration and to professional associations he was invested as a Member of the Order of Australia (AM) in the Queen's Birthday Honours in 2011.

Professor Robert Karlicek, Electrical Engineering & Center Director, *Rensselaer Polytechnic Institute (USA)*

Dr. Robert F. Karlicek, Jr. is a professor of Electrical, Computer and Systems Engineering, and the Director of the Center for Lighting Enabled Systems & Applications (LESA) and co-Director of the Institute for Energy, Built Environment and Smart Systems (EBESS), both at Rensselaer Polytechnic Institute. Prior RPI, he spent over 30 years in industrial research and R&D management positions related to optoelectronics, telecommunications and lighting system development with corporations including AT&T Bell Labs and General Electric. He obtained his Ph.D. in Physical Chemistry from the University of Pittsburgh and has over 56 peer reviewed technical papers and 48 U.S. patents.

Martin Klaasen, Founder and Principal, *Klaasen Lighting Design*

Martin Klaasen is an award-winning lighting designer, design consultant, entrepreneur, lecturer and resource speaker with more than 40 years of experience in the lighting industry operating predominately in the Asia Pacific region. Martin applies his passion for lighting design exclusively through his own company, Klaasen Lighting Design (KLD). His designs have received national and international lighting design awards. His expertise and experience span all applications, with projects around the globe. He remains deeply involved in all projects as the creative force behind and lead designer of the company's projects. Martin is widely respected by his peers in the industry, his projects have featured in industry magazines around the world.

Martin is also the founder of Lighting Design of Things (LDoT) a start-up that fills a gap in the industry to provide professional consultancy to facilitate the integration of smart data analytics systems within the lighting infra-structure.

Sharing his knowledge by educating his clients and the public is also one of Martin's great passions. Through his widely followed "Light Talk" platform, his public appearances, interviews, and many articles in the media and master classes. Martin shares his experience also through his Light Talk books and has presented at major lighting events around the world.

More recently Martin was co-founder of the Virtual Lighting Design Community, a knowledge sharing platform that brings together the lighting industries' leading experts in an innovative virtual interactive community.

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Dr Steven Lockley, Associate Professor of Medicine, *Harvard Medical School (USA)*

Dr. Steven Lockley is a Neuroscientist at Brigham and Women's Hospital, an Associate Professor of Medicine in the Division of Sleep Medicine at Harvard Medical School, and an Adjunct Professor and VC Fellow at the Surrey Sleep Research Centre, University of Surrey in the UK. With nearly 30 years of research experience, he is considered an international authority on circadian rhythms and the 'non-visual' effects of light on human physiology.

Dr Lockley has studied the circadian and alerting effects of light extensively including the role of light wavelength, timing, duration and pattern. This work has contributed to development of 'smart' lighting applications designed to improve alertness, safety and productivity in clinical applications including treatment of SAD, improving fatigue and sleep disruption in patients with traumatic brain injury, reducing serious medical error rates in an ICU, and reducing falls by more than 40% in residential care homes. He was also one of the leading scientists in the development and testing of a new lighting system for the International Space Station, for which he won the NASA Johnston Space Center Director's Innovation Team Award (ISS Flexible Lighting Team).

Dr Lockley has published over 200 original scientific papers, reports, reviews, chapters and editorials, including 'Sleep, health and society' and 'Sleep: A Very Short Introduction' from Oxford University Press. His research has been funded by NASA and the NIH. Dr. Lockley also works with clients such as NASA and Formula 1 teams to manage jet lag, shift work, and peak performance.

Jack Noonan, Vice President, *International WELL Building Institute*

Jack Noonan serves the Asia Pacific market as Vice President, APAC, for the International WELL Building Institute (IWBI). Based in Melbourne, Jack's role involves leading the technical support, market development and operations across the Asia Pacific region.

Prior to his time at IWBI, Jack was the Manager of Climate Change Programs at Sustainability Victoria, a government agency, where he developed and led the TAKE2 Climate Change Program and informed state climate policy. This followed six years working at a building science consultancy, where he held a number of leadership roles including the National Relationship and Marketing Manager, State Manager and Senior Consultant.

Jack holds Bachelor degrees in Science and Psychology, both from Monash University, as well as a Master of Business focused on the commercialization of science and emerging technology. In 2009, he was a winner of the National Australia Bank Science in Business award.

His areas of expertise include air and water quality, green buildings, sustainability rating tools, science commercialization and climate policy. He is a WELL Accredited Professional and a member of the International Society for Indoor Air Quality and the Green Building Council's Future Green Leaders program. He is passionate about environmental justice and equity, as well as the health and education of communities. He also serves on the board of a local community organization focused on adult education and social inclusion.

Allan Organ, Project Manager, *zencontrol*

With more than 10 Years experience in the development of lighting control, Allan has led engineering and development teams at both Creative Lighting and zencontrol. Author of edition 2 of the emergency test and monitoring standard, colour sensor, and general purpose sensor standards Allan represents Australia on IECs TC34 – WG 11, the group responsible for the development of the IEC 62386 (DALI) standards. Representing zencontrol Allan is also a member of the DALI alliance's Test and Certification working group, responsible for the development of DALI certification platform.

Domestically Allan is a member of committees EL-041-011, responsible for the adoption of IEC lighting standards to AU/NZS, EL-041-04-03 responsible for luminaires in Emergency lighting and LG-007, responsible for the development of the AS/NZS 2293 suite of emergency lighting standards.

At work Allan enjoys working with customers to develop new solutions to lighting and control challenges. In his spare time you can find him climbing, cycling and trying to learn Norweigan.

Gabrielle Pavicic, Technical Advisor, *Green Building Council of Australia*

Gabrielle is a Technical Advisor at the Green Building Council of Australia (GBCA). She is part of a team working collaboratively with stakeholders and industry experts to develop and implement the Green Star Future Focus rating tools, to ensure the Australian built environment addresses issues facing the industry in the next decade. She holds a Bachelor of Architecture and Environments from the University of Sydney, and has a background in interior design and architecture, working on the design and coordination of commercial fit outs and residential projects. She is passionate about the Green Building Council's mission to define and develop a sustainable property industry for Australia, and to drive the adoption of green building practices through market-based solutions.

Dr Tim Shotbolt, Principal, *light & the biosphere*

'… You can't take the country out of the boy'.

Whilst experienced in many diverse applications of lighting and design, still just a young fella with a passion for science, enjoyment of art and nature and understanding of fundamental maths. Attempting to bridge scientific disciplines to bring focus and better understanding of relationships, thresholds of tolerance and adaptation to changing conditions in our natural world particularly with respect to the influence of light. Tim has travelled to and investigated some very remote parts of Australia. Simply a passion for truth and why it is so.

A country boy with a bit of education: RED, not Bruce Willis, but Returned, Extremely Determined.

Yeon-Woo Cho, Principal Specialist Lighting Lead, *Mott MacDonald*

Yeon-Woo is currently leading the Mott MacDonald Australia specialist lighting sector, she has formal tertiary qualifications in architectural design and illumination design with over 18 years' experience in both fields. Yeon-Woo has diverse experience on lighting design projects ranging from precinct lighting, master planning, public transport infrastructure, heritage projects, premium commercial fit-outs, high-rise commercial developments through to museums and galleries. As an enthusiastic and inquisitive lighting designer Yeon-Woo provides innovative approaches to each project and her unique design skills have resulted in multiple awards of commendation and excellence through the Illuminating Engineers Society (IESANZ).

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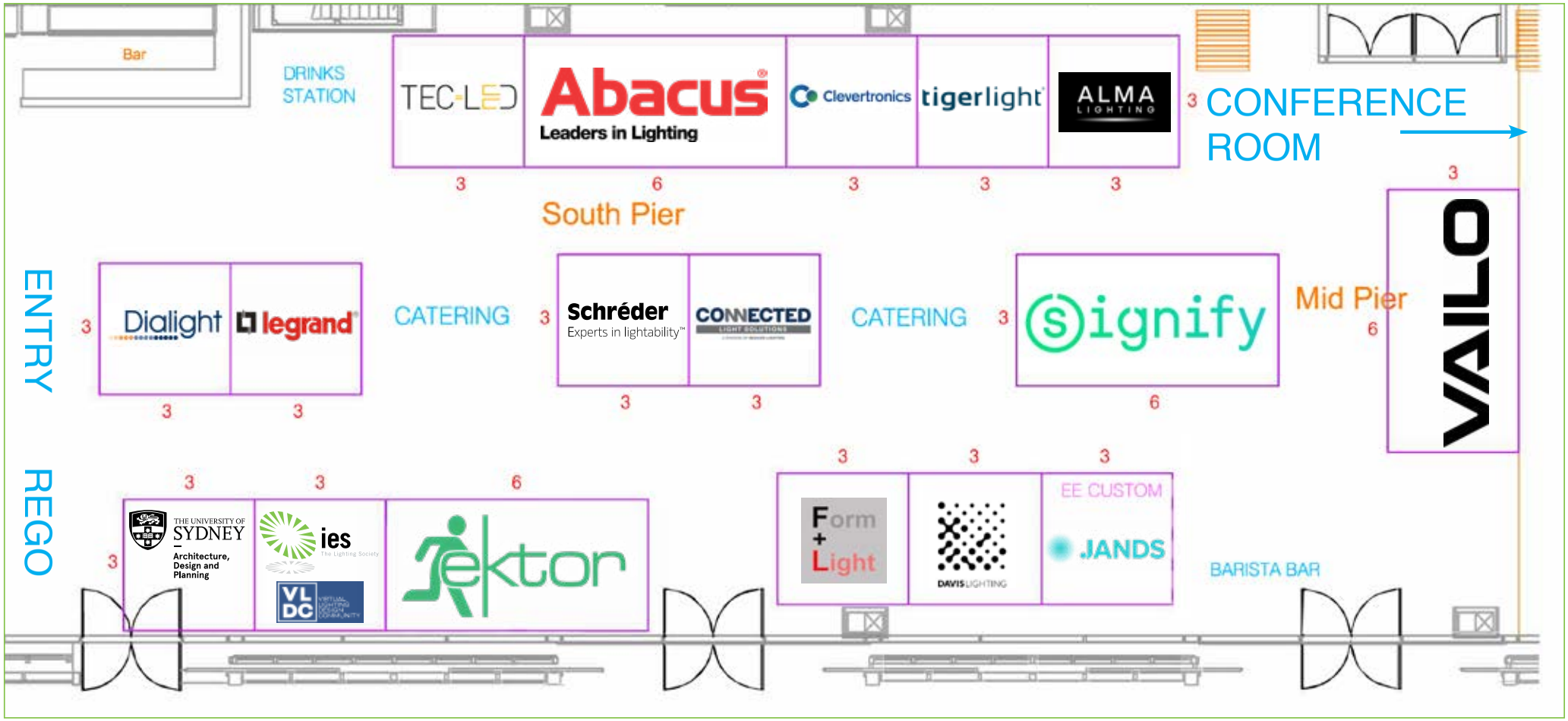
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