DEPARTMENT FOR EDUCATION AND CHILD DEVELOPMENT
OFFICE FOR STRATEGY AND PERFORMANCE

Effective Building Practices for Children and Students with Disability project report

A report to the South Australian Minister for Education and Child Development from the Ministerial Advisory Committee: Children and Students with Disability
August 2016

Non-Government Schools and Services Unit (NGSSU)

Government of South Australia
Department for Education and Child Development

Foreword

The Minister for Education and Child Development asked the Ministerial Advisory Committee: Children and Students with Disability (MAC:CSWD) to continue its investigation into access and participation for children and students with disability at new and renovated early childhood education and care (ECEC) facilities and schools. The continuation of this inquiry is in response to recommendations from a preliminary investigation undertaken in this area in 2013.

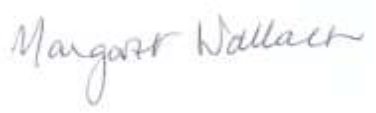
The Effective Building Practices for Children and Students with Disability project was overseen by a project group with representatives from the three education sectors, the early childhood education and care sector, an expert from Flinders University and a qualified access consultant[1].

It was found that building practices at the building, design and planning phase of new builds, refurbishments and renovations impact on the extent to which access, participation and learning for children and students with disability occurs.

This report showcases examples of effective building practice in South Australian ECEC facilities and schools, and provides guidance about how this can be achieved more broadly. The data gathered for this report will also inform the important next phase of the project; the development of a resource that can be used by the building industry in conversations with educators and carers, children and students and their families.

I would like to thank all those who contributed to the project including the children, students, parents and carers and staff interviewed from early childhood education and care sites and schools. In addition, I extend my appreciation to the contributions from architects, facility planners, a landscape consultant, disability service providers, sector staff, the project group, the Institute of Access Training Australia and the MAC:CSWD secretariat.

I commend this report to the Minister for her information.



Margaret Wallace
Chairperson
Ministerial Advisory Committee: Children and Students with Disability

[1] A qualified Access Consultant is a person who has successfully completed a nationally recognised qualification in Access Consulting. This allows them to conduct audits of buildings to assess their physical accessibility for all users. Access Consultants are trained to understand how to apply three important considerations in their work: Human Rights, compliance and functionality and use (IATA).

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Executive Summary

In January 2014 the Minister for Education and Child Development provided approval for the Ministerial Advisory Committee: Children and Students with Disability (MAC:CSWD) to continue an investigation into effective building practices for children and students with disability in early childhood education and care (ECEC) sites and schools. The terms of reference for the project were:

- to identify building processes that facilitate access and optimise participation for children and students with disability at early childhood education and care settings and schools
- to gather and document effective building design that is functional for children and students with disability
- to share information collected on effective building design that is functional for children and students with disability.

The previous equipment project (undertaken by MAC: CSWD from 2012 to 2014) had identified concerns about functional access and participation for children and students with disability in South Australian Early Childhood Education and Care (ECEC) sites and schools.

A project group that included representatives from childcare, the three education sectors, as well as an expert from Flinders University and a qualified access consultant[2] was established to oversee the project. Project group members are listed in Appendix 2.

Consultation occurred with children, students, parents and carers and staff from mainstream and special ECEC sites and schools in metropolitan and regional areas of South Australia that had been recently built, refurbished or renovated. Ensuring that the voices of children, students and their families were prominently heard and acknowledged was a priority for MAC:CSWD with 36 of the 96 interview participants (38 percent) being children, students, parents and carers. The impact of building design on the inclusion of Aboriginal children and students with disability was investigated as part of the study. Data was also collected from architects, facility planners, a landscape consultant, disability service providers and education sector staff. A site and participant profile table can be viewed in Appendix 3.

The lead project officer undertook access audit training which informed the findings of observations made during site visits and provided insight into the legislation that governs the requirements of building projects and the impacts and the outcomes for children and students with disability. Desktop research was undertaken to further investigate issues that emerged through interviews, project group discussions and the media around universal design, inclusive education, flexible learning spaces, restrictive practices and other exclusionary practices.

The Convention of the Rights of the Child 1990 (CRC) and the Convention of the Rights of Persons with Disability 2008 (CRPD) legislate the rights of people to an inclusive education. The Disability Discrimination Act (DDA) (1992) and the supplementary Standards for Education (2006) suggest that universal design principles be applied to ECEC settings and schools to allow full access and participation of all children and students. 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 children and students. Universal design allows flexibility and adaptability to meet the full range of additional needs of children and students of today and of the future, as well as being responsive to ongoing innovations in technology. The principal project officer identified that elements of universal design were

[2] A qualified Access Consultant is a person who has successfully completed a nationally recognised qualification in Access Consulting. This allows them to conduct audits of buildings to assess their physical accessibility for all users. Access Consultants are trained to understand how to apply three important considerations in their work: Human Rights, compliance and functionality and use Institute of Access Training Australia IATA).

present at some ECEC sites and schools in South Australia through observations at site visits and data collected from interviews. A definition and principles of universal design are outlined in Appendix 1.

Interviews with staff, architects and sector staff found that building practices at the planning, design and building phase of new builds, refurbishments and renovations may impact on access, participation and the learning outcomes of children and students with disability and result in exclusion for some children and students. A consistent message from the interviews with all participants was that considerations in design that extend beyond the specified minimum Premises Standards (2010) and Building Code of Australia (2011) are critical for effective functional outcomes. The specifications outlined in these documents are the minimum and do not allow for optimisation of access and participation for all, but rather focus on guidelines for physical access. In South Australia in 2015 the Department for Education and Development updated the DECD Design Standards. MAC:CSWD's consultations with Assets and Business Services DECD during the project informed that many of the new specifications within the standards were above those stated in the BCA, Premises Standards and Australian Standards. MAC:CSWD was consulted and provided feedback on these standards and will continue to work collaboratively with DECD as building processes are reviewed.

Staff from a number of ECEC and school sites reported that they were committed to using least restrictive practices[3], particularly in the management of behaviour, and that this had been facilitated by their new building designs, which could be configured in multiple ways. These universal design features facilitate freedom and independence and provide opportunities for children and students to self-regulate emotions and behaviour. Staff reported that the frequency and severity of incidents of adverse behaviour for many children and students had decreased significantly in some new facilities as a direct result of the universal design features and the positive ways in which the environment was used. At some of these sites students and their families spoke about how happy they were to attend. Parents spoke of the eagerness of their children to attend their new facility and the improvement in their learning, behaviour and progress.

The long term vision of the project group is that the consistent use of universal design principles which incorporate broad improvements for refurbishments and renovations is likely to result in less complex outcomes and be responsive and flexible to the changing needs of current users as well as children and students of the future. These facilities will be easily adaptable to cater to the needs of individuals and groups on a case by case basis.

There has been a trend in South Australia to co-locate Government special schools with mainstream schools because of the potential benefits for staff, students and families. Interviews with staff and parents revealed that some sites are embracing these opportunities and have welcomed the rich outcomes for children with and without disability learning alongside one another. They further reported that commitment, quality communication and empathy from staff and the broader community provide the best outcomes for children and students with disability to integrate with their peers.

The project found that quality consultation with stakeholders benefits the design, planning and building phases of building projects. Stakeholders include children and students, parents and carers, directors and principals, experts in the disability field who have practical understanding of the additional needs of children and students with disability, architects, facility planners, landscape designers, builders, and the community. The Public Private

3 The least restrictive alternative is the intervention that least infringes freedom of action for the shortest period of time. Before any restrictive practice is implemented, there should be a thorough investigation of alternatives that would have less impact on the freedom of the individual. These should be trialled and only after there is evidence that they do not provide for the safety of the individual or others, should a more restrictive alternative be considered. This should be documented and the ongoing use of the intervention should be regularly reviewed (Richard Bruggemann, 2015, Office of Senior Practitioner, Disability SA, Department for Communities and Social Inclusion).

Partnership (PPP) model used for some building projects in South Australia was highlighted by principals and architects as an area of potential difficulty. This is based on their understanding and experience that full and ongoing consultation is required to achieve optimal outcomes for children and students with disability. It emphasises the need for flexibility to be built into early design briefs in order to minimise adjustments during the building process, and to ensure that it documents and clearly articulates end-user requirements and realises the vision for an inclusive environment for all students.

The architects and staff involved in a variety of building projects indicated that if projects had ambitious timelines, and short turnarounds the amount of consultation is likely to be reduced. The Effective Building Practices for Children and Students with Disability project recognises that there are cost implications for extensive ongoing consultation.

A set of general principles that facilitate optimisation of access and participation for all users and which promote inclusion have been identified in section 4.4 of this report. These were gathered from positive examples observed at ECEC sites and schools in South Australia and from interviews with stakeholders. These principles will be used to inform the next phase of this project; a resource that MAC:CSWD will develop to assist in the consultation process during the planning and design of new, refurbished or renovated facilities. It is envisaged that the resource with its key design features that embrace universal design principles will be used as a useful guide throughout the building process by architects, building and facility planners, sector staff, ECEC site and school staff, children and students with disability and their families. A strength of the resource will be that it will highlight features in ECEC sites and schools that have the potential to optimise the access and participation of all children and students.

Consultations throughout the project revealed that environments featuring universal design principles are optimal for inclusion. A number of participants commented that it is equally important how environments are used and that training staff in the effective use of spaces will increase the likelihood that children and students with disability will be empowered in their learning environments and their educational and social experience will be enhanced. Facilities designed and utilised with the best interests of the child in mind, that are flexible, adaptable and responsive to the dynamic needs of individuals and that are used with least restrictive practice are more likely to provide desirable outcomes for all children and students including those with a range of disability.

Key findings

The following key findings emerged through information provided from a broad range of stakeholders for the Minister's consideration.

1. Applying universal design principles when designing and building new, refurbished or renovated facilities is most likely to facilitate access and optimise participation and learning for all children and students including those with disability.

2. This is because universal design addresses the physical, sensory and cognitive needs of all people. Universal design is adaptable, flexible and responsive to the changing landscape of people with disability and innovations in technology, and encompasses the architecture, buildings, playground, and fixtures and fittings i.e. door handles, furniture, technology and equipment.

3. Implementing the principles of universal design in new, refurbished and renovated early childhood education and care sites and schools requires going beyond the minimum standards that are outlined in the Building Code of Australia and Premises Standards (2010). These standards focus on physical disability and do not give consideration to the diversity of disability.

4. Informed quality consultation with the comprehensive range of stakeholders including children and students with disability and their families, staff from ECEC sites and schools, architects, facility planners, landscape designers, builders, and the community improves the concept and detail of the final building project.

5. It is important to seek advice from qualified disability and access experts with practical understanding of the additional needs of children and students with disability during the planning and design process for a new facility, refurbishment or renovation project. There is powerful evidence in the literature reviewed for the project that expert specialist advice will optimise the access and participation of children and students with disability.

6. The use of universal design principles together with the use of least restrictive practice[4] can improve the behaviour, engagement and well-being of all children and students including those with disability.

7. For building projects where extensive consultation does not occur beyond the design phase, flexibility built into the early design briefs will allow for adjustments in design in order to best meet the needs of children and students with disability.

[4] The least restrictive alternative is the intervention that least infringes freedom of action for the shortest period of time. Before any restrictive practice is implemented, there should be a thorough investigation of alternatives that would have less impact on the freedom of the individual. These should be trialled and only after there is evidence that they do not provide for the safety of the individual or others, should a more restrictive alternative be considered. This should be documented and the ongoing use of the intervention should be regularly reviewed (Richard Bruggemann, 2015, Office of Senior Practitioner, Disability SA, Department for Communities and Social Inclusion).

1. Introduction

In January 2014 the Minister gave approval for the Ministerial Advisory Committee: Children and Students with Disability (MAC:CSWD) to build on the preliminary investigation around functional access and participation for children and students with disability in ECEC sites and schools that was undertaken as part of the Equipment project during 2013. The project brief for the Effective Building Practices for Children and Students with Disability project was as follows:

> *In recent years, the South Australian Government has invested in renovating and building new care and education facilities, some specifically for children and students with disability. The intelligence gained from this experience has not yet been coordinated, shared or documented. This project aims to record the experiences of people involved in new building developments, to document effective building design that is functional for children and students with disability. It is intended to produce a resource that will assist with the planning and design of building developments for children and students with disability in the future.*

A project group that included representatives from childcare, the three education sectors, as well as an expert from Flinders University and a qualified access consultant was established to oversee the project. Project group members are listed in Appendix 2. The project group identified two specific areas to be investigated. They were physical access in ECEC sites and schools and participation in learning.

The project identified that for all children and students to fully access and participate in learning and play, as legislated by the Disability Discrimination Act 1992, the Convention of the Rights of the Child 1990 and the Convention of the Rights of Persons with Disability 2008, that many of the features in indoor and outdoor building facilities need to extend beyond the minimum standards that are outlined in the Disability (Access to Premises – Buildings) Standards and Building Code of Australia (2011). If all ECEC sites and schools are designed using universal design principles then they are more likely to be accessible and functional for all users including children and students with disability as universal design is of universal benefit. Key design features that were identified through interviews with stakeholders of special and mainstream sites, that optimise the access and participation of children and students and disability, also provide better access and functionality for the range of users regardless of their culture, age, religion, nationality, size or ability.

This investigation also assessed access and participation specifically for Aboriginal children and students with disability through site visits at facilities with a high proportion of Aboriginal students and sites designed specifically for Aboriginal children. It was concluded that universal design features that optimise access and participation for children and students with disability were similar to those identified by staff and parents of Aboriginal students, both with or without disability. This supported the idea that universal design principles benefit all users and not only children and students with disability.

This report includes a section on general design principles that MAC:CSWD will use as content for the development of a resource that can be used by key people involved in planning the design of new, renovated and refurbished facilities such as architects, ECEC site and school staff and families of children and students with disability.

As a society we can do more to emphasise the value and ability of all children to learn and play together in inclusive environments. The understanding that universally designed facilities benefit all users, not only children and students with disability, will result in moving a step closer to achieving a more inclusive society that benefits and enriches the lives of all people.

This report is presented to the Minister for Education and Child Development for her consideration. It is anticipated that the findings will inform future refurbishments, renovations and new builds of ECEC facilities and schools in South Australia now and in the future.

2. Background

In December 2010 the Minister for Education and Child Development asked the Ministerial Advisory Committee: Students with Disability (MAC:CSWD) to investigate equipment provisions for early childhood education and care settings and schools. The findings of this investigation were outlined in the report Equipment for Children and Students with a Disability (2012)[5] and presented to the Minister in November 2012. The report identified a number of issues and provided recommendations for further investigation and action in 2013. During the investigation in 2013, the equipment project group identified concerns about the issue of functional access for children and students with disability using early childhood education and care (ECEC), and education services in South Australia at new building sites or where there had been refurbishments or renovations to existing buildings. A preliminary investigation into this issue was undertaken by MAC:CSWD as part of this Equipment Project in 2013, which included site visits to two special schools and one mainstream school. The outcomes of this investigation were included in a report entitled Equipment for Children and Students with a Disability (2014) that was presented to the Minister in February 2014.[6]

The main findings of the 2013/2014 investigation were that:

- There are gaps between the legislation[7] and how it translates into practice for children and students with disability especially in regard to fixtures and fittings within buildings.
- The knowledge gained from recent building developments in South Australia could be better coordinated, documented and shared.
- The use of a critical friend with practical experience in functional access for children and students with disability, together with the expertise of a qualified access consultant, would improve the building design process.
- This is a timely opportunity to collate and record information gained from the current experiences of people involved in building or renovating early childhood education and care sites and schools.

The Ministerial Advisory Committee: Children and Students with Disability recommended to the Minister that effective building practices for children and students with disability be investigated further. Upon the Minister's approval, the committee commenced this work in 2014.

The terms of reference for the project were:

- to identify building processes that facilitate access and optimise participation for children and students with disability at early childhood education and care settings and schools
- to gather and document effective building design that is functional for children and students with disability
- to share information collected on effective building design that is functional for children and students with disability.

[5] This report can be accessed at the MAC:SWD website: http://www.macswd.sa.gov.au/files/links/Equipment_for_children_and.pdf
[6] This report can be accessed at the MAC:SWD website: http://www.macswd.sa.gov.au/files/links/Equipment_for_children_an_1.pdf
[7] The Disability (Access to Premises – Buildings) Standards 2010 Building Code of Australia (BCA) 2011.

3. Investigation Methods

3.1 Methods of Inquiry

Qualitative methods of inquiry were used to gather data for this project and were developed in consultation with project group members. The key research question that guided the project was:

What is the best advice for building processes that facilitate access and optimise participation for children and students with disability in early childhood education and care settings and schools?

Data for the project was gathered by:

- open ended individual and focus group interviews with parents, staff, and students at ECEC site and school visits. Telephone interviews were also administered. Interview questions for staff, parents/carers of ECEC settings and schools can be found at Appendix 4. Interview questions for staff, parents/carers of ECEC settings and schools for Aboriginal children and students can be found at Appendix 5. Interview questions for children and students can be found at Appendix 6.
- Open ended interviews with facility planners, architects, a landscape consultant, and sector staff. Interview questions for architects, facility planners and sector staff can be found at Appendix 7. Interview questions for landscape consultants can be found at Appendix 8.
- a community engagement forum with executive staff, professionals from the disability field, a parent and an interested member of the community. Professional organisations represented at the community forum and other participants are listed at Appendix 9.

Due to the technical nature of some of the aspects of this project, the lead project officer undertook access audit training, which influenced the development of the interview questions and informed observations during site visits. This included two days Access Training with the Institute of Access Training Australia (IATA) covering obligations of building personnel under the Disability Discrimination Act [1992], Premises Standards [2010], Building Code of Australia [2011], and the Australian Standard: AS1428.

The lead project officer also undertook desktop research to further investigate the issues that emerged through interviews, project group discussions and the media around universal design, inclusive education, flexible learning spaces, restrictive practices and other exclusionary practices. In particular during 2015 there was extensive media coverage about restrictive practices being applied in some ECEC sites and schools with children and students diagnosed with Autism. This prompted further investigation into restrictive practices policy and exclusion experienced by children and students with disability.

Staff from Asset and Business Services, Department for Education and Child Development, were consulted during the information gathering and report writing phases of the project. This coincided with the review of the DECD Design Standards (2015).

3.2 Profile of participants

A total of 96 individuals were consulted and contributed to the data. Of these, 77 were children and students with disability, parents, carers and staff from a sample of 11 built, refurbished or renovated mainstream and special ECEC settings and schools. The sample included sites from the three education sectors across metropolitan and regional areas of South Australia. The remaining 19 participants consulted included facility planners, architects, a landscape consultant, sector staff and professionals from the disability field.

The project group acknowledged the importance of hearing the voices of children, students and their families. A total of 14 participants (15 percent) were children and students with disability and 22 (23 percent) were parents or

carers of children and students with disability. The impacts of building design on the learning and inclusion of Aboriginal children and students with disability at ECEC sites and schools were also considered through consultation with staff and parents at sites where there were a high number of Aboriginal children. The data gathered was supplemented by observations of children and students participating within their ECEC settings and schools.

4. Project Findings and Discussion

4.1 The expectation of quality in care and educational services for children and students with disability

The Convention of the Rights of the Child 1990 (CRC) and the Convention of the Rights of Persons with Disability 2008 (CRPD) articulate the right of all people to an inclusive education. Australia has a commitment to both of these United Nations conventions. People with disabilities living in Australia have the same human rights as all other members of the community. The Commonwealth Disability Discrimination Act, 1992 (DDA) and the South Australian Equal Opportunity Act 1984 make discrimination on the basis of disability unlawful. Within this legal framework, children and students with disability have the right to participate fully in early childhood education and care and in schooling. For inclusion to be fully realised there needs to be a shared vision, understanding and commitment as to how it can be achieved and applied in practice.

High quality educational experiences for all children and students can be provided in environments that promote learning, safety, independence, choice, engagement, achievement and inclusion. Interviews with students, staff and parents, and research conducted in Australia that was reviewed for this project around inclusive education, suggested that attending a mainstream or a specialist setting does not automatically result in inclusive education.

The Children and Families Research Centre Institute of Early Childhood, Macquarie University research report states that:

> *inclusive education involves embracing human diversity and welcoming all children and adults as equal members of an educational community. This involves valuing and supporting the full participation of all people together within mainstream educational settings … Inclusive education requires putting inclusive values into action to ensure all children and adults belong, participate and flourish (Cologon K, 2013, P6).*
>
> *Inclusive education requires recognising the right of every child (without exception) to be included and adapting the environment and teaching approaches in order to ensure the valued participation of all children (Cologon K, 2013, P13).*

Staff, students and families at a number of special and mainstream schools and ECEC sites provided examples of the limitations to access and to participation in learning that some children and students with disability face as a result of their physical, emotional and social access needs being unmet.

> *The new furniture included tables with a single leg and a wheelchair could not fit underneath (staff member from a special school).*
>
> *There are no lips on ramps on play equipment so wheelchair safety is a problem (staff of mainstream ECEC site).*
>
> *The noise of hand dryers in toilets upsets children with autism. The centre could at least provide the ability for parents to turn them off if needed for their kids (parent from a mainstream ECEC site).*
>
> *The new kitchens have ovens that are too high-tech for me. I don't know how to use them (student with intellectual disability from a special school).*

4.1.1 Access and building legislation versus universal design

The Disability Discrimination Act (DDA) 1992 legislates that people with disability in Australia have the same fundamental rights as those without disability. This includes access to premises such as early childhood education and care facilities and schools. If children or students with disability are excluded from accessing and participating in these facilities, the DDA requires that reasonable adjustments be made to these premises to provide full access. The Disability (Access to Premises – Buildings) Standards 2010 were introduced alongside the updated Building Code of Australia (BCA) in 2011. These Standards outline the minimum requirements for access for people with physical disability. The requirements for other children and students with disability, such as those with additional social or communication needs, are not specifically addressed by building industry codes and standards.

In 2015 DECD undertook a review of the *DECD Design Standards*, a document "developed to assist architects, designers, builders, contractors and schools in creating high quality learning environments that utilise best practice to optimise the participation of all students" (DECD, July 2015, p5). This revised document indicates that in some circumstances DECD requirements are above those stated in the Building Code of Australia (BCA) and Australian Standards. DECD consulted with MAC:CSWD as part of the review of the DECD Design Standards and informed MAC:CSWD they are committed to ongoing and regular review of the Standards in collaboration with MAC:CSWD.

Based on the research and qualitative evidence gathered for this project, it was consistently communicated that the use of the principles of universal design as a basis for planning will assist children and students with disability to fully access and participate in their education. The Disability Discrimination Act (1992) and the supplementary Standards for Education (2006) suggest that the concept of universal design be taken into account in the development of new, renovated and refurbished ECEC sites and schools. A definition for universal design and list of principles can be found at Appendix 1. Universal Design involves designing products and spaces that are accessible and functional for the full range of human diversity regardless of age, religion, nationality, size or ability. In the case of children and students with disability, this results in access 'on the same basis' as their peers without disability. Universal design includes the incorporation of a variety of features that in some instances go beyond the minimum standards to address the spectrum of human variance including physical, cognitive, and sensory needs.

> *Universal design takes into account the full range of human diversity, including physical, perceptual and cognitive abilities, as well as different body sizes and shapes. By designing for this diversity, we can create things that are more functional and more user-friendly for everyone (University design.com accessed 2014, P1).*

For ECEC facilities and schools to be fully accessible and functional for all children and students, consideration needs to be given to the architecture, buildings, playground, and the broad range of fixtures and fittings such as door handles, furniture, technology and equipment. The data collected for this project details numerous additional adjustments that enhance accessibility and participation in ECEC facilities and schools for all children, students and adults who use them. General design principles that facilitate access and optimise participation and inclusion can be found at section 4.4 of this report.

The project found that the Premises Standards 2010 are not inclusive of all of the fixtures and fittings within buildings and do not include outdoor learning environments. Further, the Human Rights Commission publication, *The Good, the Bad and Ugly, Design and Construction for Access,* (2008), highlights examples of where the details of building code are misinterpreted or misunderstood and explains why 'precise application of relevant technical specifications is necessary to achieve the greatest level of access for the greatest number of people' (Australian Human Rights Commission, 2008, P1).

School Principals, ECEC directors from mainstream and special sites and architects involved in projects in South Australia, along with research articles on universal design and approaches to learning indicated that a 'one size

fits all' solution to universal design may not be possible. Rather, the need for flexibility within design (with no fixed formula) that can be tailored and adapted, as needed, to facilitate access and optimise participation for all is preferred, and is happening to some extent at some sites in South Australia. Most importantly, architects and school leaders reported that facilities need to be built with flexible design and materials that can be adapted and adjusted for the full range of additional needs for children and students of today, as well as for those of the future. ECEC sites and schools need to be flexible to cater to the changing landscape of disability. In recent years there has been an increasing population of children being born with Fetal Alcohol Spectrum Disorder (FASD) and an increasing number of children diagnosed with Autism. Features to support these children could include flexible spaces for self-regulation of emotion and opportunities to reduce anxiety. Alan Ford in his article *Architecture and the K-12 Learning Experience* suggested that the challenge for architects is to build facilities that meet the immediate needs of the range of end-users whilst also being able to 'stand the test of time' (Ford A, 2014). Similarly Ronald L. Mace, founder of The Centre for Universal Design at North Carolina State University collaborated with a group of architects, product designers, engineers and environmental designers in 1997 to identify the key principles of universal design and one of the key conclusions was that,

> *Choice is provided by things that are designed to be flexible, adaptable and provide alternative means of use and multiple interfaces* (Universal design.com accessed 2015).

Stephen Heppell, an expert in the design of flexible learning spaces has recently influenced the design of some ECEC sites and schools in South Australia. Heppell explains that learning spaces need to be flexible so that a variety of teaching strategies can be implemented to suit the range of changing learning needs and advances in technology. Providing a rich range of flexible options can result in maximising choices for children and students (including those with disability) about how they learn and interact with their environment. This approach addresses the diversity of human experience, including children and student with disability.

> *Students need the opportunity to work on their own, often at a computer with high speed internet access, they need to be able to work together in groups of different sizes; and they need areas for quiet concentration. They need small group collaboration, Skype links to others elsewhere sharing their project, comfortable seats to read from, places to stand and work. This can happen more easily in larger classrooms with rich access to technology, an agile layout with thoughtfully designed acoustics and quiet nooks. Spaces need to be able to change throughout the day and during the term, with furniture that can be reconfigured to suit the activity underway at the time* (Heppell S, 2015, P1).

4.1.2 Impact of universal design features on outcomes for children, students, families and staff

Interviews with architects, a landscape consultant, students, parents and staff identified examples of universal design features at new and renovated or refurbished South Australian ECEC sites and schools that were contributing to improved learning and participation opportunities for children and students with disability. The staff, children and students using these facilities reported on the ways they were benefiting from the new or improved environments. At some of these sites students and their families spoke about how happy they were to attend. Parents spoke of the eagerness of their children to attend their new facility and the improvement in their learning, behaviour and progress.

> *The playground makes me want to laugh and scream (student with disability at a special school).*
>
> *I love the new playground - the circle swing, skateboards, scooters (student with disability at a special school).*

The old school was a sad place to drop kids off. Children were not happy going there. It had a stigma of negativity for disability. Now the new school looks like a school from the street. It has a much better feeling (student with disability at a special school).

Staff consulted from new special schools, are feeling much happier and calmer in their new facilities. They also highlighted dramatic improvements in behaviour of children and students, which provided greater capacity for teaching and learning. They commented that the features of their new or refurbished centres were 'fresh' and 'uplifting' for parents, children, students and staff and that it gave all parties a sense of feeling valued. Staff also emphasised that the aesthetically pleasing environment promoted a sense of pride and inspired children and students to engage with their learning. Some of the design aspects identified by staff, parents and students that had influenced behaviour and the capacity to learn were larger and less restricted spaces, freedom and choices for learning and play, natural lighting, less noisy and less cluttered learning environments. The project found that these features benefit all children and students and support maximum access and participation of children and students with disability (For further information about recommended design features that optimise access and participation, go to section 4.4).

4.1.3 Co-located facilities and community involvement

There has been a trend in South Australia in Government schools to co-locate special schools with mainstream schools because of the perceived benefits for staff, students and families. Architects who had designed special schools that were co-located with mainstream schools, and staff from special and mainstream schools and ECEC sites that were co-located, reported that some of these benefits included exposure to a broader curriculum, opportunities for staff to share ideas and resources and for students to connect with one another, and opportunities for the development of empathy, understanding and appreciation of children and students with disability. Examples of positive experiences reported by these interviewees included sharing facilities such as resource centres, gymnasiums and halls, joint participation at special events such as sports days and book weeks, and, in Community Studies programs, where mainstream students had worked and played with children and students with disability.

Staff reported that it requires commitment and effective communication from staff and the community to foster environments which offer rich opportunities for students with and without disability to integrate and learn with one another. This was raised as particularly important in co-located sites.

It was observed during the project that facility design can enhance opportunities for community involvement in care and education facilities, which in turn, contributes to greater empathy and understanding of the importance and benefits of inclusive education and the rights and needs of children and students with disability. For example, halls or community spaces with catering facilities and outdoor picnic areas that are accessible for children and students with disability are being used for community events and are being incorporated in some designs. Front office/reception areas are designed to be welcoming and inviting and easily accessible to the community to encourage community involvement including children and students with disability and their families.

In cases where special schools were located close to community resources and facilities, this provided opportunities for children and students with disability to access the broader community and to build positive relationships. Dr Cologon reports in her research that development of positive relationships and 'social cohesion' and 'inclusion' is best achieved by breaking the cycle of 'entrenched prejudices' in early childhood.

By age six, children demonstrate internalised cultural preferences and prejudices reflective of the communities in which they live…Fostering inclusion in the childhood years has the potential to break this cycle, thus making childhood an important focus area for developing inclusion (Cologon K, 2013, P8).

Facilities that are designed to facilitate community involvement, inclusion and integration of all children and students offer opportunities for the development of social cohesion and empathy.

4.1.4 Design features that support least restrictive practices

Staff from a number of special and mainstream ECEC sites and schools reported that their new, renovated and refurbished facilities had prompted collaboration and planning around innovative ways for using their new learning spaces. Some commented that they were committed to using least restrictive practices, particularly in the management of behaviour, and that this had been facilitated by their new building designs, for example, the inclusion of additional rooms (similar to standard classrooms), outdoor areas adjacent to classrooms with clear line of sight, sensory rooms and flexibility of classroom design that could be configured in multiple ways which could benefit all children and students, including those with disability. These design features provided choice and freedom for children and students and allowed them independence and opportunities to self-regulate their emotions and behaviour, rather than being withdrawn as a disciplinary measure, which can be regarded as a restrictive practice[8]. Information provided by Autism SA (2015) states that a sensory room used for student withdrawal 'is a necessary accommodation to support [students'] function', and not a tool to be used as a punitive and therefore restrictive measure.

Staff and parents of special schools reported that the frequency and severity of incidents of adverse behaviour for many children and students had decreased significantly in those new facilities which had been designed to support least restrictive practice to support the behaviour of all children. These staff understood that approaches to behaviour management need to be adjusted for individual children and students. Students from one of the special sites that had numerous examples of universal design principles were asked where they can go if they are feeling unhappy at school, and they were able to easily identify a variety of places that they felt comfortable to independently retreat to within their school facilities to self-manage their feelings.

The Victorian Equal Opportunity and Human Rights Commission's paper *Held back: the experience of students with disabilities in Victorian schools* report (2012) provides qualitative data collected from surveys of parents/carers, educators and students about the experiences of students with disability in schools. Of the 617 parents and carers who completed a survey 128 (21%) indicated that their child had been placed in 'special rooms' (other than timeout rooms) as a behaviour management technique and 34 (6%) indicated that restraint had been used with their child at school. The report also indicated that 514 (58%) of the educators had used restraint with a child and over half of these were inadequately trained to deal with the situation. Freeman and Sugai from the University of Connecticut stated that:

> *restraint and seclusion procedures should be used only as a last resort in the case of emergency and not as a punitive measure (Freeman J & Sugai G, 2013).*

In South Australia guidelines for staff working or volunteering in education and care settings were developed between the three education sectors in 2005 and updated by the Department of Education and Children's Services in 2011. These guidelines *Protective Practices for staff in their interactions with children and young people* provide advice 'for the establishment of positive, caring and respectful relationships with children and young people in education and care settings' (DECS, 2011, Foreword). These guidelines are designed to support staff to manage behaviour and develop relationships positively with all children and students, including those with disability. The

[8] Restrictive practice is any practice, device, or action that removes another person's freedom or interferes with another person's ability to make a decision. This includes detention, seclusion, exclusion, and aversive, chemical, physical and mechanical restraint. (Department for Communities and Social Inclusion, July 2013).

office of the Senior Practitioner, Disability SA, *Department for Communities and Social Inclusion* provides advice and support around Restrictive Practices experienced by adults with disability in supported living environments.

4.1.5 Design features for Aboriginal children and students with disability

The project officer conducted site visits to two Aboriginal ECEC sites for the project, one of which had been refurbished and the other which was a recently built centre. Interviews undertaken with staff and parents and tours of these sites revealed that the facilities included a number of universal design features that optimised access and participation of Aboriginal children, Aboriginal children with disability and the broad range of users. Some of the features that were included in these sites to support and respect the Aboriginal culture such as circular rather than angular design for the overall facility shape and the inclusion of a community centre were similar to features that were identified in this project as features that facilitate access and participation of children and students with disability. The universal design features that were indicated by staff and parents at these centres that facilitate access and participation of all children included:

- large open spaces together with quiet spaces to retreat or have quiet calm time
- flexibility and adaptability of learning spaces rather than fixed furnishings and spaces that provided choice and freedom
- hearing augmentation and sound absorption features
- wayfinding[9] elements and layouts that were easy to navigate
- open and welcoming entrance to the facilities
- aesthetically-pleasing spaces that impacted on the well-being of children and staff and which made them feel valued
- features that facilitated ease and safety of arrival
- large open natural environments
- transparency of supervision with clear line of sight
- uncluttered spaces
- natural lighting and connectivity between indoors and outdoors.

While the majority of the facilities that were visited for the project emphasised the importance of design that facilitated and welcomed community involvement, a point of differentiation in the Aboriginal centres, was the quality of purpose built community centres that were connected directly to the outdoor environment and encouraged the family and cultural values of Aboriginal people. The other feature mentioned by the staff of these sites that is commonly featured in Aboriginal centres, is the inclusion of hearing augmentation systems, as many Aboriginal children and students have otitis media and experience long periods of conductive hearing loss. The staff of the centres emphasised the value of these features for the participation of Aboriginal children who have hearing impairment, together with the sound absorption materials that had greatly impacted on the participation of learning of all children, not only those with a hearing impairment. Improvement was observed by staff in the ability of all children to concentrate and focus on their learning.

[9] Wayfinding is the process individuals use to navigate in unfamiliar surroundings. Wayfinding extends beyond signage to include elements of site design, site layout, physical, sensory, cultural and cognitive needs. (Queensland Government Integrated Systems & Process Improvement Unit, PPAS Health Planning & Infrastructure Division, August 2010).

4.2 Impacts of the regulations and guidelines for refurbishments and renovations to early childhood education and care sites and schools on inclusion

4.2.1 Definitions and impacts of renovations and refurbishments

Interviews with parents and staff from one mainstream school and one Aboriginal ECEC site, with sector staff, and the Education and Early Childhood Services Registration and Standards Board of South Australia revealed that the regulations and timing of processes surrounding the renovation and refurbishment of facilities may impact on the access and participation of a child or student with disability across the three education sectors. It is important to articulate the difference between the terms renovate and refurbish. Renovation of a building, part of a building or other fixed structure, as defined in the Education and Care National Regulations, means construction, demolition, removal, relocation or carrying out structural alterations which affects the fabric of a building or fixed structure. Examples of this include constructing additional rooms, relocating walls, demolishing parts of a building or fixed structure or making changes to the fabric of the building such as cutting a doorway in a wall to improve access. Refurbishments or refits include removing some or all fixtures and fittings in a room and refitting with desired facilities, while smaller refurbishments could include examples such as making adjustments to a reception counter height, door knobs, lockers or furniture.

Many ECEC facilities and schools are currently housed in old buildings, and in some cases, major refurbishments may be required to provide full accessibility and participation for all users. In the case of the government sector, some preschool buildings are currently not owned by DECD but rather by a local council. Therefore, the process for conducting refurbishments and renovations to make the facility accessible and functional for children with disability can raise complexities. There is a long term DECD plan to move preschools onto school sites and all new preschools are being built on existing school sites. This does not apply to the independent sector or catholic sector as all ECEC facilities are co-located with schools.

4.2.2 Whole site renovations

Sector representatives and staff from an ECEC site reported that for whole site renovations, ECEC site directors and school principals need to give consideration as to whether they wish to move their service off-site or negotiate to have the renovation conducted in stages so that children and students have safe access to parts of the facility. This may include the need for temporary portable buildings located away from the construction site. If building staff are working on site with children or students present, child protection and police clearances are required along with comprehensive briefings in regards to occupational health and safety issues. In addition it was recommended by teaching staff of a special school that if children and students are on site during construction that a daily safety inspection of the site is desirable, in order to ensure that a site meets safety standards.

In regards to DECD sites, staff from Infrastructure, DECD informed that transferring students to alternative facilities during building projects are considered as a part of project delivery. Principals are on the project control group and builders are managed to ensure there is minimal disruption to curriculum delivery. For instance, ensuring disruptions such as noise are minimised. DECD and Department of Planning, Transport and Infrastructure have policies in place regarding safety and access during building works.

4.2.3 Renovations or refurbishments for individual children or students

Interviews with staff and parents from a mainstream school, disability service providers, the project group and sector staff highlighted the considerations required when a building renovation or refurbishment is being made on behalf of an individual child. It is important for this work to be undertaken discretely and respectfully to ensure

the dignity of the child is respected and that their differences are not highlighted unnecessarily. For example, adjustments made to furnishing and fittings such as heights and types of door handles and accessible toileting facilities. Ongoing adjustments may be required as the child grows and gets older, their needs change as a result of their disability or when they transition to a new site. Adequate lead time is required so that staff at a new facility have time to arrange for the necessary adjustments. Ongoing communication between parents and caregivers and ECEC site directors or school principals is essential so that the needs of the individual child or student who requires adjustments can be met. In cases where parents and caregivers are not able to undertake such negotiations and communications, it is essential that school and ECEC site staff advocate for the child's needs and that interim measures or alternative access are provided as required by the Disability Standards of Education (2005).

4.2.4 Legislation and guidelines governing building projects at ECEC sites and schools

There are four levels of legislation and guidelines that govern new, renovated or refurbished buildings for ECEC sites and schools as illustrated in the table below.

Federal government legislation - Disability Discrimination Act (DDA) 1992
Federal government legislation – Premises Standards (2010) and Building Code of Australia and Australian Standards
State government regulations – Department of Planning, Transport and Infrastructure (DPTI)
Sector specific guidelines e.g. DECD Design Standards, Guidelines for individual schools in the Independent sector and the Catholic sector

In addition to these, in DECD schools, a Disability Access Provision has to be completed by site leaders in collaboration with Special Educators when a child or student requires a refurbishment or renovation to be done to make an ECEC facility or school accessible. ECEC sites need to also meet the National Quality Standards and requirements set out in the Education and Early Childhood Services Registration and Standards Act 2011 and the associated national regulations. Processes that are required under these regulations, standards and guidelines may result in exclusion in the following ways:

- the ECEC setting or school applying for hardship as it may impact on the number of children or students the site can accommodate
- a delay in the refurbishment going ahead thereby not being completed until after the child leaves the ECEC or school environment
- there not being the additional space (above the specified standards) that is required to optimise access and functionality for some children and students
- the child not being able to attend their local ECEC site or school
- the parents being discouraged or frustrated by the process of enrolling their child.

In the case of ECEC settings, renovations may impact on the maximum number of children who can attend a service as permitted under the South Australian specific provisions in the National Regulations. Currently minor work that does not constitute a renovation does not necessarily prompt a recalculation of a service's capacity. A proposal for amendment to the National Regulations has been put forward to change the impact of a renovation of ECEC sites so that renovations will not necessarily trigger the recalculation of the service's capacity. This would result in the service being able to make renovations for an individual child without the disincentive of having their capacity potentially reduced. This proposed change to the National Regulations has yet to be considered by the Ministerial Council.

4.3 Factors that support the consultation and planning processes

4.3.1 Comprehensive ongoing and free-flowing consultation

A consistent message communicated by participants of this project across the three education sectors was that comprehensive consultation is critical when undertaking a renovation or refurbishment, or building a new ECEC facility or school that caters for the needs of children and students with disability. The time taken from the initial consultation to the completion of a project varies considerably depending on its size, complexity and level of communication.

Architects and school leaders reported that the quality of the consultation in the planning stages and throughout the building process can provide a more efficient and economical outcome than retrofitting at the completion of a building project. One of the most consistent responses from interviews with stakeholders was that consultation continue beyond the design phase, be ongoing and involve all parties including children and students, parents and carers, directors or principals, experts in the disability field, architects, facility planners, landscape designers, builders, and the community. Ongoing communication allows for formative feedback and adjustments by staff to architects and building personnel during the planning and building process as identified (e.g. location of switches, location of equipment, dimensions of rooms including learning spaces and toilet facilities). The project recognises that there are cost implications for extensive ongoing consultation, as once a project brief is tendered, changes to the design through variations normally result in significant additional costs and delays in delivery. The planning and approval stages are therefore crucial in delivering a project to an agreed specification, budget and timeline. Architectural expertise in delivering projects that meet the needs of children and students with a disability is also crucial.

The lead project officer visited three special school sites where the building designs had been completed by the same architect. The principal of one of these schools reported that the keys to achieving good outcomes for children and students with disability were having opportunities for ongoing consultation and the school leader communicating a clear and strong philosophy and vision for the access and participation of children and students with disability. This school was one of the best examples of universal design observed for this project. School leaders from the other two special schools reported that consultation for these projects was disjointed throughout the planning and building process and in their opinions, this had resulted in very few universal design elements featuring in the final product. One of these facilities was built under the Public Private Partnership and one was not. However, the common barrier communicated to achieving optimal access and participation in design was limited consultation throughout the process.

The Public Private Partnership (PPP) model used in the building of new facilities and the associated timeline pressure to open the new schools in South Australia emerged as an area of potential difficulty from the point of view of site leadership staff and architects involved in these projects. This is based on their understanding and experience that full and ongoing consultation beyond the development of the initial brief leads to better outcomes. This suggests that the flexibilities required to meet the needs of children and students with disability should be built into the early design briefs.

4.3.2 Consultation with experts in universal design and access

Interviews with school leaders, ECEC site staff and architects revealed that leaders who had visited other sites around South Australia, Australia and/or overseas, and who had consulted with those who have a practical understanding of the additional needs of children and students with disability, believed that they had more capacity to influence a quality outcome. This was observed during visits to new, refurbished or renovated facilities throughout the project. Leaders of new and refurbished schools and ECEC sites also emphasised the importance of

not compromising their vision due to budget restrictions as often there are manageable and creative alternatives to achieve a desired outcome if conversations are held during the design and building process with directors/principals, architects, facility planners and building personnel.

Staff from special and mainstream schools and ECEC sites suggested that it is beneficial to have people with practical understanding of the additional needs of children and students with disability to be involved in the planning and consultation of new and refurbished facilities from the outset. The involvement of access consultants to provide advice and facility audits of existing buildings could also assist in the design process, particularly in regards to physical disability. In addition to this expertise, communication with and observation of children and students with disability and consultation with their families in ECEC settings and schools by architects and facility planners and playground consultants was seen as desirable.

Architects reported that the development of a practical understanding of universal design and the broad range of design concepts that support the additional needs of children and students with disability will have a positive influence on access and participation. Architects interviewed for the project reported that the Association for Learning Environments[10] provides a useful vehicle for facilitating consultation between educators and the building industry.

The Australian Human Rights Commission (2008) maintains that misunderstanding through lack of direct experience with people with disability or in training in disability and access can result in the development of inaccessible facilities for some people. For example, the location of signage and font size and type used can result in signage being inaccessible to people with cognitive or intellectual disability, vision impairment, for people in a seated position in a wheelchair or for people who are short in stature.

> *…unless you have friends with a disability, or develop particular skills in the area of building access it can be difficult to understand why it is that the design and construction of access features must be precise. If you do not understand how people with a disability move around in and use facilities; why safety rails on ramps are necessary, or why visual indicators on glass doorways must be in a certain position it is easy to overlook mistakes or think that close enough is good enough (Australian Human Rights Commission, 2008, P1).*

The DECD design standards state the importance of seeking advice from 'a qualified disability access consultant to ensure modifications optimise the learning and participation of children and students with disability' (DECD, July 2015, p 11).

4.3.3 Continuity of personnel

The architects and leadership staff of two new special schools reported that the involvement of committed personnel from the start to finish of a building project including school principals, facility planners, architects, building supervisors/project managers and builders can influence the quality of the final outcome for its end-users. In cases where continuity is not possible, new personnel need to be thoroughly briefed to understand and appreciate the additional needs of the children and students who will or are using the facility. They also need to understand the features of universal design that have been identified as priorities. If these steps are not adhered

[10] Association for Learning Environments (formerly named the Council of Educational Facility Planners International) is a worldwide organisation where members share knowledge, experiences and best practices in planning, designing and building learning environments. The 2014 national conference was held in Adelaide which enabled educators and architects to showcase features of design that maximise accessibility and functionality for children and students with disability through organised site visits.

to, leadership staff and architects reported that the final product may not reflect the initial vision and priorities identified earlier in the process. This may impact on the access and participation of some children and students, and result in the need for expensive additional retrofitting.

4.3.4 Industry practice

Participants reported that regular communication between all parties including ECEC site or school staff building site managers and builders was required to ensure functionality and safety at the building facility after its completion e.g. fastidious cleaning inside and outside, appropriately located switches, quality of building materials. Before children and students use the completed facilities at the end of the building process, it was suggested by staff that a building supervisor in consultation with school or ECEC staff conduct a quality assurance exercise to ensure all areas have been satisfactorily completed and safe for all children to access and fully participate in their learning.

4.4 General principles for universal design and inclusion

Whether building a new school, ECEC facility, or specialist unit within a mainstream site or for an Inclusive Preschool Program (IPP); or undertaking a refurbishment or renovation; the project findings suggest that similar general principles and features be applied to facilitate universal access and to develop inclusive learning environments. Information has been gathered about these features through observation of a variety of facilities across the three sectors and through the data collected via interviews with children, students, parents and carers, directors and principals, ECEC site and school staff, architects, facility planners, a landscape consultant, and sector staff. Many of these features go beyond the minimum standards outlined by the Building Code of Australia 2011 and the Disability (Access to Premises – Buildings) Standards 2010. The DECD Design Standards (2015) include some of the features that are listed below, which go beyond the minimum standards e.g. acoustics that accommodate the installation of soundfields, door widths. The review of the DECD Design Standards in 2015 has resulted in greater representation of features within educational facilities that extend beyond the minimum standards. The commitment of the DECD Assets and Business Services team to review these standards annually in consultation with MAC:CSWD and other stakeholders will facilitate continual and ongoing improvement for future building projects as new knowledge evolves.

Section 4.4 provides a comprehensive list of features that were captured in site visits, interviews, and research that can be used as a guide for designers and ECEC site and school leaders in their discussions around creating environments that incorporate the principles of universal design and facilitate inclusion for all. Some of these design considerations are not yet considered in the Building Code of Australia 2011 or the Disability (Access to Premises – Buildings) Standards 2010.

4.4.1 Location, signage and wayfinding

The size, shape and gradient of land where an ECEC site or school is or will be located can cause challenges for architects and may limit the options for design. If the design features are not well considered, this may impact on the level of accessibility and functionality of a facility. The location, signage and other visual cues can impact on the accessibility of a facility by supporting or impeding orientation, wayfinding and mobility to and within the facility. This can impact on a child or student's independence and safety.

When a student was asked in an interview to describe the best things about her new school, one of her responses was 'there are no hard parts to get to'. A staff member interviewed at a school commented that the benefit of the wayfinding features of the facility was that 'all kids make their own way to their classrooms.' The design provides these children with directional cues such as signage, colours, symbols and logical connecting pathways that help them to navigate their facility independently and with minimum anxiety.

Design principles for access around location, signage and wayfinding that were identified by interviews with architects, disability service providers and students and staff of special and mainstream schools and featured in IATA documentation are listed below.

- Tactile Ground Surface Indicators (TGSIs) that can be detected underfoot assist orientation and safe negotiation of the environment. These may highlight changes in direction or provide warning indicators for hazards e.g. at the bottom and top of stairs, at landings and at ramps. For TGSIs to assist with universal access, they need to have a minimum of 30% luminance contrast compared to the surrounding ground surface (Australian Human Rights Commission, 2008, P4). TGSIs are specified in the Premises Standards as necessary for warning indicators but not as directional indicators and are therefore not always included for the latter.

- Colour contrasts to make features stand out from other features in indoor and outdoor environments e.g. painted pathways, toilet seat and lid in contrasting colours.
- Accessible signage which is concise, easy to read and to understand, is a minimum of 18 size font, tactile, displays the blue international symbol for access and braille and is at an appropriate height so that the information shared is accessible for all users. These features assist all people to easily find their way to an educational facility from the community and navigate their way within a facility.
- Logical level pathways and connectivity from space to space assist all users to navigate their space independently and comfortably.
- Directional design features such as colour, texture and symbol that symbolise definitive areas within learning spaces may assist in identifying the purposes of particular learning spaces thereby promoting independence and choice, e.g. tight weaved carpeted areas that are adhesive-fixed for quiet reading and play, linoleum areas for eating, cooking, art activities, areas with more natural lighting for reading, high ceilings for interactive activities and low ceilings for quieter calmer activities.
- Directional hints such as footprints on the floor, snakelike pathways and handrails/other hand support that lead from one activity to another can assist children and students to navigate their space, together with providing physical support.
- Undercover outdoor walkways which have predicable paths or loops that return to the starting point provide direction to assist with wayfinding to various key areas of a facility.

4.4.2 Building materials, fixtures and fittings

The staff from several mainstream and special schools and ECEC sites reported that the quality of building materials, fixtures and fittings used in the indoor and outdoor learning environments of their facilities was inconsistent. Staff indicated that the establishment of a benchmark for quality of these features that ensures the reliability, safety, robustness and ease of use for all users in addition to providing environments that are conducive for all children and students to learn was required.

They also indicated that engaging all children and students in choosing, designing and building furniture, gardens and other decorative and useful fixtures for their learning environment facilitates ownership and a sense of pride and belonging in their environment for all children and students, including those with disability.

Staff from a refurbished centre commented that the noise absorption materials used in their refurbishments along with soundfield systems had improved the learning and behaviour of children who were less distracted and seemed calmer and more focussed in their learning environment. This was a design feature that they had chosen to incorporate that had resulted in the learning environment being more inclusive as it provided optimal conditions for all children to hear and focus on their learning.

Design principles that facilitate access and participation in learning around building materials, fixtures and fittings that were identified by staff, architects, and disability service providers and/or featured in IATA documentation are listed below.

For access

- Doors designed to be easy to use and manipulated to facilitate independence i.e. in excess of the standard width, light and easy to open and close, have lever style handles and have the ability to stay open without the need for a door stop.
- The inclusion of solid contrasting strips on any fully glazed doorway or wall. Double glazed options are more energy efficient and safe due to how they shatter.

- A range of flooring that is functional regardless of the mobility of its users is preferred e.g. non-slip flooring and the inclusion of a range of surfaces including tight-weaved and adhesive-fixed carpeted areas and easy to clean flooring for messy activities.

For participation

- The use of glass or other fencing materials to maximise visibility and transparency and that allows for passive supervision and independence e.g. a child in a play area with a teacher observing them through glass.
- Indoor sports floor materials that are impact-resistant, minimise injury while also being responsive enough to bounce a ball.
- The provision of good quality blinds (without cords) to block sun glare especially at times of the day when the glare from natural light may impinge the ability to do some indoor activities such as using whiteboards, depending on where the windows are located. This is particularly necessary with the inclusion of more glass that is recommended as a universal design feature to facilitate passive supervision.
- The inclusion of features for minimising noise levels assists all children and students to participate actively in their learning e.g. noise absorption in walls, floors and ceilings, imperfect square rooms that result in less reverberation i.e. don't echo.
- The inclusion of hearing augmentation, for example, soundfields, can assist all children to access the curriculum and participation in their learning.

4.4.3 Entrances and exits to and from early childhood education and care facilities and schools

Staff and parents of special and mainstream ECEC sites and special schools explained that the experience of arriving at and departing from an ECEC facility or school impacts on the quality of a child's or student's day. Staff, parents, facility planners and architects reported that where new builds are located within close proximity of other ECEC sites or schools, addressing traffic management for school arrival and departure times together with community understanding and appreciation of the additional needs of some children is important. For example, in a co-location, traffic congestion and difficulties accessing car parks close to the site entrance was reported to cause anxiety, pose safety concerns for some families and inhibit access for all children and students.

> *The speed zones do not assist the congestion. Getting across the road with a child with a disability is difficult (Parent of a child with disability from a special school co-located in a mainstream school).*

Staff and parents of ECEC sites and special schools reported that the magnitude and logistics of the movement of minibuses, taxis and cars needs to be carefully managed, as do the speed limits within the facility and in neighbouring streets. Architects, staff and parents suggested that consultation with the local community, site staff, local council and facility planners during the planning and design phase to assist in identifying and resolving logistical issues that may occur between sites in a co-location is necessary.

The project found that some facilities provided accessible car parking and other parking for families close to the principal pedestrian entry point into the main building. Staff identified this as an example of going beyond the minimum requirements in order to provide an inclusive environment.

Parents and staff highlighted some specific features that maximise ease of access and safety, while simultaneously minimising anxiety for children and students arriving at and departing a facility. Design features for maximising access for children and students with disability regarding entrances and exits from ECEC sites and schools identified by parents and staff and/or featured in IATA documentation are listed below.

- Accommodation for two cars at one time heading in opposite directions at vehicle entrance points, with signage that facilitates traffic flow.

- Provision of a number of sheltered and accessible car parking bays with appropriate gradients for ramps (in proportion to the needs of the educational community) and with space for future expansion as the cohort of children and students change, that are close to the principal pedestrian entrance of the building.
- Provision for drivers and passengers to load and unload from the vehicle away from passing traffic and with enough space for manoeuvrability of wheelchairs and prams.
- Provision of accessible and sheltered taxi and bus parking close to the principal pedestrian entry point to the facility.
- Provisions for children and students with disability to be dropped off directly to the main sheltered entrance to the building.
- A continuous accessible path of travel that is safe and easy to navigate from car parking bays to the principal pedestrian entrance.
- A pedestrian crossing for safe entry into the facility in cases where parking is not available or where children arrive by public bus.
- Multi-level lockable gates within the facility parameter for filtering the safe and calm arrival and departure of children and students.
- An alternative entrance to the building that is close to the principal pedestrian entrance for children and students who require a quieter and calmer entrance to their facility. *Note: This feature provides choice for individuals who do not feel comfortable accessing the building from the main entrance as crowds and noise may cause anxiety.*

4.4.4 Accommodating families of children and students with disability

Staff at special ECEC sites and schools reported that design features can be used to encourage interaction and assist in establishing trusting and comfortable relationships with children and students with disability and their families, which can contribute to more inclusive environments. In particular, the use of extensive glass ensures the visibility of the reception area from the street. Features that maximise the access and participation of children and students with disability and their families as identified by staff, parents and architects are listed below.

- Wide self-opening automatic doors (where possible) with step free entry and a continuous accessible path of travel to reception desk. An automatic door feature that does not allow for easy exit once children and students have arrived. The preferred option is that children not be required to exit via front entrance to access other areas of the school.
- Installation of varying heights of reception front counter that incorporate leg space for people in wheelchairs and which can accommodate people of varying heights.
- Furniture and displays that do not impede on space for mobility circulation for people with vision impairment and people with physical disability.
- Reception areas that are welcoming, inviting, aesthetically-pleasing, calming and that provide a positive first impression to parents and carers and the community. The incorporation of natural lighting and glass together with a large area to minimise congestion and anxiety for some children, students and their families were considered important in providing the desired atmosphere in these areas.
- The provision of small meeting rooms or spaces close to the entrance of a facility where parents and carers can share sensitive information discretely with staff at the beginning and end of the day.
- The provision of video monitors at reception allows for a gradual and staged exit by parents if required. This may assist in providing a positive start to the day and alleviating the anxieties of children and students including those with disability, by watching their parents leave the facility.

4.4.5 Size, shape and connectivity of educational spaces

The size and shape of educational spaces together with the connectivity between indoor and outdoor learning spaces all contribute to optimising access and participation for all. There is often the need for more staff assistance for individual children and students as well as large and often multiple pieces of personal equipment, which all require more space. There is potential for children and students with disability to fall or collide more readily. For example, those who are developing their proprioception[11], or those with mobility or vision impairment may be at risk.

Building structures are usually designed first and the outdoor areas are designed around the building structures. This can impinge on the possibilities of the outdoor learning space as reported by a landscape consultant, architects and ECEC site and school staff of special and mainstream facilities. Designing indoor and outdoor areas simultaneously and giving consideration to the impact of adjustments on both areas was identified by the landscape consultant and school and ECEC site leaders as resulting in more inclusive indoor and outdoor environments. Design features that optimise access and participation around the size, shape and connectivity identified by staff, students, architects and landscape consultant are listed below.

For access

- The provision of larger than the minimum standards learning spaces to minimise potential risk, to maximise safe navigation, to allow for greater circulation and movement and to provide extra space for additional staff and equipment.
- The capacity of corridors to accommodate the safe passage of two children or students to travel safely side by side in wheelchairs without the impingement on space of furniture such as lockers or equipment.
- A circular design allows sub schools (junior, middle, senior school) or specialist areas to be located around a central point minimising travel distances between areas within the facility. This maximises functionality for users with mobility issues and provides opportunities for all children and students to comfortably and independently navigate their environment. All of these features may also minimise the anxieties of some children and students.

For participation

- The provision of seamless connectivity between indoor and outdoor learning areas, optimally with the use of glass partitions for passive supervision for all children and students including those with disability.
- Classrooms may incorporate a fully sheltered secure outdoor learning area adjacent to the indoor learning area as there are a range of benefits to this connectivity. These spaces can be used for children and students to independently withdraw and are described by architects as transitional spaces that are controlled by subtle means to allow children and students the freedom to choose, or as an alternative learning environment that allows for passive supervision. Consideration to the direction of the sun and shelter from the rain and positioning of drain pipes and the inclusion of quality café blinds will allow access to these environments all year round. The consideration of the size of these areas includes space for suspension points with soft fall material underneath to accommodate swings and hammocks.
- Architects, staff and parents from a range of special and mainstream facilities recommended planning the site in a circular arrangement ‘around a village green’ rather than angular designs. The circular design promotes

[11] The ability to sense stimuli arising within the body regarding position, motion, and equilibrium (http://www.medicinenet.com/script/main/art.asp?articlekey=6393).

interaction and provides a sense of community and inclusion within the educational environment. It also facilitates passive supervision and safety more easily than an angular design with hidden corners.

4.4.6 Indoor learning environment

Staff, students, parents, and disability service providers explained that the optimal accessible indoor learning environment provides for a variety of flexible, accessible and functional learning experiences that can be adapted for particular learning activities and that accommodate the needs of the range of current and future users of the facility. Design features for optimal access and participation in the indoor environment are listed below.

For access

- Furniture that is minimal to create greater circulation space and to avoid clutter.
- Separate spaces where children and students can quietly retreat or withdraw that are not considered or used as places of punishment but pleasant areas where children choose to go to feel calm and relaxed and as part of their capacity to self-regulate their behaviour. These areas are made available as additional spaces for their prime purpose. Other spaces for withdrawal could be carrels or curtained off areas within larger learning areas such as libraries.

For participation

- Space to include provisions for the learning of life skills e.g. kitchen and laundry facilities.
- All learning areas be multi-use spaces with flexible (not fixed) furnishings within uncluttered environments.
- The ability for staff to adjust the learning environment assists in maintaining the interest and stimulation of children and staff and provide a range of learning experiences. For example, portable storage units can be used to divide sections of learning areas in a variety of ways depending on the nature of particular cohorts or individuals or the learning and play activities that it needs to accommodate.
- The ability to divide or open up larger learning spaces and the inclusion of learning commons adjacent to clusters of classrooms provide opportunities for more choice and greater collaboration and interaction when desired.
- Circular furniture design can promote interaction and safety with the exclusion of sharp corners.

For access and participation

- All facilities provide a variety of learning spaces separate from the main classroom that allow opportunities for a broad curriculum and variety of learning experiences for all children and students e.g. a hall or larger space for assemblies and games, art rooms, dance/music rooms and separate larger kitchens, information technology room, technical work spaces for Vocational Education Training programs and community programs. Sound absorption materials in these spaces is also beneficial as well as ease of movement from space to space that is under shelter and within short distances where children can reach, see and access all areas. If a hall or large community space includes a stage, ramps are necessary to ensure access to the stage.
- These facilities be accessible for children in wheelchairs i.e. with leg clearance under sinks and benches and at accessible heights, and include safety features such as heat resistant glass on ovens, that are not too complex to understand and use e.g. induction stoves may be too complex.
- Chairs and tables that can be configured and easily adjusted in a variety of designs can assist in accommodating the needs of individual children and students of different heights or those using wheelchairs as well as to facilitate group work.
- A variety of physical levels can be created to suit the needs of a variety of activities and children/students e.g. adjustable table heights, soft furnishings such as bean bags/couches and the placement and height of windows to allow for smaller people to benefit from the transparency and to allow for passive supervision from a seated position.

4.4.7 Outdoor learning environment

The data from the interviews indicate that a well-designed outdoor environment is equally as important as the indoor environment for the well-being, mental health, social interaction, inclusion and the learning experiences of all children and students including those with disability. MAC:CSWD's research report *Physical Education and Physical Activity*, *opportunities for students with a disability (2010),* indicates that the World Health Organisation (2003) proposed that:

> *regular physical activity provides people, male and female, of all ages and conditions - including disabilities – with a wide range of physical, social and mental health benefits. (WHO, 2003 in MAC:CSWD 2010, p12)*

For outdoor environments to maximise access and participation, to stimulate the learning of all children and to maximise their capacity to explore a variety of experiences independently, it is optimal to include features that are a combination of permanent and flexible structures and activities that lead logically to one another.

The majority of staff that were interviewed emphasised that outdoor learning areas be available and accessible all year round with provision for variable weather conditions and that additional outdoor space beyond the minimum requirements be provided to ensure they are accessible and functional for all children and students. Staff and architects highlighted that similar principles be applied to the outdoors as to the indoors in terms of the extra space, flexibility and choice the environment provides for all children and students including those with disability.

The involvement of children and students in digging, gardening, preparing soil, planting, watering and caring for the plants that they prepare for cooking and eating can be an extended sensory and learning process for all children but can cater for the additional and specific sensory needs of some children and students with disability. For a refurbishment, renovation or new build, staff suggested that existing trees not be removed but rather the playground be designed around them.

Many staff also commented on the importance of integrating the use of natural environmental features alongside man-made structures and tactile materials to optimise engagement and sensory experiences. Examples include

cubby houses that are made from natural materials to emulate a tree house setting, the use of shrubs and trees, edible plants and vegetables grown in garden beds, hedges or mazes for hiding and relaxing, murals with different textures and posts with learning statements. The landscape designer interviewed for the project commented on the importance of identifying limitations prior to designing outdoor areas rather than compromising on important features later in the process e.g. positioning of underground water tanks and pipes.

Design features that optimise access and participation in outdoor environments for all children and students are listed below. This list may vary depending on the age of the student cohort. See section 4.4.8 for the specific needs of adolescents.

For access

- A continuous accessible path of travel to link all facilities, that is free of trip hazards, steps obstruction, clutter, overgrown plants and equipment.
- Adjustable outdoor furniture of different heights that allow a wheelchair front-on access for all activities including water play, interactive panels, raised gardens, troughs and sand. Variable turning circles of wheelchairs which vary depending of the size and type of chair are given consideration i.e. diameter range of approximately 1500mm for a small child and up to 2200mm for an adult is required (Jeavons M, 2008, P118).

For participation

- A combination of large level open spaces and options for quiet retreat when required e.g. forts, cubby houses.
- Features that promote fun and independent play e.g. animal sculptures, tactile sensory panels, music.
- Facilities that allow for communal activities such as covered outdoor learning areas and picnic or BBQ areas.
- Provisions for carers when children and students need intensive support with their play e.g. extra seating with back support in key areas such as sandpits, amongst shrubs.
- Provision for outdoor water and power supplies for hygiene and health support if required.
- Solid outdoor furniture that is robust, cannot be lifted and does not incorporate sharp corners.
- In ECEC facilities, a space between the outdoors and the classrooms where all children can leave coats, and rubber boots to allow play in a variety of weather conditions for all children and students including those with disability.
- Basketball rings on adjustable poles to include students of different heights to play.

For access and participation

- A layout that allows for maximum visibility and supervision with no blind spots.
- Wide and directional paths to allow for bikes, scooters, nature walks and wheelchair exploration allowing all children to participate.
- The provision of alternative experiences to allow all children to participate and enjoy a variety of sensory experiences and textures e.g. garden beds, waterplay and sandboxes at various heights, the inclusion of level, wide and ‘jetty-like’ pathways through textures that are difficult for wheelchairs to navigate, such as sand or water play, and wheelchair-height play equipment.
- The inclusion of climbing equipment or raised areas and in ground trampolines that are not located in the continuous accessible path of travel but close to the perimeter.
- A range of swings of different shapes and sizes that move in a variety of ways. Swings that are located on boundaries assist with safety and supervision. Circular swings are appropriate for older students. At least one wheelchair accessible swing. This needs to be placed in a location that doesn’t obstruct yard supervision or path of travel.

- A range of ground surfaces e.g. natural grassed areas that are large enough for active ball play, artificial grassed areas, natural grass areas or soft fall areas. These surfaces allow access in a range of weather conditions for children with mobility disability or delay in gross motor development to explore their environment in a seated position, shuffling or crawling (smooth, undercover, and heat-resistant in summer. Coloured concrete/paving/mosaic to provide sensory interest, visual contrast to surrounding fixtures, and additional sensation.
- A variety of sandpit experiences that either have a cover or are under shelter. A range of sandpit sizes is preferable i.e. smaller sandpits allow children to play calmly and independently when they choose and larger ones promote interactive play. A sloping beached edge assists a child who can crawl, a raised edge may be used as a transfer station from a wheelchair, a simple rail or handgrip may help a child with poor balance, provision of back support while sitting in the sand, and a wheelchair accessible raised sand table on the edge of the sandpit will enable all children to play together.

4.4.8 Adolescents with disability

In some cases there can be tension between the size and age of a student with disability and their level of development, which can lead to incorrect assumptions about their needs as adolescents. It may be assumed that a physically large student has similar cognitive development as their peers due to their age. Their needs for social interaction and participation in physical activity may be overlooked and therefore not catered for in design. Some students may stay at school longer as they may complete their SACE over a number of years. Design features for the participation of adolescent students with disability that were identified by students, parents and staff, are listed below.

- Provision of more physical space than is required for smaller children is essential to allow for flexibility of size for older and larger students.
- Students expressed the need for an outdoor area with tables and chairs separate from the younger children and students in the school that provides a teenage 'hang out' space to be with friends their own age.
- Provision of opportunities for learning independent living skills through hands-on and practical experience, e.g. using tools to maintain and assemble equipment (such as bikes), gardening skills and learning how to use equipment found in kitchens and laundries.
- Equipment for activities suitable for adolescents, such as swings, exercise and sports equipment.

4.4.9 Calming and stimulating sensory learning spaces

Many staff, parents, carers and disability service providers commented on the necessity of the environments of ECEC sites and schools to facilitate the calming or alerting of senses as needed for individual children and students. The tolerance levels of individuals vary significantly so an inclusive environment that has the capacity to minimise sensory overload, whilst also having provisions for stimulating the senses where necessary, facilitates the access and participation of all students.

Many of the newly built facilities that were visited for this project incorporated sensory rooms, which were a purpose built space designed to be used to avoid or recover from sensory overload or to provide sensory input to meet a sensory need, e.g. tactile, auditory or visual stimulation. Some of the features of these rooms included a mirror ball, swings, hammocks, bubble tube, ball pool (where children can control colours and experiences) and an absence of windows. Staff expressed differing opinions about the value of sensory rooms. Some felt that the general design elements of the overall facility be required to address the sensory needs of children rather than relying on one specified space, while others reported that they utilised this space regularly with their children and

students with positive outcomes. An overall facility that incorporates universal design principles certainly addresses the varying sensory needs of all the people who use it, in addition to a purpose-built space for individuals who require an additional level of sensory support.

Design features around sensory needs for access and participation that were identified by parents, staff and architects are listed below.

- Minimisation of noise in the environment e.g. use of acoustic absorption materials in walls and ceiling, pin up boards for displays in classrooms that provide additional sound proofing, use of music to signal change thereby minimising use of bells and sirens, and use of paper hand towels instead of hand dryers.
- Awareness of other potential sources of noise such as fridges, fans, air-conditioners and fluoro lights.
- Provision of equipment including hammocks, egg chairs, swings, and climbing equipment.
- Minimisation of pattern and colour unless it serves a function rather than an aesthetic purpose e.g. colours used for visual cues in identifying areas and assisting with wayfinding.
- Provision of quiet spaces indoors and outdoors away from the busy thoroughfare of the environment.
- Provision for staff to lock away potentially distracting elements of the environment, when necessary, such as computers or water isolation buttons for sensor taps and outdoor water features.
- Provision of fresh air and natural light through glass, skylights and open-able windows.

4.4.10 Health and safety

Staff, parents, architects, disability service providers and the project group indicated that there needs to be a balance between providing a safe environment for children and students with disability and staff, whilst also preparing children and students for 'real life' challenges and risks and assisting them to develop independence inside and outside of the ECEC site or school environment. There were two clear sides to this discussion articulated by participants. Some staff acknowledged the importance of encouraging independence and provision of choice, while others explained that appropriate security and safety for staff and students in some schools needs to be acknowledged and managed e.g. quick, convenient and easy entrance and exits mechanisms (swipe cards or key pad entry instead of keys and manual latches), a duress button for emergency situations and the ability to discretely lock down specific areas of a facility if necessary. Other equipment such as fire extinguishers, alarms/emergency buttons, power switches and power points need to be inaccessible to some children and students but within easy access of staff and some individual students and student cohorts. Potential consequences of these conflicting needs according to some staff and parents may be that:

- some facilities appear to be 'too security focussed' or 'prison-like' in appearance e.g. spike-topped fencing used at some facilities
- doors or gates may be inaccessible to adults or children in wheelchairs (without assistance) but ensure the safety of younger or more vulnerable children who may be prone to climbing or escaping.

It is important that designs consider both the need for facilitating independence for children and students whilst also providing a safe environment for staff, children and students. Interviews with staff found that the use of universal design principles along with the use of the least restrictive practices by staff resulted in significant decreases in the number and severity of incidents that impacted on staff and student safety. Children and students were happier and calmer as the facilities provided them with options for managing their emotions and behaviours more independently. Section 4.1.4 provides examples in South Australia where least restrictive practices have had a positive impact on outcomes for children and students with disability.

Many children and students with disability also live with health issues and according to the Kids Matter and Young Children with Disability research report, 'there is evidence that children with disability are significantly more likely

to develop mental health problems than children without disability (McMillan & Jarvis, 2013). For an ECEC site or school to be functional and accessible, the facility needs to be able to cater to these needs while considering the dignity and privacy of the individual child and allowing for children and students to self-manage their needs where possible. Adjustable temperature controls and levels of natural lighting in response to individual health needs may be critical for some children and students with severe health needs. The design of outdoor areas need to consider the health and fragility of children who may tire easily, and who have heightened sensitivity to ultra violet rays, wind or noise.

Design features for access around health identified by staff, disability service providers, and architects are listed below.

- Separate discrete spaces that cater for health care needs e.g. separate sinks for peg feeding, cleaning medical equipment, space for allied health staff and other equipment.
- Well shaded and sheltered outdoor areas .
- Adjustable heating and cooling mechanism in each room that can be separately controlled. The provision for fresh air in all rooms is beneficial as well as a mechanism to filter the air. These features are beneficial for all children but necessary for children and students with significant health issues.

4.4.11 Dedicated storage spaces

The critical need for designated and dedicated storage spaces in ECEC sites and schools for children and students with disability was consistently communicated by staff. The staff at many of the facilities commented that one of the biggest issues they face is lack of storage for equipment and resources. Staff and disability service providers emphasised that if the overall design does not encompass adequate storage then this may compromise overall space which could include classroom or toilet space and result in inaccessible environments, for some children and students with disability. Design features around storage identified by staff, architects and disability service providers are listed below.

For access

- Storage close to classrooms for large personal equipment used by children with physical disability e.g. wheelchairs, walkers, hoists (lifters), Kelly chairs, trolleys. An individual child may need up to three or four pieces of equipment but may not use some of the equipment for the entire day. This issue needs be given consideration in the overall provision of space.
- Provision for secure filing of health records for allied health staff and for the management and administration of medication.
- Accessible toilets, that are not regularly in use, are not used as a storage facility.

For participation

- Sheds to accommodate equipment such as play equipment, bikes, tools or bike maintenance workshop space.
- Provision in classrooms for locking away resources that may be distracting or unsafe for some students e.g. technology equipment, kitchen facilities, sinks. A practical solution could be the installation of roller shutters that provide convenient and easy lockable storage, with the option for keeping the resources accessible for some student cohorts to promote independence.
- Lockable walk-in pantry-style storage in classrooms for teaching resources so that classrooms can be free of clutter and equipment can be quickly and easily accessed and rotated by staff.

  Clutter can be overwhelming and difficult to process for students with sensory processing challenges (Autism SA, received May 2015).

4.4.12 Accessible Toilet Facilities

The accessibility, privacy, dignity, safety and convenience of all users of toilet facilities at ECEC sites and schools, including smaller children, older students and adults, are important considerations in design. Staff, parents, disability service providers and architects provided comprehensive information about their concerns with toileting facilities. The most important consideration is the size of the area and location of fittings to ensure that a person can move around, receive assistance if needed and use the toilet and hand basin. Additional space in the toilets will also accommodate two staff members, who may need to support or supervise a child or student with their toileting and changing, as well as additional equipment e.g. change tables for smaller and larger children and students, showers and hoists. A variety of design features are required in toilets to accommodate the range of users who may need significant assistance or may use the facilities independently. Staff reported examples of inaccessible elements of the facilities at their ECEC sites or schools such as:

- toilet paper being unreachable from the toilet
- swing doors clashing with other doors causing injury hazard and preventing entrance and exit
- insufficient space to assist children
- Occupational Health and Safety hazards such as difficulty in opening doors, awkward positioning of benches.

Design features around access to toileting identified by students, staff, disability service providers and architects are listed below.

- Location of large changing beds and equipment, away from walls, to facilitate easy and safe access by staff on each side of the bed who need to assist with toileting or changing.
- Air-conditioning and ventilation for the comfort of children, students and staff due to the additional time that may be required for the care of children and students with disability who need assistance with their toileting.
- Adjustable step up to age appropriate and adjustable change tables.
- Accessible toilets located close to all classrooms with entry from the inside and outside of the building.
- A two way bathroom to avoid congestion in and out of toilets for all users.
- Left and right hand accessible toilets to allow for users to transfer to toilets from either side with appropriate signage to indicate this feature.
- Ability to accommodate an ambulant user of toilet facilities who requires support on both sides i.e. space for hand rails.
- Leg clearance to access sinks and taps and lever style taps for smaller children and those with low muscle tone.
- Facilities including the basin, sanitary facilities and bins that do not encroach on circulation space or the ability to transfer from either side of the toilet.
- Signage that is tactile, with braille and the international symbol for access.
- Privacy and dignity balanced with the need for assistance.

4.4.13 Dedicated staff spaces for meeting with families

For the sole purpose for staff to host meetings with parents and carers, multiple meeting spaces separate from the staffroom are useful. In the case of parents of children and students with disability, often more meetings tend to be held than for their peers without disability to discuss pertinent issues and to manage Negotiated Education Plans. These meetings can be held more discretely if the spaces are located away from classrooms, away from staffrooms, but closer to the front entrance of the facility.

5. Conclusion and future directions

The Effective Building Practices for Children and Students with Disability project group has the future vision that inclusive access and participation in early childhood education and care sites and schools will be a reality for all children and students. Universal design in all facilities, together with inclusive practices, will allow all children and students to learn and play together and to access and participate fully in their learning.

The interviews, desktop research and expert advice from the project group all supported the findings that the principles of universal design be incorporated into early childhood education and care settings and school designs to ensure that facilities are accessible and functional for the full range of human diversity regardless of age, nationality, size or ability. The key to universal design is the flexibility and adaptability of a facility that is responsive to the changing needs of individuals and cohorts of children and students, as well as being responsive to innovations in technology. Some new, refurbished and renovated facilities in South Australia demonstrate understanding of universal design principles that facilitate and promote inclusion. In addition to providing environments that support universal design principles, it is equally important to consider how these spaces are used to promote inclusion for children and students with disability on the same basis as their peers. This means empowering all children and students with choice in environments that are designed and furnished in ways that enhance their educational, social experience and well-being, as well as promoting the use of least restrictive practices within these spaces. Facilities that are designed and utilised to be flexible, adaptable and responsive to an individual's needs, whether the child has a disability or not, are in the best interests of all children.

High quality consultation is imperative during the planning, design and building process of ECEC sites and schools that involves experts in the disability field as well as acknowledging and valuing the voice of children and students and their families, and ECEC site directors, school principals, and architects and building personnel.

The findings of this report will be used to develop a resource that will provide a guideline of features that enhance access, participation and inclusion in care and education facilities for children and students with disability. Once complete, the resource can be utilised to facilitate consultation between ECEC site directors and school principals and staff, children and students with disability and their families, and architects and building personnel throughout the design, planning and building process.

As indicated earlier in this report, as a society we can do more to emphasise the value and ability of all children to learn and play together in inclusive environments. The understanding that universally designed facilities benefit all users, not only children and students with disability, will result in moving a step closer to achieving a more inclusive society that benefits and enriches the lives of all people.

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Appendices

Appendix 1: Universal design definition and list of principles

Edited Extracts from the Institute of Access Training Australia Access Guidelines for Buildings and Facilities 2014

What is universal design?

Universal design is the process of designing products and environments to be used by everyone to the greatest extent possible, without the need for adaptation or specialised design.

(Note: There are no universal designs and there are no universally designed products. Universal design is a continuous improvement process in the design of products and environments.)

The aim of Universal design is to provide one solution that can accommodate all people, including people with disability, as well as the rest of the community.

Seven principles of universal design

The principles of universal design were developed by the Centre for Universal Design at North Carolina State University, United States of America (USA).

The authors are a working group of architects, product designers, engineers, and environmental design researchers These seven principles may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.

Principle one: Equitable Use

Wherever possible provide the same means of use for all users, avoiding segregation or stigmatising any users

Principle two: Flexibility in use

Provide choice in methods of use and facilitate the user's accuracy and precision and provide adaptability to the users pace**.**

Principle three: Use of the design is easy to understand

Use of the design is easy to understand regardless of the users experience, knowledge, skills or current level of concentration.

Principle four: Perceptible information

The design communicates necessary information effectively regardless of ambient conditions or the users' sensory abilities. The design uses different modes (pictorial, verbal, tactile) for redundant presentation and provides adequate contrast between information and surroundings.

Principle five: Tolerance for error

The design minimises hazards and the adverse consequences of accidental or unintended actions.

Principle six: Low physical effort

The design can be used efficiently and comfortably with minimal physical effort.

Principle seven: Size and space for approach and use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture or mobility

Appendix 2: Project group

Chairperson

Ms Margaret Wallace	Chairperson, Ministerial Advisory Committee: Children and Students with Disability

Members

Ms Stephanie Grant	Principal, Our Lady of La Vang, Catholic Education SA
Ms Deborah McInnes	Senior Advisor: Early Childhood Support Services, Office for Children and Young People, Department for Education and Child Development
Nicole Kyrkou	Program Manager, Complex Needs and Mental Health, Office for Children and Young People, Department for Education and Child Development
Ms Barbara Murray	Educational Consultant, Association of Independent Schools SA
Mr Peter Skjott	Access Officer, Orientation and Mobility Instructor, Guide Dogs Association of SA &NT
Peter Walker	Lecturer, Special Education, Flinders University of SA

Ministerial Advisory Committee: Children and Students with Disability

Skye Yuill	Acting Executive Officer and previously Jo Shearer Executive Officer
Kerry Pienaar	Project Officer

Appendix 3: Site and participant profile

Site Profile by Sector and Student Cohort

Sector	Student Cohort
CESA	Special school, 5 to 20 year olds. Many children have Autism, intellectual disability, need high level of personal care.
DECD	Special school, Reception to year 12. Students with intellectual disability, ASD and Mobility Opportunities Via Education (MOVE) unit.
DECD	Mainstream school with two secondary special classes, B-12. Approximately 212 NEP students, 2 special classes i.e. Year 8-9 middle years & years 10-12 years (24 students).
DECD	Mainstream ECEC. 5 children with Autism, and other children with global delay, intellectual disability and behaviour issues.
DECD	Special School, R to Year 12+ students. Student cohort includes those identified with an intellectual disability and eligible for a special school placement.
DECD	Special early learning centre. Preschool children with physical disability, ASD, significant developmental delay.
DECD	Special School. Senior students who are not at the severe end of the Autism but have high intelligence, compulsive and social issues.
AISSA	Mainstream primary school (renovation undertaken to improve accessibility for individual student). Foundation to year 7.
DECD	Mainstream Aboriginal Children's Centre. Some of cohort have conductive hearing loss and participate in intervention speech and language program, 2 children with ASD.
DECD	Mainstream Aboriginal Children's Centre. Includes Inclusive Preschool Program (IPP).
DECD	Special school, R to year 12 students. Student cohort includes those identified with an intellectual disability and other disability.

Site Profile by Sector, Location, Type of School and Year level

Sector	Number		Location	Number		Mainstream/co-locations/special	Number		Year levels	Number
DECD	9		Metro	9		Mainstream	5		Primary	1
CESA	1		Country	2		Special sites	7		Secondary	1
AISSA	1					Co-located	5 + ECEc CHECK		Children's Centre/early learning	4
						Mainstream with IPP or Special Education classes	2		Birth/Reception to year 12	5

Participant Profile

Interviewees	No of organisations/schools/ECECs represented	Total participants
Early Childhood and Care and School Staff	10	41
Disability Service Providers and Allied Support Staff	4	5
Students	4	14
Parents/carers	8	22
Facility Planners, Regulators and sector staff	3	8
Architects	3	4
Landscape consultant	1	1
Community member	1	1
Total		96

Appendix 4: Interview questions for staff, parents/carers of early childhood education and care settings and schools

1. Could you please talk about how you find these early childhood/school buildings and their surroundings in terms of accessibility and functionality for children and students with disability?

   (prompts)

   (a) When arriving at the centre/school

   (b) During instruction/class time

   (c) During break time

   (d) When moving from one class or space to another

   (e) When leaving the centre/school

2. Which parts of the building(s) are easiest for children and students with disability to use?

3. Which parts of the building(s) are most difficult for children and students with disability to use?

4. How does the building(s) and its surroundings affect the level of educational participation of children and students with disability?

5. If you could improve the building(s) and its surroundings for children and students with disability – what would you do?

   What would be needed to make these improvements happen?

   (prompts)

   (a) money

   (b) consultation

   (c) expertise

6. What could be done to make the building(s) and its surroundings safer for children and students with disability?

7. What would you advise some-one if they were building a new early childhood setting or school or improving an existing one, so that it was welcoming and easy to use for children and students with disability?

Appendix 5: Interview questions for staff, parents & carers of early childhood education and care settings for Aboriginal children

1. Could you please talk about how you find these early childhood buildings and their surroundings in terms of accessibility and functionality for children and students with disability?

   (prompts)

   (a) When arriving at the centre/school

   (b) During instruction/class time

   (c) During break time

   (d) When moving from one class or space to another

   (e) When leaving the centre/school

2. Please provide some background about the process of refurbishing this centre and the level of consultation in which staff were involved i.e. with community, facility planners, architects, builders and DECD staff.

3. Which parts of the building(s) are easiest for children and students with disability to use?

4. Which parts of the building(s) are most difficult for children and students with disability to use?

5. How does the building(s) and its surroundings affect the level of educational participation of children and students with disability?

6. If you could improve the building(s) and its surroundings for children and students with disability – what would you do?

   What would be needed to make these improvements happen?

   (prompts)

   (a) money

   (b) consultation

   (c) expertise

7. What could be done to make the building(s) and its surroundings safer for children and students with disability?

8. What would you advise some-one if they were building a new early childhood setting or school or improving an existing one, so that it was welcoming and easy to use for children and students with disability?

9. Are the needs of Aboriginal children with a disability and their families different to non- Aboriginal children with disability in regards to facilities? Please describe ways that buildings and outdoor environments in children's centres can be developed or altered to better meet the needs of Aboriginal children with a disability and their families?

Appendix 6: Interview questions for children and students

1. Could you please tell me about the new school buildings and play spaces.

   (prompts)

   (a) When you get to school in the morning

   (b) During play time

   (c) During class time

   (d) When going to the gym or PMP room or other buildings

   (e) When you are leaving school to go home

2. Which parts of the building(s) are easiest for you and your friends to use?

3. Which parts of the building(s) are most difficult for you and your friends to use?

4. How does the new school and play spaces help you to learn at school?

5. If you could make this school even better, what would you want or do?

   What would be needed to make the school better?

6. What could be done to make the building(s) and play spaces safer?

7. What would you tell other schools to do to make their school a better place for kids?

Appendix 7: Interview questions for facility planner, architects, sector staff

1. We would like you to discuss the building project brief(s) for childcare settings, preschools or schools that you have been involved with, in relation to children and students with disability.

   Please tell me about the considerations you make when planning and building facilities for children and students with disability.

2. a) Please tell me what informs your practice when planning and building facilities to accommodate children and students with disability.

   b) How does consultation with stakeholders inform your practice?

3. a) Please describe the design aspects of buildings that have worked well for children and students with disability.

   b) How do you know they have worked well?

4 a) What challenges have you faced when designing buildings to maximise access and participation for children and students with disability?

   b) How have you overcome these challenges and what compromises have been made?

   c) Who made compromises?

5. What changes or adjustments have you suggested to maximise the access and participation of children and students with disability at these sites?

6. a) If you could improve building(s) and their surroundings further for children and students with disability – what would you suggest?

   b) What would be needed to make these improvements?

7. What could be done to make childcare, preschool or school buildings and their surroundings safer for children and students with disability?

8. As part of this project, we are endeavouring to produce a resource that will assist people in the future to design and build (or renovate) environments that are functional for children and students with a wide range of disability. The audience will include educators and educational facility planners/builders.

   Please suggest what information this resource should contain and in what form it would be most useful.

Appendix 8: Interview questions for landscape consultant

1. We would like you to discuss the playground and outdoor areas that you have designed and built

   Please tell us about the considerations you make when planning and building outdoor facilities for children and students with disability.

2. Please tell us about the consultation that you undertake that informs the design of playgrounds to accommodate children and students with disability.

3. a) Please describe the design aspects of playground and outdoor areas that have worked well for children and students with disability.

   b) How do you know they have worked well?

4 a) What challenges have you faced when designing playground and outdoor areas to maximise access and participation for children and students with disability?

   b) How have you overcome these challenges and what compromises have been made?

   c) Who made compromises?

5. a) If you could improve playground and outdoor areas further for children and students with disability – what would you suggest?

   b) What would be needed to make these improvements?

6. What could be done to make childcare, preschool or school playgrounds and outdoor areas safer for children and students with disability.

7. As part of this project, we are endeavouring to produce a resource that will assist people in the future to design and build (or renovate) environments that are functional for children and students with a wide range of disability. The audience will include educators and educational facility planners/builders/landscapers.

8. Please suggest what information this resource should contain and in what form it would be most useful.

Appendix 9: Community engagement forum organisations represented and other attendees

- Autism SA
- Novita Children's Services
- CanDo4Kids
- NDIS Independent Advisory Council
- A parent of a child with disability with expertise in access
- An adult with disability

Appendix 10: Glossary of terms

Access consultant	A qualified Access consultant is a person who has successfully completed a nationally recognised qualification in Access Consulting. This allows them to conduct audits of buildings to assess their physical accessibility for all users. Access Consultants are trained to understand how to apply three important considerations in their work: Human Rights, compliance and functionality and use (IATA). http://www.accessauditsaustralia.com.au/Articles/What-makes-an-effective-Access-Consultant-.aspx
Augmented hearing technology	Hearing augmentation can be defined as communication of information by using a combination of audio, visual and tactile means, e.g. soundfields http://www.disabilityaccessconsultants.com.au/hearing-augmentation/ Augmented hearing technology may assist people with hearing impairment, Auditory Processing Disorder, Attention deficit hyperactivity disorder, Autism
Inclusive Preschool Program (IPP)	Inclusive Preschool Programs (IPP) support children with disabilities and high support needs to optimise their learning outcomes within a localised preschool setting. Inclusive Preschool Programs are part of state government policy to promote social inclusion and reflect the Department for Education and Child Development's commitment to early childhood intervention and inclusive education. www.decd.sa.gov.au/speced/files/links/IPP_Guidelines_2014.doc
Least restrictive Practice	The least restrictive alternative is the intervention that least infringes freedom of action for the shortest period of time. Before any restrictive practice is implemented, there should be a thorough investigation of alternatives that would have less impact on the freedom of the individual. These should be trialled and only after there is evidence that they do not provide for the safety of the individual or others, should a more restrictive alternative be considered. This should be documented and the ongoing use of the intervention should be regularly reviewed (Richard Bruggemann, 2015, Office of Senior Practitioner, Disability SA, Department for Communities and Social Inclusion).
Proprioception	The ability to sense stimuli arising within the body regarding position, motion, & equilibrium www.medicinenet.com/script/main/art.asp?articlekey=6393
Public-Private Partnership (PPP)	A Public-Private Partnership (PPP) is a contracting arrangement in which a private party, normally a consortium, takes responsibility for the design and construction of a component of new infrastructure; and/or takes a long-term contract to operate and manage the infrastructure www.infrastructure.org.au/content/ppp.aspx
Refurbishment	Refurbishments or refits include removing some/all fixtures and fittings in a room and refitting with desired facilities, while smaller refurbishments could include examples such as making adjustments to a reception counter height, door knobs, lockers or furniture. (Education and Care National Regulations)
Renovation	Renovation of a building/part of a building or other fixed structure means construction, demolition, removal, relocation or carrying out structural alterations which affects the fabric of a building or fixed structure. (Education and Care National Regulations)
Restrictive Practices	Any practice, device, or action that removes another person's freedom or interferes with another person's ability to make a decision. This includes detention, seclusion, exclusion, and aversive, chemical, physical and mechanical restraint. It does not include the use of devise for therapeutic purposes or to enable safe transportation of a person. (Department for Communities and Social Inclusion (DCSI, 2013).
Soundfield amplification	Surround sound similar to that of home multi-channel systems, but with robust professional components and the complete freedom of movement that wireless

	microphones bring. Soundfield systems amplify the teacher or speaker's voice in a learning environment to assist children and students to access their learning. http://corabarclay.com.au/soundfields/
Tactile Ground Surface Indicators	Truncated cones and/or bars installed on the ground or surface, designed to provide pedestrians who are blind or vision-impaired with warning or directional orientation information. (IATA 2014)
Universal Design	Universal Design is the process of designing products and environments to be used by everyone, to the greatest extent possible, without the need for adaptation or specialised design. (IATA 2014)
Wayfinding	The perceptual, cognitive, and decision making processes necessary for a person to orient themselves and find their way. (IATA 2014)