

## 4<sup>th</sup> Australian Universal Design Conference

### LIST OF ABSTRACTS

#### **Aligning enabling environments for people with autism and dementia within universal design**

**Presenters:** *Terri Preece*, Environmental Design Consultant, Dementia Training Australia, and *Shelly Dival*, Autism Design Specialist, Enabling Spaces

Oral Presentation

Dementia is the single greatest cause of disability in older Australians. While 3 in 10 people are over the age of 85 and almost 1 in 10 people over the age of 65 have dementia, it is not considered a normal part of the ageing process (NATSEM (2016) Economic Cost of Dementia in Australia 2016-2056).

Autism Spectrum Disorder (ASD) is often considered a hidden disability. It can go undiagnosed and it is not a condition recognisable by a person's physical appearance. An estimated 1 in 70 people in Australia are diagnosed with ASD. It is a lifelong condition. What do these disabilities have in common? They are conditions that affect the brain and behaviour such as socialisation, communication and the perception of their environments.

Terri Preece has been consistently applying evidence-based dementia friendly principles in residential and public environments and believes dementia friendly design is enabling for everyone, including ASD. Shelly Dival has explored the connections between ASD and creating more enabling living environments and believes the guidelines can be applied to a much broader range of disabilities, including dementia.

How much does designing environments for people with dementia and autism actually have in common? What are the similarities and the differences between designing for the 2 disabilities? Is it just about sensory perception or is there more to be unpacked? And can creating a coordinated approach still meet the individual requirements of the person with dementia and the person with ASD? This presentation will share practical knowledge and expertise to better understand how to align designing for these two disabilities into a more inclusive design approach under the one umbrella of universal design.

#### **It's the little things that count: A case study of an age and dementia friendly streetscape.**

**Presenter:** *Guy Luscombe*, Principal, System Architects

Oral Presentation

With over 90% of older people opting to live at home as they age and some 70% of people with dementia staying in their home environments, the case for a universally designed

neighbourhood becomes even more important. Moonee Valley City Council, realising that the particularly large number of older people ageing in place in its area, developed a 'toolkit' to assist them to implement more age and dementia friendly public spaces.

"Age'n'dem" as it became known, used existing evidence and a user reference group to develop 'tools' - practical advice, guidelines and techniques – to guide those given the task of planning, designing, building and maintaining these spaces. But did it work?

Using a case study of Union Road, Ascot Vale, and referencing the toolkit, this presentation will show what was done, how it was received by users and what was learnt from it. An ongoing project, and almost invisible, it was a case of the little things that really made a big difference, and shows that, with a bit of thought and design, it is relatively easy to make local neighbourhoods more inclusive, user friendly and robust enough to meet the future demands of our increasingly urban environments.

### **Everyone, Everywhere: Exploring the interface of Communication Access for People with Communication Disabilities with the Principles of Universal Design**

**Discussion Leader:** [Georgia Burn](#), Communication Access Coordinator, Scope

Table Topic

The ability to socially interact and participate in community life are essential components of social inclusion. People with communication disabilities are vulnerable to social exclusion, due to challenges with communicating. People with communication disabilities may experience a range of communication difficulties of physical, sensory, cognitive/intellectual, neurological and/or psychosocial origins.

Since 2011, Scope (Aust.) has worked with businesses, services and organisations within Victoria, Australia, to create communication accessible communities, and award eligible services with the Communication Access Symbol. Communication access has attempted to act as a vehicle for the social inclusion of people with communication disabilities. It is said to occur when *"people are respectful and responsive to individuals with communication disabilities, and when strategies are used to support successful communication"*. This grass-roots initiative has gained world-wide momentum, with early-adopters now building this communication access movement globally in places such as Canada and the UK, and has prompted an increasing number of businesses and organisations to seek this accreditation as part of Accessibility Action Plans or wider organisational policy. In 2018, Speech Pathology Australia established the National Communication Access Alliance, and has embarked on a project to develop national communication access standards working in collaboration with Standards Australia.

Communication access is still an emerging concept. There appears to be similarity between communication access and the concept of universal design; however, the exact relationship is yet to be defined. The aim of this study was to therefore begin conceptualising this connection.

A systematic literature review study was conducted, which aimed to ascertain the key elements of universal design to provide a basis for which communication access can be compared. Universal Design relating to the Built Environment, Learning, and Web Accessibility were explored and considered in relation to communication access. Findings and future work will be discussed.

### **Creating communication accessible public transport services for everyone, everywhere, everyday**

**Presenter:** *Georgia Burn*, Communication Access Coordinator, Scope

Oral Presentation

By the end of 2019, five components of public transport services in Melbourne, Victoria, will be accredited with the Communication Access Symbol. This means that every passenger, including people with communication disabilities, can communicate with trained staff when travelling around Melbourne and Victoria. Historically, the accessibility of public transport has focused predominantly on physical access. However, making transport services accessible and inclusive not only includes making the physical and built environment accessible, but true inclusion also involves creating services that consider and accommodate the social environment as well. "Communication access occurs when people are respectful and responsive to individuals with communication disabilities, and when strategies and resources are used to support successful communication" (Solarsh et al, 2013). The Communication Access Symbol was launched in 2011 and aims to award businesses who have undergone an accreditation process in order to improve their customer service with customers who have a communication disability.

In Melbourne, Australia, the governing body that oversees public transport is the Department of Transport; with a range of contracted operators connecting passengers to the community across train, tram and bus networks. Several operators, including V/Line regional rail, Public Transport Victoria (PTV) call centre, five PTV hubs, Yarra Trams and Metro Trains Melbourne (MTM) have all recognised the importance of communication access and engaged in the Communication Access Symbol accreditation process. This presentation will describe the communication access journey for these public transport providers, and present case studies on the communication access movement that is occurring more broadly.

## **Making a Place for Joy: How the design of the built environment enhances happiness and quality of life.**

**Presenter:** *Ryan Loveday*, Director, Fulton Trotter Architects

Oral Presentation

Connecting with the conference's theme of '*Thriving with Universal Design: Everyone, Everywhere, Everyday*' this presentation will discuss the practical relationship between the design of the built environment and the opportunities for social cohesion, happiness and quality of life afforded by that environment. Drawing directly from our own experience in the design of aged care and health facilities; we make the case that what is good, supportive and enabling for the most vulnerable of us, in these kinds of places, is in fact, good for everyone, everywhere.

With a play on words, we address the fact that Joy is both an essential emotional aspect of healthy existence, but also a real person with her own story and history. While Joy clearly lives in institutional aged care, what can we learn from her circumstances, and are her needs fundamentally different from anyone else's? What do we really need to be happy?

Recognising that for the most part we simply accept buildings as passive backdrop to our lives, we show that the built environment has a profound impact on how we feel, how we behave, how we live; and how we interact with each other. With social isolation shaping as the new cancer of our age, how do we design for Joy, or in other words, supportive space that provides a wide range of choice, autonomy, connection and meaning?

In supporting Joy, we expand on 10 fundamental design strategies that we believe aged care can teach us in the broader context- strategies including the blurry edge, sticky spaces, pattern & detail, connection to country and several more. We finish by focussing on the need for empathy in design, recognising that at a human scale our buildings can be a fundamental form of restraint (a hot topic in aged care), or a powerful facilitator of growth, opportunity and happiness.

## **Creating a new standard of universal design in holiday park cabins**

**Presenter:** *Garry Ellem*, Holiday Parks Coordinator, Lake Macquarie City Council

Oral Presentation

The project of creating a bespoke design for cabins within the Lake Mac Holiday Parks group targeted an inclusive design to meet the needs for a broad range of customers. This was not just about focusing on the archaic concept of someone in a wheelchair. This project focused on developing a suitable bespoke cabin design as well as what else can be done to coincide with this new mindset and improve the overall experience at the parks.

So, what's wrong with an off the shelf product? Everyone else seems to utilise these. A review of typical cabins revealed a startling situation; there were some common shortfalls that nearly every cabin contained.

- Can you go up the ramp when it is raining without getting wet?
- Are there glasses or microwaves, or kitchen appliances stored higher than the kitchen bench? Can you reach these? How about at the back of the lower cupboards?
- Can you open/close the window and blinds?
- Or, in the case of one award winning holiday park, can you use the spa bath in your luxurious access cabin if you have a need to use a wheelchair or a walking frame or... do the **steps** up to the spa bath stop you?

This presentation will discuss the project scope provided to architectural and industry experts, testing the market for new fully accessible designs, and to include those with first-hand experience in the design process. The main elements of the design process were: a floorplan suitable for a wide range of users including families; minimal environmental impact and energy efficiency to reduce ongoing costs; and making inclusion a new standard throughout the park so that the cabin isn't sitting in isolation in the park.

### **From niche to mainstream: local government and the specialist disability housing sector.**

**Presenter:** *Linda Martin-Chew*, Team Leader Projects and Infrastructure, City of Whittlesea, and *Rosie Beaumont*, former Metro Access Officer, City of Whittlesea

#### Oral Presentation

The City of Whittlesea supports one of the fastest growing communities in Victoria, with a population of 220,000 and more than 12 housing developers active across the municipality. Whittlesea also supports a significant population of residents with disability and an established disability housing sector, historically dominated by institutional and group home accommodation. In 2016, the National Disability Insurance Scheme (NDIS) rolled out across the municipality, offering substantial investment to grow a Specialist Disability Accommodation (SDA) market. This investment represented a unique opportunity for residents with the highest levels of support needs to move beyond the bounds of institutional living into housing that approximated a mainstream experience of home.

This presentation tells the story of the City of Whittlesea's journey into this emerging disability housing market, initially pulled in by the advances of speculative developers but then deliberately exploring the opportunities to progress the Council's strong policy commitment to accessible and affordable housing.

At the heart of this journey was community-based consultation with disability advocates, housing developers, strategic and social planners and residents with disability. Conversations revealed challenges including a disconnect between the areas of greatest

need in the community and SDA investment, a growing number of residents with disability entering the private rental market, planning proposals that responded to the funding opportunity of SDA but not the social intent, a lack of regulations to prohibit poor housing models and planning conventions and community concerns that created barriers to innovation.

Feeding this local intelligence into the policy planning and review cycle, Council developed strategies to reduce barriers to the supply of appropriate disability housing and strengthen industry engagement to promote accessible design and housing models of benefit to the whole community.

### **Evaluating Support, Technology and Built Design in Housing for People with Disability and Complex Care Needs**

**Presenter:** *Rebecca Jamwal*, Research Fellow, Summer Foundation

#### Oral Presentation

In recent times, Australians with complex care needs have seen their housing options increase via the development of housing demonstration projects (HDPs). HDPs are based on the premise that well located, appropriately designed housing - combined with quality support - can increase independence, wellbeing and community integration, while reducing lifetime care costs. The considerable amount of planning behind the built, technology and support design within HDPs has been clearly documented, and represents significant capital investment for funders. It is therefore important to understand how these environments are being used by those who reside within them. This research aims to explore how design and technology features, built into HDPs, are used by tenants, and how each of these environmental factors influence tenant participation at home.

Participants are people with disability and complex needs, aged 18-65, who have recently moved into an HDP. Semi-structured interviews will be undertaken 3-6 months post move to gain the perspective of participants on their use of, and interaction with, the built, technology and support environments. At one month following, a time sampling methodology will be employed to collect data via observation, to document the interaction between each of these environmental factors. A final interview will be undertaken to discuss the research team's observation of the participant's interaction with the built, technology and support environments.

This presentation will explore the development and use of the time sampling observation tool designed for use in this study, and present case study and initial findings from our preliminary data collection. Research findings aim to guide future housing design for people with disability and complex needs and ultimately reduce the risk for this group of admission to inappropriate settings, such as residential aged care.

**How to best teach Universal Design to design students at TAFE? A presentation of results; regarding teacher and coordinator recommendations, new ideas and potential new projects.**

**Presenter:** *Bec Renton*, Health Science Research Student, Deakin University

Oral Presentation

Universal Design (UD) is a well promoted design tool within global, national and state policy. UD is used in the design process to create accessible built environments, which in turn promote health and wellbeing to all. To achieve the benefits of UD, architectural professionals must learn the skills to implement UD in practice. This study will explore current policy and legislation promoting UD as well as analysing a current vocational building and design architectural course to examine to what extent current course curriculum incorporates UD and how much this aligns with the levels promoted in policy. Interviews with course coordinators and teachers will then gain insight into current architectural educator perspectives and understandings of the concept of UD as well as gaining further insight into what is taught and what is believed to be the best way to incorporate UD content into the curriculum.

This research project aimed to see what levels UD and accessibility beyond compliance were being taught within a Victorian Vocational Architectural Design course, the study then aimed to gain teacher and coordinator perspectives on UD and its philosophy, how they are teaching UD, if at all, and also how they feel UD could best be taught to students in the future. The presentation will discuss the results, and will talk about potential ideas for implementing the recommendations from participants.

**Keywords:** universal design; architecture; education; inclusive design; accessibility; curriculum; vocational; beyond compliance.

**Community-based Studios for enhancing Students' Awareness of Universal Design Principles**

**Presenter:** *Hing-Wah Chau*, Academic Teaching Scholar, Victoria University.

Oral Presentation

A series of community-based design studios were delivered at the University of Melbourne for postgraduate architectural students from 2017 to 2019 to draw their awareness of universal design principles and incorporate those principles in their design assignments.

A design studio is a place of experimentation and exploration. Students are encouraged to propose solutions to respond to our community needs. Bringing real-world issues into design studios enables students to equip themselves with the capabilities to formulate corresponding design strategies for built environment, especially to cater for the specific needs of people with disability and older adults.

Through the engagement with different stakeholders, including practising architects, urban designers, non-profit organisations and local council, students are required to assess the current site context and carry out site analysis, prepare precedent case studies, attend inclusive design workshops, prepare schematic design, leading to their detailed design and final presentations.

In this paper, the course structure of these community-based studios is firstly introduced, followed by an analysis illustrating how students' awareness of universal design principles can be enhanced. Potential improvements are discussed and further guidance for replicating similar studios at other institutions are given.

### **Design Matters to make well spaces**

**Presenter:** *Michael Walker*, Principal Advisor Universal Design, Victorian Health & Human Services

#### Oral Presentation

The presentation will discuss and demonstrate the links to relevant human rights instruments; provides evidence for the problems the policy sets out to address. It will discuss biophilic approaches to design, the use of colour and MSE (multi – sensory environments) environments in the health space.

The presentation will showcase exemplars in aged care setting, Youth Prevention and Recovery centre, and Emergency departments. Using Universal design involves designing spaces that are functional for the full range of diversity, and for addressing the physical, sensory and cognitive needs of all of the community. The presentation will demonstrate the use of Universal design principles which allows for flexibility and adaptability to meet the full range of additional needs of all people of today and of the future, as well as being responsive to ongoing innovations in the health sector.

The presentation will discuss and highlight case studies in which Universal design places human diversity at the heart of the design process so that buildings and environments are designed to meet the needs of all users. The objective of universal design is to ensure that all people can access, use and understand the environment to the greatest extent and in the most independent and natural manner possible, without the need for adaptations or specialised solutions. The presentation will demonstrate the commitment to achieving design outcomes:

- Body fit - accommodating a wide a range of body sizes and abilities.
- Comfort - keeping demands within desirable limits of strength and stamina.
- Awareness – insuring that critical information for use is easily perceived.
- Understanding – making methods of operation and use intuitive, clear and unambiguous.
- Social integration – treating all groups with dignity and respect.



- Personalization – incorporating opportunities for choice and the expression of individual preferences.
- Cultural appropriateness – respecting and reinforcing positive cultural values.

Case studies include; Emergency departments and Autism, Aged care and mental health. Aged care design and Youth Prevention and recovery centre. Alcohol and other Drug Residential rehabilitation facility.

### **Is occupation the missing link to advancing the universal design of public built environments?**

**Presenter:** *Valerie Watchorn*, Lecturer, Deakin University

This presentation will outline findings from an integrated literature review on the universal design of built environments and recent research that extends on these findings.

The Person-Environment-Occupation model was used as a theoretical framework to synthesise literature published on universal design and built environments between 2011 - 2017. Thirty-three peer-reviewed journal articles were included, and findings revealed that much of the current discourse focuses on the person and the environment, with the occupations carried out in built environments and the interaction between these domains not referred to in much detail. This gap in literature highlights a need for further knowledge on how people interact with, and use, built environments for meaningful activity and social participation. Although such information on the usability of environments has the potential to strengthen the empirical basis of universal design and advance its application, perceptions of usability are subjective and difficult to collate at population levels. Findings from a recent scoping study on the evaluation of universal design in public built environments suggest that involving user-experts, particularly people with lived experience of disability, in design processes can provide valuable insight into designing for usability not just accessibility. However, it is not known who should be included as user-experts and what factors serve as barriers and facilitators to the meaningful participation of people with disabilities in design processes. Research is currently underway to examine how co-design processes may serve to advance the universal design of public built environments.

### **Housing older Australians: wants, needs and innovative inclusive approaches**

**Presenters:** *Guy Luscombe* and *Kelli Dendle*

Oral Presentation

Unmet demand for appropriate, accessible and affordable housing for the large emerging cohort of older Australians is increasing due to inadequate supply, reduction in homeownership among older adults, growing need for universal design features, and a

preference for ageing-in-place. Exploring innovative and inclusive housing models for people as they age is critical.

While the raw numbers of housing options for older people may be rising, e.g. retirement villages, many options are marketed on a full cost-recovery basis, requiring considerable entry capital and restricting future flexibility for residents. Affordable housing options are frequently located on urban fringes with concomitant disadvantages e.g. lack of proximity to services. Better located or universally designed housing suitable for ageing-in-place is in low supply and unaffordable for all but the relatively wealthy.

This presentation will be given by members of the Australian Association of Gerontology's special interest group on Housing and the Built Environment, which includes representatives from government, academia, service provision and private practice. A brief review of the housing issues facing older people will be presented. The implications of these issues will then be explored – for governments, the housing industry, service providers and older people themselves. Finally - and importantly - this will be followed by an informed collaborative discussion about potential solutions.

The presentation will: stimulate discussion in this space; Influence and prompt policy which enables and promotes appropriate residential models; Influence residential design, funding and delivery approaches; Stimulate people to think more holistically outside their area of specialty; and lead to further collaborative projects that increase knowledge and improve housing for older people.

### **Understanding the differences among Universal Design and Inclusive Design implementation: Context of Indonesian Public Library**

**Poster Authors:** *Gunawan Tanuwidjaja*, PhD Candidate, *Assoc Prof Janice Rieger*, and *Prof Jill Franz*, Queensland University of Technology. Presentation by Janice Rieger.

The promotion and protection of the rights of Persons with Disabilities is central to the UN Convention on the Rights of People with Disabilities (UNCPRPD) which also adopted in Republic of Indonesia. Following the recommendation of UNCRPD, several Indonesian national regulations advocate for the rights of Persons with Disabilities (PwDs) and Universal Design implementation. The legislation operates over three levels adding to the complexity of disability-related policies in the country. However, the implementation of the Indonesian regulations remains problematic with many buildings, especially public libraries.

In response to such barriers, previous studies suggest to improve the educational facilities and services. Recognising that public libraries role in educational provision of PwDs, this study will identify the barriers and opportunities for the Universal Design (UD) or Inclusive Design (ID) of Public Libraries in Indonesia and Australia. In this initial stage, Both UD and ID concept are evaluated because of the USA and the UK design process model facilitating PwDs and older people. Despite of the difference, both concepts will be discussed for this PhD study.

This study will involve an exploration of an Indonesian and Australian Public Library. In particular, the study aims to investigate the barriers and key success points of implementing Inclusive Design (ID) in public libraries from Indonesian and Australian stakeholders' perspectives. The purpose of this study is to create an ecological model of the stakeholders' participation in ID implementation in Indonesia and Australia. This study uses a Grounded Theory (GT) methodology supported by Case Study Research (CSR), and Post Occupancy Evaluation (POE) framework. The study will utilise document evaluation, stakeholder interviews, and walkthrough evaluations of the selected case libraries.

### **Universal Design and Playspaces 'from Concept to Completion'**

**Presenter:** *Evan Wilkinson*, Regional Coordinator, Sport and Recreation Victoria

Oral Presentation

For the past decade Sport and Recreation Victoria has been playing a leading role with the application of Universal Design principles into community sport and active recreation facilities across Victoria, with the goal to enable and empower a diverse population by improving human performance, health and wellness and encouraging social participation.

Sport and Recreation Victoria's, Regional Coordinator, *Name* will provide an insightful and informative presentation on a recently completed regional play space project at Kingston Park in Ocean Grove, which was funded in partnership between Sport and Recreation Victoria and the City of Greater Geelong. Due to its broad appeal in catering for a broad range of users and age groups, this brand new play spaces that has considered the principles of Universal Design from the outset provides a great platform to review and discuss in more detail.

Spoken from the funding partner's perspective the presentation will address the different stages of this project's lifecycle and how the principles of Universal Design were considered along the journey from the initial funding application and design phase through to the completed project.

The presentation will also discuss the benefits of the funding partnership between State and Local Government and whether or not the inclusion of the principles was successful in practice, the involvement of SRV as the funding partner during the design phase and how well the completed project was able to deliver an inclusive and innovative play space.

### **Different Buildings for Different Minds - Designing spaces and places for autism while creating truly inclusive communities.**

**Presenter:** *Shelly Dival*, Autism Design Specialist, Enabling Spaces

Oral Presentation

Individuals with Autism often incur social, educational and economic challenges and discrimination. Autism can impact many facets of a person's life, including the way a person

relates to his or her environment. Interaction with our built environment can be particularly debilitating with social isolation and the inability to work effectively being just two examples of the impact of a poor environment. Currently in Australia there is minimal expertise across industry and government in understanding how to create neurological inclusive environments. Autism is the single largest disability group for participants of the NDIS at 29%. Combined with other neurological groups, the number climbs to 2/3rd of participants with no physical disability. Yet our building codes and policies, and community and industry models for inclusion only take into account physical disability.

To create truly inclusive communities we need to change the way we approach building design and community planning by ensuring neurological consideration in our decision making. Drawing on over 20 years in building design, reflecting on global research undertaken through a Churchill Fellowship, and her role as an international advisory board member for research, the author, whose work is gaining national and international attention, will take conference participants on a tour of global best practice in architecture when designing for autism. How architecture relates to, and enhances other services and programs to create enabling spaces for people with autism, others in the community such as those with dementia and even the neuro-typical.

Applied to the Australian context the discussion will include the current state of programs and research regarding autism and the built environment and how Australia has the opportunity to collaborate on a global scale and rise from having a limited knowledge base to becoming a leader in the field while working towards true inclusion policy and practice.

**Note:** There is a late change to the following presentation: Margaret Ward will be updating delegates on the decision to mandate access features in all new housing. Co-presenter is Hugh Bartram from Victorian Department of Planning. The paper for the original presentation was published by [Griffith University](#).

### **Universal design in housing: Reporting on Australia's obligations to the UNCRPD**

**Presenter:** *Margaret Ward*, Convenor, Australian Network for Universal Housing Design  
Oral Presentation

The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) obliges Australia, as a State Party, to embrace the concept of universal design as a guide for its activities. The UNCRPD triggered significant changes in the last decade directed by the 2010-2020 National Disability Strategy (the Strategy), with its vision for an inclusive Australian society that enables people with disability to fulfil their potential as equal citizens.

This presentation reviews Australia's national and international reports on these obligations over the last decade focusing on Australia's response to the Strategy's commitment in 2011 to support the 'National Dialogue agreement', a self-regulatory approach to incorporate universal design in housing. It argues that the both the Australian governments and the housing industry largely disregarded the National Dialogue agreement, and misrepresented to the United Nations the progress made in achieving accessibility within the housing stock.

It evidences the importance of advocacy and a direct line of communication to the United Nations from people with lived experience, something the United Nations relied on to discover that the National Dialogue agreement had failed.

Given this past disregard and willingness to misrepresent the facts, the Australian governments will need to be monitored closely in the consideration of a minimum access standard for all housing in the National Construction Code. The question remains whether a net benefit to society will be found to be of greater priority than the self-interests of the private housing sector and the political vagaries of government. Again, it will take the voice of people with lived experience and those who represent them to make the argument.

### **Access and Inclusion in Public Toilets: Impacts on social and economic participation**

**Presenter:** [Katherine Webber](#), Independent Consultant

Oral Presentation

The toilet – WC, bathroom, restroom, loo, dunny, outhouse – is an essential piece of infrastructure for everybody regardless of location, race, gender, disability and age. Its provision in public<sup>1</sup> supports essential human functions. Toilets are a space where people expose their most vulnerable body parts in an effort to achieve health outcomes. In addition to eliminating bodily waste, people use toilets to administer essential medication, menstrual management, caring for young children, supporting others to use the facilities, finding a quiet place to rest, or accessing drinking water. In every country of the world, if provided, public toilets are spaces that are too often poorly designed or located, avoided if possible, perceived as dangerous, and are removed rather than improved because they are regarded as an expenditure and liability rather than a right. If a person or group of people is unable to locate, access or use a public toilet, their use and participation of the public space that the toilet is in is limited, therefore restricting their full involvement as a citizen.

This presentation will present some of the findings from over 30 conversations with community groups, advocates, local government, and industry in the United States of America, Canada, UK, Ireland, The Netherlands and Germany, exploring how they are developing innovative solutions to support inclusive and accessible public toilets. Ultimately the planning, provision and maintenance of public toilets supports the dignity, humanity and human rights of people.

### **When it is not legislated: How can we improve access and inclusion in public toilets?**

**Discussion Leader:** [Kathrine Webber](#), Independent Consultant

Table Topic Discussion

The legal framework provides the foundations for the planning, design, provision, construction, operation and maintenance of public toilets. As part of research towards Churchill Fellowship in six countries, a commonality across each of the places I visited was

that there was no legislative requirement for government to provide toilets in public spaces. However, when toilets are provided, their construction must meet international and national standards and the relevant building codes. The provision of and access to toilets is intrinsically linked to achieving other government strategies, especially those related to physical activity and tourism. Hence the importance of legislation, ordinance and by-laws was a consistent theme across many of the meetings.

In Wales, the Public Health Act (2017), requires local authorities to develop toilet strategies. “By working with local partners and those affected by continence issues, the toilet strategy will have to assess the need for toilets locally and will set out the steps the local authority propose to take to increase access to toilets in their area.” ([Crohn’s & Colitis UK](#)). The legislation also ensures that local authorities will need to coordinate to consider access to toilets along key transport routes and within cultural venues and events. While the Wales Public Health Act 2017 does not mandate the provision of public toilets the strategy must include a local assessment of need and how the local authority will address the local need. In this table topic discussion let’s discuss what legislation and policy is required to progress inclusive and accessible public toilet provision in Australia.

### **Interoception as a universal design for learning strategy to support well-being and engagement in learning in education for all children and young people**

**Presenter:** [Emma Goodall](#), Manager Disability & Complex Needs, Department for Education South Australia

#### Workshop Presentation

Children thrive at school when they are supported to attend, take in and process information, and interact positively with peers and educators. Children who are disenfranchised can struggle to emotionally self-regulate, and experience higher rates of disengagement and suspensions as well as poorer learning outcomes. A program in South Australia is indicating that teaching interoception skills to all students can positively influence their engagement and achievement in the classroom and shift a school’s culture to being more pro-social.

This workshop will give a brief overview of interoception and its role in emotional cognition, expression and regulation. Interoception, the conscious perception of internal body signals, tends to be atypical in people with developmental disabilities, mental health disorders, trauma, intergenerational trauma and chronic stress. Participants will learn how to implement a range of interoception activities to support well-being and engagement in schools and other contexts, such as justice, mental health and aged care.

Participants will then be introduced to two practical tools to use with children and adults to support the development of self-awareness and connectedness in a positive and non-judgmental manner. These tools are being used in over 150 schools and preschools across South Australia as well as schools in New Zealand as a universal design for learning strategy.

Participants have shown improvements in interoceptive awareness over time, and demonstrated more effective self-regulation and pro-social behaviour.

Professionals who understand the people they are working with can effectively support their well-being and engagement in learning. The activities and practical skills learned in this workshop are equally applicable in the home, and can be used by families.

## **Sensory Spaces**

**Presenter:** *Jack Mulholland*, Community Access and Inclusion Facilitator, Maroondah City Council

### Oral Presentation

Australian Building Standards for accessibility of the built environment for people with a disability focus on people who use wheelchairs; access and facilities for people with ambulatory disabilities; and access for people with hearing or vision impairments. The standards do not include neurodiverse conditions such as autism, ADHD, and other cognitive conditions. Australian Building Standards continue to lag behind changes in society where we find buildings that may be accessible for one disability but not accessible for another. A universal design approach ensures buildings are accessible for all, thus meeting all the community needs.

Recently there has been a significant increase in people diagnosed with autism, as highlighted by the NDIS where 30% of approved plans are for people with autism. Autism can include sensory overload where every sense is heightened; every noise, colour and movement is intensified. As a result, both individuals and families can find places such as shopping centres, sporting stadiums, airports, and other public spaces extremely challenging.

Places that require walking through crowds, interacting with people and undergoing instructions, can be highly stressful for people with Autism. Sensory spaces are being introduced to the built environment allowing families to shop free of anxiety, attend football matches as a family, and to experience travel for the first time. For these places a sensory room offers a quiet space to reduce anxiety and over-stimulation with access to sensory soothing items in an environment free of smell and bright lights.

These rooms also create a safe environment for people with Attention Deficit Hyperactivity Disorder and post-traumatic stress disorder who can also experience sensory overload. People with dementia can also find an environment that encourages sensory stimulation.

This presentation will highlight the community need, the solution, and various design approaches relevant to the building usage or purpose. It will also highlight the progress made not only in Australia but across the globe and highlight some case studies of best practice in developing a sensory space.

## **Reframing Universal Design: Creating Short Videos for Inclusion**

**Presenter:** *Janice Rieger*, Associate Professor School of Architecture and Built Environment, Faculty of Engineering, Queensland University of Technology

### Workshop Presentation

In this workshop, participants will view four short design videos, and reflect on how videos can be created to enact change and broaden our thinking about universal design. As well as discussing practical considerations of different audiences, filming logistics, content, methods, participants, etc., this workshop will highlight the importance of inclusion in videos (e.g., the use of captions). The four featured videos will showcase designing for disability in houses, urban spaces and public institutions in Australia and Canada.

Videos are a powerful medium that can be used across all sectors to inform best practice in universal design and contribute towards inclusive and thriving communities. The suite of resources presented in this workshop through a series of experiential activities offer new ways to understand inclusion and generate innovative and accessible solutions.

The workshop will highlight how inclusive videos have the ability to impact spatial design, education and policy development. It will introduce innovative ways to communicate with our stakeholders everywhere and everyway, beyond plans, policies and document.

## **Easy English: A critical addition to Universal Design for Everyone, Everywhere, Everyday**

**Presenter:** *Cathy Basterfield*, Independent Consultant

### Oral Presentation

This paper will present international literacy data (OECD, 2013, ABS,2013) which identified 44% of the adult Australian population do not have the literacy to manage a range of day to day reading tasks, nor have the skills, knowledge or hardware to access web based written information. The data for computer-based problem solving identified 66% of Australian adults do not have the skills and knowledge to meaningfully engage with web-based materials. These are not marginal groups of people in our community. They are our neighbours, friends, older people, people who may be ill, have a disability or had limited educational opportunities. They are also Aboriginal and Torres Strait Islander people and many people with English as a second language.

These people need to access meaningful written information. Consider leasing a home, negotiating a loan, finding a job, to taking a holiday, learning something new, accessing health services, attending a festival, making a complaint about a built environment and just being part of an inclusive community.

It is 13 years since the United Nations Convention on the Rights of Persons with a Disability (2006) was enacted. There are specific Articles in the Convention which identify access to information. Developing written information in Easy English needs to be considered as an integral part of Universal Design.



This paper will present case studies of organisations who have adopted the use of Easy English as a Universal Design strategy, and the positive outcomes for these organisations and the people they engage with when Easy English has been introduced. The introduction of Easy English assists Everyone, Everywhere, Everyday reducing many hidden barriers and building inclusion. Let's include Easy English in all Universal Design journeys.

### **Mobility Scooters in the Wild: Users' Resilience and Innovation**

**Presenter:** [Theresa Harada](#), Research Associate, University of Wollongong, NSW, Australia

Oral presentation

Recent research in Australia on mobility scooter users highlights that the built environment does not cater for their inclusion. The mobility scooter as an assistive transport technology is vital in ensuring access to public services to ensure health and wellbeing for people with mobility impairments. In this paper, we examine how users are co-producing urban design through their practices performed 'out in the wild'. We identify the pressing considerations for how mobility scooter users both survive and thrive. First, mobility scooters, as *electric* powered mobility devices (PMDs), face similar legislative and regulatory issues to e-scooters and other niche innovations currently being trialled on city streets that both solve problems and create them for urban governance. How to create inclusive policies for PMD users that allow safe travel and easy access is currently not well understood. Second, the impact of climate change on energy systems is creating momentum for renewable power and smart systems that will in turn impact decisions and policies around electrified private and public transport and associated energy infrastructure. It is important that mobility scooters are not overlooked in planning for inter-modal electrified transport. Third, national and international efforts to achieve safer and more sustainable 'car free' cities to reduce congestion and increase liveability need to include design for PMD users. This could potentially provide spaces for greater inclusivity and social integration of PMD users through the design of public and private spaces. Finally, an ageing population globally is set to encourage demand for technologies and accompanying infrastructure to facilitate mobility into senior years. Given the nexus of legality, energy, sustainability and ageing positions this paper's focus as an integral linchpin to critically informed and inclusive urban design.

Co-authors: Thomas Birtchnell, University of Wollongong, Gordon Waitt, University of Wollongong.

### **Mainstreaming visual contrast in built, transport and information environments for everyone, everywhere, everyday**

**Presenter:** [Penny Galbraith](#), GalbraithScott

Virtual oral presentation

Vision is our dominant sense and is the process of deriving meaning from what is seen. Half the human brain is devoted directly or indirectly to vision ([MIT](#), 1996). In the brain, visual processing accounts for about 30% of the cortex, compared with 8% for touch and 3% for hearing ([Seyens](#), 2019). About 80% percent of our perception, learning, cognition, and activities are mediated through vision. The visual process generates appropriate motor, and/or cognitive responses to the world around us ([Brainline](#), 2019). This is why people with an acquired brain injury often have a vision impairment.

Visual contrast sensitivity is a crucial part of human vision (different to acuity) allowing detection of objects and discriminating objects or details from their background. Poor visual contrast therefore has a very significant impact on people with a vision impairment.

Worldwide, luminance contrast has been recognised in Standards and Codes for new buildings, transport and information, as the most relevant measure of how a person visually perceives their environment. Luminance contrast is recognised as crucial for safety and is vital to remove environmental barriers for people with a vision impairment. However, luminance contrast is a tiny fraction of compliance and neglected in maintenance of existing assets.

Prescribed measuring techniques involve expensive, bulky equipment which is a barrier to use and controlled light source measurements do not reflect ambient lighting, or how an environment is experienced by users. The consequence is that new facilities often fail to achieve acceptable luminance contrast outcomes. In existing buildings, public spaces and transport, luminance contrast requires maintaining as surfaces become damaged and dirty.

This paper describes human vision in more detail and why providing luminance contrast is so important to universal design and to removing environmental barriers. The paper will also propose a new research-based approach to measure luminance contrast to make it a mainstream concern for everyone, everywhere, everyday.

## **Defining Eudaemonic Design at Home, using Creative Methods and Co-design with Older Adults**

**Presenter:** [Jenna Mikus](#), PhD Candidate, QUT Design Lab

Poster Presentation

### **Background**

People spend more than 90% of their time indoors. As a consequence, buildings are key influencers on the health and vitality of the people who inhabit them. Recent research details the possibility of designing buildings for positive health impacts. To date, most health-based design has stemmed from architectural science-based principles. This paper explores a new approach, based in philosophy but developed using positive psychology research, that is now being applied to the built environment. It centres around the term Eudaemonia, which originated with Plato but was most notably defined by Aristotle as “being one’s best self” and experiencing thriving, flourishing health.

## Research Focus

According to the United Nations Department of Economic and Social Affairs, the percentage of people in the world ages 50-74 will more than double between 2020 and 2030 and ages 75+ nearly quadruple in that time period. While these extra years can be a gift to many, they are accompanied by personal and societal challenges relating to quality of health and environmental support of that health. The World Health Organization (WHO) believes that “if people can experience these extra years of life in good health and if they live in a supportive environment, their ability to do the things they value will be little different from that of a younger person”. Therefore, it is crucial that we understand what constitutes a health-supportive environment and design for it. This poster is based on ongoing research exploring how co-design and creative methods can be employed virtually with older adults to define Eudaemonic Design as a positive, pragmatic approach to curate thriving health and well-being at home for older adults and potentially people of all ages.

## Inclusive Built Environment for Malaysian Heritage Mosque

**Presenter:** *Nur Amirah*, Lecturer, Centre for Innovative Architecture and Built Environment Universiti Kebangsaan Malaysia (UKM).

Poster Presentation

Mosque accessibility has been an issue for some time and it is still a problem that needs to be rectified in particular the heritage mosque in Malaysia, either national listed mosque or any historical heritage mosques. Heritage buildings have been coping with the demands of providing accessibility for Persons with Disabilities (PwDs) and mosque is a priority as mosque is one of the building typologies that is most visited and used by the public whether heritage listed or not. Making Malaysian heritage mosque accessible is an effort of its own as it will have modification and renovation barriers that contradicts with the heritage building planning policies and requirements. The aim is to identify the common accessibility obstacles and provide recommendations or innovation design solutions to accommodate access design that complement heritage preservation views. The challenge would be implementing access design according to Malaysian Standard MS1184 and at the same time complementing heritage design guidelines preservation concerns for the chance of social inclusion for any mosque environment and activities. As a summary, these efforts of making heritage mosque inclusive and accessible will benefit accessible tourism that will contribute to Malaysian economy as well as promoting inclusive Muslim cities.

## Know your users, meet their needs, and enable them to thrive (with some help from ISO Standards)

**Presenter:** *Emily Steel*, Centre for Universal Design Australia

Workshop presentation

We are more likely to thrive when our needs are met, but is it possible to meet everyone's needs? A good place to start is with the international Standard ISO/IEC 29138-1 Information technology — User interface accessibility — Part 1: User accessibility needs.

The latest version describes high level user needs, recognizing that different users can have different sets of user accessibility needs in different contexts. In addition to identifying user needs, it identifies the relationship of these user needs with the accessibility goals found in ISO/IEC Guide 71: 2014 Guide for addressing accessibility in standards. Professor Jim Carter recently started mapping the user needs to guidance found in ISO 21801-1 Cognitive accessibility — Part 1: General guidelines.

While this set of user accessibility needs was developed for the domain of ICT, many of the user accessibility needs in this set also apply in other domains. Working with user needs is less stigmatizing than creating discrete guidance for different populations based on diagnostic or other criteria that are often only loosely connected to functional needs and frequently overlap.

This workshop will outline the structure of the Standard, and select specific user needs that map to cognitive accessibility guidelines to demonstrate how these can be met with examples of products and systems. The Standards mentioned do not provide requirements or specific processes and methods for the application and evaluation of user accessibility needs, giving designers the freedom to meet the challenge and ensure that their new or improved products or systems allow as many people as possible to thrive.

## **Inclusive Design: An International Case for Good Design and Good Business**

**Discussion Leader:** [Jenna Mikus](#), PhD Candidate, QUT Design Lab

Table Topic Discussion

### **Session Overview**

In this table topic session, the author leverages her international experience as an industry professional and PhD candidate in the built environment to facilitate a discussion about Inclusive Design (ID) from a global point of view. The session will begin with an overview of similar design principles—namely, Inclusive Design, Universal Design, and Design for All in addition to the less frequently used People-centred Design and Accessible Design terms. While these approaches are similar, there are differences among them, primarily due to their historical origins and evolution over time. To ensure consistent group understanding, we will review this nuance and provide the current corresponding definition of each term.

Following the introductory conversation, the primary focus of the session will be to discuss as a group similarities and differences among terms, highlight positive and negative aspects of ID-related projects (some which will be presented and some which will be sought out from participants), and review recent company and government policy changes that have been enacted worldwide for ethical and business purposes.

In addition to serving as a smart and fair way to design, Inclusive Design has become a global hot topic over the past five-ten years. Expert perspectives on this newfound popularity will be shared with the group and examined collaboratively in the context of the world and Australia in particular. Participating in this session is expected to enable group members to develop a better understanding of Inclusive Design-related terms, identify best and worst practices for implementation, and foster an appreciation for how and why Inclusive Design, as Design and Architecture Norway (DOGA) states, is a “low-cost, high return way to generate new ideas” and has therefore become “[not only about good intentions, but also good business]”.

### **Universal design in local government: participatory action research findings**

**Presenter:** [Adam Johnson](#), Local Area Coordinator Community Capacity Building at APM

Oral presentation

In 2014 the City of Bunbury in Western Australia set an aspirational goal to become the *Most Accessible Regional City in Australia* (MARCIA), acting upon a recommendation from their Disability Access and Inclusion Committee. In partnership with Edith Cowan University, a 3-year participatory action study was established to investigate systemic barriers to universal access in the design of City services and infrastructure, and how internal policies, procedures and design culture shape decision-making. The research was conducted in collaboration with people with lived experience of disability.

Historically, universal design has been minimally and inconsistently applied by local governments in the development of ‘public infrastructure’, which includes buildings, facilities, services, information and events intended for use by the public. The study identified five key barriers and facilitators of universal design in public infrastructure, and developed a model of *Universal Public Design* that may be usefully applied in other public design contexts, including other local governments, other tiers of government, and the commercial sector.

A defining feature of this PhD study was its methodology, which used Participatory Action Research (PAR) to position people with lived experience of disability as researchers and activists, engaged in a concurrent process of inquiring, sharing and influencing. Eleven people were recruited as co-researchers, working alongside a PhD candidate who adopted the role of facilitator and ‘animator’ in addition to researcher. Together, they engaged informants from the City of Bunbury (elected members, executives, managers and technical officers) in deliberative dialogue about the City’s role in public design.

The presentation will share the findings from the study and discuss the process of PAR, using examples and illustrations drawn from the engagement experience. The presentation will also touch on progress made since the research recommendations were adopted by Council in 2018.

## **Designing with the Digital Divide to Design Technology for All**

**Presenter:** *Jenna Mikus*, PhD Candidate, QUT

Oral presentation

Recent practice articulates the proven value of technology in older adult lives, and the interest and ability of older adults in technology use. As Director of the Design Age Institute Colum Lowe states in the 2020 Design Week article, “Technology has the power to change people’s lives more than anything else in human history” (Long, 2020, p. 3). However, of the technologies that have been studied and considered successful, many have not been accepted by older adults. This is not because the users are disinterested or incapable. Instead, research and practice contend it is because they tend to be left out of the originating design process.

Design professionals and academics, including Bernard Isaacs, Alan Newell, Ann Light, and Don Norman, extol the virtues of designing for the old to design for the young, rather than designing for the young to exclude the old. This paper explores Isaacs, Newell, Light, and Norman’s collective assertion that by designing with and for this group of what is defined as members of the Digital Divide—people who are often outside of the more frequently designed-for user groups—it may be possible to design for other demographics. That is, it may be possible to use it as a mechanism to design for all.

This position paper presents a problem that demands further research and is therefore considered to take a problematisation approach rather than a gap-spotting approach (Sandberg & Alvesson, 2011). By positioning this subject through the lens of problematisation, this paper provides the foundational rationale for an ongoing research project that considers the role of technology in future ageing-in-place home health design. Most importantly, it allows for the potential to contribute sound scholarship relating to if, why, and how design done with older adults might result in better gerontechnology (or older adult-focused) design and potentially enhanced technology design for all.

## **Inclusive Towns Project**

**Presenter:** *Nikki Williams*, Acting Inclusive Communities Coordinator, City of Greater Bendigo

Oral Presentation

Following a successful pilot in 2017, the Inclusive Towns Project worked across the City of Greater Bendigo, Loddon Shire Council and Mount Alexander Shire in 2018. The project aimed to:

- Increase participation for people with a disability in the communities that they live in or visit by increasing the accessibility of local businesses, and
- Improve job opportunities for people with disabilities by increasing awareness and readiness of businesses to employ people with disability.

The City of Greater Bendigo employed six Support Officers with a lived experience of disability for this project to work with businesses to help them understand that inclusion goes beyond addressing physical access. This was a conscious decision as Support Officers were the individuals interacting with the businesses and showcasing their perspective about how to be more inclusive and the benefits for the community, rather than a Council employee 'telling the business' how to be more inclusive. By having people with disability employed as Support Officer roles within council, it provided Council staff with a wider understanding of disability and how people with disability can become valued staff members.

There were some initial challenges getting businesses take part in the project. This was due to previous poor relationships with Council, lack of understanding of disability, not seeing people with disability as customers and the fear of having to make expensive changes to their business. However, businesses learnt that solutions were easier to implement than first thought. They were able to make a lot of small improvements for a great outcome, and they received positive feedback from customers and people with disabilities.

This program saw great change both in the community and within Council. This project highlighted the need to look internally at the organisation and how to build the capacity of staff to have a greater understanding of disability and how to advocate for internal policy changes to increase the number of people with disability employed by the City of Greater Bendigo. For other organisations looking to make their community more inclusive, small businesses are a great place to start as everybody uses them to shop, for social interactions and be part of the community.

### **Mapping how something gets built: Where and how can we embed universal design?**

**Presenter:** *Virginia Richardson*

Workshop presentation

This interactive workshop will tease out and identify all the relevant stages, processes and legislation that affect how something gets built, and identify opportunities to influence/ensure universal design is embedded into each stage. It will also explore how we might bring in "lead users" at different stages to test and develop plans, and what would be required to support and embed diverse community engagement.