PP 100010900

VOLUME 50 I NUMBER 4 I SUMMER 2025

IHEA
Institute of Healthcare Engineering, Australia

HEALTHCARE FACILITIES

IHEA NATIONAL CONFERENCE 2025

Future proofing healthcare building systems - getting the basics right

26-28 MAY 2025 | SYDNEY MASONIC CENTRE

FEATURED INSIDE

We look after you.

Ambulances . Receptions . Theaters .
Labs . Rooms

www.soularchhealthcare.

While you look after others

Cold Plasma Disinfection System

No filters. No waste. No maintenance.
Unique Technology.

.com.au

SOULARCH
Healthcare Supplies

BeaconMedæs®

Improve reliability, connectivity, and serviceability with the new BeaconMedaes MAT-S Medical Gas Cylinder Manifold

The BeaconMedaes MAT-S is an AS2906-2021 compliant medical gas cylinder manifold designed to ensure the highest level of safety and purity for medical gas pipeline systems, while providing comprehensive information and real-time remote monitoring capabilities.

Available for: oxygen ● medical air ● surgical tool air ● nitrous oxide carbon dioxide ● medical gas pipeline systems

It includes:

- Fully-automatic changeover mechanism
- Complete redundancy on pressure regulation equipment
- Full-colour touchscreen with pressure readings and flowtrends
- BMS HLI and Smartlink capability

BeaconMedaes is a global leading specialist in the design, supply, and installation of piped medical gas distribution.

Life is in the details.®

BeaconMedaes Australia
0429 854 457

CONTENTS

Cover: 2025 IHEA National Conference 2025, 26–28 May 2025, Sydney Masonic Centre

Visit the Institute of Healthcare Engineering Australia online by visiting www.ihea.org.au or scanning here →

IHEA NATIONAL OFFICE

Direct: 1300 929 508
Email: IHEA.members@ihea.org.au
Website: www.ihea.org.au

IHEA MISSION STATEMENT
To support members and industry stakeholders to achieve best practice health engineering in sustainable public and private healthcare sectors.

ADBOURNE PUBLISHING

PO Box 735, Belgrave, VIC 3160
www.adbourne.com

ADVERTISING

Robert Spowart
T: 0488 390 039
E: robert@adbourne.com

PRODUCTION

Sonya Murphy
T: 0411 856 362
E: production@adbourne.com

ADMINISTRATION

Adele Spowart
E: admin@adbourne.com

Cleveland
MEDICAL AIR SOLUTIONS

Experts in Medical Compressed Air Solutions

We have over **30 years of experience** and an extensive range of high-quality products including **Class ZERO Oil Free Air Compressors, Ultra Low Purge dryers, HLI enabled Breathing Air Purifiers and 15bar Surgical Tool Air Compressors.**

About Us

Since 1994, Cleveland Compressed Air Services have proudly provided and distributed our products and services to the healthcare industry. We offer tailored solutions backed by quality products, audits, installations, service & repairs.

Our solutions include:

- Medical Breathing Air Compressors Systems
- Laboratory Air and Gas Generation Systems
- Medical Suction systems
- Filtration
- On-site Nitrogen Generation Systems
- On-site Oxygen Generation Systems
- Medical Tool Air Compressor Systems
- CSSD Compressor Systems

Cleveland CAS are authorised service representatives for well-renowned brands such as:

ALMiG Compressor Systems

Parker

BOGE

OMEGA AIR more than air

24/7 Support

Our network of service technicians are there to help whenever they're needed.

Medical Expertise

We offer Medical Compressed Air Solutions with a wealth of experience.

Oil Free Solutions

We are licensed distributors of oil-free and environmentally friendly compressor solutions.

Get in touch with the team today!

info@ccair.au
(08) 9452 3669
clevelandcompressors.com.au

EDITOR'S MESSAGE

This Summer edition of *Healthcare Facilities* arrives a little later than anticipated, mainly because the Spring edition was delayed well into the back end of 2024, and then the holiday season intervened. However, as expected this summer edition is brimming with the celebrations of various IHEA branch end-of-year activities, and especially the awards ceremonies recognising members who have contributed much to the Institute during the year.

With 2025 now well underway we anticipate another exciting year of activities for members and we look forward to sharing this with you through this publication each quarter. The iconic cover image reminds us that we will be heading to Sydney, NSW for the National Conference in May – so I encourage you all to get involved, as the call for abstracts is wide open and waiting for your contribution.

I also have mixed feelings about penning this editorial piece, as I will be stepping aside from this role within IHEA and handing over the editorial reins to Fred Foley from the WA Branch. Fred has been, and continues to be a willing, active and capable contributor to IHEA, and I am grateful for his willingness to take on the editorship. I will be handing this over in the coming months and look forward to supporting Fred as he brings his own uniqueness to Healthcare Facilities.

I have enjoyed years of connections with many members during my tenure as editor since 2013 and have enjoyed bringing this journal together more than 40 times. The relationships made with contributors have been fantastic, even though sometimes it felt a little like herding cats – but every edition came together with stimulating technical information curated especially for this industry.

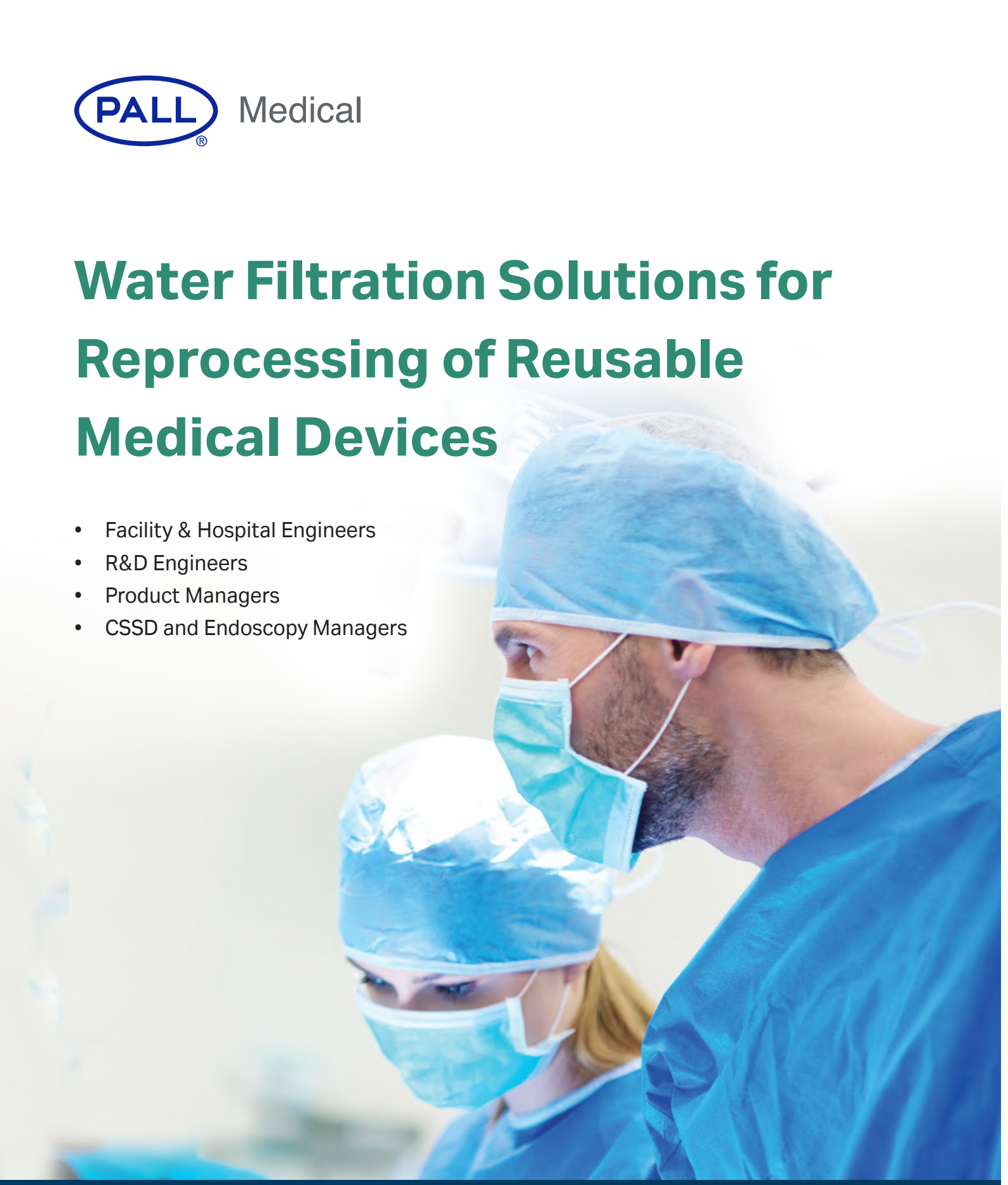
Thank you to everybody who has made this publication so reputable, to the Board, Branch members, proof-readers, advertisers and sponsors. It has been a pleasure to work with our publishers, Adbourne throughout, and I know they will continue to support Fred and IHEA to share and learn together.

Regards
Darryl Pitcher – Editor

PALL Medical

Water Filtration Solutions for Reprocessing of Reusable Medical Devices

- Facility & Hospital Engineers
- R&D Engineers
- Product Managers
- CSSD and Endoscopy Managers



Get your free brochure on Water Filtration Solutions for Endoscope Reprocessing and reach out to us!

P: 1800 150 522
E: medical.anz@cytiva.com
W: cytiva.com/pallmedical

SCAN and get your free brochure

NATIONAL PRESIDENT'S MESSAGE

My message comes to you from the Wirringka Palliative Care Unit at the Modbury Hospital in South Australia. Wirringka means 'together' in Kaurna language, and this name captures the architectural intent behind this outstanding facility which opened in December of 2021. The rooms are a little larger and more comfortable to enable families to gather together around the bedside in those final days. The development also offers a thoughtfully designed communal kitchen, dining area and adjacent garden for reflection and respite, and a sharing of experiences between families in similar circumstances.

Unfortunately, my purpose here is not to explore this excellent facility but rather to support and grieve and celebrate end of life. I am grateful for the existence of this facility, those engineers and architects and project managers with the vision and skills to take it from concept to construction, the facility managers and support staff who keep it running, and for the compassionate medical staff who make end of life all the more bearable. Never underestimate the positive impact that moments in your day-to-day have on those receiving care in your facilities.

Since our last journal, I have had the honour of representing IHEA at the International Federation of Healthcare Engineering (IFHE) Council Meeting and Conference in Cape Town, South Africa. Although we can sometimes feel that Australia is a world away, the Conference caused me to reflect on how many of the same challenges are faced by the healthcare industry the world over. Primary healthcare systems that can't keep up, ramping in our emergency departments, the need for scarce resource optimisation, and an imperative to meet sustainability objectives in the midst of rising demand and falling budgets. I celebrate the passion you bring in the midst of the tempest!

In November the IHEA board met in Adelaide to discuss a range of matters, and I certainly appreciated the passion and ideas expressed - we are fortunate to have a committed and experienced board to lead the organisation into 2025 and beyond.

In May I plan to head to Belgium for the IFHE Council Meeting run alongside IFHE's European Conference. IHEA has for many years been a strong and reliable partner of the international federation, punching well above its weight pound for pound. With IFHE in the midst of redeveloping its policies and procedures, we continue to help shape the organisation for the future including with special attention to initiatives in our region.

I hope you've had - or, for those lucky ones, continue to have - a restful and safe holiday season as we prepare for another exciting year ahead. And if you're the one on shift over the holiday period, then please know that your service is appreciated.

Thank you for your support in 2024 and I hope to see you at our 2025 IHEA Conference in Sydney from 26-28 May. If you haven't already saved the date, then take a moment now to pencil it in your diaries!

All the best,

Michael Scerri,
President, IHEA

heaterSteam Titanium

CAREL

Humidity Matters

A complete range of humidification solutions to maintain the correct levels of humidity (40-60% rH) enhancing human immune system reaction and significantly reducing infection from seasonal respiratory viruses

40-60%rH

optimum humidity level

CAREL Australia Pty Ltd
PO BOX 6809, Silverwater Bus. Ctr. N.S.W. 2128
Unit 37, 11-21 Underwood Rd Homebush N.S.W. 2140
Tel. (+61) 02 8762 9200 - sales.au@carel.com

healthcare.carel.com

2020 - ADCLPAUEN1

National Board Meeting at Adelaide Oval November 2024.

L to R: Darryl Pitcher, (SA) Past President; Michael Scerri, (SA) National President; Danny Tincknell (QLD) State President; Jon Gowdy (NSW/ACT) Director; Jan Simpson (WA) State President; John Muhalinac (Vic/Tas) Director; Nick Coffey (QLD) Director; Vanessa Galina – IHEA Member Services; Cameron Ivers (NSW/ACT) State President; Fred Folley (WA) Director; Michael McCambridge (Vic/Tas) State President; Rohit Jethro (WA) National Treasurer.

IHEA NATIONAL CONFERENCE 2025

Future proofing healthcare building systems - getting the basics right

26-28 MAY 2025 | SYDNEY MASONIC CENTRE

It is our pleasure to invite you to attend the **2025 National Conference, hosted by the IHEA's NSW branch.** The Conference will be held **26-28 May 2025 at the Sydney Masonic Centre.**

The IHEA National Conference offers a platform to explore cutting-edge technologies, best practices and the latest trends while focusing on future proofing healthcare building systems and getting the basics right.

Through insightful sessions, interactive discussions and valuable networking opportunities, you'll leave the conference feeling inspired and ready to implement new ideas that can make a real difference in hospital engineering.

IHEA
Institute of Healthcare Engineering, Australia

For more information, please visit www.iheaconference.com.au

IHEA NATIONAL CONFERENCE 2025

Future proofing healthcare building systems - getting the basics right

26-28 MAY 2025 | SYDNEY MASONIC CENTRE

Call For Abstracts Open Now!

The 2025 IHEA National Conference invites abstract submissions from delegates who have an interest in Healthcare Engineering and Facilities Management. The IHEA offers authors the opportunity to share their vision and experience on topics that align with the conference theme.

This year's theme is ***Future proofing healthcare building systems – getting the basics right.***

This theme provides a platform for abstract authors to explore the anticipation of future needs, technological advancements and/or changes to regulations or standards in healthcare building systems.

Prizes will be awarded for the best paper presented by an IHEA member as judged by the conference technical committee.

The abstracts submission deadline is **5pm AEST Friday 31 January 2025.**

KEY DATES

December 2024 - January 2025	Call for abstracts open
December 2024	Sponsorship opportunities open
January 2025	Early bird registrations open
26 - 28 May 2025	National Conference dates

SPONSOR & EXHIBITOR OPPORTUNITIES NOW AVAILABLE!

Sponsoring or exhibiting will provide an excellent opportunity to promote your organisation and to maintain a high profile within the industry.

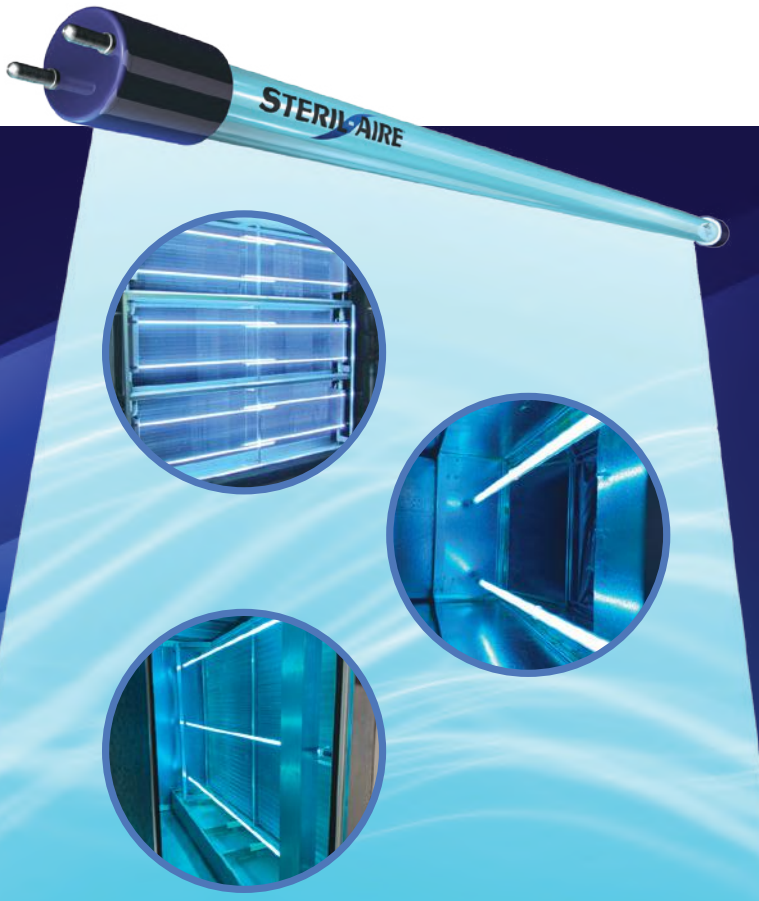
Visit **www.iheaconference.com.au** to view the available opportunities.

Contact the Conference Organisers
Iceberg Events Phone: +61 7 3876 4988 **Email:** amy@icebergevents.com.au

For more information, please visit www.iheaconference.com.au

STERIL-AIRE®

Pure Air. Real Science.™



OUR SCIENCE IS GROUNDBREAKING BUT OUR GOAL IS SIMPLE

"Continue to produce innovative, technological solutions backed by science that enhance our customer's image save money and create a better environment to live, work and breathe."

STERIL-AIRE, ISO CERTIFIED IN BOTH 9001:2015 AND 14001:2015,

launched UVC for HVAC industry in 1994 and remains the leader today. Steril-Aire is the unrivaled leader in the development of high performance UVC solutions for air and surface decontamination.

IN HOSPITALS. IN LABORATORIES. IN SCHOOLS AND GOVERNMENT FACILITIES AND OFFICES AND HOMES.

Steril-Aire devices are also used to enhance food safety through mold and bacteria control, extending product shelf life and production yields.

STERIL-AIRE'S SYSTEMS ENGINEERED UVC EMITTERS ARE THE PERFECT SOLUTION FOR RETROFIT OR NEW HVAC SYSTEMS.

They produce no ozone or secondary contaminants. In addition to being environmentally friendly, they offer an average payback within 24 months (or less) of installation.

FROM REDUCING ENERGY CONSUMPTION AND CONTROLLING COSTS, TO OPTIMIZING HUMAN AND MECHANICAL PRODUCTIVITY,
UVC SOLUTIONS FROM STERIL-AIRE PAY MEASURABLE DIVIDENDS TO YOUR FINANCIAL HEALTH.

UVC has been independently tested against innumerable pathogens including SARS-like Coronaviruses. There are understood dosages that can be applied for disinfection. Steril-Aire's unmatched very high output UVC works by destroying RNA and DNA of microorganisms with specific energy fields. This allows Steril-Aire to be effective against many types of viruses including: Flus, Coronaviruses, SARS, MERS, and Measles to name a few.

CONTACT US FOR YOUR LOCAL REPRESENTATIVE OR TO REVIEW OUR WHITE PAPERS & AUSTRALIAN CASE STUDIES

Steril-Aire Oceania 1300 781 128 info@steril-aire.com.au www.steril-aire.com.au

QUEENSLAND BRANCH REPORT

I hope everyone is looking forward to a great time with family and friends over Christmas and New Year. Many of us will be holidaying during this time (I have the good fortune to be enjoying an overseas break whilst I complete this report) and I wish you all safe travels and activities. For those of us who are on call or are working, I hope your shifts are as uneventful as they can be!

The Queensland committee is busy planning for next year's activities and beginning to grapple with what is required to host the national conference in 2026 – it seems so far away but it will be great to get some details squared away. I am always grateful for the committee members' input and hard work – nothing happens without them.

Every journal report is a reminder of how quickly the year flies by and the seasonal changes that this brings. When I first started this report back in Oz, I was looking out my office window at a developing thunderstorm and being reminded that water leaks, humidity, and struggling HVAC systems will probably be high on the agenda in the coming weeks. In Queensland, the change of state government is also a reminder that our ability to sustain and improve our facilities is subject to funding cycles and government imperatives. Change (and crisis) is inevitable and having systems and processes in place that enable us to cope is vital.

New Members

I would like to welcome all new members from Queensland that have joined recently – we look forward to catching up at upcoming events and getting to know you. Last report we welcomed the West Moreton Health cohort of health corporate members and this time I have the pleasure of

November PD presentation


Queensland delegates at November PD event


Branch Networking Dinner

Branch Networking Dinner

welcoming our Children Health Queensland colleagues as corporate health members.

Afternoon Professional Development Seminars

Our November PD held on 21 November at the Pineapple Hotel and the Christmas breakup at Felons Brewing Co was very well attended - approximately 55 attendees for the PD and 40 people for the dinner. It was great to see so many attendees joining us for a drink and a catchup afterwards and for making the trip across the river for dinner. Special thanks to Cetec, Stantec and Opira for jointly sponsoring the event.

The topic for the PD, "***Humidity + HVAC***" , was well received. Pat Chambers (Stantec) reviewed air cleaning solutions for health facilities, Stuart Buck (Cetec) provided his insights on the importance of air tightness for hospital buildings and Dr Claire Bird (LITMAS) persevered through the challenges of presenting online and having to shift rooms mid-presentation – all helping us to appreciate the importance of understanding the behaviour of microbial communities in damp buildings. All very topical especially in Queensland in this summer season.

Please keep an eye out for information that will be forthcoming via emails and as published on the IHEA website for the next PD being planned for early March 2025.

Queensland members enjoying networking dinner

Queensland delegates at November's PD event

Midyear Conference Photos

Apologies for the lack of photos for the midyear conference – they did not get loaded up in time to make the cut in the previous Journal so a selection is included in this report, along with memories from the November PD, for your viewing pleasure.

Committee of Management

Again, nothing happens without the assistance of the COM and thanks again for their support.

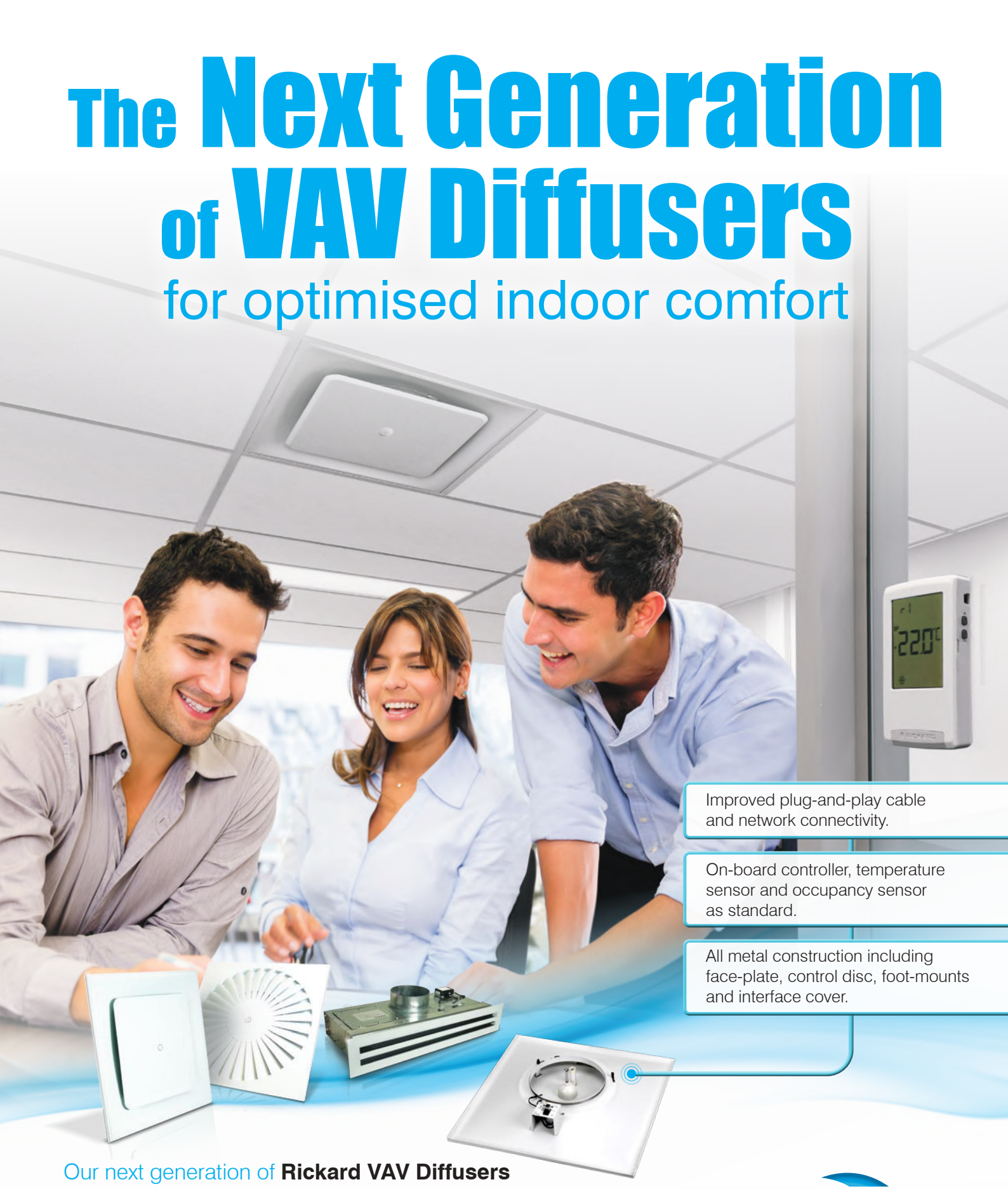
President	Danny Tincknell
Vice President	Michael Campbell
Treasurer	Michael Ward
Secretary	Josiah Padgett
State National Board Rep	Nic Coffey
Committee member	Christopher Aynsley-Hartwell
Committee member	Arthur Melnitsenko
Committee member	Mark Fasiolo
Committee member	Mark Collen
Committee member	Adrian Duff
Committee member	Liam Duller
Committee member	Linda Jordinson

If you would like to communicate with the QLD Branch via email, please do so at ihea.qld@ihea.org.au . We would greatly appreciate feedback on our events and welcome any ideas for topics that you are especially interested in. A continuing challenge is also how to best serve our members across our large membership region and this is something the committee continues to seek opportunities to improve. If you have suggestions we are very keen to hear them.

Danny Tincknell
President, QLD Committee of Management

The Next Generation of VAV Diffusers

for optimised indoor comfort



- Improved plug-and-play cable and network connectivity.
- On-board controller, temperature sensor and occupancy sensor as standard.
- All metal construction including face-plate, control disc, foot-mounts and interface cover.

Our next generation of **Rickard VAV Diffusers** not only provide occupants with optimised thermal comfort, they are also easier to install, and include more features and functionality. These auto zoning diffusers can operate through a BMS or Rickard standalone software, and reduce power consumption by lowering demand on the air handling system.

For more information call **1800 133 379**
or email **info@fantech.com.au**

www.fantech.com.au

FANTECH
Intelligent Ventilation

VIC/TAS BRANCH NEWS

The Victoria / Tasmania Branch will be recommencing the monthly 'Lunch + Learn' one-hour professional development sessions in January 2024 and we look forward to publishing the program, and connecting with members across the country.

We are also glad to warmly welcome Pablo Perez-Reigosa to the Victoria/Tasmania Branch Committee of Management!

Pablo brings a wealth of experience and expertise to the committee, holding a Bachelor of Mechanical Engineering from Monash University and a Master in HVAC from Swinburne University. With a decade of experience in maintenance within the Health Engineering Industry and 12 years as a consultant, Pablo's career reflects a deep commitment to engineering excellence.

Since 2019, he has been an Asset Manager with Ventia, working on the Facility Management contract with Austin Health. His focus includes optimizing asset performance to support Clinical Business Continuity plans, implementing real-time condition monitoring using IoT sensors, and pioneering a pilot project that leverages AI for identifying performance drifts in assets.

We are excited about the innovative perspectives and expertise Pablo will contribute to the committee! Welcome aboard!

The Committee of Management for 2024 will include: John Mihalinac, Victorian Health Building Authority; Steven Ball, recently retired; Rod Woodford, Bendigo Healthcare; Pablo Perez, Ventia; and Michael McCambridge, The Royal Melbourne Hospital

Pablo Perez-Reigosa

LOOK AHEAD ACTIVITIES

Master Class, 'Lunch & Learn' Ultraviolet Germicidal Irradiation Technology Systems in Building HVAC Systems, Wednesday 29 January 2024 12:30 to 1:30 ESDST.

Indoor air quality (IAQ) is now a top priority as individuals spend 90% of their time indoors. Traditional HVAC systems focus on temperature, humidity, and basic air quality metrics such as carbon dioxide and VOCs. However, these systems often fail to address airborne pathogens such as viruses, bacteria, and mould spores. Airborne transmission is the primary pathway for many diseases, highlighting a critical gap in building safety. Mitigating this risk requires a multi-faceted approach that includes ventilation, advanced filtration, and germicidal UV light (UVGI). UVGI is a game-changing technology capable of inactivating microorganisms without disrupting airflow or relying on chemicals.

The presentation by Jason Vecchio and Sankha Senanayake of Opira Group will delve into the fundamentals of UVGI technology and its installation in Sanuvox UVGI systems. As we face current IAQ challenges and prepare for future health threats, now is the time to invest in safer, healthier indoor environments. Opira Group is here to assist in paving the way for cleaner air and a healthier community.

We look forward to sharing the invitation to the online session, and having you join us as we continue to learn from each other and share expertise.

If you have any suggestions for other 'Lunch n Learn' programs please reach out to us at ihea.victas@ihea.org.au and we will explore how we can program them in for the benefit of members.

Remember that past Lunch n Learn PD seminars are available by visiting the IHEA website…www.ihea.org.au

We wish all members a Happy New Year and look forward to connecting more in 2025.

Michael McCambridge
Vic/Tas State Branch President

NSW/ACT BRANCH NEWS

Welcome to the Summer addition of the IHEA journal from the NSW/ACT Branch.

The last couple of months have been quite exciting and plenty of events for the IHEA across Australia.

Thanks to Vanessa Galina in Member Services, we are regularly kept up to date with events, articles and online forums sharing valuable information, keeping members abreast of all that is going. It has been a pleasure to be a part of this national group, taking the IHEA forward with excitement and innovative thinking.

I was glad to attend the National Board meeting in Adelaide towards the end of November where there were profitable discussions about the strengths of IHEA and the opportunities to expand membership engagement and networking. I can assure you that there is a great deal of work in the background keeping the organisation running and ensuring that it stays around for many years to come.

I would like to put the call out for members to get more involved in promoting the IHEA in your own area and getting the word around, forwarding on the email that includes the quarterly journal, speaking to your upper management, and letting people know about the value and importance of IHEA.

This is about information sharing, problem solving, meeting industry experts in their field, asking and answering questions and most importantly, in my view, talking to people who are in the same predicament as you are, by our expanding networking groups.

BRIEF HISTORY OF INSTITUTE

The Institute was formed in Victoria early in 1949.

Aims and Objects as outlined in Articles of Association.

Formation of New South Wales Section - July, 1952.

Formation of West Australian Section - July, 1953.

First Australian Conference held in Sydney - July, 1953.

Second Australian Conference held in Melbourne - November, 1954.

Advantages of Conferences

Standardization of Hospital Equipment.

Economies effected by tried Hospital Engineering practice.

Isolation of engineering equipment not suitable for hospital use.

The discussion on proved results obtained from new installations.

The discussion on unorthodox hospital engineering installations.

The Engineering services being a very major item in hospital maintenance expenditure and capital costs, technically qualified men should be available to supervise a high standard of maintenance efficiency with the object of cost reductions.

- 0 - 0 - 0 - 0 - 0 -

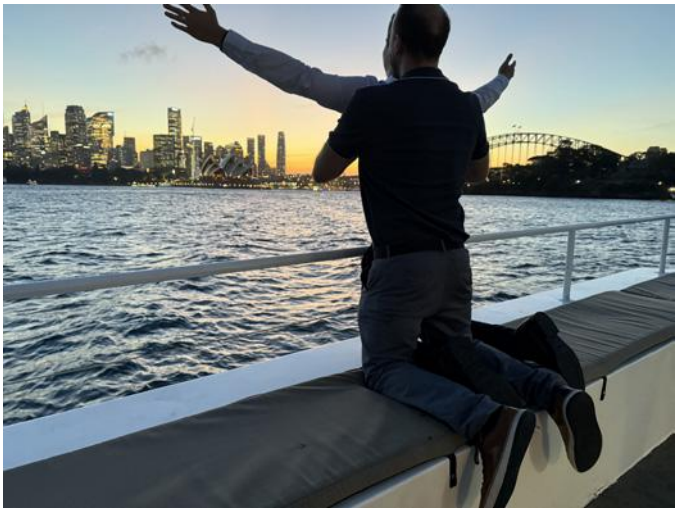
We held an awesome Professional Development Day on November 22nd 2024 visiting the oldest Hospital in Australia, the Sydney Eye Hospital.

With the cloud of a rail union strike threatening to shut down the whole of the greater Sydney network, which, if it had proceeded would have been doomed our event, but a

Union controlled government managed to rein in one of their own, and with a last minute decision, the trains continuing to roll that day. Phew, there were a few relived people with that decision.

With thanks to one of our past Presidents Jon Gowdy for giving us a in depth history of where the IHEA began and what the core values are, which have not changed too much since the day of conception. The IHEA has been around for more than 75 years with many dedicated members paving a way for better healthcare facilities and services that provide a higher quality of health care to our society.

We had a very special guest, Kate Napier, Principal Heritage Architect from NSW Public Works Heritage present on the task at hand for preserving Sydney/NSW heritage.



What an eye opener and how fantastic to see a dedicated group tackling the enormous job with the limited funds and skills to repairing our convict / colonial history. Kate explained that many of our greater Sydney Hospitals have these styles of heritage buildings that need constant maintenance to preserve or replace the sandstone features and structures. This includes: Sydney Eye Hospital, Royal Prince Alfred, Prince of Wales, Concord Estate, Roselle Estate and many more.

From an hospital engineering department view, we now have a direct contact for when we come across a heritage issues or uncover parts of buildings that have been lost, find records or other artifacts. Hopefully we can preserve as much history as possible before the developers start on their work.

I also would like to thank Kate for inviting a couple of the IHEA NSW/ACT branch members to visit their stone yard. We had a tour of how they work with the gigantic sandstone blocks, how to choose the types for where they are intended, how to cut and shape the blocks, all the way down to the skilled masons who hand cut and shape the finished product.

With the national conference coming in May 2025 we will be having a tour of the stone yard for a limited number so keep an eye out for the registrations.

Jamie Peterson from the Nepean / Blue Mountains District gave a talk on the challenges of running one of her hospital, Katoomba Hospital at the top of the mountains. From being a historical hospital in the middle of the mountain range, facing freezing temps to raging bush fires on a regular basis. She explained how the engineering department must be always adaptable and creative to ensure the place stays open. Thanks Jamie for coming down to the big smoke to share your story.

I would like to thank the great sponsors and presenters of the day

Peerless Jal talking about their floor preparation systems, Dulux paints supported by Higgins Painting, Time and People, are always great sponsors, Clevertronics and Schneider Electric, CETEC water management crew, Control my Building / Seimens, Amber Smart Systems, On Constructions, Jawtyn, JSnB Plumbing.

These days would not happen without the support from the local Health Districts for supporting the IHEA, so I would like to thank Dr Pauline Rumma for opening up Sydney Eye Hospital and its wonderful museum and Clyton Tubbs for truly going out of his way to help.

Once the formalities of the day had finished, we all headed off to the wharf for our famous Sydney Harbour cruise aboard the mighty Eclipse. A great time was had by all and it was great catching up with everyone for the informal part of day.

I hope everyone is looking forward to the National conference in May in Sydney. This is shaping up to be a great event with interesting technical tours, guest speakers and topics. With plenty to do in Sydney, this is not an event to miss.

Merry Christmas and I hope you get a holiday or at least a couple of days off.

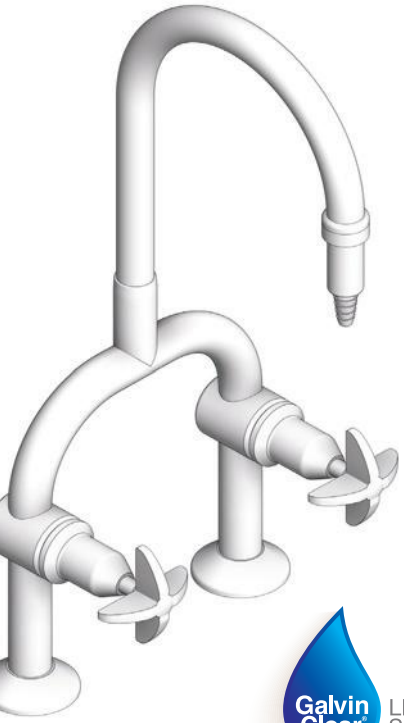
Cameron Ivers
NSW/ACT Branch President

GalvinEngineering
the mark of reliability

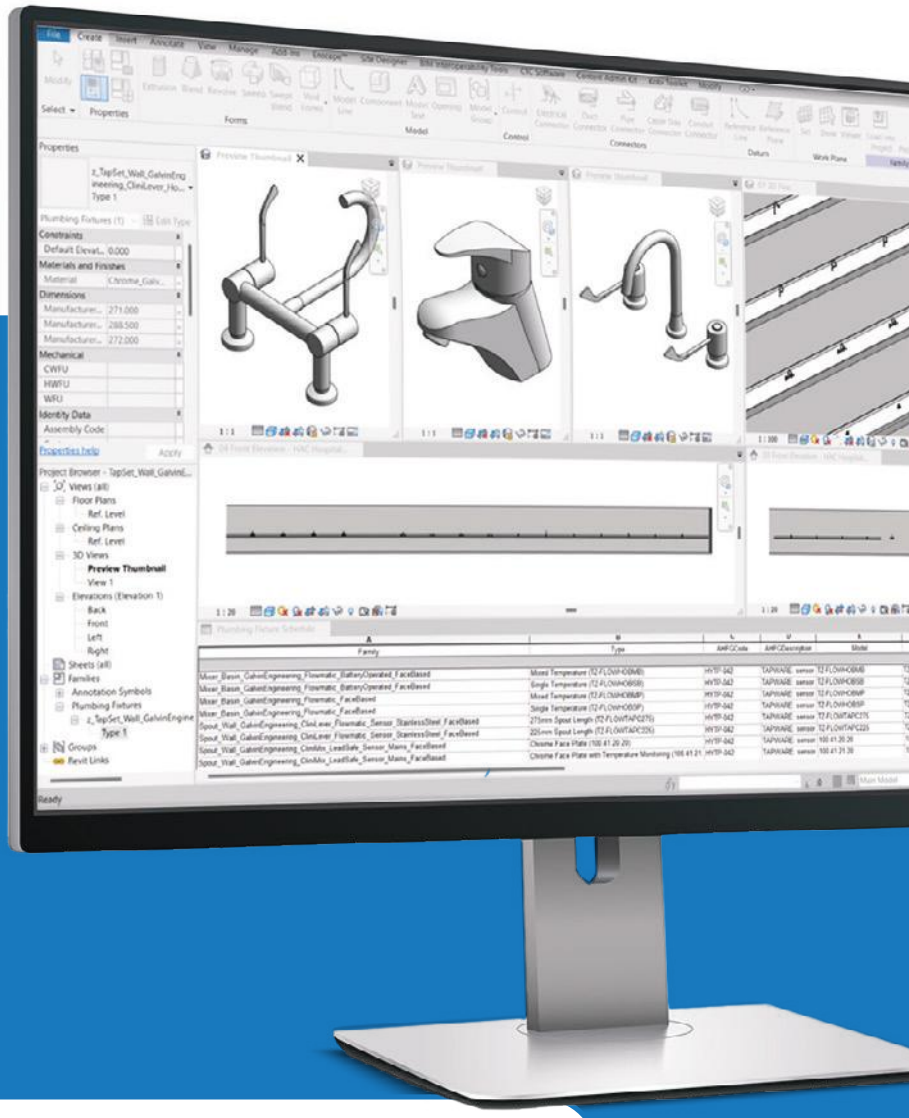
BIMcontent.com
Partner

Start designing with our high-quality BIM content today.

Download our BIM library for your next project.



Galvin Clear LEAD SAFE™



We've done the hard work for you

- ✓ Face Based formats
- ✓ Non-Hosted formats
- ✓ Virtual Showroom
- ✓ AusHFG codes
- ✓ Pre-loaded content for library download, browsing and QA.

www.galvinengineering.com.au/bim-revit-library

WA BRANCH NEWS

Have you seen the movie Crackerjack? Well, that was my first impression when our members met at the North Perth Bowling Club in October. The ambience was reminiscent of the film. There were characters old and young sitting throughout the clubroom sipping drinks in the late afternoon sun, happily chatting about the last bowling tournament or whatever. They all seemed to be enjoying themselves totally oblivious to the world outside. Then 25 members and guests invaded their space to discuss *Electrification in Healthcare*.

A panel of experts comprising of the Plexus team, being Ralph, Sam, Nick, Alex and Dan also ably supported by Pras Suraweera from Summation was set up to present on *Sustainability in Health and Beyond*. Each panel member gave a brief summary of their field of expertise after which they bravely opened the floor to questions. Needless to say they were bombarded, so much so that the hot chips, pies and sausage rolls had to be returned to the kitchen to prevent them going cold.

The Members

The Plexus Panel

The take away message was, global warming is real, and time is rapidly running out if we are to reverse the damage already done. The solution is not simple, and we all have to play our part if we are to get it right. Given our history and the disasters we are now having to manage, getting it right is something we do not do overly well. With the enthusiasm, expertise and visions demonstrated by the team from Plexus and Summation at least we are on the right path. Our thanks go to Plexus for hosting such a thought-provoking session.

Earlier in the year, we hosted a session where the WA Health Department's Licensing and Regulatory Unit's Ms Karen Zegglar accompanied by Mr Alex Rodger detailed the pending changes to the Western Australian Health Facilities Guidelines for Engineering Services. The LARU committee for the first time, wanted to release the draft for public comment from the WA IHEA members and other interested parties. The objective of this meeting was to create an appetite for a future workshop once the draft was released.

Well, it worked so well, that as the registrations for the workshop grew and continued to grow, we had to change venues three times, this was a first for the WA chapter.

Finally, on the 21st of November we convened a workshop at the Fiona Stanley Hospital's Auditorium where more than 50 delegates consisting of members and guests discussed the pending changes. The discussion was expertly facilitated by committee member Yulie Olsson-White. LARU was represented by Mr Alex Rodger, who bravely faced the audience to give a brief overview of the changes and the reasons behind each. The delegates broke into smaller genre-specific work groups to voice their concerns about the changes. The groups reconvened and their concerns were documented but as time rapidly ran out, it became evident that one workshop would not be sufficient to address all of the issues raised.

Ms Yulie Olsson-White

The takeaway from this was that there is a lot of passion and concern for the future of Western Australian Health. LARU's gesture to open the guidelines for public comment demonstrates that they too have a similar vision. There is an opportunity here for improvement providing sane communication and cooperation prevail. Let us hope this opportunity is not wasted.

Mr Alex Rodger


Discussion Groups

Our thanks must go to Ms Karen Zegglar and Mr Alex Rodger for creating this opportunity. To Mr Andrew Waugh for finding this last-minute venue and Ms Yulie Olsson-White for facilitating the event.

December is the month where we celebrate the year past and plan for the year ahead. The 2024 WA IHEA year closed on Friday December 13th with a sundowner at the Generous Squire Pub in the Perth CBD. Perth on a hot Friday evening in December is a buzz with activity and the crowd at the venue were no different.

Our end of year sundowner is a time where the Committee of Management awards those who have contributed to WA Health Facility Management. This year was no different with many worth recipients nominated. After an exhaustive elimination process the committee was able to agree on the final list.

The Apprentice of the Year was awarded to Mr Harry Hoffmann of Fosters Services. Harry as an apprentice electrician has excelled in every endeavour he has undertaken. His academic prowess is matched by his technical abilities. His employer Alex Foster is highly supportive and complimentary of Harry.

The **Trades-Person of the Year** was awarded to **Mr Ben Stanley** of the Centigrade Group. Unfortunately, Ben was not able to be present to receive his award. His achievement will be recognised in the Autumn edition.

The Engineer / Facility Manager of the Year was awarded to Mr Rupert Lodge of South Metropolitan Health Services. Rupert has consistently demonstrated engineering excellence in all of the projects he has been involved with.

The **Volunteer of the Year** was awarded to **Ms Jana Simpson** the IHEA WA State President. Jana was surprised to receive this award having shrugged her responsibilities as president as being just part of the job. Her professionalism


The Generous Squire


Harry Hoffmann with Jana Simpson

and commitment have gone above and beyond the norm and as a result has seen the WA branch rise to new heights.

The committee will take a short hiatus over January, but we will be back in force next February, where we will visit BOC's Canningvale medical gas production facility.

On behalf of the Western Australian Committee of Management I would like to take this opportunity the thank our members for their support over 2024 and to wish all IHEA members and their families a happy and safe Christmas and a healthy and prosperous 2025.

Kind Regards
Frederick Foley
WA Immediate Past President

Rupert Lodge, Andrew Waugh and Jana Simpson

Jana Simpson with Andrew Waugh

Facilities & Asset Management Consultants

MACDONALD CONSULTANCY

Our team delivers:

- FM estimating
- Asset modelling
- FM strategic reviews
- FM procurement
- Asset management reviews
- PPP support
- Best practice reviews
- System and processes support
- Operational support
- Building condition assessments

Helping clients with:

- Statutory and other obligations
- Constrained budgets
- Reporting
- Meeting long term fiscal and environmental issues
- Subject matter expertise

Client benefits:

- Risks mitigated
- Spend optimised
- Quality improved
- Distraction to core business is greatly reduced

CAMS LIFECYCLE MODELING TOOL

RMIT UNIVERSITY | MACDONALD CONSULTANCY

RMIT & Macdonald Consultancy in partnership

CAMS delivers:

- Seamless data collection upload and modelling
- Life cycle estimating
- Forward works planning
- Multi-faceted reporting
- Options appraisals
- Micro and macro data analysis

Helping clients with:

- Estimating
- Budgeting
- Reporting
- Capex management

Client benefits:

- Executive/client expectations managed
- Risk of asset failure in service mitigated
- Whole of life costs optimised
- Core business and LCC spend demonstrated
- Supports CAPEX business cases
- Assists with ISO 55000 alignment
- Facilitates succession planning

To find out more about Macdonald Consultancy, please contact us:
E donald@macdonaldconsultancy.com.au M +61 447 800 851
macdonaldconsultancy.com.au

NOVAPRODUCTS

Your trusted partner for the supply and installation of second fixings in both new and existing buildings

Novaproducts is a leading Australian company specialising in the supply and installation of second fixings for both new and existing commercial buildings. With a strong commitment to delivering high-quality solutions and exceptional service, Novaproducts has earned a reputation as a trusted partner for businesses seeking expert assistance in the final stages of construction, renovation, and fit-out projects.

Founded with a focus on providing precision and efficiency in the building and construction industry, Novaproducts has grown to become a prominent player in the sector. Their core expertise lies in the installation of second fixings, which refers to the final elements of construction that complete the interior of a commercial building. These include items such as door hardware, locks, shelving, cabinetry, handrails, and various other fittings that ensure the functionality, security, and aesthetic appeal of the building.

Novaproducts works on both new construction sites and existing buildings, offering specialised products and services to suit each project type. For new constructions, the company is primarily involved from the final stages of building, providing and installing the essential fixtures that complete the space. For existing buildings, Novaproducts excels at supplying and installing high-quality second fixings during renovations, refurbishments, or ongoing maintenance projects. Whether it's upgrading the interiors of an office, adding protection to high-traffic areas, or enhancing the aesthetic appeal of a building, Novaproducts delivers tailored solutions for every project.

The company works closely with industry-leading companies such as Multiplex, Serco, and Georgiou, further solidifying its position as a trusted supplier and installer of second fix solutions. These collaborations highlight Novaproducts' ability to successfully partner with major contractors and developers, delivering quality results on large-scale, high-profile projects, as well as on smaller-scale renovations and fit-outs.

Novaproducts offers a wide range of products that meet the diverse needs of commercial spaces. These include door and wall protection, skirting, hospital bedstops, bollards, and other essential products designed to improve the functionality, safety, and aesthetic of buildings. Their products are ideal for a variety of sectors, including healthcare, education, retail, and hospitality, ensuring that all spaces are equipped to meet the demands of both occupants and visitors.

A key strength of Novaproducts is their ability to provide a comprehensive service, combining quality product supply with expert installation. Whether working on new construction projects or retrofitting existing buildings, the team at Novaproducts ensures that every product is integrated seamlessly into the design. The company's skilled professionals—from project managers to expert installers—work to ensure that each project meets the highest standards of quality, safety, and client satisfaction.

In addition to their technical expertise, Novaproducts is known for its outstanding customer service. The company maintains strong relationships with clients, providing timely updates, managing project timelines, and addressing any challenges that arise during the installation process. Novaproducts' proactive approach ensures that every project is completed on time and within budget, regardless of whether it's a new build or a renovation.

Novaproducts is a trusted partner for the supply and installation of second fixings in both new and existing commercial buildings. With a dedication to quality, expertise, and customer satisfaction, Novaproducts continues to set the standard for excellence in the Australian commercial construction and renovation industry.

NOVAPRODUCTS GLOBAL

VOTED #1 by Hospital Engineers

FSH Hospital (Healthcare) Bed Stop

The ultimate solution to prevent hospital beds from colliding with walls & equipment. Designed with precision and crafted for safety, this innovative product ensures mobile items like hospital beds are stopped before causing damage to machines, furniture, equipment or walls. (DESIGN PROTECTED). Customizable length available.

Bedstop Installation in – WA, NSW, VIC, SA, NT, TAS, QLD, or Do It Yourself with our easy to follow instructions!

KEY FEATURES

- **Impact Prevention:** The FSH Bed Stop is engineered to eliminate the risk of hospital beds making unintended contact with walls. Its robust construction acts as a reliable barrier, providing a buffer zone to avoid collisions and potential damage.
- **Moisture Resistance:** Hospitals demand products that can withstand the challenges of diverse environments. The FSH Bed Stop is moisture-resistant, making it an ideal choice for areas prone to spills, cleaning routines, and other wet conditions. This feature ensures long-lasting durability and performance, even in demanding healthcare settings.
- **Infection Control:** Recognizing the critical importance of maintaining a hygienic environment, the FSH Bed Stop is designed to be infection-resistant. The non-porous surface inhibits the growth of harmful microbes, contributing to enhanced infection control protocols within medical facilities.
- **Universal Compatibility:** The FSH Bed Stop is versatile and compatible with various hospital bed models, making it a practical and adaptable solution for healthcare providers. Its universal design ensures seamless integration into existing hospital infrastructures.
- **Affordable and Effective:** The FSH Bed Stop is your economical alternative to costly repairs caused by repeated collisions between hospital beds and walls. Instead of investing in extensive repairs or replacements, this product provides a practical and affordable solution to minimize damage and prolong the life of your hospital beds.

ShockGuard Impact140 bollard

You will never need another Bollard! Every time your bollards get hit, 3 things get damaged as a result: The vehicle, bollard and the mounting surface. Similar to bike helmets, after reasonable impact most bollards should be replaced as the impact will weaken the bollard and its mounting system. Along with this, if the mounting surface (e.g concrete) is damaged then a new footing will have to be made to safely install a replacement. As you can imagine a small impact can turn out to be very costly.

The ShockGuard Impact140 is a Galvinised steel Bollard that pivots upon impact keeping the bollard in perfect working order (and looking brand new as well). The Bollard transfers the impact force from the typical breaking points (like the baseplate, fixings or mounting surface) into the pivot spring, spreading the force out and reducing its effect. The Impact140 is the perfect high traffic car parks like hospitals, healthcare campuses, schools and shopping centres. Reach out to the team at Novaproducts to see how we can help you.

NOVAPRODUCTS GLOBAL SHOCKGUARD

www.novaproducts.com.au

Sydney - Lvl 1, 85 William Street Darlinghurst NSW +61 2 8322 0817

Perth - 54 Catalano Cct Canning Vale WA +61 8 9455 2228

Reduce the Spread of Airborne Viruses.

Indoor air quality has always been important, however with continued airborne spread of viruses, it is more important than ever for healthcare facilities to take action for the safety of their staff and patients by doing all they can to minimise risk with best practices in air filtration.

Trusted by hospitals and clinics throughout Australia, primarily to reduce the risk of airborne viruses, INOVA air purifiers are an extremely effective tool to create a safer environment for your staff and patients.

Each system utilises a high-efficiency pre-filter and medical-grade HEPA filter to capture airborne aerosols, viruses, bacteria and particulate contaminants.

Unlike some of the plastic alternatives, InovaAir uses powder-coated aluminium construction making them well suited to commercial environments where surface disinfection is regularly required.

INOVA systems also include long-life filters providing up to 3 years between changes*.

Proudly Australian owned and manufactured on the Central Coast of NSW for more than 20 years.

- High capacity, cylindrical H13 certified medical-grade HEPA filter with 6.4m^2 surface area and metal casing.
- Plastic-free, chemical-free, aluminium powder-coated construction allows for easy wipe-down and disinfection of external surfaces with any ethanol-based alcohol cleaning agent.
- Directional High-Flow™ air diffuser for quiet operation and superior airflow.
- Australian made, ensuring quick and reliable support and filter replenishment.
- Portable. Easily moved from room to room on wheels.
- Wall mounted versions available.
- 100% Airtight filter seals.

* H13 medical-grade HEPA filter.

INOVA®

AUSTRALIAN MADE

For more information scan the QR code

1300 137 244

www.inovaairpurifiers.com.au/health

FLUID FLEXIBILITY

Navigating Healthcare Flood Response

Principal Author

Jamie Jacobi B.Sc (Chem), MRACI CChem

Co-Authors

Jono Dashper B.Env.Sc,

Jordan McDonnell B.Sc.M.

Dr. Tyson White B.Arc (Hons), PhD

The resilience of healthcare facilities against flooding and water-related disasters is crucial for maintaining operational capabilities and ensuring patient safety. This paper delves into multidisciplinary strategies and best practices essential for effectively preparing for, responding to, and recovering from such events. It emphasises proactive risk management and rapid response mechanisms to fortify healthcare facilities against the potentially devastating impacts of flooding.

The document highlights the importance of integrating architectural resilience, technological advancements, and comprehensive emergency procedures to ensure continuity of care. Advanced planning and staff training play pivotal roles in enhancing facility readiness and response capabilities. Additionally, the paper explores sustainable recovery processes that not only restore facilities but also improve their future flood resistance, thereby safeguarding infrastructure and human lives. It provides actionable insights and frameworks that healthcare administrators and facility managers can implement to significantly enhance their preparedness and resilience, ensuring that healthcare services remain uninterrupted and effective even during catastrophic flooding events.

Introduction

Healthcare facilities are uniquely challenged by flood events due to the essential nature of their services and the heightened vulnerability of their patient populations. The direct impacts of flooding, including significant damage to infrastructure and medical equipment, are compounded by indirect effects such as service disruptions and escalated health risks. These consequences require a robust and comprehensive management approach.

This paper is designed to aid in the construction of an integrative framework, aimed at enhancing flood resilience in healthcare settings. The focus is on three critical areas: preparedness, immediate response, and long-term recovery.

Preparedness involves strategic planning and training to equip staff with the skills and knowledge necessary to respond effectively. This includes the development and regular updating of emergency response plans, as well as investment in infrastructure that can withstand flood conditions.

Immediate response strategies are designed to minimise health risks and infrastructure damage as quickly as possible when flooding occurs. This involves the deployment of rapid assessment teams, the establishment of command centers

to coordinate response efforts, and the implementation of effective communication strategies across the facility.

Long-term recovery goes beyond the restoration of services and repair of physical damage. It includes reviewing and revising emergency protocols to incorporate lessons learned, thus improving the facility's resilience against future floods. Through a comprehensive approach that encompasses these strategies, healthcare facilities can ensure they respond to flooding events in a structured manner, safeguarding both patient care and integrity.

Understanding Risks and Immediate Responses Effective flood management in healthcare facilities requires an understanding of the associated risks, and the implementation of strategic measures to mitigate them.

Hazard Identification

As such the identification and management of potential hazards forms a key point of consideration, with successful navigation of flood events beginning with hazard identification.

Electrical Hazards: Contact between floodwaters and electrical systems poses significant risks, including power failures and electric shock. These incidents can disrupt essential services and lead to severe safety hazards within the facility.

Structural Hazards: The structural integrity of buildings may be compromised during flood events, increasing the risk of collapsing building materials. Regular structural assessments are vital to identify vulnerabilities that could lead to failures during or post flood event.

Biological Hazards: Floodwaters often harbor pathogenic microorganisms, raising the potential for outbreaks of waterborne diseases. These biological threats can be particularly severe in healthcare settings, where they pose a heightened risk to vulnerable populations, such as patients with compromised immune systems.

Chemical Hazards: The displacement and potential mixing of chemicals during flood events can lead to the formation of toxic environments. This can be not only from external sources entering the facility, but internally as well, with healthcare facilities known to store a range of pharmaceuticals.

Best Practices for Initial Response

To effectively manage these risks, healthcare facilities must implement best practices tailored to their specific needs and constraints. Key steps in the initial response to flooding include:

Emergency Communication Systems: Rapid activation and utilisation of emergency communication protocols are crucial. These systems coordinate actions with both internal teams and external emergency services, ensuring that all parts of the facility are informed and responsive to the situation.

Water Extraction and Damage Mitigation: Immediate deployment of water extraction teams and equipment is essential to reduce further water infiltration and limit damage to the facility's structure and internal systems. This step is critical in preventing secondary resultant damages, such as mould and structural weakening.

Securing Critical Infrastructure: Prioritising the protection and restoration of critical areas within the facility, such as intensive care units, surgical rooms and emergency departments, is paramount. These areas contain vulnerable patients and sensitive medical equipment, crucial to the facility's operation and require rapid restoration to functional status.

Additionally, the initial response plan should include measures to safeguard records and data integrity, maintain healthcare services to the extent possible, and provide clear evacuation or relocation instructions to all facility occupants.

As is the case with fire evacuation drill, training staff in flood response protocols can ensure they are prepared to act quickly and effectively in such an event.

Engaging the Right Expertise

In the dynamic environment of healthcare facilities facing flood events, engaging specialists in environmental health, structural engineering, and disaster recovery is crucial. These professionals bring a depth of expertise essential for assessing damage, evaluating structural integrity, and formulating bespoke response strategies that cater to both immediate and long-term needs.

Specialist Roles

The roles of these specialists are distinct yet interdependent:

Environmental Health Professionals: These experts focus on assessing the health impact of the flood within the facility. Their evaluations help identify potential hazards, such as microbial or chemical contaminants that could compromise patient health and safety.

Structural Engineers: These specialists assess the physical damage to the facility's infrastructure. Their insights are crucial for determining the structural integrity of the building, identifying areas at risk of collapse, and planning necessary reinforcements or repairs to ensure the facility's safety and functionality.

Disaster Recovery Experts: These professionals develop and implement strategies to restore the facility to operational status. They coordinate recovery efforts, manage resources, and ensure that the recovery process adheres to safety standards and best practices.

Qualified Scientific Consultants: Integral to the assessment team, these consultants bring a scientific rigor to the evaluation process. They work closely with the specialists to understand the broader implications of biological and chemical hazards, assessing risk and guiding the remediation process.

Highly skilled in the field of Occupational Hygiene, their expertise is particularly valuable in ensuring the cleanup and recovery efforts are based on sound scientific principles and that they effectively mitigate risks to health and the environment.

Importance of Expert Assessments

The assessments conducted by these experts are instrumental in prioritising actions based on the criticality of issues and the associated risks. For instance, environmental health professionals are adept at rapidly identifying the potential for fungal growth and other biological hazards following a flood.

Their assessments guide the prioritisation of the cleanup process, focusing efforts on high- risk areas such as patient rooms, operating theaters, and other sterile environments. This targeted approach ensures that resources are allocated efficiently, and that recovery efforts are concentrated where they are most needed to safeguard patient care and facility safety.

By leveraging the specialised skills of these professionals, healthcare facilities can develop a comprehensive and effective response to flooding. This ensures not only the swift restoration of services but also the long-term sustainability and resilience of the facility against future disasters.

Structural and Environmental Considerations In the aftermath of a flood, structural and environmental considerations become paramount to ensure the continued safety and functionality of healthcare facilities. The management of these elements is critical, particularly in controlling environmental conditions that affect patient health and recovery.

Managing HVAC Systems

Maintaining optimal air quality is crucial in healthcare settings, where the presence of immunocompromised patients makes the control of airborne contaminants essential. Heating, Ventilation, and Air Conditioning (HVAC) systems play a pivotal role in this aspect and must be managed meticulously to prevent the exacerbation of health risks following water ingress.

The first step often involves a comprehensive assessment of the HVAC systems to identify potential damages or risks of contamination. Systems in areas directly affected by flooding should be shut down immediately to prevent the spread of pathogens and mould spores.

Simultaneously, modifications to HVAC filtration systems may be necessary to bolster their effectiveness in filtering out potential pathogens that could be introduced during, or

develop post the flooding event. This might include upgrading to High-Efficiency Particulate Air (HEPA) filters, which are capable of capturing particles down to 0.3µm.

Furthermore, the re-routing of airflow to avoid contaminated areas and the increase of air exchanges in unaffected zones are critical measures to maintain safe and clean air throughout the facility. Regular monitoring and testing of air quality post-flood are essential to ensure these systems continue to perform optimally and that any adjustments made achieve the desired outcomes.

Special Considerations

Different areas within a healthcare facility require bespoke approaches to water ingress management, reflecting their varied functions and the specific needs of their occupants. Patient care areas, including ICUs, surgical suites, and recovery rooms, demand the most immediate and stringent measures to ensure that they are restored to full operational capacity as swiftly as possible. These areas are prioritised due to their direct impact on patient health and the critical nature of the services they provide.

Conversely, non-patient areas such as administrative offices, cafeterias, and reception areas may tolerate a longer recovery time frame. While these areas are essential for the overall operations of the facility, their restoration may not typically impact direct patient care. The management strategies in these areas focus more on efficiency and cost- effectiveness, balancing the need to return to normal operations with the practicalities of recovery processes.

Throughout the facility, the implementation of these tailored strategies should be guided by a qualified scientific consultant who ensures that all actions are aligned with the best practices outlined in health and safety protocols. This strategic and differentiated approach helps maximise resource allocation and restoration efforts, ensuring that each area of the facility receives the attention it requires based on its function and importance to overall facility operations.

Long-term Recovery and Remediation Efforts Long-term recovery and remediation are crucial phases that ensure healthcare facilities not

only return to their pre-disaster operational states but also improve resilience against future incidents. This phase involves comprehensive damage assessments, professional remediation, and continuous improvement of recovery plans to better prepare for future events.

Remediation Steps

After the immediate threats are mitigated, healthcare facilities must focus on long-term recovery and remediation. The first step is conducting detailed damage assessments to determine the extent of the impact across the facility. This involves both structural evaluations and assessments of medical equipment and other critical infrastructural components. These assessments are vital for planning the remediation process and are typically carried out in collaboration with qualified scientific consultants to ensure accuracy and compliance with health standards.

Engaging professional remediation services is essential for effectively restoring the facility. These services must be capable of handling the complex requirements of healthcare settings, including the removal of hazardous materials, deep cleaning of all surfaces, and restoration of air quality to acceptable levels. Frequent revisiting and revising of recovery plans are also crucial, as they ensure that the lessons learned from the current incident are integrated into future emergency preparedness strategies.

Collaboration with insurance providers and regulatory bodies during this phase ensures that all remediation efforts are financially supported and comply with the latest health and safety regulations. This alignment is critical not only for financial and regulatory reasons, but also for maintaining trust and confidence among patients and staff.

Guidelines for Contractor Engagement

Selecting the right contractors is critical to the success of the remediation efforts. Facilities should prioritise contractors who have specific experience in healthcare settings, as they are familiar with the unique challenges and standards these environments entail. Contractor specifications should include detailed timelines that outline each phase of the remediation process, comprehensive safety protocols to protect the remediation workers, facility staff and patients, and clear outcomes that define what successful remediation looks like.

When engaging contractors, it is also vital to establish clear communication channels and regular reporting mechanisms. This ensures that the facility management remains informed about the progress of remediation efforts and any issues that may arise during the process. Regular audits and inspections by independent consultants can provide an additional layer of oversight, ensuring that contractor work meets all expected standards and specifications.

Furthermore, it is recommended that healthcare facilities develop long-standing relationships with a select group of contractors. This approach not only speeds up the response time in emergency situations but also improves the quality of work, as the contractors become increasingly familiar with the specific needs and requirements of the facility.

Enhancing Future Resilience

Post-remediation, it is essential to enhance the facility's resilience to future flooding events. This may involve updating building materials and infrastructure to more flood-resistant alternatives, such as waterproof barriers and elevated electrical systems. Training programs should

also be updated to include the insights gained from the recent flood, and drills should be conducted frequently to ensure that staff are prepared for future incidents.

Additionally, healthcare facilities should consider integrating new technologies that aid in flood management and recovery. For example, advanced monitoring systems can detect early signs of water ingress, and automated shutdown systems can minimise damage when flooding occurs. These technological enhancements coupled with robust planning and training, can significantly fortify a facility against future disasters.

Ongoing Management and Improvement

Sustaining operational readiness against future flooding demands a dynamic and adaptive management approach that not only addresses immediate recovery post-event, but also strengthens preventative measures. This ongoing management framework ensures healthcare facilities are perpetually prepared and resilient, leveraging the latest advancements in technology and procedural updates.

Continuous Training Programs

Regular training and continuous professional development for staff are central to maintaining a high level of preparedness.

Training programs should revisit existing flood response protocols and introduce new procedures that emerge from any previous incidents and research. These training sessions need to be practical and frequent, involving simulations and drills that mimic real-life scenarios, thus ensuring staff can apply their knowledge effectively under pressure.

Training should also include the use of any newly purchased technologies and equipment that can aid in flood management and response, ensuring all personnel are proficient in their operations.

Review and Update of Flood Response Plans

Ongoing evaluation and continual refinement of flood management strategies are crucial. This involves integrating lessons learned from past flooding events to update emergency response plans. This iterative process ensures that plans remain relevant and effective, incorporating new technological advancements and procedural innovations. Regular audits of existing plans and protocols allow for the identification of potential gaps or weaknesses, which can then be addressed in subsequent revisions.

The revision process should be collaborative, involving feedback from all levels of staff who participate in emergency response. This broad base of input ensures that the plans are

comprehensive and cover all aspects of flood response, from initial alert systems to post- event recovery and patient care continuity.

Leveraging Technology

Adopting new technologies plays a significant role in enhancing flood preparedness and response. Modern monitoring systems can provide early warnings of potential flooding, allowing for more proactive measures. Additionally, data analytics can be used to assess the effectiveness of current flood response strategies and predict the outcomes of hypothetical scenarios, leading to better-informed decision-making.

Engagement with Regulatory Bodies

Regular engagement with regulatory bodies ensures compliance with health and safety standards and secures access to support and resources during recovery phases. These relationships also facilitate updates to regulatory requirements in flood management protocols, aligning them with national and international best practices.

Effective Framework

An effective framework for ongoing management and improvement in flood readiness involves not only consistent training and plan revision, but also a forward-looking approach that embraces technological advancements and regulatory alignment. By instituting these practices, healthcare facilities can enhance their resilience and readiness, ultimately safeguarding patient care against the disruptive impacts of future flooding.

Administrators

Healthcare administrators play a pivotal role in this preparedness framework. It is their responsibility to ensure that strategies developed are comprehensive and adaptable to the changing dynamics of healthcare needs and environmental threats. Regular reviews and updates of flood response strategies are essential. These reviews should incorporate recent events, technological advances, and evolving best practices in disaster management, allowing facilities to stay ahead of potential challenges and ensure their responses are both timely and effective.

A multidisciplinary team is crucial, encompassing facility managers, healthcare professionals, emergency response co-coordinators, and policy makers. Each member contributes unique perspectives and expertise, enriching the preparedness plan. Their collaborative efforts ensure comprehensive coverage of flood management—from prevention and response to recovery and mitigation.

The call to action for healthcare administrators is clear: proactive engagement in regularly reviewing and enhancing flood response strategies is essential. Such engagement should align with applicable national and international standards, and be tailored to the specific needs and circumstances of their facilities, integrating lessons learned from past events to continuously improve disaster response capabilities.

Conclusion

In conclusion, the resilience of healthcare facilities against flooding is significantly enhanced by a forward-thinking, evidence- based approach to disaster management. By prioritising preparedness and adopting a multidisciplinary strategy, healthcare administrators can safeguard their facilities against the disruption caused by future flooding events, ensuring that patient care and safety are maintained at the highest levels.

sova / dignity in motion

Engineered to Last

Quality products for funeral homes and mortuaries, designed and customised for the final journey.

500kg Ceiling Hoist

2 speed, 270° swivel, adjustable length straps ergonomic pendant, head strap, ceiling track system

500kg Mortuary Trolley

Electric over Hydraulic system, drive unit, Auto tray loading, electric body tray brake

Mortuary Racking

Body trays and coffins, guide rails. Options: Front/ side loading, 3/4 Tier, fixed or mobile

Proudly part of the family aidacare HEALTHCARE EQUIPMENT

08 9302 4757
sovamotion.com.au

Commercial Air Purifiers Designed for Healthcare

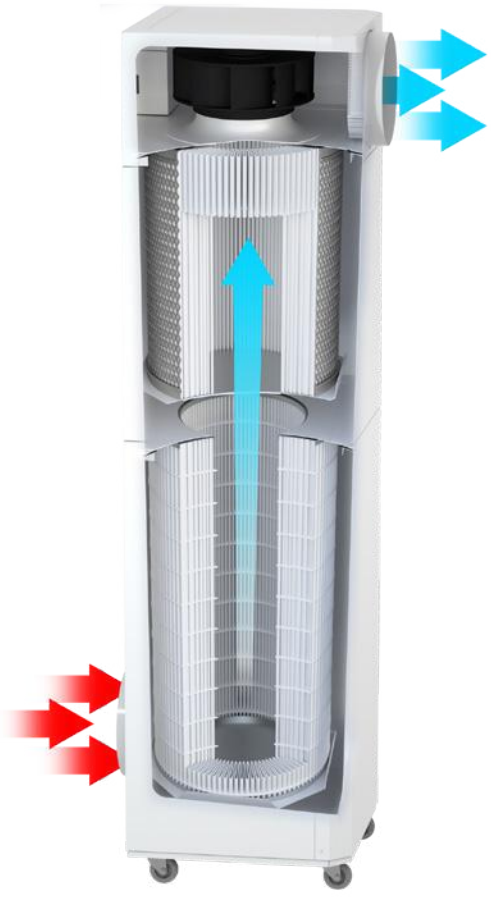
For over 20 years, INOVA Purifiers has been a leading provider of Australian-made commercial air purifiers for hospitals and healthcare facilities. During the COVID-19 pandemic, INOVA became a key supplier, helping Australian hospitals contain the virus and protect both patients and staff with reliable air filtration solutions.

INOVA offers a range of air purifiers, including freestanding and ducted units, with negative air filtration configurations available for critical areas.

Our systems are designed to help healthcare facilities manage airborne viruses effectively by delivering clean, purified air where it's most needed. With a focus on safety and efficiency, INOVA ensures your facility is well-equipped for optimal air quality.

Each INOVA air purifier is fitted with H13 medical-grade HEPA filters to ensure the highest standard of filtration. We also offer the option to customise units with high-capacity activated carbon filters for enhanced chemical, odour, and toxin removal, providing an additional layer of protection.

Protecting your hospital from airborne viruses requires more than just facemasks. INOVA Purifiers provides the right solutions to safeguard your facility and ensure a healthier environment. Contact one of our specialists today to learn how we can support your hospital's air quality needs.



INOVA®

AUSTRALIAN MADE

For more information scan the QR code

1300 137 244

www.inovaairpurifiers.com.au/health

ANZEX Delegates

THE FUTURE OF STANDBY ENERGY – WHAT COMES AFTER DIESEL?

Kevin Miller
Capability Leader - Buildings Electrical – Aurecon
Nellie Whiteside
Electrical Engineer – Aurecon.

Introduction

With global warming being a serious concern, there is a push globally towards reducing and eventually eliminating reliance on fossil fuels. Whether you believe in the science of global warning or not, it is likely that there will be increasing government restrictions on the use of fossil fuels potentially leading to a complete ban. With the typical service life of a diesel generator in a hospital application being approximately 40 to 50 years, there is the potential that any units installed today may need to be replaced with an alternative before end of life.

What are the alternatives?

The alternative solutions considered here are:

- Biodiesel
- Hydrogen
- Batteries (potentially including wind and solar)
- Natural gas

During the course of the investigation, several other possibilities were considered, however these are the alternatives which are either currently available or on the cusp of being market ready and are viable for consideration.

Biofuels

Biodiesel is any fuel that is derived from biomasses such as plant matter or animal waste, thus as opposed to diesel fuel is a renewable energy source. This is a fast-growing industry within Australia with 180 million litres of fuel ethanol and 18 million litres of biodiesel being produced here in 2021. With the growing trend to convert to renewable fuel sources for standby energy and Australia being one of the major producers of feedstock for bioethanol; biofuels are a worthwhile contender when seeking alternatives to diesel as a standby power source.

Switching over to biodiesel presents an array of benefits when comparing to diesel including but not limited to being a renewable energy source, having a lower sulphur content, reduced particulate matter, biodegradability, reduced toxic emissions and a similar level of emissions but far reduced whole of lifecycle contribution. Essentially, the emissions from combustion are similar to diesel fuel however a roughly equivalent volume of are absorbed from atmosphere during fuel production giving a whole of life net zero result.

From a theoretical perspective biodiesel does appear to be all that when on the search for diesel alternatives however when it comes to the crunch of practicalities there are some trade-offs and considerations required to be made. When looking at capital costs the majority of diesel generators on the market are biodiesel compatible generators or a slight increase in cost is required for this capability. There is also the potential for existing plant to be adapted to burn biodiesel avoiding the need for plant replacement. Another consideration impacting capital costs is that biodiesel is approximately 10% less energy dense than regular diesel fuel. This means that a greater reservoir of fuel is required which in turn is approximately 10% greater spatial requirement when swapping to biodiesel fuels.

Weighing up all of the considerations of this technology as a standby energy alternative to diesel it seems that this is a great opportunity however the main barrier to popular utilisation of biodiesel is the availability of bulk supply in a timely manner. Sourcing biodiesel currently comes at a premium and also has large wait times which is not acceptable for standby power of critical infrastructure. It is likely though given continually increasing production of biodiesel within Australia and investment from the CSIRO in further developing biodiesel technologies that the widespread adoption of biodiesel is imminent and that we may make use of this highly advantageous alternative.

Hydrogen

Hydrogen generator technology is generally well advanced with several manufacturers on the verge of having products ready to go to market. There are already hydrogen engines being manufactured for other uses with at least 12 hydrogen refuelling stations either in construction or already in use across Australia. We anticipate that hydrogen will be a viable alternative to diesel for standby generation in the next five to ten years.

Current indications are that the cost of a hydrogen fuelled generator will be roughly three times that of a diesel generator on initial release. However, this can be expected to reduce as their use becomes more prevalent.

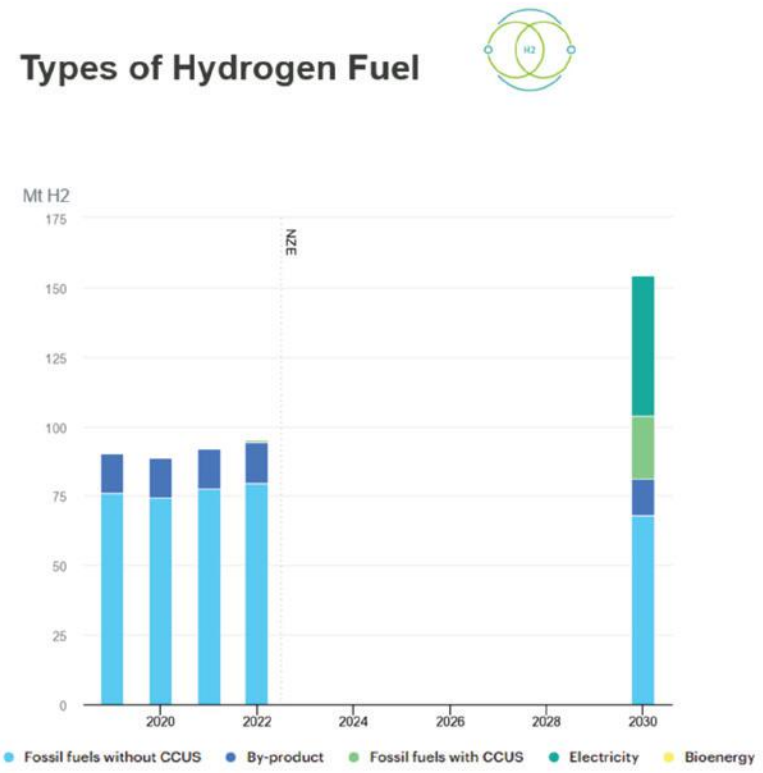
There are two forms of hydrogen fuelled generation, piston engines and fuel cells. Fuel cells are the more efficient of the

two technologies, and are good at dealing with steady state loads, however they do not deal well with fluctuating loads. Conversely piston engines are more similar in performance to current diesel engines and deal with variable loads reasonably well but at lower efficiency than fuel cells. Both have a similar footprint to a diesel generator for the same power output meaning existing plant spaces designed for diesel generators may be suitable for reuse.

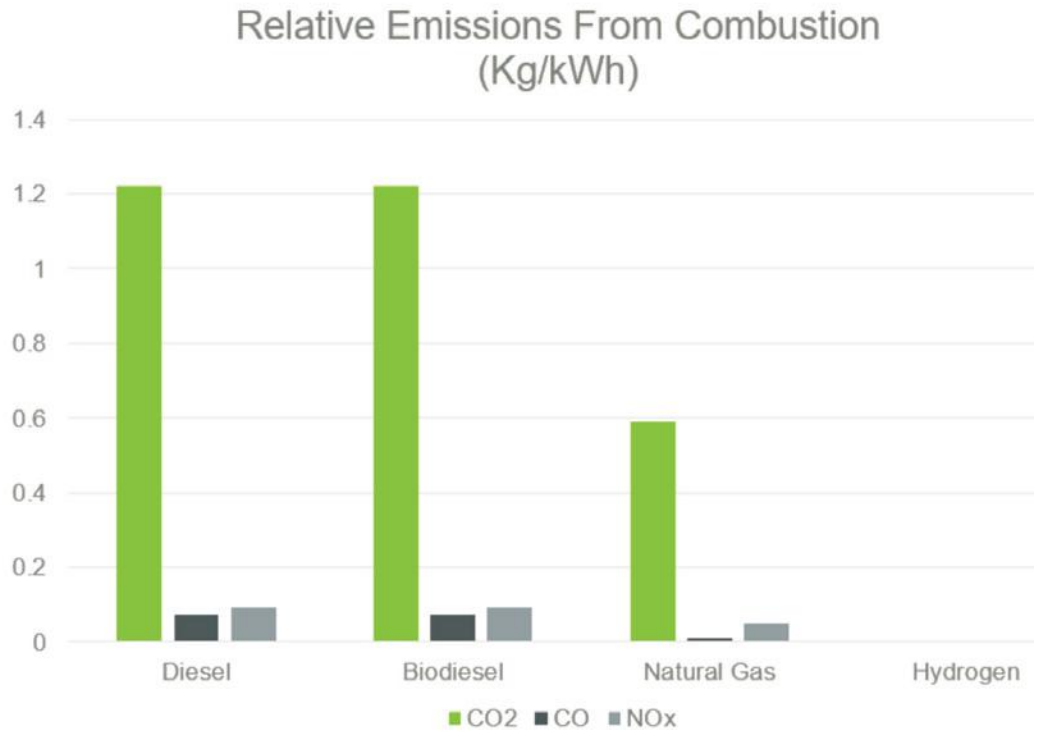
When planning for a hydrogen system for a healthcare facility, it is likely that a piston engine will be required to cater for load fluctuations. For larger scale schemes there may be some merit to the use of fuel cells as a base loading to improve system efficiency, however this may not be cost effective given the added complexity and relatively low running hours per annum.

The most significant consideration in planning for a possible hydrogen solution is the fuel storage and this is an area where currently there is significant investment. The volume of storage depends on the storage pressure and with current technology is likely to be several times larger than an equivalent diesel tank. However the required footprint is likely to reduce as the technology improves. As a highly volatile gas, the hazardous substance implications will also be quite different. For comparison, storage is likely to be more similar to large oxygen storage vessel rather than a diesel tank.

With emissions from combustion being relatively negligible – largely just water – it is emissions from production of hydrogen that are of more concern. Currently most hydrogen used commercially is a byproduct of fossil fuel extraction. However predictions are that the growing demand for hydrogen for sustainable energy will be met by a “Green Hydrogen”. This is hydrogen produced by sustainable means – predominantly fossil fuel with carbon capture or by electrolysis of water powered by sustainable electricity.



IEA, Global hydrogen production by technology in the Net Zero Scenario, 2019-2030, IEA, Paris https://www.iea.org/data-and-statistics/charts/global-hydrogen-production-by-technology-in-the-net-zero-scenario-2019-2030-3, IEA. Licence: CC BY 4.0



Natural Gas

Being a fossil fuel, natural gas may seem to be a strange inclusion in a discussion about sustainable energy. It has been included in this review because:

- Emissions from combustion are roughly half that of diesel generation.
- It is currently available with natural gas generators already in use.
- The cost of the generation plant is roughly equivalent to a diesel generator (noting fuel storage costs are higher).
- The physical size of the generator is roughly equivalent to a diesel generator (noting a larger storage vessel will be required).
- The installation constraints will likely be similar to hydrogen generation potentially making this a viable stepping stone.

While natural gas is unlikely to be a long-term solution, in locations where there is a reliable supply chain it potentially could be a good stepping stone worth considering to an eventual hydrogen fuelled solution.

Batteries with Solar and / or Wind

Despite recent rapid advances in battery technology, the major inhibiting factor is still cost. The cost per kWh of battery storage is roughly equivalent to the cost per kW to install a diesel generator i.e. the cost for three days storage is roughly 72 times the cost of an equivalent diesel generator system. With significant research into battery technology ongoing this is something worth watching, however it is unlikely that batteries alone will be suitable as a direct replacement for diesel generators in the near future.

Batteries also have the major drawback of having finite storage capacity. This can be at least partially overcome by installing supplementary sustainable generation. Widespread and highly developed sources of renewable energy such as solar and wind power used in conjunction with battery storage systems present an obvious area of investigation as a possible alternative to the tried and true diesel generator. These pairings of renewable energy with battery systems are readily and widely available and they have both seen vast technological developments over the last 10 years.

The most obvious advantage of the use of solar and wind as an alternative to generator power is that both of these are free to make use of and are readily available in Australia's climate. Both solar and wind are also completely free of emissions going forward after the initial installation.

A known constraint with the implementation of solar generation systems is the large spatial requirements to achieve acceptable energy capacity capabilities. For critical facilities such as hospitals which are usually located within our city centres where space is a scarce commodity it is undesirable to dedicate increased portions of this to standby power systems which although critical are infrequently used and already have the compact option of a diesel generator. Wind turbines are also not well suited to urban environments. To operate efficiently they require a reasonably laminar flow of are which is difficult to achieve with turbulence created by building structures. There are also acoustic issues and they would struggle to come close to the required capacity. Both systems also have the major limitation that they are reliant on the whether so are inherently not suitable as a reliable source of backup energy.

Although we have seen rapid growth in this renewable technology it is unlikely that they will ever achieve the required capacity density or reliability required for a hospital backup power system. That said, there is still the potential viability of these systems on a commercial basis to manage peak demands and to offset the purchase of energy from utility providers.

What Else Could be Coming?

In the current day search for clean, reliable and financially viable solutions to standby power there are unfortunately not many where the technology is sufficiently advanced to present a realistic alternative. It is worth noting that development in technologies such as micro or pumped hydro, kinetic energy storage and potentially even micro-nuclear are likely growth areas in the field and may be present acceptable solutions as they are continually advanced.

Summary

We are on the verge of a revolution on how we meet our energy needs. There is a high probability that and diesel standby generators being installed today will need to be upgraded to a more sustainable solution before the end of their rated life. Therefore, it is only sensible to consider what that alternative might be and make provision for the future upgrade.

For sites with existing diesel generators, this will likely be a transition to biofuels (at least as a first step). Most diesel engines can be adapted to run on biofuels meaning existing generation plant may not need to be replaced. However, the energy density of biofuels is generally lower that diesel so allowing 10% additional storage to maintain the same autonomy period is recommended.

Many consider that green hydrogen will be the long-term solution. The generation plant technology is well advanced with hydrogen fuelled engines already in production for a number of applications. The physical size of the plant is roughly equivalent to current diesel generators meaning direct substitution may be possible. The challenge lies with the storage solution which will be quite different to a diesel storage solution, more akin to an oxygen storage vessel. Based on current technology the storage vessel will need to be several times larger than a diesel tank to provide the same amount of energy. However, this is an area of ongoing development so likely to improve over time.

Cut installation time in half with adhesive-free!

No drying, no odours, no disruption - a safer, cost-effective flooring solution for working in active environments.

Products contain **bio-based and recycled** content

Sustainable adhesive-free floors that save time and money

One-stop supplier for all floor, wall and door needs

Robust products backed by **industry-leading guarantees**

Solutions that exceed Australian **safety and hygiene** standards

Easy to clean with no ongoing maintenance

altro

altro.com/au

ADHESIVE-FREE FLOORING: revolutionising healthcare environments

In healthcare environments, every infrastructure decision can have a significant impact. Flooring is often overlooked, yet it is critical to maintaining a safe, efficient, and healthy environment. Traditional flooring installations involving adhesives can create unwanted disruptions, extended downtime, and health risks. This is where adhesive-free flooring systems are proving to be a game-changer, offering a faster, safer, and more cost-effective solution.

Speed and Efficiency: Halving Installation Time

In healthcare, time is a valuable resource. Project delays can lead to unnecessary disruptions, affecting both staff and patients. Traditional adhesive flooring systems often require significant downtime for prep, drying and curing, which can take hours or even days. Patients and staff are forced to work around the construction zone during this time, creating significant challenges and delays.

Adhesive-free flooring offers a powerful alternative. The installation process is considerably faster, which means that healthcare facilities can complete their flooring projects in half the time compared to traditional adhesive systems. With quick installation, these critical spaces can remain functional without long periods of disruption.

Cost-Effective Solutions for Healthcare Facilities

Healthcare facilities often face the challenge of managing tight budgets while maintaining high standards. Traditional adhesive flooring systems, though effective, can be costly due to the need for noisy and expensive removal of existing floor coverings, the price of adhesives, and extended installation times—all contributing to higher overall costs.

Adhesive-free flooring systems offer a more cost-effective alternative. These systems can be installed directly over existing hard, smooth floor coverings, significantly reducing installation costs and time. With no adhesives to purchase, lower material costs, and a quicker, less labour-intensive process, facilities benefit from shorter project timelines and a faster return to full operation. This solution not only reduces expenses, but also minimises disruption, providing a smarter and more efficient flooring option for healthcare environments.

Safety First: A Safer Option for Healthcare Workers and Patients

Safety is a top priority in healthcare environments. Traditional flooring installations often require solvent-based contact adhesives, which can pose risks to installers, patients, and staff if proper PPE is not used.

Adhesive-free flooring systems eliminate these concerns. Removing adhesives from the process significantly reduces the risk of exposure to harmful substances, creating a safer installation experience for everyone involved. This innovative approach prioritises health and safety, making adhesive-free flooring an ideal choice for healthcare facilities.

Altro Adhesive-free Flooring – Tried and Tested in healthcare for 15+ Years

Altro, the inventor of safety flooring, launched its first adhesive-free range in 2009. Now, fifteen years later, Altro offers five adhesive-free ranges that provide quicker installation, reduced downtime, and no harmful odours. These floors also feature easy-to-clean technology, are 100% recyclable after use, and are known for their durability and low maintenance. With all their benefits, it's easy to see why Altro adhesive-free floors are a practical and reliable choice for busy healthcare environments.

THE BEST EQUIPMENT FOR YOUR FACILITY

Call us on 1300 243 477 or email info@laundrysolutions.com.au

Laundry Solutions Australia

IPSO

THE NEXUS BETWEEN HEALTHY AND SUSTAINABLE DESIGN – TOOLS FOR DECISION-MAKING

By Warren Li

Associate Sustainability Engineer

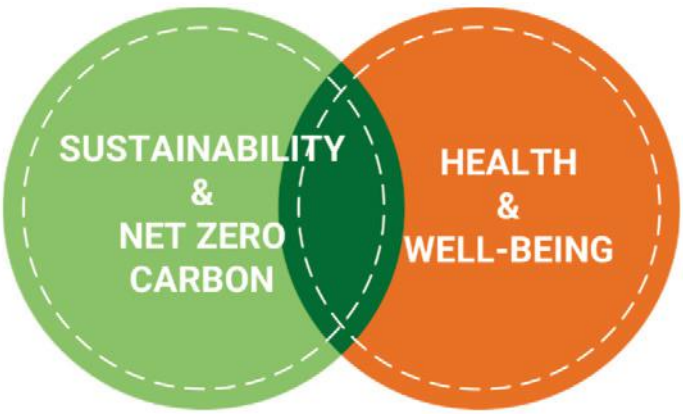
Introduction

Healthcare facilities can put significant stress on our natural resources due to the nature of their operations. They are massive energy consumers and generate tons of medical waste, in their effort to improve the patients' physical and mental health conditions. Due to restorative and well-being benefits, there is an increasing case for good design, which is often correlated with access to fresh clean air, natural light, and greenery. However, these can in turn penalise energy and water performance as follows:

- Increasing the outdoor air rates means that the air conditioning system size is bigger and uses more energy.
- A highly glazed façade for daylight access results in higher solar gains, air conditioning use and carbon emissions.
- Green landscaping especially in regions with low rainfall can be hard to maintain without using a considerable amount of potable water.

This balancing act is especially relevant in the new age of net zero carbon and energy and water budgets through benchmarking schemes such as NABERS and Green Star. There is also the emergence of sustainability guidelines from various health departments around Australia.

As engineers, we are often called to present the whole picture to the client. Through advanced building simulation techniques, it is possible to find the nexus between a health-oriented design and sustainability.



Nexus planning provides a pathway towards finding the sweet spot between environmental sustainability and human health. It is part of the decision-making process in designing healthcare facilities, as the project teams increasingly have to consider more briefing requirements.

So, what tools and techniques can engineers and designers use to assist in nexus planning?

This article looks at the building simulation techniques to provide adequate information to stakeholders. The three design parameters being explored here relate in particular to fresh air, natural light and greenery but there are many more sustainability-health dichotomies in healthcare.

Fresh Air and Energy Nexus

The outdoor air rate requirements in hospitals are primarily driven by each state's health standards and guidelines. In general, these state guidelines state that the design of ventilation systems must consider ventilation rates specified in AS 1668.2 and include specific outdoor air changes for a variety of spaces. The standards set minimum general requirements for outdoor air supply to prevent excess accumulation of airborne contaminants.

In addition to these engineering guidelines, some states have their own sustainability design guidelines, some of which include consideration of a 50% increase on the minimum AS 1668.2 outdoor air rates, with an assessment of operational energy impacts. If a new hospital project is designed to Green Star, this 50% overall increase becomes mandatory. Designing for a 100% increase scores additional points in the Green Star rating scheme.

Similarly, state guidelines provide minimum requirements for air filtration efficiency (e.g. HEPA in many instances) to control the concentration of airborne dust particulates including PM10 and PM2.5.

However, once the state requirements are met, what additional improvements can the project target to achieve a good design outcome without compromising the energy targets?

First, let's go back to basics and have a look at some Indoor Air Quality (IAQ) performance benchmarks from various guidelines:

Once the IAQ performance outcomes are agreed the design team can commence ventilation and filtration design using a simultaneous IAQ and energy modelling strategy. Research following the recent COVID-19 pandemic has accelerated the development of advanced design solutions that support the increased demand for air quality forecasts to control the spread of the disease.

An IAQ model systematically estimates air contaminant levels and by using mathematical expressions, these models help us understand the complex physical phenomena related to indoor air quality. Predicting ventilation airflows and air contaminant transport within buildings is inherently complex. Reliable models require precise input data, thorough validation, and an understanding of the unique characteristics of each indoor environment.

IAQ PARAMETERS	Green Star maximum limits	WELL maximum limits	National Standards from NCC IAQ handbook
CO_2 (ventilation effectiveness)	800-700ppm	900-750ppm	800-600ppm
PM10 (Dust particulates)	not specified	50-20 µg/m3	50 µg/m3
PM2.5 (Dust particulates)	not specified	15-10 µg/m3	25 µg/m3

Table 1: IAQ Benchmarks

Daylight parameters	QLD (Metro North Sustainability Guidelines)	Green Star Guidelines	WELL Standard
	Achieve Daylight Autonomy of at least 160 lux (daylight) for 80% of the hours between 8am and 6pm. Minimum area percentages:		
Clinical areas	60%	40% of the regularly occupied areas across the building, no less than 20% on any floor	Generally aligned with Green Star with alternate parameters
Interventional suite clinical areas	20%		
Clinical support services areas	30%		
Other support service areas	60%		
General front of house	40%		

Table 1A: Daylighting benchmarks

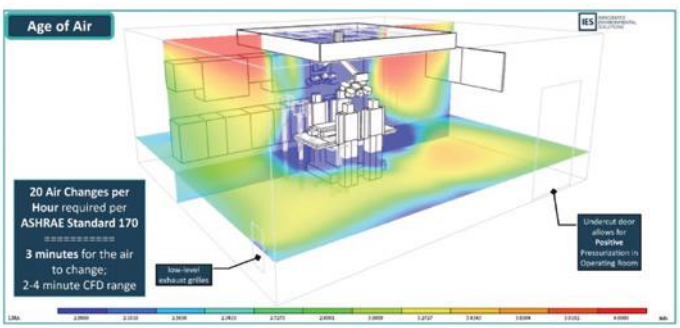


Figure 1: IAQ Modelling with CFD

Fortunately, there are several software programs readily available to simplify the process. These programs and tools can combine microscopic computational fluid dynamics (CFD) techniques and macroscopic simulation techniques to build a complete ventilation, air contaminant and IAQ model for the building. CFD tend to be more accurate but also more time-consuming. Here are some software examples:

Microscopic (CFD)
- ANSYS Fluid
- OpenFOAM
- SimScale

Macroscopic
- Indalo – IES VE
- CONTAM
- IA-Que

There are many opportunities and potential benefits to be unlocked through adopting a performance-based approach and using an IAQ Verification Methods in terms of:
- opportunities to maximise the IAQ provided by ventilation systems.
- opportunities to reduce energy use associated with building ventilation.
- improvements to the sustainability outcomes of the overall building operation.

Daylight and Energy Nexus, and more

One of the early building design decisions which impact the amount of daylight is the façade strategy. First, it needs to comply with minimum Part J energy efficiency code requirements as well as Part F which ensures suitable provision of natural light.

Natural light can offer wellness benefits to patients and hospital staff alike and this is reflected in the following sustainability guidelines and ratings tools:

Increasing the daylight access, however, introduces additional heat loads, especially in warmer climates, which increases the energy required to maintain comfort conditions. During design, there are almost infinite permutations and combinations of façade parameters that will affect both energy and daylight including:
- Window-to-wall ratio
- Glass U-value

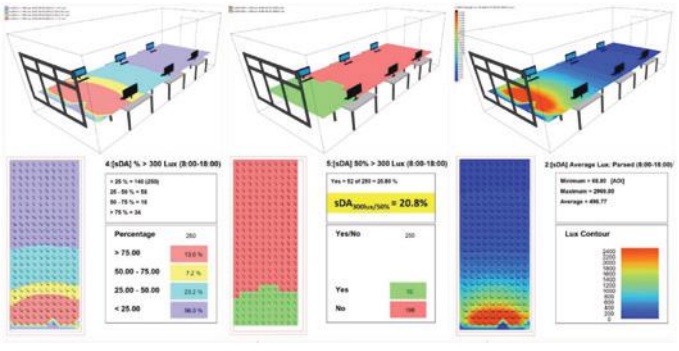


Figure 2: Daylight Autonomy Measurements

www.mta-au.com

MTA Liquid Chillers & Heat Pumps

PEACE OF MIND IN HVACR & PROCESS INDUSTRIES

Products which always work, everywhere

MTA's industrial-grade chillers are designed to operate in even the most harsh conditions, with water outlet temperatures from -24 °C to +30 °C.

TAE G is the **process chiller** designed specifically the most demanding **industrial applications**, combining the **reliability** and **durability** with the application of **eco-friendly refrigerants** R513A and R454B.

Multiple solutions to all your needs

MTA offers air and water-cooled chillers and heat pumps in the 2 – 2,000 kW range with scroll-inverter, scroll, multi-scroll and screw configurations.

iPNG: chillers with **inverter driven** screw compressors up to 1,383 kW cooling capacity. **Highest efficiency** combined with robust **industry grade quality**.

The green transition of energy systems

Always focused on energy efficiency and environmental protection, MTA further strengthens its commitment by adopting low GWP refrigerants.

iCYGNUS N HP is the brand new air-source propane **R290 heat pump**, with inverter compressor, delivering **high water temperatures** with **maximum efficiency** and **silent operations**. The sustainable electrification of heating.

Trusted in multiple Australian applications

Leading Australian customers with the most varying and demanding applications trust MTA to perfectly meet their diverse specific needs.

Medical & MRI, Food & Bev, Chemical & Pharma, Technical & Commercial Air Conditioning, Mechanical & Machine Tools, Plastics, Electronics, Wineries, Paper, Lasers, Materials, Gas Treatment, IT Cooling, Transport.

MTA Australasia

Pakenham VIC 3810
Tel. +61 1300 304 177
E-mail: sales@mta-au.com

- Glass solar heat gain coefficient (SHGC)
- Glass visual light transmission (VLT)
- Shading devices design and extent

On top of that, more projects are considering embodied carbon in their design with Green Star setting minimum upfront carbon reductions of 10% and up to 40% depending on the rating target. NABERS is also developing a benchmarking tool to assess buildings based on their embodied emissions and the NSW planning regulator has introduced mandatory reporting requirements for new developments.

As buildings become more efficient and the power grid decarbonises through addition of renewables, there is an increased focus on embodied carbon in order to achieve Australia's net zero emissions target by 2050. Measuring and managing embodied emissions in buildings is becoming increasingly important.

Since façades can account for 10-20% of the building's embodied carbon footprint, the life cycle assessment (LCA) of materials and design can no longer be ignored. Upfront carbon has to be assessed in tandem with the energy and daylight in this triple nexus scenario.

This adds to the complexity but fortunately, with advancements in computing power, machines can be programmed to handle these multi-faceted simulations, as part of parametric studies.

Parametric modelling offers dynamic control over geometry and components, allowing the designer to assess multiple variants at the same time. It is implemented through the design computer programming code such as a script to define the dimension and the shape of the model.

Using this method, simultaneous daylight and energy modelling can be used to optimise the size of windows and shading elements along with an embodied carbon lens.

Tools available to conduct this type of advanced modelling include:

- IES VE – One Click LCA
- Rhino with Grasshopper
- Design Explorer (for visualisation)

Parametric design provides a better framework for decision marking because it sets the boundaries and works towards a common ground between the targets for energy loads, daylight and embodied carbon. It is best to carry out this design modelling in early design before locking in the façade strategy.

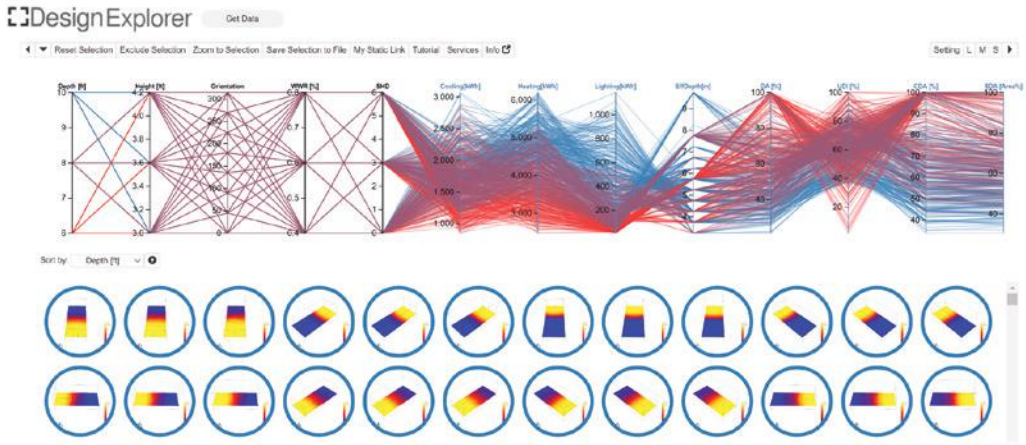


Figure 3: Multi-dimensional parametric studies

Figure 4: Green roof example – Bendigo Hospital

Greenery and Water Nexus, and more

Gardens and green landscaping provide restorative and calming places that help reduce stress and provide respite from the clinical setting. Exposure to natural elements, such as plants and natural materials, has been associated with reduced blood pressure, decreased depression and anxiety, improved attentional capacity, better recovery from illness, and enhanced psychological well-being. Spending time connecting with nature can have significant positive effects on both physical and mental health.

This health aspect of nature is outlined in state sustainability guidelines and in some cases, minimum sizes are proposed for the area coverage:

However, with NABERS water targets starting to appear on some new projects, it is important to consider the water requirements for irrigation. In many cases, the landscape specialist can provide the amount of irrigation water required for each month of the year. As a priority, native drought-resistant plants should be selected, and non-potable water should be supplied via sub-surface drip irrigation pipes from rainwater storage tanks which are adequately sized based on the location, rain collection area and water use. In this way, there is minimal water penalty for having extensive green landscape.

The other sustainability item to factor in is again embodied carbon. If the green space is not at ground level, it will most likely be located on top of concrete structures, which then add extra structural loads and therefore extra thickness and reinforcement steel to the slab. This increases the embodied carbon of the project.

However, at the same time, the layer of soil also can act as additional insulation for the roof, which in turn lowers the air conditioning loads. A green roof also reduces the urban heat island effect and helps mitigate the risks of intensifying temperatures. So, here we have a quadruple nexus example: greenery area – water – embodied carbon and operational energy/carbon. In many cases, this kind of nexus planning is non-existent on projects, but in a world where more sustainability metrics tracking is required, a proper reporting process should be put in place, and it can be as simple as this table below:

This provides a clear transparent process to show the various sustainability-related moving parts in the decision-making process when it comes to planning green space requirements.

	QLD (Metro North Sustainability Guidelines)	Green Star Guidelines	WELL Standard
Proposed Outdoor Green Landscaping Criteria	At least 30% of the site area to be soft landscaping, regenerating local natural habitat with connection from indoor spaces	5% of the building's floor area or site area (whichever is greater) is allocated to nature in which occupants can directly engage with.	Outdoor green space of an area of at least 5% of the project interior area

Table 2: Green Spaces Area Benchmarks

Daylight parameters	Iteration 1	Framework
1_Proposed green landscaping area	__m2 __% of site area/GFA	Guidelines and Rating Tools
2_Potable irrigation water	__kL	NABERS Water Target
3_Embodied carbon impact (due to increased structural loads)	__tonsCO_2-e	Embodied Carbon Target
4_Energy savings and operational carbon reduction (due to increased insulation)	__kWh/yr __ tonsCO_2-e/yr	NABERS Energy Target

Table 3: Nexus Planning Parameters for Green Spaces

Summary

The healthcare sector is increasingly required to look at its ecological responsibilities. This includes reducing energy-related and embodied CO2 emissions and saving our natural resources. At the same time, there is a movement to have a people-oriented design conducive to health and well-being, which is, after all, the cardinal purpose of a healthcare facility. Good healthy design principles tend to focus on access to clean fresh air, natural light and green spaces. These can have negative energy, carbon and water impacts and these sustainability metrics are being increasingly reported. Careful management and balancing are needed if projects need to meet targets from health sustainability guidelines or rating tools such as NABERS and Green Star.

The three examples outlined in this article explain the process of nexus planning and provide the tools to assist in the decision-making:

- **Indoor Air Quality (IAQ)** modelling to investigate the performance outcomes of ventilation design for fresh clean air.
- **Parametric modelling t**o perform façade optimisation for daylight access, along with energy and embodied carbon impacts.
- **Water modelling** combined with energy and embodied carbon assessments to analyse the impacts of green landscaping provisions.

The key to a successful design outcome is a transparent process whereby the engineers can use simulation methods to demonstrate and communicate the nexus between healthy and sustainable outcomes to relevant stakeholders during the design process.

What would a major fire do to your healthcare operations?

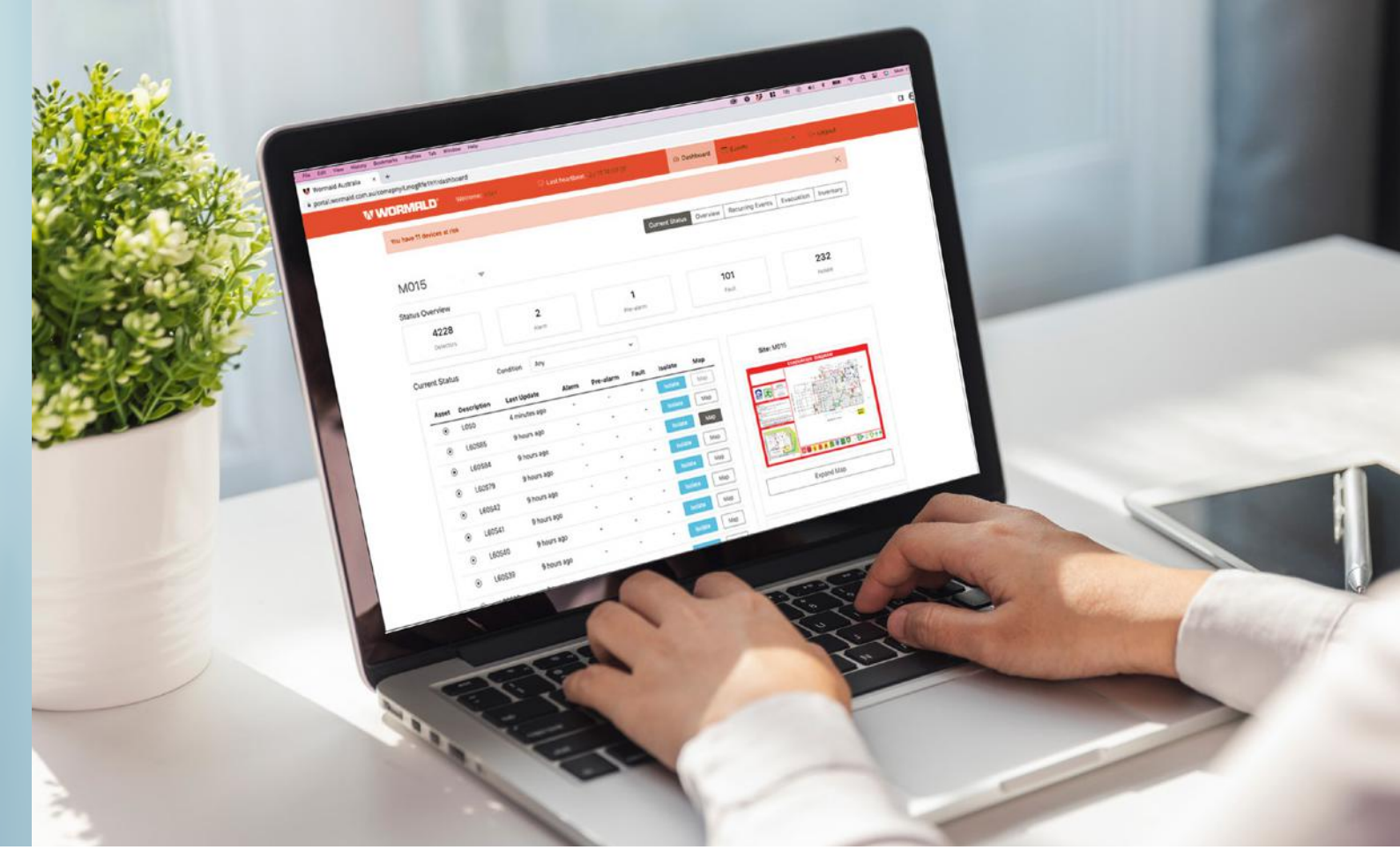
Would your staff know exactly what to do in an emergency situation? How sound are your fire detection and protection systems, and could your health facility cope with a fire?

One of the healthcare's most extraordinary feats is keeping people safe. That is why we provide reliable innovative and smart fire protection solutions to help our healthcare customers protect their patients and staff.

As one of the largest fire protection providers, we can provide dedicated, specialist teams for design and installation, maintenance and technical support, as well as services ranging from engineering advice to fire training and evacuation plans.

We can custom design fire protection systems to match your needs and your budget to refurbish and upgrade your existing system. Our Major Projects team is adept at undertaking large-scale installations in facilities like hospitals, that cannot tolerate interruption.

www.wormald.com.au



Wormald FireM
Advanced Fire System Monitoring

- Transforms any standard fire panel into a **Smart Fire System**
- Receive **instant real time alarm notifcations** in-app and sms
- Get **notified** of pre-alarms, faults and isolations
- Advanced AI data analytics to **reduce maintenance** costs through **call avoidance** and target fault finding
- **Reduction of costly** fire brigade callouts and building evacuations
- Compativle with **any brand/model** of Fire Indicator Panel (FIP)
- **Indefinite capture and storage** of FIP data including historical events and asset information
- **Compliance visibility** and accountability
- **User friendly desktop** portal and mobile app
- One person testing option available

133 166

WORMALD®

Goldman Plumbing

Design, Installation and Turnkey Project Delivery Specialists for Hydraulic, Steam and Medical Gas Systems

From minor upgrades to major infrastructure undertakings, Goldman Plumbing has you covered. Operating throughout Queensland, New South Wales, Victoria and South Australia, our in house team has the resources and skills to manage your project from conception to completion.

With 60 years of experience, we specialise in providing unequalled service for all hydraulic, medical gas, and steam systems within the Health and Aged Care sectors. Our team of skilled professionals ensures precision in design, seamless installation and turnkey project delivery.

Goldman Plumbing Provides Design, Installation and Project Delivery for the following key services:

- Medical Gas Systems
- Building Design and Construction
- Hot Water Systems
- Warm Water Systems
- Non Potable Water Systems
- Steam Systems
- Compressed Air Systems

Goldman Plumbing also provide:

- 24/7 Maintenance to all services and systems
- TMV and Backflow Prevention installation and testing
- Hot and Warm Water system upgrades and repairs
- Pump servicing and repairs

Contact: (02) 8850 6300

Visit our website: goldman.com.au

RO WATER SYSTEMS

Improving compliance and plant life is the sustainable choice

Suzanne Manley

Wood

Introduction

Quality standards for hospital RO Water Systems in Australia are changing. Expectations are increasing for improving the water quality used for CSSD applications with AS/NZS 4187 being superseded by AS 5369: 2023.

Renal RO units and systems can have an expected plant life of 10 years or less once sanitisation becomes less effective against the build up of biofilm. Countering the effects of biofilm in meeting compliance with ISO 23500: 2019 can result in an increased frequency of chemical sanitisation and thermal disinfection.

Poor water quality performance and unscheduled maintenance events increase the operational costs of the water system and raise questions about system reliability.

Patient outcomes are known to improve with the quality of the water used in renal dialysis and the CSSD processes for reusable medical devices and endoscopes.

Investigation of compliance issues, system performance issues and a focus on addressing their root causes can support an improved plant life. Observations from five Australian hospitals and the increased requirements of AS 5369 were considered in preparing this paper as it explores the relationship between RO water systems maintenance and improved sustainability.

This paper outlines some practical strategies that hospital RO water system owners can use to prioritise maintenance activities and improvement projects to the benefit of system performance and patient outcomes whilst also improving system sustainability.

Quality Monitoring

Monitoring the water quality begins at the mains water connection. The chemical, microbiological and physical properties of the feed water will have seasonal variation. This has an impact on the performance of the water purification equipment. Regular sampling and water quality data collection throughout the RO water system including incoming water supply, at each step of the purification process and at the user outlets is essential to identify trends and early indication of performance issues.

Obtaining water quality data requires input from several sources and a supportive open path of communication with maintenance contractors, suppliers and internal customers or medical departments.

Table 1 lists some of the key information that can be collated for a holistic view of RO water system performance.

Whilst the water quality requirements for a dialysis ward will be different to the CSSD, we can use the same methodical approach for investigation and troubleshooting any excursions from the acceptable quality limits.

Table 1 Key information sources

Maintenance Contractor	Water testing laboratory	Data acquisition system	Medical Directors / Ward staff
Adequate water sampling points Detailed service reports including unusual alarm events or unscheduled replacement of any components In-house Engineering attendance during service visits to gain insights about the system operation and inspect the condition inside any open systems System operation training for in-house Engineering personnel and system users	Adequate frequency of sampling and testing Test result reports including trend analysis of chemical, microbial count and endotoxin levels Notifications from Water Authority on expected changes to water supply quality	Adequate in-line instrumentation with data output capability Adequate trend reporting from the available in-line instrumentation Access to data in a format that allows comparison of multiple parameters for trend identification IT support to gain remote access to historical trend data for desktop reviews	Record and investigate all reports of water quality issues Record and investigate all complaints from system users that could indicate system performance issues

STERRI MATT®

HOME OF THE ORIGINAL PPE STATIONS

PPE Stations of Choice

Sterri-Matt®

Largest range of PPE Stations and Dispensers. 100's of combinations to spec our unique PPE Stations, we understand why our stations are the No.1 choice for Hospitals & Aged Care both here in Australia and now overseas.

We also now have the largest range of Quad & Tri Glove Dispensers.

WCS1

WCS2

WCS3

3 ways to use PPE stations

Door Mobile Wall

WCSG4

QUAD GLOVE DISPENSERS

*Mask Dispensers *Patient Record Holders *Reception PPE Dispensers *Apron Dispensers, just too many to list..

Call for Catalogue

New to the Sterri-Matt® Glove Dispenser range is our Universal Quad Glove Dispenser with Aprons and Wipes. Available with our unique front load option. Universally fits all sizes & brands of gloves. SMATT-WCSG4FLGC

*** Need something bespoke, our team can design, prototype and produce a dispenser to your specification. Call for details*

SCAN ME

www.sterrimatt.com info@sterrimatt.com 1300 132908

Risk Based Maintenance and Improvements

Once the available data has been reviewed and a root cause of any adverse quality event/s has been identified, the output of these investigations can be introduced to the risk assessment process.

Particular attention to the microbiological results is recommended as this will provide an indication of the locations within the water system that have biofilm growth potential. A biofilm forms when bacterial cells attach to the internal wet surfaces. Low bacterial and endotoxin levels are therefore desirable throughout the system to minimise the development of a biofilm.

Biofilm growth is the typical indicator for replacing dialysis RO plant after 10 years. Opportunities to limit the biofilm growth are opportunities to extend plant life.

A water system operating at low temperature and using clean design principles will have a significantly lower bioburden as compared to a system operating closer to 36°C with deadlegs of stagnant water, a low recirculating velocity and with piping systems, fittings and joints that contain crevices.

A system walk down with the designer, installer or engineering consultant may identify areas of concern. An installation with significant deviations from clean design principles is a common issue for hospital RO systems where a general plumbing contractor is often engaged. The author notes that significant departures from clean design principles have been observed within RO water system installations at each of the five hospitals considered in preparing this paper. Most of the observations are in the pre-treatment system and add to the bioburden and challenge the entire system operation by premature fouling of the downstream RO process equipment and piping.

Consider the benefits of engaging a specialised piping contractor with a system specification based on clean design principles for any system upgrades. Progress inspections during the installation supports adherence to the clean design specification and supports a low bioburden operation from Day 1 of commissioning.

Having identified improvement opportunities, ranking and prioiritising action items is the next step in the continuous improvement journey. This is where AS 5369 becomes a useful tool.

In December 2023, AS/NZS 4187 was superseded by AS 5369 Reprocessing of reusable medical devices and other devices in health and non-health related facilities.

The changes to the standard broaden the scope of reprocessing water quality and risk management system requirements, require segregated reprocessing environments and have a greater emphasis on the requirement for suitably qualified and competent personnel to be engaged for validation, quality and operational tasks.

There are implications in the new standard for CSSD facility design, specification and validation including the documenting of water as an “agent involved in reprocessing”. Process maps or flow diagrams of the CSSD systems including the water purification are mandatory and to be used in a formal risk evaluation and management system. The developed risk assessment is then recommended to be reviewed annually or whenever a change is made to the process.

The AS 5369 Appendices provide useful new guidance material. Appendix A has specific guidance around the documentation of product families and the characteristics of devices to be considered in the validation of disinfection and sterilisation processes. Appendix B is a new addition to the standard and provides guidance on the risk-based approach referenced throughout. The examples provided in Appendix B are appropriately specific to handling of devices within the CSSD environment. The RO water system is considered an input to the reusable medical device process flow and also requires risk assessment as a system that maintains quality.

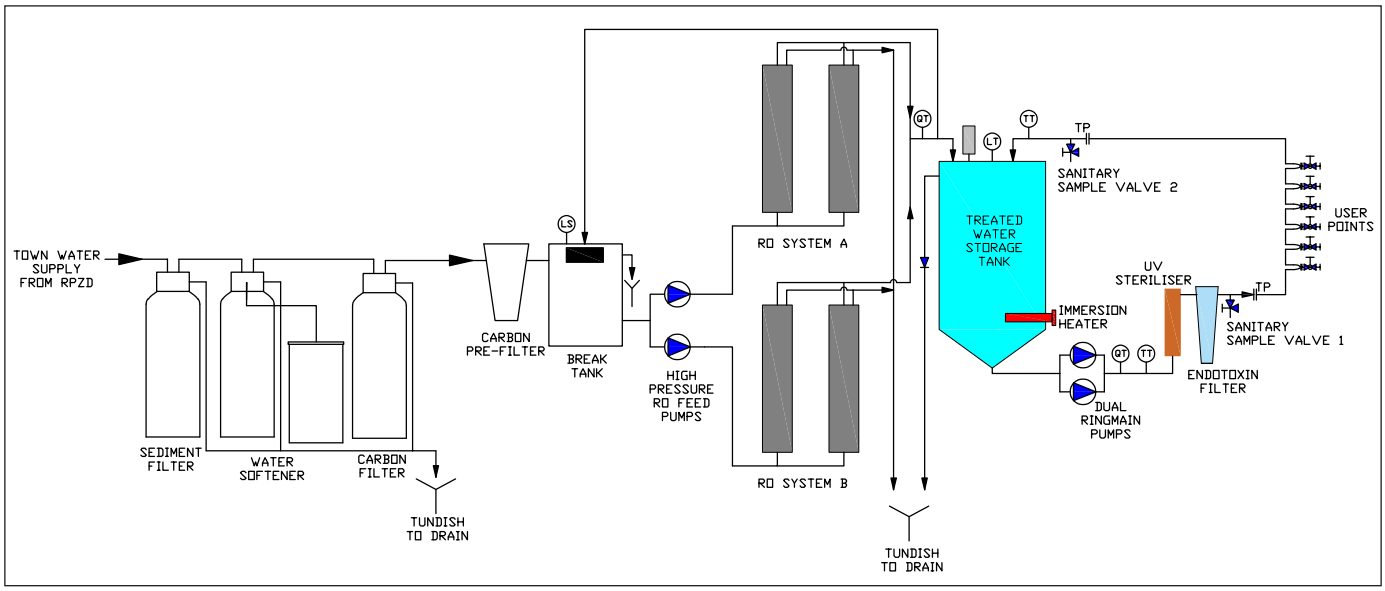


Figure 1 Typical arrangement of a pre-treatment and RO water system, Southland Filtration

Table 2 Example risk assessment

Process Step	Hazard or threat	Risk Assessment			Total
		Likelihood	Frequency	Impact to Patient	
Pre-treatment piping	Microbial growth in stagnant water within a deadleg section of piping (Biological)	10 (High)	10 (All the time)	1 (Mild)	21 (short term)
		10 (High)	10 (All the time)	5 (Moderate)	25 (long term)

Table 3 Key aspects of sustainability and underlying principles applicable to RO water systems

Sustainability Category	Key principles	RO water application
Water efficiency	Minimise water consumption	A low bioburden RO water system requires a lower frequency of sanitisation. Avoiding or minimising chemical sanitisation procedures significantly reduces the flushing water volume required to remove residual chemical prior to the system resuming normal operation.
Waste	Aim for zero waste during building construction and operation. Implement waste management initiatives (eliminate, reduce, recover / recycle waste, engage employees, etc)	Strategies to adopt clean design principles and avoid microbiological loading of the system extends the plant life of piping and replaceable system components such as filter cartridges and RO membranes.
Materials and resources	Avoid using materials which damage the environment Minimise use of materials which increase concentrations of substances in the earth's crust or ecosphere	Strategies that extend plant life instead of demolishing and replacing it reduce the embodied carbon of the system. The need to use chemical sanitising agents and energy for thermal disinfection can be minimised in a low bioburden RO water system.

Example Risk Assessment

Taking the common issue of a deadleg of stagnant water in a typical RO water system pre-treatment piping as an example, we can develop a risk assessment for the biological hazard of high bioburden in the pre-treatment piping causing biofilm development and microbiological load on the RO membranes.

In this example, the indirect impact to patient is mild in the short term but becomes moderate as the biofilm develops and the hazard persists. System availability may be compromised in the long term by increased sanitisation frequency as fouling of the RO membranes starts to impact system performance.

In both the short term and long term, the risk score ranking for stagnant water in the pre-treatment piping is categorised a severe high risk (15-30) as defined in AS 5369 Appendix B. The piping deadleg risk is consequently required to be documented and the control measures in place to manage the defined risk and the assigned corrective actions.

The ranking of identified hazards in the established risk assessment document becomes a guide to the prioritisation of maintenance budget expenditure and justification for capital improvement projects.

Sustainability

Risk evaluated priorities for improved compliance and performance can also make RO water systems more sustainable. The key aspects of sustainability applicable to RO water systems are water efficiency, waste and materials.

Conclusion

The introduction of mandatory risk assessments for the performance monitoring and maintenance of CSSD system, as required by AS 5369: 2023, is an opportunity for facility owners to proactively manage RO water system performance.

Utilising the risk assessment framework to capture findings from regular review of water quality data allows for the prioritisation and allocation of budget to improvement projects that return the greatest benefits.

Whilst the objective is to improve water quality compliance and patient outcomes, there are measurable sustainability benefits with improved water efficiency, extended plant life and reduced consumption of chemicals and replaceable components.

References

Haemodialysis Water Sampling Handbook, Queensland Health
ISO 23500: 2019 Preparation and Quality Management of Fluids for Haemodialysis and related therapies
AS4187: 2014 Reprocessing of reusable medical devices in health service organizations
AS5369: 2023 Reprocessing of reusable medical devices and other devices in health and non-health related facilities
Purification process to meet AS/NZS 4187:2014 Amdt:2 (2021), Dr Surani McCaw
ISPE Design & Control of Pharma Water System to Minimize Microbiological Contamination (2017), Dr Tim Sandle
Wood Sustainability Study (2024), Brendan Fox

LEADING EDGE AUTOMATION

ALERTON AUSTRALIA

Creating Reliable, high-performing Hospitals

Our solutions prioritize reliability to ensure seamless operations and consistent performance, even in the most demanding healthcare environments.

Reduce Energy Costs

Lorem ipsum dolor sit amet sed diam nonummy nibh euismod

Enhance Control

Lorem ipsum dolor sit amet sed diam nonummy nibh euismod

Improve Indoor Air

We deliver advanced monitoring and control capabilities that improve air quality and prevents the spread of airborne pathogens

FOR MORE INFO

SCAN HERE

SEE HOW OUR SOLUTIONS WILL ENHANCE YOUR HEALTHCARE FACILITY

Contact us:
(03) 9918 7777

(Global)
www.lea.global
info@lea.global

(Australia)
www.alerton.com.au
info@alerton.com.au

BIDETS AND TOILETING TRUTHS
Addressing an unspoken daily task

Let's talk about a topic we rarely discuss openly but encounter every day: toileting. Maintaining good hygiene is essential, but standard toilet paper often falls short in providing thorough cleanliness.

The bidet difference

Imagine cleaning your hands after gardening by only wiping them with a dry towel. Not the cleanest option, right?

Yet, that's essentially what toilet paper offers when it comes to cleaning sensitive areas. Bidets provide a much more effective clean by using a gentle stream of water that removes bacteria and irritants without abrasive rubbing.

This isn't just a comfort upgrade; it's a health benefit that supports better hygiene and reduces potential complications associated with inadequate cleaning.

Who benefits most from bidets?

Bidets are particularly beneficial for people facing physical challenges, limited mobility, chronic conditions or temporary injuries that make toileting difficult. Here are some examples of where bidets can make a difference:

- **Urinary tract and bladder infections**. Bidets clean more effectively than toilet paper, helping reduce bacteria that can lead to infections.
- **Visual impairment**. Simple, intuitive controls allow those with low vision to handle their hygiene independently.
- **Obesity**. Many bidets come in different shapes and sizes to fit various body types.
- **Arthritis, carpal tunnel, and back pain.** For individuals who struggle with twisting or reaching, bidets minimise physical strain.
- **Neck injuries, sports injuries and physical disabilities (spinal)**. Bidets eliminate the need for bending and twisting, maintaining hygiene with minimal movement.
- **Women's hygiene**. For those experiencing thrush or other infections, bidets offer a safe, gentle cleaning alternative that reduces irritation.
- **Colon and bowel cancer, incontinence**. Patients managing bowel issues benefit from bidets' gentle and thorough cleaning.
- **Skin disorders**. Bidets reduce irritation caused by the abrasiveness of dry toilet paper.

Maximising independence

For many people, bidets mean a return to independence in daily hygiene tasks. Features like heated seats, warm water and air dryers turn a routine experience into one that's gentle, clean and dignified.

Increasingly, occupational therapists are prescribing bidets for their clients, with outstanding results.

Occupational Therapist Manny Jackson says, "Over the past year, I have recommended the Coway BA08 Health Care range bidet toilet seat to three of my clients in need of toileting assistance.

"Installation of the bidet for each client has been successful in enabling them to regain their independence and dignity with toileting, and they all report great satisfaction with the product."

Bidets are also eco-friendly, as they cut down on toilet paper usage, lowering both costs and environmental impact. It's a win for both personal comfort and the planet.

Across the spectrum of aged care, bidets can play an important role in supporting quality of life.

If you're a healthcare provider undertaking a new build or renovation, it's worthwhile giving consideration to the benefits bidets will offer your patients and staff.

Craig Spence, National Business Development Manager, InteliCorp/The BIDET SHOP
thebidetshop.com.au; intelicorp.com.au

The most advanced and thinnest bidet in the world

NATIONAL 2000

Do you want the luxury of a warm water wash and a warm air dry bidet that just replaces your toilet seat

MADE FOR AUSTRALIA

The BIDET SHOP®

BUILT IN HIGH HAZARD DEVICE ATMOSPHERIC VACUUM BREAK (AVB) AS 2845.1 COMPLIES AS/NZS 3500:1:2021

1300 243387

INSTALLATION REQUIRED

For the largest range of fully apporoved bidets

thebidetshop.com.au

SOPHISTICATED SOFTWARE CAN HELP DRIVE 'TRANSITION'

Sara Sloman

Paythru

Sara Sloman, Chief Strategy Officer at Paythru, argues in that to deliver a successful EV transition across the healthcare estate, healthcare estates and healthcare engineering teams must 'look beyond the chargepoint itself', to digital solutions, and how to both maximise user convenience and secure the best return on their investment.

Healthcare estates are looking to a Net Zero future. As set out in the NHSE/I publication, *Delivering a 'Net Zero' National Health Service*, published in October 2020, the NHS is planning to deliver a commendable 80% reduction in emissions by 2045. A major element of this will be supporting the transition to electric vehicles (EV) – whether the organisation's fleets of cars, bikes, and ambulances, or the vehicles that a growing number of its 1.27 million staff use to travel to work. The NHS is showing its ambition to be a trailblazer in this sphere. As the UK's largest employer, and home to almost 500,000 car parking spaces, it has an advantage of scale that justifies considerable thought to getting its EV deployment strategy right – a strategy that will impact many, and many others may copy.

Things are certainly happening. The latest figures show that around half (51 per cent) of NHS Trusts have an onsite EV charging infrastructure, and 43 per cent are planning to install charging facilities over the next few years. This comes in the wake of complex and lengthy planning and car park reviews across the country, aimed at reducing single occupancy use on site.

Paythru says cloud-based payment can 'revolutionise' the future of paying for parking.

Considerable thought required

This drive toward greater take-up of EVs will only continue as the NHS – as well as private health providers – seek to reduce their carbon footprints, and support staff, patients, and visitors, to do so. Successful EV charging is, however, about so much more than simply getting chargers in the ground. To get the best from them, considerable thought must be given to how they will be used by drivers, and managed by healthcare estates over time, so that they can be designed to be operationally cost-effective throughout their lives.

The benefits of EV chargers

Before we look at the challenges and solutions of deployment, let's reconsider the value of putting in EV chargers in the first place. Among the key such benefits are:

- Decarbonising your estate: This is the obvious one. Chargers support internal combustion engine (ICE) vehicles, which can be replaced with cleaner electric ones.
- Employee perks: Staff could be given access to low cost charging as a perk, incentivising them to switch to EVs.

As the UK's largest employer, and home to almost 500,000 car parking spaces, the NHS 'has an advantage of scale that justifies considerable thought to getting its EV deployment strategy right'.

The latest figures show around half of NHS Trusts have an onsite EV charging infrastructure, and 43 per cent are planning to install charging facilities over the next few years.

Many NHS staff will not have driveways at home, but guaranteed affordable charging at work could offer a significant incentive.

- Greater patient and visitor convenience: Easily accessible car park charging provides added convenience for patients, who can benefit from charging their electric vehicles during the 'downtime' of being in hospital or for people visiting.
- Generating extra income: Many chargers could be run at a profit, generating valuable revenue at scale for NHS Trusts
- Positive public perception: 'Going electric' demonstrates the health facility's commitment to promoting sustainability, improving its public image. As community leaders and influencers, hospitals that embrace EV technology will be seen to encourage and motivate others to make the transition to more sustainable futures, reflecting a reputation as responsible and forward-thinking institutions.
- 'Future-proofing': By 2030, it is anticipated that there will be between around 8 and 11 million hybrid or electric cars in the UK, if uptake is aligned with the Road to Zero (RTZ) targets. By 2040, the number of hybrid or electric cars could reach 25.5 million. Accommodating the growing EV driver numbers with accessible chargepoints could be highly beneficial for many types of facilities within the healthcare estates sector.

Consider the user experience

Hardware and infrastructure are often the focus in electrification of transport, but lately there has been welcome attention on the opportunity that software can present to unlock the full benefits and capabilities of that hardware. Indeed, beyond getting chargers in the ground, health estate managers need to think about how they want people to interact with, and pay for, the chargepoints. This is often an afterthought, in that they may assume the chargepoint provider will provide an adequate solution. However, that can be an oversight that leads to systems that are not fit for purpose or become redundant over time.

Considering 'the whole digital experience'

Thinking of the whole digital experience in its own right – in particular the payment – rather than as a bolt-on, can help ensure that charging infrastructure delivers. Think of the user experience as separate – as a digital platform in the cloud that is lifted away from the physical charger. Once you separate the physical from the digital, you open options to meet user needs and evolve as those needs change.

When setting up your EV charging systems on healthcare estates, therefore, we need to think beyond the charger. Much has been written about getting them in the ground, and we won't revisit that here. However, in 'getting them in the ground' our conversations with industry suggest that the following are points that are often overlooked, and Estates managers of all stripes often wish they had thought about them earlier:

- Consider what tariff will work best for you. For instance, how much revenue do you want to generate, or is the goal to incentivise uptake and you simply want to make enough to cover running costs. Will this change over time? Do you want different payment systems and rates for fleets, staff, and visitors? You may even want to set up more complex systems, such as ones where all staff get, say, 10 hours per week at a reduced rate, but then revert to the market rate. This is all very hard to do with physical infrastructure, but it is much easier if the physical charger is only starting and ending the change, and all the data and payment processing exists in a cloud-based software platform, that can be setup and adjusted remotely.
- Being able to set, vary, and update tariffs across your estate will make your life easier, as charging infrastructure expands and needs change. As new legislation aimed at improving the chargepoint experience looms, requiring simple payments, multiple options, and interconnections between different payment schemes, it's clear that future EV charge point must combine the physical charger with a digital equivalent in the cloud.

Paythru advises: 'Think of the user experience as separate – as a digital platform in the cloud that is lifted away from the physical charger.'

- Do you want your own app? Most NHS Trusts will partner with chargepoint operators on deployment, who will usually have their own app through which users can access the chargepoint. However perhaps you also want your own proprietary app – or to upgrade an existing app to allow EV charging. That puts you in control, allowing you to offer multiple services, and collect better data. You may even want separate apps for staff and the public, or a dedicated app for staff, and integration with other widely-used EV chargepoint apps for the public. A cloud-based platform can be the back end for your own payment app, but also allow anyone else's payment app to integrate, so drivers have options.
- Will you need to handle multi-party payments? A growing user frustration is paying for parking and charging. These can be hard to integrate; especially given that many car parks have existing processes for paying for parking. A payment platform can sit as a layer in between, giving the user a single payment, and then splitting the cost between different parking and EV divisions' bank accounts. The same goes for any multi-party payment. For example, you may want to manage the chargers yourselves, but you will need to pay the chargepoint operators to install and maintain them. One solution to reduce risk could be a cost-sharing arrangement; that could involve a monthly payment of a percentage of revenue. Once a percentage is agreed, dividing the fee into two separate bank accounts upon payment would reduce a lot of administration.

'Going electric' demonstrates the health facility's commitment to promoting sustainability, improving its public image, Paythru maintains.

- Do you want to make your chargers more widely available? There will be times when chargers should be exclusively for staff and visitors, but some locations may have quieter times when chargers could be offered to the general public, or to local fleets to charge up, in order to generate more revenue from your chargepoint investment. This may mean putting them on Zapmap, and setting times when they appear as available, or setting up a separate payment system so that approved third party vehicles can use them at certain times.

Payments 'not as simple as they seem'

The key learning here is that payments – and the whole user experience that goes with them– are not as simple as they might seem. With so many parts (chargepoints, apps, parking

Paythru says: 'Undoubtedly hospitals, medical centres, and clinics, and their Estates and Facilities managers, can install and manage an efficient charging infrastructure..'

spaces etc.) and players (CPOs, different departments at local authorities), it's important to embrace technologies that can handle this, and set yourself up to manage infrastructure that will inevitably evolve.

The buzzword in the tech industry is 'platform' – in layman's terms this is the bit that sits in the middle and makes everything else work. Think of Uber. It does not itself provide a physical service; rather it offers a cloud platform that connects drivers and passengers. Both share their data; both have their own version of the app. The platform handles the locating, communication, and payment split, and can change prices and cater for different users' needs and different times while all being seamless for the user. Similar types of platforms can handle the complex relationships between EV chargepoints, car parks, and drivers.

Retrofitting card readers

It's also worth mentioning that the proposed retrofitting of contactless card readers onto EV charging hardware by the UK government could have unintended consequences and limitations that could have detrimental effects on the EV industry's progress, and unforeseen environmental concerns, not just for healthcare estates, but for wider applications too. Government may therefore want to consider including the development of cloud-based and roaming payment systems as an option for payment alongside contactless or as an alternative. Closed networks that require pre-registered membership or exclusivity should be urgently reassessed, as they exclude new users from being able to access vital charging when needed. Cloud-based and roaming payment systems should also become accepted as part of the customer experience alongside contactless, to future-proof the EV industry.

Undoubtedly hospitals, medical centres, and clinics, and their Estates and Facilities managers, can install and manage an efficient charging infrastructure, simultaneously solidifying their commitment to patient care and environmental responsibility. Too often though the sole focus is on getting enough chargers in the ground. This is important, but it should not be done at the expense of a smooth experience for all users. To support their estates to transition to clean mobility, Estates and Facilities managers should carefully consider the different user experiences at the change point, and the role that innovative digital solutions can have in enabling that.

Reprinted from the Health Estate Journal, the monthly magazine of the Institute of Healthcare Engineering and Estate Management ('IHEEM').

Sara Sloman, Chief Strategy Officer, is the driving force behind the strategic direction of Paythru, leveraging her extensive experience in delivering sustainable transport projects in both the private and public sectors over the past two decades. Her expertise enables her to lead the development and implementation of effective EV strategies. In recognition of her contributions to the field, she was honoured as GreenFleet EV Champion in 2018, and has consistently been included on the GreenFleet '100 Most Influential' list since 2019, achieving the number 32 position in 2023. Her dedication to sustainability, ESG, diversity, and inclusion, earned her the Barbara Cox Woman of the Year award in 2023.

Paythru says its 'highly customisable' cloud-based payment platform 'overcomes charging pain points by putting drivers at the centre of the charging experience'. The company said: "By moving the chargepoint payment into our cloud platform, we lift the user experience away from the physical charge point. That allows behind-the-scenes integration with other parties, whilst providing a single clear transaction for the user."

THE NEXT GENERATION OF RICKARD VAV DIFFUSERS FOR OPTIMISED INDOOR COMFORT

There is a growing demand for products that can create comfortable indoor spaces while maintaining a healthy and productive working environment. At the same time, new government policies and the dramatic increase in energy costs have created a greater need for products and systems that utilise energy-efficient technologies.

Our next generation of Rickard VAV Diffusers provides occupants with optimised thermal comfort and are easier to install. These diffusers can operate through a BMS or Rickard standalone software, and reduce power consumption by lowering demand on the air handling system. The system can accommodate a single Rickard VAV diffuser or can be expanded to control thousands of networked VAV diffusers. Each Rickard diffuser is self-modulating, allowing for easy control of smaller zones and making them more comfortable for occupants. Combined with smart commissioning software, this VAV design enables substantial benefits.

Fantech Product Manager for Intelligent Ventilation Systems, Peter Henry, said the next generation of Rickard VAV diffusers has been redesigned for easier installation. “The new design simplifies commissioning, as each Rickard diffuser automatically zones when it is first powered,” he said. “ Additionally, all diffusers are now configured as masters, as it is generally preferable to monitor the temperature where each diffuser is installed. If any diffusers do need to be assigned as slaves, they can be easily changed using the Rickard MLM software.”

Rickard diffusers only allow the required amount of conditioned air to enter the space, determined by the temperature in the space and the set-point on the diffuser’s integrated sensors and wall thermostat when installed. The set point on individual diffusers can be easily adjusted for personalised comfort control over the environment during any part of the day.

“These re-engineered diffusers help with commissioning on several levels,” explained Peter. “They are designed to be more reliable, with an all-powder coated metal construction, and the complexity of parts on the diffuser has been significantly reduced to streamline installation.”

A key benefit of Rickard VAV diffusers is their ability to reduce the demand on the fan system by providing only the required volume of hot or cold air to enter the conditioned space. If the air volume required reduces, the diffuser’s aperture size also reduces which creates additional pressure in the ductwork. This pressure signals to the air conditioning system to slow down, which in turn saves fan energy. If the air volume required increases, the diffuser’s aperture opens, allowing more conditioned air to enter the space.

Standard features now include a temperature sensor at the neck of every ceiling diffuser to monitor temperature at the outlet point before supply air enters the space. Plus, an onboard thermostat beneath the diffuser faceplate to accurately monitor the temperature within the space. This ensures consistent and customisable climate control for optimised thermal comfort in the building.

Peter added, “Occupancy sensors has also been made standard on every Rickard diffuser. When a room with occupancy sensing is vacant, the Rickard diffuser will automatically reduce the supply of air to that room, which can further reduce energy costs.”

For further information on the next generation of electronic Rickards VAV diffusers, contact Fantech on 1800 133 379.

CENTIGRADE MEDICAL GASES

Centigrade Medical Gases Pty Ltd specialises in Medical Gas and Laboratory gas Installation, break down repair, maintenance, and commissioning services. Our dedicated team of seven includes a manager, supervisor, four technicians, one apprentices, and administrative support. We play a vital role in ensuring the functionality and efficiency of Medical Gases systems, particularly in industries like healthcare, university and pharmaceuticals that rely on controlled environments.

Our mission is to be leading the charge in healthcare innovation, focusing on the critical role of medical gas and laboratory systems. We're committed to delivering tailored, high-quality solutions that support patient care and enhance medical procedures.

Visit www.centigrade.com.au or www.centigrade.com.au/medical-industrial-gases/

SAVE MONEY AND BENEFIT THE ENVIRONMENT

KAESER compressors and the compressed air they generate are used in a multitude of applications. However, the fact that compressor exhaust heat can be harnessed often remains forgotten. This opportunity saves energy and costs, while also reducing the CO^2 footprint.

100% of the drive energy supplied to a compressor is converted into heat. This heat could simply be conveyed away, however, there are plenty of ways to make use of this readily available energy source.

The simplest, most efficient method is to use the compressor heat directly. That is, air ducting directs the heat to neighbouring rooms or buildings.

In addition to providing space heating, hot compressor air can be used for applications such as drying processes, generating hot air curtains or preheating burner air for heating systems. Compressor exhaust heat can also be used to supply hot water heating and service water systems.

For more information about KAESER heat recovery : https://au.kaeser.com/products/rotary-screw-compressors/heat-recovery/

WHY DO WE TOLERATE INFECTIOUS AIR IN THE WARDS OF OUR HOSPITALS?

Neo-natal wards? Oncology wards? Burns units? These patients suffer high consequences for respiratory infections, yet HEPA filtration standards are not generally applied.

Why? Because conventional HEPA filters lead to massive increases in costs, energy and emissions.

But that's a problem that has now been solved. PlasmaShield provides HEPA standard decontamination - plus deodorisation and disinfection – yet avoids the increase in costs, energy and emissions.

Your engineering team can learn more at https://plasmashield.com.au/

BUILDING SERVICES RECRUITMENT AUSTRALIA (BSRA)

BSRA NICHE ▸ AGILE ▸ CONNECTED ▸ TRUSTED

Established in 2006, **Building Services Recruitment Australia (BSRA)** has extensive experience recruiting for hospitals and across the healthcare industry.

Specialising across Facilities Management hard services, we recruit Project Directors, Construction & Engineering Managers, Project Managers, Project & Technical Engineers, Contract Managers & Administrators, Commissioning Managers, Asset Managers & Reliability Engineers, Energy Engineers, Quantity Surveyors, Essential Services Managers, Auditors and Facilities Management Specialists.

We offer both permanent placement and short-term labour hire solutions servicing commercial and government clients at federal, state, and local levels.

Visit the Building Services Recruitment Australia Website at https://www.bsra.com.au/

SOLVE SMELLY BATHROOM DRAINS WITH DRAIN MATE®

Having a clean and hygienic environment for residents and patients is paramount for a successful Healthcare business. You can clean all you like, but it can be difficult to get rid of those bad smells coming from the bathroom floor drain and the last thing you want is the smell being what is remembered about your Healthcare facilities.

Using harsh and nasty chemicals is a short term and costly solution. The simple, easy, cost effective and environmentally friendly solution is Drain Mate®.

How it works

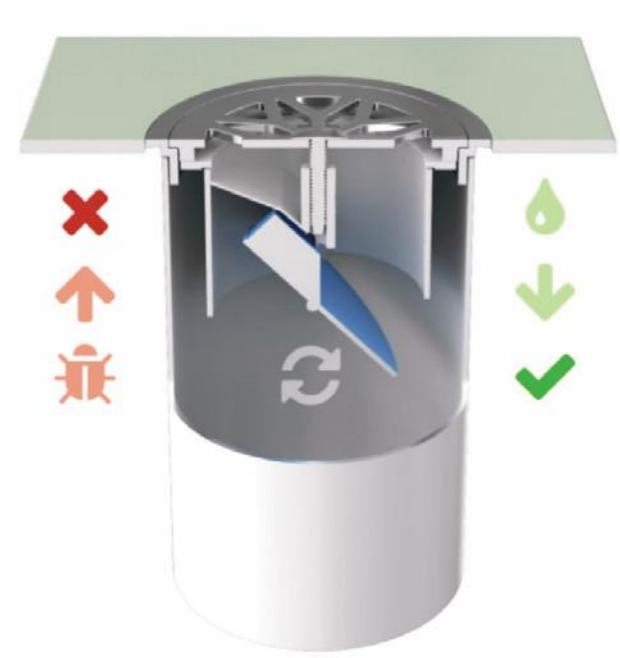
Drain Mate® is a one way floor drain that fits easily into your existing standard 100 mm (4 inches) floor drain. Drain Mate's unique self-closing trap door lets waste and water through, but keeps smells, pests, noise and overflow out.

Design and manufacture

Designed, invented, and made in Australia, Drain Mate® is made from quality ABS plastic, and is 100% recyclable. Drain Mate® has also been subjected to testing by a recognised testing laboratory for Australian Standards and has been granted Level 2 Certification and complies with approved specifications WMTS-040:2022 (License: 023117). Drain Mate® is easily installed; no plumber required and attaches to your existing floor drain grate cover using one of our four supplied washers and attachment screw. There is also no need for any additives for Drain Mate® to function correctly and is easily removed for cleaning.

Where it is used

Drain Mate® has been installed in many, many bathrooms throughout Australia, both residential and commercial, providing an immediate solution for drain smells and pests.



Drain Mate® can be installed anywhere there is a 100 mm floor drain, including homes, apartments, hotels and motels, restaurants, hospitals and healthcare facilities and schools.

More information

For further information on Drain Mate®, visit our website www.aussiedrainmate.com.au for a demonstration video, installation slide show, where and how to buy Drain Mate®. There is also an FAQ section on the website that can answer your questions about the manufacture Drain Mate®; fitting, operation, and maintenance of Drain Mate®.

You can also simply contact Mark on 0400 193 821 to discuss how Drain Mate® can solve your 100 mm floor drain problems.

HydroChem

HIGH RISK WATER SYSTEMS

CSSD AS/NZS 5369

Legionella

Risk Management

TMVs

Disinfection Systems

Cooling Towers

Boilers

WE CARE ABOUT YOUR WATER

Australian owned and operated for over 40 years

hydrochem.com.au