

Credit: Integricity Visuals Sdn Bhd, 2021



Best Business Practice Circular & Guidance Toolkit: Inclusive Playground

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Foreword from UNICEF



FOREWORD by Dr Rashed Mustafa Sarwar, *UNICEF Representative to Malaysia and Special Representative to Brunei Darussalam.*

In early 2018, UNICEF and Sime Darby Property took their first steps towards developing a truly innovative and unique partnership to design and build Malaysia's first inclusive playground, using principles of human-centred design and universal design. The purpose of this initial partnership was to combine our strengths – property development, and upholding children's rights – to create a child's rights case and a business case around the importance and added value of designing and building for all.

This concept is known as Universal Design – an inclusive approach towards designing a product or an environment whilst ensuring that it is accessible to as many people as possible, regardless of age, gender, and disability. It enables different people, with their diverse needs and perspectives, to each engage with a product or environment that is most meaningful and useful to them.

Designing for everyone – particularly for communities that are usually ignored and considered a minority such as children and persons with disabilities – not only upholds the basic principles of human rights of inclusion but also makes good business sense as it enables access to markets and opportunities previously untapped.

Article 31 of the UN Convention on the Rights of the Child recognises the importance of play for all children: "Children have the right to relax, play, and to join in a wide range of leisure activities." However, a playground is much more than just a nice place for children to play. It can be a microcosm of our society, where children and their caregivers learn, develop new skills, interact with a diverse group of people, and all grow as a community.

In addition, there are tangible benefits to creating unique outdoor spaces that are user-oriented and have something for everyone. Property values rise, the presence of people on the streets reduces anti-social activity, and commercial and retail businesses thrive in areas where there is a lively and playful social environment. Far from being an economic burden on the local authority and developers, the provision of high-quality outdoor "child-friendly" spaces that are developed through a sense of social responsibility is an investment whose value will far outweigh its cost.

I am delighted to present to you this **Best Business Practices Circular and Guidance Toolkit** as a testimony of our journey, an inspiration to other local authorities, and a guide for future property development in Malaysia.

Thank you.

Dr Rashed Mustafa Sarwar

UNICEF Representative to Malaysia and Special Representative to Brunei Darussalam

Foreword from Sime Darby Property



It gives me great pleasure to introduce the first-of-its-kind Best Practices Circular and Guidance Toolkit by Sime Darby Property and UNICEF Malaysia. This toolkit has been carefully curated to guide companies and property developers to address a pertinent issue – townships developed to cater for persons with disabilities in mind.

Sime Darby Property is honoured to collaborate with UNICEF Malaysia in this timely ambition and to be the first property developer to design and build the country's inaugural Inclusive Playground in our award-winning township, the City of Elmina in Shah Alam, Selangor.

Sime Darby Property has always strived to ensure that our townships are thoughtfully designed to cater to all needs. We consciously create multi-generational homes to meet the growing requirements of a family, as well as a community, and believe that this visionary initiative with UNICEF will take our commitment a step further.

As a responsible company, we remain steadfast in developing resilient and prosperous communities that are well-equipped for the future. The onus, we believe, is on property developers to raise awareness on crucial topics such as inclusivity and walking the talk by creating holistic environment in our townships where families with or without persons with disabilities can integrate, be included and feel belonged.

Sime Darby Property is proud to be part of UNICEF's fight to make positive changes for children with disabilities in Malaysia with our maiden Inclusive Playground in the City of Elmina. Together, we can build a sustainable and comprehensive future for all.

Thank you.

Dato' Azmir Merican
Group Managing Director

Foreword from Shah Alam City Council



Assalamualaikum Warahmatullahi Wabarakatuh and greetings to all.

Shah Alam City Council (MBSA) is grateful for the opportunity to collaborate and create good synergy with leading property developer, Sime Darby Property and international non-governmental organisation, UNICEF Malaysia, in the development of the first-of-its-kind Inclusive Playground in Malaysia.

As a local authority, MBSA plays a role in planning sustainable urban development strategies and empowering the social development specifically for the community in Shah Alam. We welcome the idea of building an all-inclusive public facility by two reputable organisations, that offers equal opportunities to all children.

The universal nature of this public project which focuses on a specific group of children is much needed as it would fill the gap prevailing in the community. The Inclusive Playground also contributes to the development of special facilities for the development of children with and without disabilities in Shah Alam.

The commitment towards the Inclusive Playground in the Elmina area is a testament to the strong partnership between the public and private sector in providing the best communal facilities to the local community. This Inclusive Playground has various special features that take into consideration the age, group, development and even the level of growth of children. This Inclusive Playground will also be the main attraction and reference for other developers in producing a fully equipped and universal residential area to all parties without marginalising certain groups.

MBSA believes that the existence of such playgrounds, that do not disregard factors such as a child's age and development, will provide support to the needs of children who require special attention as well as indirectly promote social activities for the whole family. At the same time this playground is also a free facility that can be used by family members to help each child grow up brilliantly.

The involvement of UNICEF Malaysia to ensure various aspects, such as safety, adequacy of facilities and compliance with standards, are complied with and emphasized in the construction of this inclusive playground is greatly appreciated and should be commended. The synergy built between MBSA, Sime Darby Property Berhad and UNICEF Malaysia should be emulated by all parties, especially the local authorities and developers in providing for the well-being of community housing development.

Sime Darby Property Berhad and UNICEF Malaysia's collaboration to realise the construction of this playground is seen as a form of welfare and long-term responsibility to the community that will have a good impact towards the formation of a quality and healthy society.

Lastly, we hope that the construction of this Inclusive Playground would benefit all parties, especially those who make the foundation of our future – our children. Congratulations and well done to Sime Darby Property Berhad and UNICEF in their efforts to build and enhance the lives of future generations.

Thank you.

YBhg. Dato' Haji Zamani Ahmad Bin Mansor
Datuk Bandar
Majlis Bandaraya Shah Alam

Introduction



Credit: Integrity Visuals Sdn Bhd

In an increasingly urbanised and digital environment, communities have less access to shared spaces where children can play, learn, and connect with nature and each other. Even though they might seem insignificant, playgrounds play a critical role in facilitating a child's physical, social, intellectual, and emotional development. For children with disabilities, these opportunities are even harder to come by.



Malaysia's Policies around Disability



UN Convention on the Rights of Persons with Disabilities



The United Nations Convention on the Rights of the Child

Purpose of this Document

Global prevalence rates indicate that there could be around **440,000 children with disabilities in Malaysia**. However, official numbers tend to be low, likely due to underreporting or lack of awareness.

People with disabilities in Malaysia are often overlooked by society and businesses, when in fact they are not only a viable market segment, but also very innovative extreme users who have built their lives around significant environmental constraints.

Businesses often assume that designing for people with disabilities is expensive, but retrofitting existing structures to be disability-friendly is far more costly. Society, as a whole, is moving towards ensuring that historically-marginalised groups of people are more included. Designing and building with inclusivity in mind can keep costs low while expanding market appeal and future-proofing your business.

This toolkit aims to raise awareness and provide information to support the planning and development of inclusive playgrounds –

playgrounds designed to create interesting play and learning opportunities for all children, regardless of their age, level of development, and whether or not they have a disability. By taking into extra consideration the needs of children with disabilities, inclusive playgrounds provide unique socialisation and learning opportunities, ensuring that all children and their families can enjoy the play opportunities that benefit them and their development into successful adults.

This is a guide for any company or property developer that intends to design, build, and manage a park or playground space, particularly in a residential setting. It is especially aimed towards the corporate sector, government bodies, other stakeholders and communities who may be responsible for planning new parks, play spaces, and residential estates, and reviewing the quality and distribution of existing parks and play spaces.



Group photo of all participants that took part in the End-User Consultation Workshop.



Data on Children with Disabilities in Malaysia

The National Health and Morbidity Study (NHMS, 2019) highlighted that Malaysia's childhood disability prevalence rate was 4.7%.¹ This figure is broadly in line with the global prevalence rate of 5.1% reported in the 2011 World Report on Disability.² However, the Government of Malaysia's persons with disabilities registration system reported only 133,583³ children registered with disabilities aged 18 and under (1.4% of the child population).⁴ There is a real risk that not only are individual children with disabilities going unregistered - and therefore being deprived of access to a wide range of services and interventions - but they are also not being adequately considered in national policies, programmes, budgets, service delivery and planning processes.

Prevalence Rate:



In Malaysia **4.7%** or 1 in 20 children (under 18 years old) have a form of disability.



WHO estimate that **5.1%** of the global child population (0 - 14 years old) have a disability.



133,583 children in Malaysia are registered as having a disability.



only **1.4%** of children with disabilities in Malaysia are registered as having disabilities.

¹ MOH (2019). National Health and Morbidity Survey: Technical Report Volume 1. Non-Communicable Diseases: Risk Factors and other Health Problems. Institute for Public Health, Ministry of Health, Malaysia, p.011.

² WHO (2011). World Report on Disability. World Health Organisation. Online: http://www.who.int/disabilities/world_report/2011/en/

³ DOSM (2018). Social Statistics Bulletin: Malaysia. Department of Statistics Malaysia, p. 205. Data extracted from the Government of Malaysia Persons with Disabilities register of 2018.

⁴ That is 133,583 of 9.4 million.



Malaysia's Policies around Disability

The most significant step forward in recognising the rights of people with disabilities came in 2008 with both the signing of the **UN Convention on the Rights of Persons with Disabilities (CRPD)** and the enactment of the **Persons with Disabilities Act**. This was the first time that the Government of Malaysia formally acknowledged the need to reduce barriers to participation and adopted a rights-based approach to disability.

The Malaysian Government was a signatory of and went on to ratify the CRPD in 2010 which demonstrated its serious intent to promote inclusion, albeit with reservations on Article 15 (freedom of torture or cruel, inhuman or degrading treatment or punishment) and Article 18 (liberty of movement and nationality).⁷



UN Convention on the Rights of Persons with Disabilities

The Convention follows decades of work by the United Nations to change attitudes and approaches to persons with disabilities. It moves from viewing persons with disabilities as “objects” of charity, medical treatment and social protection towards viewing persons with disabilities as “subjects” with rights, who are capable of claiming those rights, being active members of society, and making decisions for their lives based on their free and informed consent.

It also identifies areas where adaptations have to be made for persons with disabilities to effectively exercise their rights and areas where their rights have been violated, and where protection of rights must be reinforced.

⁷ UNICEF (2019). “Issue Brief: Children with Disabilities in Malaysia”



The United Nations Convention on the Rights of the Child

Article 31 of the UN Convention on the Rights of the Child recognises the importance of play for all children:

“Children have the right to relax, play and to join in a wide range of leisure activities.”

Malaysia ratified the Convention on the Rights of the Child (CRC) in 1995 to uphold its commitment to the protection and welfare of her children, albeit with several reservations. This was a major step for the country.

Definitions:

Access refers to the ability to physically access all the external and built environments that a person without disabilities can access. True access also requires the removal of physical barriers that might deter or impede a person with a disability from engaging with a service.

Dignity means that people with disabilities can participate in society and have their needs met without drawing attention to themselves, or being made to feel inferior or “special.” They also have the maximum possible level of independence, choice, and control.

Equity addresses the basic rights of all individuals, where there is an equal playing field for all individuals and groups according to their respective needs. This might mean equal treatment, or treatment that is different but offers the equivalent rights, benefits and opportunities.

Inclusion means that people of different abilities visibly belong to and can participate fully in the goals and activities of society without having to feel “different” or “other.” Accommodations may need to be made to enable full participation. People with disabilities feel respected and appreciated as fully-functioning members of society.

Participation means that people with disabilities are able to actively and meaningful engage in and be a part of society. They are able choose and control which aspects or activities they would like to participate in, and feel like they can have an impact on others and on society.

Why Build for Inclusion?



Credit: Integricity Visuals Sdn Bhd

Grandmother looking at her grandchild colouring in at the End-User Design Workshop.

“

We always do as much as we can for our child, Zahir – we get him the latest aid, we take him to the best centres, but at the end of the day, what he wants is to be able to play in a place where he doesn't feel that he's 'disabled,' where there are slides that he can reach, and where there are all sorts of new friends that he can play with. And we want to know that he'll be safe there.

- Parent

”

Building an inclusive playground does not have to be expensive. If you commit to designing for inclusivity from the beginning of the project, it usually costs the same as or less than a typical playground. Additionally, having an inclusive playground broadens a residential area's appeal by catering to an often-ignored population, which opens it up to a whole new market.



**Designing for Inclusion Makes
Business Sense**



**Designing for the Future: More Play,
More Nature, More Connection**



Credit: Integricity Visuals Sdn Bhd, 2021

A lone child in a wheelchair looking at other children playing on a playground.

Inclusive design is an approach towards designing a product or an environment so that it is accessible to as many people as possible, regardless of age, gender, and disability. It enables different people, with their diverse needs and perspectives, to engage with a product or environment in the individual ways that are most meaningful and useful to them.

Many architects and developers build for “today” – for their existing customers, and what their perceived needs are. In order to truly differentiate themselves from the competition, developers need to “design for the future.” Designing for everyone – particularly for communities that are usually ignored because they are considered a minority – means access to markets that have been previously untapped.

In Australia, for example, about 18% of the population lives with a disability. The annual disposable income of Australians living with a disability is an estimated 40 billion Australian dollars.⁹ In the United States of America, the estimated total after-tax disposable income for working-age people with disabilities is about

490 billion dollars.¹⁰ While this type of data has not been compiled for the Malaysian market, it is undeniable that people with disabilities are a hidden market with tremendous potential.

Unique outdoor spaces that are user-oriented and have something for everyone cause property values to rise, and the presence of people on the streets reduces anti-social activity. Commercial and retail businesses thrive in areas where there is a lively and playful social environment. Expenditure on outings helps support local businesses. Far from being an economic burden on local government and developers, the provision of quality outdoor spaces that are developed through a sense of social responsibility is an investment whose value will far outweigh its cost.

Welcoming, inclusive spaces enable people to get to know one another, and healthy communities look after each other and their environments. By getting to know each other, they can offer mutual support, creating a sense of social cohesion, belonging, security and pride in their local community.

⁹ Pricewater House Coopers Australia (2019). “The Benefit of Designing for Everyone.”

¹⁰ Yin, M., Overton, Shaewitz, Smith (2018). “A Hidden Market: The Purchasing Power of Working-Age Adults with Disabilities” American Institutes for Research.

Designing for Inclusion Makes Business Sense¹¹

Inclusive design is not only important for social equality – it makes good business sense. Embracing diversity and inclusion is mutually beneficial for both people with disabilities and businesses. The challenges that exist for consumers with disabilities become opportunities for businesses to serve them. People with disabilities get greater access to products and services that can benefit them, and businesses are motivated to create competitive products and services. Listed below are several reasons to businesses should embrace inclusive design.

- 1** **Design innovative products**

- 2** **Enhance customer experience and satisfaction**

- 3** **Increase market access and reach**

- 4** **Improve brand reputation and customer loyalty**

- 5** **Avoid expensive design changes and reduce legal risk**

¹¹Adapted from Yin, M., Overton, Shaewitz, Smith (2018). "A Hidden Market: The Purchasing Power of Working-Age Adults with Disabilities" American Institutes for Research.

1

Design innovative products

People with disabilities are often regarded as “extreme users” – early adopters who are eager to try the newest and most advanced technologies, and often discover new ways of using and adapting these technologies. These extreme users can spark innovation which in turn benefit all consumers. Even though these products tend to be aimed at specific target groups, they often generate interest and demand from unforeseen markets and segments that find these innovations useful as well. For example, voice recognition software has been used in assistive technology devices for people with disabilities since the 1980s. Today, this technology is embedded in mainstream products such as Amazon’s Alexa, Apple’s Siri, Google’s Assistant, and Microsoft’s Cortana, which millions of people use on a daily basis.

2

Enhance customer experience and satisfaction

Inclusive design and greater accessibility of products and services often improve the user experience for all users, not just users with disabilities. For example, many people choose to watch movies and television with subtitles, even if they are not hard of hearing or deaf, because it improves their understanding. Customers who enjoy the better user experience will also spread the word about that product, service or environment, creating free marketing, increasing awareness, and potentially bringing in new customers.

3

Increase market access and reach

According to the World Bank, an estimated one billion people, or 15% of the world’s population, experiences some form of disability.¹² Longer life expectancies and an aging population means that the number of people with additional access needs will only increase in the future. Taking an inclusive approach to design can help businesses find and seize important opportunities for growth through new products and services that are accessible to all segments of the market, and increase market share. The market potential is even greater when one considers the family members, caregivers, friends, colleagues and others who are connected to consumers with disabilities. These people also tend to value and patronise businesses that they recognise as disability-friendly.

¹²World Bank (2020). “Disability inclusion.” Available at www.worldbank.org/en/topic/disability

4

Improve brand reputation and customer loyalty

A business's clear commitment to inclusion and accessibility can demonstrate a genuine sense of Corporate Social Responsibility (CSR). As society shifts towards being more aware of the importance of providing for members of society who have historically been marginalised, the company's reputation will also improve, as it will be seen as being more socially responsible, community-minded, and forward thinking. A survey by the Marketing Anthropology Project showed that 66% of American consumers would purchase goods and services from a business that featured individuals with disabilities in their advertising, while 78% would purchase goods and services from a business that took steps to ensure easy access for individuals with disabilities at their physical location.¹³ By investing in products and services for this growing market, businesses can increase both sales and positive brand recognition. Businesses can actually stand out from their competition by embracing direct and inclusive advertising approaches.

5

Avoid expensive design changes and reduce legal risk

As accessibility regulations continue to develop and become even more required, it is important to apply the Universal Design Principles at the early stages of design and development of any product or service. Not only will this ensure that people with disabilities are a viable customer segment, but it will also save businesses the high costs of retrofitting their products and services to fit accessibility requirements. Greater accessibility and security features in products and services can also solve unanticipated problems before they happen. For example, ensuring that a playground is blind-accessible greatly reduces the chances of a blind person experiencing a safety-related incident. If the playground had not been properly accessible, any safety-related incident would lead to a potentially expensive lawsuit. Other impacts could include needing increased customer support, doing a product recall, and bad publicity for the developer. Employing inclusive design strategies from the beginning can help minimise this risk by anticipating potential issues that users with disabilities might experience with your product or service, and designing out these potential pain points before you open to market.

¹³ National Business & Disability Council (2017). Marketing anthropology project (MAP).

Myths



Myth 01

Only children with disabilities will enjoy playing in an inclusive playground

People often think that designing for inclusion means designing only for disability, and that only people with disabilities will be able to use and enjoy inclusively-designed products. This is untrue. The main tenet behind inclusive design (also known as universal design) is that good design can meet everyone's needs.

If an environment is accessible, usable, convenient, and a pleasure to use, everyone benefits. In fact, many of the products we use every day were designed with disability access in mind. For example, lowered curbs and streetside ramps designed for wheelchair users are also indispensable for parents pushing strollers, and people with heavy luggage.

An inclusive playground provides new and interesting play and socialisation opportunities for all children, regardless of disability. Also, having a diverse group of children playing in the same space together can build important qualities in all children, such as empathy, communication, teamwork, and kindness.



Credit: Integricity Visuals Sen Bhd

Child with disabilities designing a playground with his mother



Myth 02 | Designing for inclusion means ensuring access for wheelchairs

Wheelchair users are usually the most “visible” people with disabilities, and many people often think that once wheelchair users can actually get into a space, that makes it accessible and inclusive. However, true access means that not only can a person with disabilities get in, but they can have a fruitful and meaningful experience once they are in there.

Similarly, there are many other people with “invisible” disabilities, whose needs are much less obvious. These might include children with hearing impairments, chronic pain, or learning disabilities such as autism spectrum disorder. While they might be able to physically access a typical playground, they will not be able to functionally and meaningfully play there.



Credit: Integricity Visuals Sdn Bhd

Child with disabilities draws with his mother

Myth 03 | Inclusive design is too expensive



Credit: Integricity Visuals Sdn Bhd

People often think that the way things have always been done before is the most cost- and time-efficient way to do things. Therefore, trying something new must be difficult and expensive, if not everyone would have already done it. This is patently untrue.

If architects and developers decide, from the very beginning, that inclusion is an important goal, then they can incorporate universal design principles into every aspect of the design. Very often, this will incur a similar cost, and sometimes, be even more cost-effective. What is very expensive, however, is retrofitting an existing structure with design elements that can cater to people with disabilities as a delayed response to best practices.

Visit to the factory that is building the inclusive playground

Designing for the Future: More Play, More Nature, More Connection

Families today are no longer looking for just the perfect house – they are looking for a home in a place that allows them to lead a lifestyle that reflects their values and aspirations. Digital devices are a critical aspect of modern living, but parents are always looking for ways to pull their children away from too much screen time. They want them to have a childhood similar to the ones they had, and they want to be a part of a community that prioritises a healthy lifestyle and a connection to nature.

Incorporating well-designed communal spaces into any residential development can have this effect. Families love spaces that give them regular access to nature while providing enriching play opportunities for their children. These spaces not only enhance property value, but also often become a focal point of a residential area, because they bring people together while creating a sense of belonging and identity.

Play is critical for a child's development

Children with disabilities are entitled to the same play opportunities as all other children, and arguably have a heightened need for the benefits these play opportunities offer. Yet they are the group most deprived of these opportunities, because many of the settings which offer them are too hard to access.

Today's urban children spend a majority of their time indoors and sedentary, with much of their stimulation coming from a screen, and therefore mostly passive. A lack of physical movement in childhood has a surprisingly wide range of impacts on a child. Apart from general health, it affects the child's body awareness, handwriting, hand-eye coordination, ability to self-feed, calm oneself, and form successful relationships with other people. Children with low muscle tone find it much harder to sit still, and to concentrate and learn.¹⁴

Play is the means by which children develop all the skills they will need in adulthood. Research has shown that play is a particularly powerful, and frequently overlooked contributor to a child's cognitive, physical, emotional, neural, sensory and social development, in addition to the obvious

benefits of movement, exercise and fitness. Through play, children explore, manipulate and create with both natural and man-made opportunities they find in their surroundings.¹⁵

Well-designed play areas provide opportunities for children to develop their gross and fine motor skills, stimulate their social skills, develop their creativity and imagination, and foster healthy personal habits such as kindness, grit and perseverance. Children need regular, graded, progressive exposure to these experiences for their physical and neural development, and to gain a sense of mastery as they have fun and learn to deal with the challenges before them. Play areas built with the principles of inclusive design provide these important opportunities for all children, regardless of age, gender, and disability.

¹⁴ Shonkoff, J., Phillips D, eds. (2000). "From Neurons to Neighborhoods: The Science of Early Childhood Development." National Academy Press.

¹⁵ Ginsburg, K. (2007). "The Importance of Play in Promoting Healthy Child Development and Maintaining Strong Parent-Child Bonds." *Pediatrics*, the Official Journal of the American Academy of Pediatrics. Available at <https://pediatrics.aappublications.org/content/pediatrics/119/1/182.full.pdf>

Harnessing nature's bounty

All children benefit from greater access to nature. Children with disabilities are in more dire need of these emotional, social, cognitive, and physical benefits, yet they are far less likely to have access to them.

Recent research by the European Centre for Environment & Human Health at the University of Exeter has shown that people who spend at least two hours a week out in green spaces – local parks or other natural environments, either all at once or spaced over several visits – were substantially more likely to report good health and psychological well-being than those who did not. The effects were robust, encompassing different occupations, ethnic groups, people from rich and poor areas, and people with chronic illnesses and disabilities.¹⁶

Spending time in nature is no longer considered a “nice to have,” but has been found to be a must-have for physical health and cognitive functioning. Studies have shown that time in nature – as long as people feel safe – is an antidote for stress; it can lower blood pressure and stress hormone levels, reduce nervous system stress, while enhancing immune system function, increasing self-esteem, reducing anxiety, and improving mood. It has also been found that attention deficit disorder and aggression lessen in natural environments. Similarly, psychiatric unit researchers have found

that being in nature reduced feelings of isolation, promoted calm, and lifted mood among patients.¹⁷

The recent trend of outdoor schools and nature-based learning shows that young families are increasingly aware of the importance of nature in their children's lives. Prominent examples of these include the Green School in Bali¹⁸, Forest Schools in the United Kingdom¹⁹, and the Kuala Lumpur Steiner Education²⁰ school. At these schools, nature and play are central to the curriculum because they provide a myriad of opportunities for a child's holistic development and personal growth.

For children who attend more traditional schools, access to nature and play at home is even more critical. When there are playgrounds available, both the child and other family members spend more time outdoors. Inclusive playgrounds not only provide access to children with disabilities, but also mean that older family members who may have limited mobility or be in wheelchairs can participate in the valuable family time outdoors.



Credit: Integricty Visuals Sdn Bhd, 2021

Smiling child standing on a climbing frame in a playground.

¹⁶ M., et al. (White 2019). “Spending at least 120 minutes a week in nature is associated with good health and wellbeing.” Scientific Reports. Available at www.nature.com/articles/s41598-019-44097-3

¹⁷ Robbins, J. (2020). “Ecopsychology: How immersion in nature benefits your health.” Yale Environment 360. Available at <https://e360.yale.edu/features/ecopsychology-how-immersion-in-nature-benefits-your-health.3> WHO, World Report on Disability, accessed June 27, 2018, www.who.int/disabilities/world_report/2011/en/

¹⁸ For more information, visit www.greenschool.org

¹⁹ For more information, visit www.forestschoollassociation.org

²⁰ For more information, visit www.klsteinerschool.my

Best Practice 1: Educate Yourself and Your Team



Credit: Integricity Visuals Sdn Bhd

Site visit to City of Elmina and the inclusive playground. The event includes representatives from Sime Darby Property, UNICEF and Lineworks & Space (architects).

“

At first, I thought I knew how to design for people with disabilities--make sure you have wheelchair ramps, disabled toilets, and stuff like that. But this design process, actually speaking to people with disabilities and parents of kids with disabilities – it really opened my eyes. I learned that there are so many types of disabilities that we can't see but affect every aspect of their lives. And that so many kids always feel left out when all they want to do is play and make friends. By 'walking a mile in their shoes,' I found that just the smallest design tweaks and a slight change in perspective could make a world of difference--they could help a child with disabilities feel like there are play facilities that they can use and love...and feel like they belong.

”

While the most important step in designing an inclusive playground is committing to having inclusion as a central aspect of the design, the next step is to ensure that you and your team adhere to the best practices around designing for inclusion. The easiest and most effective thing to do is to hire expert consultants, but it is also critical that leadership and the entire team have a solid understanding of the key factors and parameters surrounding inclusive design.



Raising Children with Disabilities



Making Play Inclusive



Designing for All: Principles of Universal Design

Raising Children with Disabilities

No two children are the same, and no two families will have the exact same experience of raising a child with disabilities. Some parents will have had tremendous access to knowledge and resources, whereas some will have had little to no access. Some may have the benefit of supportive extended families and communities, while others may feel like they are doing this all on their own.

Raising children with disabilities is costly due to the need for therapy, specialist services, accessible housing, adapted vehicles or transport, and assistive technologies such as wheelchairs, orthotics, furniture, software and communication devices. Children with certain types of physical disabilities can sometimes require constant at-home care. Many families of children with disabilities end up needing for one parent to stay at home.

However, all families raising children with disabilities face the same issue – living in a

world and a society that is not built to meet their needs and their children's needs. There are many environmental barriers that people with disabilities have to face, some of which can be dangerous when unexpected, such as changes in flooring level, traffic, or lack of pavements. The greatest barrier, however, is the discrimination and social isolation that families and their children with disabilities face every day, and the constant reminder that the world has not been built to include them.



Credit: Integricity Visuals Sdn Bhd

A family with three children, mother and father all laughing.

Junaidah and Azmi

Junaidah and **Azmi** are both deaf. When they go to a playground, they can't hear each other calling out and may not know where the other is. They rely solely on sight lines for supervision. The sight lines make them feel safe and comfortable, and help with social interaction.

Siew Lin

Siew Lin is twelve years old and has cerebral palsy, so she uses a wheelchair. She loves to play with her friends, and she particularly loves playing on the swing. For her to be able to use the swing set safely, she needs a back support so that she can sit on it, or she needs a seat she can lie on. Either way, she requires her family or other carers to be able to lift her to help her get into the swing seat.

Michael and Mei Ling

Michael and **Mei Ling** are parents to **Timmy**, who has cerebral palsy that has affected one side of his body. He has poor balance and his vision is slightly affected, but he is able to move slowly with crutches. He enjoys playing in playgrounds, and particularly loves being up in the higher levels. He finds it difficult to climb up the same challenging climbers as his friends, but he can manage a stairway, and he can manage to use a slide if he can get up to the deck. However, he is vulnerable to being knocked over by other children – he needs smooth, even surfaces so he can avoid tripping over uneven edges and level changes. If he trips, he finds it hard to get up by himself.

Joseph and Kevin

Joseph has low vision and his son **Kevin** is blind. Joseph cannot drive a car. This means that apart from difficulties getting to a park or play space, once they are there, Joseph cannot supervise Kevin and would not know the kinds of hazards there are in the space. The local playground is unfenced and is in a park that slopes downhill towards a busy road. There is also a major drain in the park that has an open drainage pit with no cover. Kevin likes to run but cannot perceive any of these hazards, so Joseph cannot allow him to run there at all. To save Kevin from disappointment, Joseph just doesn't bring him to the playground.

Adam, Alia and Anya

Mushfiq and **Siti** have three children, **Adam**, **Alia** and **Anya**, all of whom are under eight years old. All of the children have autism spectrum disorder and one has additional developmental delays, with various implications for their social, cognitive, and sensory development. The children love to play and explore outside and Adam loves to run freely and explore the boundaries of spaces. He is particularly attracted to water. Alia is a very skilled climber and reaches the top of challenging structures easily and quickly. Anya is wary of busy, noisy spaces and gets upset easily, preferring quiet, calming spaces with lots of sensory opportunities to explore with her hands and feet. Mushfiq works all day and Siti cannot manage all of the children by herself. She cannot bring the kids out unless she has someone to help her look after them in the park, to ensure that they are safe and able to find activities they enjoy. The rest of her family do not live close by, so outings are rare for the family. She feels sad that she cannot give them the opportunity to play outside, even though they love it so much.

Making Play Inclusive

Inclusive play is about enabling children and adults with any kind of physical, physiological, intellectual, cognitive or sensory impairment to choose spaces and activities which suit their needs, interests and abilities, and to play socially with their friends and families. Play is not only cognitively, physically, and socially beneficial – it is therapeutic.

Additionally, accessible, inclusive design is not only about wheelchair access. Numerically, the population of children with disabilities who need to

use wheelchairs is relatively low compared to those with other disabilities. Wheelchair access remains important, however, because once wheelchair access via a path has been achieved, people with strollers, walking frames, and other mobility aids can all use the space. Paths also allow children who are blind to find activities, aid ambulant children with poor balance, and help children with cognitive challenges orient themselves and make sense of a space. Additionally, a path can allow older grandparents to visit a play space and play with their grandchildren.

Universal Design results in...



Equity:

Children with disabilities are provided with reasonable accommodations that cater to their needs so they can access their rights on a full and equal basis.

"There is somewhere that I can go and play with other children in my neighbourhood just like they can."

"I can use the same entrance as everyone else. Seating areas, toilets and drinking fountains that have been designed so that I can use them."

"I have the same degree of choice as everyone else, and an equivalent choice when some activities can't be accessible."



Access:

Children and people with disabilities can physically access all the facilities, and barriers that may have prevented them from engaging in the activities have been removed.

"I can physically get into the park and the play space. The layout is easy to understand, and I can orient and adjust myself to the space and the activities."

"There is an easy-to-navigate route to the main activity area and to social spaces. The route is wide, and smooth enough to use without excessive effort or high risk of falling over. I can manoeuvre around the social spaces and activity areas in order to play."

"There are some activities with elements that are challenging and risky, but if I don't choose to participate in them, there is no risk of injury to me."



Inclusion:

Children with disabilities feel that they belong in the space, and that they can participate fully in the activities. Both children with and without disabilities play alongside and with each other.

"I can enter the space via a dignified entry alongside my family and friends, not a different 'disabled' entry. I feel welcomed by signage and details that make me think others want me here and I feel that I have an equal right to be here."

"The design creates situations where I can play alongside another children, regardless of their abilities. There are multiple activities where I can join in with everyone else, even if I might not be able to do everything others can."

"There are various opportunities to find the play qualities that I am looking for, including different degrees of challenge to suit my abilities, and quiet spaces as well as busy, active ones."



Participation:

Children with disabilities feel that they have choice and control over where and how they participate, and are supported in doing them to the best of their ability.

"I can take part in a selection of activities alongside and equally with everyone else and do them to the best of my ability."

"I can physically get onto some moving equipment, such as a swing seats, and there are supports so I can use these items safely. I can reach main points of interest, including some spaces that are elevated above the ground, and some sensory or nature-based zones."

"I can choose what I do and where I go."



Dignity:

Children with disabilities can participate in the playground activities without drawing attention to themselves and without being made to feel inferior.

"I am not made to feel uncomfortable and that all attention is on me, or that anyone has to make a fuss to let me do things."

"The toilets are set up so that I can have the privacy I need, and I can have my clothes changed."

"I do not want to be embarrassed or feel different or excluded."

Designing for All: Principles of Universal Design



Credit: Integricity Visuals Sdn Bhd, 2021

Aerial image of the Inclusive Playground.

Once inclusion has become a priority and a central value, the next important step is understanding how to design and build for inclusivity. Universal Design is the design and structure of an environment so that it can be understood, accessed, and used to the greatest extent possible by all people, regardless of their age or ability. When architects, designers and developers think about and plan around people's diverse needs and abilities (like children, parents, older people, people with injuries and illnesses, and people with disabilities), they can create environments that actually meet those needs and abilities.²⁴

The Seven Principles of Universal Design were developed in 1997 by the late Ron Mace, an American architect and product designer. Mace was also a wheelchair user, and he led a working group of architects, product designers, engineers and environmental design researchers at the North Carolina State University to create these Seven Principles. These principles may be used to guide the design process, evaluate existing designs, and educate both designers and consumers about the characteristics of more usable products and environments.²⁵

²⁴ Woodward, S. (2017). "Universal Design 101." Available at www.rickhansen.com/news-stories/blog/universal-design-101

²⁵ Center for Excellence in Universal Design. "The 7 Principles." Available at <http://universaldesign.ie/What-is-Universal-Design/The-7-Principles/>

The Principles of Universal Design



Principle 1

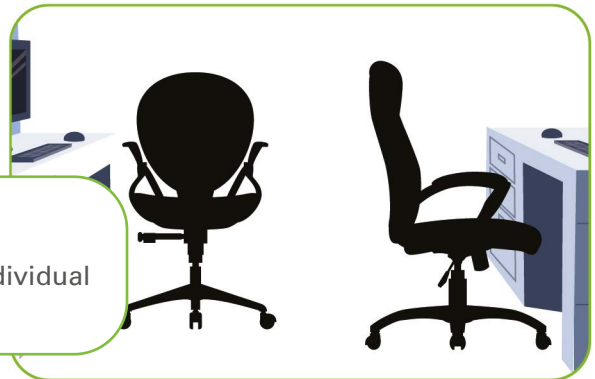
Equitable Use

The design is useful and marketable to people with diverse abilities.

Principle 2

Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.



Principle 3

Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

Principle 4

Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.





Principle 5

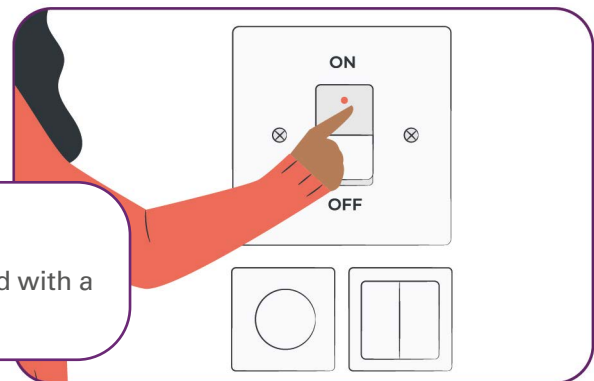
Tolerance for Error

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

Principle 6

Low Physical Effort

Design can be used efficiently and comfortably and with a minimum of fatigue.



Principle 7



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.

Malaysian Standard 1184:2014

The Malaysian Standard 1184:2014, "Universal design and accessibility in the built environment – Code of practice" was formulated by the Department of Standards Malaysia and revised in 2014. The Department of Standards Malaysia comprises both the National Standards Body and the National Accreditation Body, and is part of the Ministry of International Trade and Industry (MITI). The Malaysian Standard 1184:2014 outlines requirements and provides recommendations for the construction of access to and circulation within buildings, and egress from buildings both for everyday use and in case of emergencies or evacuation. These standards apply to public-access buildings, including residential buildings (although landed property is excluded), entertainment and recreational buildings, educational, cultural and scientific buildings, as well as sports and government buildings.

The Malaysian Standard 1184:2014's guidelines were created to ensure that the needs of all people are taken into consideration when designing, constructing and managing the built environment. In its full incarnation, the standard is intended to benefit all people, including people with hearing, visual, mobility, cognitive, learning and hidden impairments.²⁷

²⁷Dr Asiah Abdul Rahim (2016). "Access audit in the build environment 2016. MS1184:2014 Universal design and accessibility in the built environment – Code of Practice (Second Revision)" [Powerpoint presentation]

Best Practice 2: Make the End-User a Critical Part of Your Process



Credit: Integricity Visuals Sdn Bhd

Boy with cochlea implant smiling whilst reading a book.

“

It is crucial that property developers consider and prioritise the needs of people with disabilities when designing a development. We learned through this project that children with disabilities often feel left out at playgrounds as conventional recreational facilities are not inclusive and were not designed to promote equal play for all children. We now understand how the smallest tweaks in design and change in perspective can make a world of difference for them. All children have the right to play, and now play they shall.” – Dato’ Azmir Merican, Sime Darby Property Group Managing Director.

”

The most important factor in creating something that people will actually use is keeping your end user at the centre of your design. This becomes doubly critical when designing for people whose lived experiences are dramatically different from your own. People with disabilities are often sidelined by society, and their experiences and needs ignored. In order to effectively design for people and children with disabilities, you will need to prioritise involving them in every step of the process.



Creating Inclusive Participation



Credit: Integricity Visuals Sdn Bhd

Inclusive Playground Initiative End-User Consultation Workshop

While the prospect of actively approaching and engaging children with disabilities may be a daunting one, it is important to remember that all children are capable of forming views, although they may need appropriate help in expressing them. They have the right to express their views freely, but they must be provided with relevant, accessible, and appropriate information available at a level and in formats that they can understand, and be provided with a safe space in which they are supported in developing and exploring these views.

It is also critical to work closely with the parents and caregivers of children with disabilities as expert practitioners. Not only will they have expertise on their own children, but they will also have years of experience navigating a world not made for children with disabilities. Similarly, they will have access to communities and resources for children with disabilities.

The following information and approaches have been summarised from UNICEF's 2015 report and handbook, "Take Us Seriously: Engaging Children with Disabilities in Decisions Affecting their Lives".²⁸

How can children with disabilities be reached?

- UNICEF situation analyses and surveys
- Local Organisations of Persons with Disabilities such as the Malaysian Confederation for the Disabled (MCD)
- Children's organisations such as the Children's Representative Council's (Majlis Perwakilan Kanak-Kanak) members with disabilities, and the Malaysian Youth Council (Majlis Belia Malaysia)
- Community-based services and institutions such as health centres, religious communities, clinics and Special Education Schools
- Reaching out to youth with disabilities and their parents via social media

²⁸ Available at www.unicef.org/disabilities/files/Take_Us_Seriously.pdf

Creating Inclusive Participation

When children feel accepted and included, they will feel empowered to actively participate by sharing their thoughts and ideas. The practices listed below can help children with disabilities, their families and caregivers feel more comfortable being a part of your design research.

Ensure that they feel welcomed and comfortable in the space.

Check that the environment is accessible and allows everyone to participate equally – ensure that there are ramps, wide-enough doorways, adequate lighting, accessible toilets, and no hazards. Always ask children with disabilities how best to meet their needs, or if and how they need to be assisted. Always address the child, and not their assistant or sign language interpreter. Introduce consistent, predictable routines so children know what to expect. If your group involves both children with and without disabilities, help the children develop ground rules for resolving issues that might lead to exclusion and withdrawal. Organise activities for the children to get to know each other.

Create equal opportunities for every child to contribute.

Recognise that every child has a contribution to make to the group and to the activity, but that they will make contributions in different ways. Allow children with disabilities to take the same risks as other children in order to help them gain confidence. Over-protection denies them the chance to explore and discover what is possible. Do not help children with disabilities unless they need it. Too much support can be patronising and you will not get the same level of unique, insightful participation. Be open and flexible to change to accommodate the children involved.

Build on children's strengths.

When encouraging the children to participate, find multiple ways for them to contribute to the activity. Focus on reinforcing each child's strengths and abilities rather than on the things they cannot do. Use peers and encourage teamwork by facilitating child-to-child activities, and encourage the children to pair up to support each other. Build a supportive and inclusive environment by praising children who ask for help or say, "I don't understand." Thank them for asking and then offer help or an explanation.

Accommodate children's individual differences.

Give them plenty of time to both understand what is being talked about and to formulate their responses. Be flexible and adjust your level of language to different children. Recognise that children with different impairments will access information in different ways. Documents are more accessible if they are clearly written, as concise as possible, and as legible as possible by using slightly larger typeface. Use pictures and images to provide information, and let children express themselves in pictures and images. Allow the children to decide where they sit and take part in activities – a child with low vision may need to sit at the front of a room, and one using a wheelchair may find it difficult to work with groups of children on the floor. Use smaller groups to allow for different patterns of language exchange, and model good communication so that children learn from what they see and hear.

Participation tools for children with communication difficulties

Children often express themselves better if they are given a range of options of methods that they can use. Here are some examples of options:



Taking photos and videos to enable children to articulate their world, highlight places, objects and people who are important to them, and explore fears, challenges and barriers. For example, you could ask a child to take a video camera with them as they visit an existing playground near their house, so that you could see their experience from their point of view.



Pictures cut out from magazines, or cartoon images can be used to help children highlight good and bad things in their lives, and stimulate their views on identifying preferences, concerns and changes they would like to see happen.



Craft materials such as play-doh, ice cream sticks, markers, pipe cleaners and cardboard which children could use to build a model that reflects something they would like to see in their own lived environment.

Inclusive Playground Initiative End-User Consultation Workshop
Integrity Visuals Sdn Bhd



Questionnaires which include sad, neutral and happy faces can further children's understanding and enable them to respond more readily. Pictorial images can be used to guide semi-structured conversations and interviews.

Case Study: Key Stakeholder and End User Engagement



Credit: Integrity Visuals Sdn Bhd

Inclusive Playground Initiative Stakeholder Consultation Workshop (Sime Darby Property)

In August 2018, before the Inclusive Playground at the City of Elmina was designed, landscape designer Mary Jeavons arranged for two days of workshops. The first day consisted of a stakeholder workshop with over sixty consultants and landscape architects from Lineworks, Sime Darby Property and the Municipal Authority of Shah Alam. This workshop touched on the importance of inclusion from a developer's perspective, as well as how to integrate Universal Design principles into the design of the playground.

The second day consisted of end user workshops with children with and without disabilities, their parents and grandparents, as well as

caregivers and helpers. UNICEF contacted ten different organisations for people with disabilities and disability service providers. These included occupational therapists and other experts who could give feedback on how existing playgrounds cannot cater to children with disabilities. These organisations then reached out to their own networks to contact families who would be interested in participating. Ultimately, the workshop consisted of 45 end-user participants (thirteen children with disabilities, their siblings, parents, grandparents, caregivers and helpers), and seven disability therapists and expert practitioners.

Before Consultation:

Participants were sent an information pack with the programme, and an overview of the facilities, including a description of the Kids' Chill Out Area, and designated accessible parking spaces.



The children and their families were asked to record a short video about their current access to outdoor play. They were asked to answer questions including:

- ❓ How, where and with who do you normally play?
- ❓ What type of play do you want and like to do?
- ❓ What functional challenges do you face when you play?
- ❓ Are there any infrastructure barriers that prevent you from accessing public playgrounds?



The therapists and expert practitioners were also asked to record a video responding to the following questions:

- ❓ How, where and with who do the children you work with normally play?
- ❓ What functional challenges do they face when they play?
- ❓ Are there any infrastructure barriers that prevent them from accessing public playgrounds?
- ❓ What do you think the top priorities should be for designing an inclusive playground for all?

During Consultation:



A Kids' Chill Out Area was prepared, outside of the main workshop room. It was for children to use as and when they needed to, in case they got bored or tired, needed to move around, or if they were feeling over-stimulated. The Chill Out Area had comfortable seating, colouring and drawing, crafts, construction toys (Duplo blocks), and Disney movies playing.



The participants were split into groups of five or ten, consisting of a mix of children, therapists, and carers. Each group was asked to build or draw their ideal playground. They were provided with craft materials such as kid-safe plasticine, coloured paper, lollipop sticks, twigs, and crayons and pencils.



Around the room, the facilitators had put up posters with photographs of different play spaces, materials, equipment and play ideas. These were intended to stimulate discussion and creativity among the groups. The participants were also given coloured stickers, and invited to look around the room and place their stickers on photos and ideas that appealed to them.

During Consultation:



The facilitators went to each individual group to discuss:

- ✓ The priorities and viewpoints expressed in their model or drawing
- ✓ Their expectations of an ideal playground
- ✓ How they would like to be able to use it
- ✓ What should be included in the design so that it would benefit them



After a break, the groups each did a quick presentation of their ideas in their models and drawings, and the facilitators brought together and highlighted some common themes that they had been seeing. This led to greater discussion and insight around design priorities.



After the children and their families left, the facilitators held a separate discussion session with the therapists and expert practitioners.

Key Takeaways from Consultations:



Based on their discussions and conversations with the end users and stakeholders, the facilitators compiled data on the activities, amenities and outcomes that the end users and stakeholders wanted.



In terms of elements and activities, most of the end users picked swings, sensory elements and slides as the most desirable. Stakeholders prioritised having elements of the natural environment, traditional games, and water play.

Key Takeaways from Consultations:



The most critical amenities for end users were having shaded rest areas, a secured fenced area and furniture that could cater to people with disabilities. Stakeholders prioritised disability-friendly toilets, shaded rest areas, and furniture.



For both end users and stakeholders, the most critical outcome was inclusiveness – ensuring that children of all abilities and ages could enjoy the playground together. The second most important outcome was that the children would be able to take risks in a safe environment, while still having lots of fun. The third most important outcome was family interaction – providing a space where the whole family could come together and engage in intergenerational play.

Best Practice 3: Design to Enable and Include



Credit: Integricity Visuals Sdn Bhd, 2021.

Inclusive playground, City of Elmina, Malaysia.

“ Before this, I thought that inclusive design meant following the guidelines on how big sidewalks and bathrooms needed to be, and making sure that there were enough ramps for wheelchairs. Designing for access always felt just like additional boxes we needed to tick. But when we observed how facilities designed for inclusivity actually helped more people use our facilities more easily, even those without disabilities, we realised that small tweaks can make a huge difference, and can even give birth to new opportunities for all. ”

It is far easier and cheaper to plan for inclusion in the design phase of a project, than to retrofit an existing or built design to make it accessible and inclusive. However, designing for inclusion does require a slightly different set of priorities. This chapter outlines how a designer's approach should adapt for designing to enable and include.



Checkpoint 1: **Placing Your Playground**



Checkpoint 2: **Choosing and Creating the Right Location**



Checkpoint 3: **Before We Can Play**



Checkpoint 4: **Design a Play Space that will give every Child something to Love**



Credit: Integricity Visuals Sdn Bhd, 2021

Two smiling children standing on a sensory swing, working together to move the swing forward.

It is a common misconception that an inclusive facility built for people with disabilities can only be used by people who have disabilities. However, this is not true. When a facility is truly inclusive, that means that it can be used by everyone – whether or not they have disabilities.

Many people also think that designing an accessible playground for children with disabilities means “dumbing it down” by taking out the more challenging aspects and making sure that everyone can use every facility. This is also untrue. Physical and intellectual challenges in their play opportunities are important for all children’s development, and are therefore an important aspect of playground design.

Children with disabilities also need to face challenges that push them to learn and grow, although these might be quite different from what

is already available at traditional playgrounds. An inclusive playground which has a range of facilities provides these opportunities for all children. Items that provide challenges for some but high risk for others allow all children to opt in when they want to challenge themselves. Those for whom an activity may be too difficult or potentially hazardous have the opportunity to opt out. Children can choose activities that they enjoy and can benefit from. This also gives children without disabilities access to a range of different play opportunities.

Designing for inclusion is not a limitation. It is an expansion. When you design for inclusion, you actually widen the usability of your facility, ultimately broadening your user base and making your facilities more marketable. In this chapter, we will explore some of the key components behind making your playground design more accessible, thoughtful, flexible and inclusive.

Designing to enable removes factors that disable

An inclusive playground can be more than a space in which children with disabilities can access opportunities for healthy developmental play. If it is thoughtfully designed, it can be a space in which a child's experience can transcend their disability – where they can be in an environment that allows them to be a child, and not feel like a child with disabilities. A truly inclusive playground can be a microcosm of a world that we aspire to create – where facilities are built with everyone's needs in mind, and where everyone feels like they belong and can fulfil their potential.

Inclusive playground design enables children and their families to engage in fun outdoor experiences both together as a family, and socially as a part of a larger community. Even if it may be impossible to provide for every possible situation and type of disability, it is important to incorporate design elements that can benefit as many people as possible, and maximise the usability of the playground.



Credit: Integricity Visuals Sdn Bhd, 2021

Child with disabilities independently playing in a toy car.

Remove factors that disable

- o Remove physical barriers in order to enable physical access and aid orientation around a space.
- o Provide physical supports (such as back and torso supports, and hand supports) to help children keep their balance and use equipment they otherwise could not use.
- o Remove hazards that disproportionately affect users with a disability to reduce the risk of injury (and the associated fear of going out).

Include factors that enable

- o Provide a choice of activities so that someone unable to do one type can find another to enjoy.
- o Provide play opportunities and experiences (such as sensory play) that are typically absent from many public playgrounds but that are vitally important for some children with particular needs. These will be beneficial to most children.
- o Provide amenities that cater to the needs of people and children with disabilities so that families can all enjoy the facilities together. These amenities should also include spaces and activities that encourage children with and without disabilities to play and interact with one another.

Create benefits for all

- o Merely providing opportunities for children with disabilities to play can have therapeutic effects on their development, such as increased confidence, strength and balance, greater sensory integration, desensitization to stressful situations, and better self-regulation strategies.
- o Designs that encourage cooperation and social interaction through play help children organically practice effective communication, negotiation, and conflict resolution. These are important social skills to build, and can also indirectly help overcome feelings of social isolation.
- o When children and adults are exposed to and encouraged to interact with people different from themselves, they all develop greater empathy, which in turn builds greater social acceptance and tolerance of difference.

The Seven Principles of Inclusive Playground Design

The Seven Universal Design Principles have been interpreted for their specific application to play spaces by PlayCore, an American playground design company, in partnership with the Utah State University Center for Persons with Disabilities, and Lekotek, a programme that specialises in assistive technology. Their Seven Principles of Inclusive Playground Design applies the original seven principles to both the details of individual play elements as well as the overall play environment and amenities. These principles should underpin your design approach and inform most of your design decisions.

Principle 1 | **Equitable Use**

Principle 2 | **Flexibility in Use**

Principle 3 | **Simple and Intuitive Use**

Principle 4 | **Perceptible Information**

Principle 5 | **Tolerance for Error**

Principle 6 | **Low Physical Effort**

Principle 7 | **Size and Space for Approach and Use**

Universal Design Principle	Principle of Inclusive Playground Design Children want to...	What this looks like ²⁹
1. Equitable Use	<p>...be treated Fairly</p> <p>The play equipment provides social justice by being equitable and usable by people of all abilities so they can enjoy their right to play.</p>	<p>1a. Opportunities for physical, social-emotional, sensory, cognitive and communication development are integrated throughout</p> <p>1b. Multi-generational play activities such as musical instruments offer developmentally meaningful experiences</p> <p>1c. The play space was designed to offer learning opportunities and programmes to teach children how they can successfully play together</p>
2. Flexibility in Use	<p>...be Included</p> <p>Play environments designed to be socially and physically inclusive provide everyone the opportunity to participate in the play environment more independently and equally with their siblings, friends, neighbours, and family members so they can be included in the fun.</p>	<p>2a. Activities offer various types and forms of play such as dramatic play opportunities</p> <p>2b. Physical play components such as climbers offer beginning, intermediate and advanced levels of graduated challenge for healthy risk-taking</p> <p>2c. Provides choices in method of participation of both gross and fine motor activities</p>
3. Simple and Intuitive Use	<p>...be Smart</p> <p>The play environment provides understandable and developmentally-appropriate opportunities for children to discover and demonstrate that they are smart, capable, able to take risks, and successful.</p>	<p>3a. Activities that provide behavioural cues and sensory feedback reinforce understanding and expectations</p> <p>3b. Intuitive play patterns, such as looping, offer repetitive, active play</p> <p>3c. The well-organised play environment intentionally reinforces play and avoids user conflict</p>
4. Perceptible Information	<p>...be Independent</p> <p>The play environment allows children to effectively explore and participate in play at their own level.</p>	<p>4a. Universal signage with tailored messages and visual supports encourage participation and provide directional cues</p> <p>4b. Accessible routes of travel and poured-in-place surfacing are used to and within the play environment</p> <p>4c. Sensory-rich experiences encourage discovery and exploration</p> <p>4d. Universal Design features such as slide transfers support independence and self-confidence</p>

²⁹ These are adapted from PlayCore's "Me2: 7 Principles of Inclusive Playground Design." Available at www.playcore.com/programs/me2

Universal Design Principle	Principle of Inclusive Playground Design Children want to...	What this looks like
5. Tolerance for Error	<p>...be Safe</p> <p>The play environment addresses current safety standards while providing developmental opportunities needed for exploration and challenge.</p>	<p>5a. Age-appropriate play equipment applies safety standards and addresses potential hazards</p> <p>5b. Cozy spots offer areas to seek sensory relief and jump-in points offer places to observe and understand play activities prior to participating</p> <p>5c. Seating and supervision areas provide clear visibility of activities</p>
6. Low Physical Effort	<p>...be Active</p> <p>The play environment supports various degrees of physical and social participation in play while minimizing unnecessary fatigue.</p>	<p>6a. Accommodations such as high backs and moulded seats help children maintain a neutral body position during movement experiences</p> <p>6b. Equitable alternatives are found within play experiences, such as upper body activities</p> <p>6c. Balanced play experiences that promote social inclusion through reciprocal interaction encourage cooperation</p>
7. Size and Space for Approach and Use	<p>...be Comfortable</p> <p>The play environment is usable for individuals with diverse body types, and different sensory, posture, mobility, and motor control needs.</p>	<p>7a. Play activities, such as those found on balcony panels, offer comfortable reach and approach for individuals who are seated or standing</p> <p>7b. Ramps and decks provide adequate space for multiple users and encourage movement and gathering</p> <p>7c. Integrated shade and trees offer a balance of environmental conditions</p> <p>7d. Amenities and comfortable proximity to the school enhance the user experience</p>

Checkpoint 1:

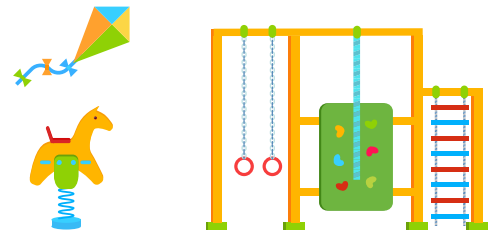
Placing Your Playground

The first decisions you and your team will need to make is on the type play facility you want to build, and how to best integrate that facility into your development, taking into account your layout, size, population and density. Depending on these, you can then decide which type of play facilities would best enhance your community and fit your budget: small, local play spaces that are within walking distance from homes, medium-sized district parks that may serve a whole residential precinct, or large destination playgrounds that provide play experiences for and caters to visitors from both inside and outside of the immediate residential area.

Depending on the size of your development, you may want to opt for several small local play spaces, a single medium-sized district play space, or a combination of these. However, even the smallest playground should not be less than 75 metres across in any dimension, and should have enough choice of play activities to keep children with different needs engaged. If there are several play spaces, they should each be different so that they form a network of varied play spaces that can cater to families' different recreational and social needs. As some families may need a fence around the entire park in order to ensure that their children are safe, at least one playground in a development should be fully fenced.

Type of Play Space

Local Play Space



Definition and significance

The neighbourhood playground is the basic unit and building block of a play space system. These are generally within walking distance of residents' homes. They are unlikely to attract users from outside of the neighbourhood.

Role and function

They primarily serve children's daily play and social needs, and provide recreational and social opportunities for the family. Children who are old enough are able to walk or cycle to these playgrounds independently. For families who live in smaller dwellings, these spaces often make up for a lack of private space in the home. They also function as an important meeting place for local families, children, and teenagers. Visits usually tend to be fairly short.

Distribution and catchment

Residents should ideally have access to a park that is less than ten minutes' walk away, or within 500 metres, as measured by actual walking routes, and not by radius circles. Ideally, users should also be able to access these spaces from their homes without having to cross a busy road, although this might not always be possible.

District Play Space



Definition and significance

These medium-sized playgrounds are designed to serve a whole residential precinct. They are typically larger and more prominent than the local playground, and will contain more facilities and amenities. District play areas will have a distribution similar to local primary schools.

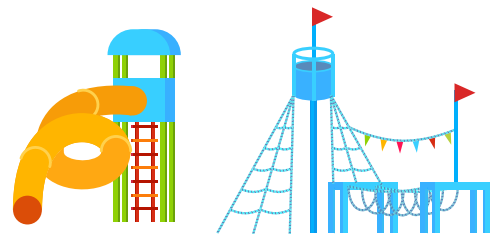
Role and function

These playgrounds are designed to meet children's and families' recreational and social needs. Visits to these spaces often coincide with other needs, such as visits to shops, schools, kindergartens, and sports facilities. They are also important social meeting places for members of the community. Visits here are usually longer than to the local parks.

Distribution and catchment

Residents should have access to a district play area within their suburb. They are usually located near a neighbourhood node, such as a shopping centre, school, community centre, or sports facilities. Users live relatively close by, and may travel by foot or bike, as well as by car.

Destination Play Space



Definition and significance

Larger destination playgrounds provide play experiences for people from both their immediate vicinity, and visitors from outside the municipality. They have facilities and amenities that can cater to crowds of people, and may also be located near another major destination or attraction.

Role and function

Destination playgrounds provide interesting and special play experiences that families plan outings to, because they are unlikely to be available in local or district play spaces. These may also be "themed" experiences. Visits are likely to be of moderate or extended duration.

Distribution and catchment

These playgrounds attract visitors from far beyond suburb boundaries. Families may arrive on foot, by bike, and car, or using public transportation. Proximity to public transportation is important.

Checkpoint 2: Choosing and Creating the Right Location



Credit: Integricity Visuals Sdn Bhd

Site visit to City of Elmina and the inclusive playground. The event includes representatives from Sime Darby Property, UNICEF and Lineworks & Space (architects)

Once the types of playgrounds have been chosen, the next step is placing them in a location that will be most beneficial to the community. The micro-location of the playgrounds in the context of streets, dwellings, commercial and community facilities determines how easily children and their families can move around independently and safely to access the spaces and activities they seek.

Placing a playground near focal points of community activity, such as schools, community centres, shops and restaurants will create a lot of engagement and increase the playground's usability. If that playground is inclusive, it also creates a space where all children will be able to play together, and families that live with a disability will have maximum chances of social inclusion as they interact with other members of their residential community.

In some cases, a larger than usual population may depend upon just one park to meet all of their local play and recreation needs. Such parks are classified as "high dependence" and will require higher-quality provision than might otherwise be expected of a similar sized park elsewhere. "Higher-quality" might mean catering for a broader range of age groups, activity types, and a higher level of accessibility than there would otherwise be

if there were more parks to choose from.

In order to make the playground location accessible to everyone, it is important to incorporate easy, safe and accessible walking and cycling routes that link the residential areas to the community facilities. This will reduce dependence on cars, enhance safety, and encourage children's independence as they grow older. All the footpaths and sidewalks should be designed for full access and mobility, with suitable surfaces, gradients and widths.

Ensuring access does not end with the construction of the playground. It is critical to ensure that a maintenance system is planned and put in place, to ensure that the paths are well-maintained, in order to reduce hazards to users with disabilities. Similarly, to ensure better security for all children and users, it is good practice to locate the parks in prominent locations where they will have wide street frontage and face the fronts of dwellings, to ensure good surveillance and full activation.

Play spaces must also provide the necessary assets and amenities required to ensure that children and people with disabilities are able to visit and use the play facilities with ease and dignity. The different types of play spaces, however, have different requirements for these.

Requirement	Local play spaces	District play spaces	Destination play spaces
Access and inclusion for people with disabilities	Within every local precinct, people with a disability must be able to access a choice of play and social opportunities in parks. Parks with a high level of dependence require higher levels of accessibility even at the local (and most important level).	District parks are expected to provide a higher level of accessibility to play and social features than in local parks. Parks with a higher level of dependence require higher levels of access, including to a wider choice of play opportunities.	Destination parks are expected to provide a very high level of accessibility to features, including a wide choice of play activities, picnic settings and furniture, and natural areas. Accessible parking is desirable where possible.
Path system	A wheelchair-accessible path that links shade, seating and play facilities to local footpaths is needed.	A seamless, wheelchair-accessible path system that links a good choice of key play areas and social areas to surrounding footpaths and the parking facilities is needed.	
Seats and tables	Required. The configuration of furniture needs to encourage and facilitate social interaction. At least some accessible furniture is required.		Required. The configuration of furniture needs to encourage and facilitate social interaction. A choice of accessible seating styles and picnic furniture is also required.
Shade and shelter	Tree shade over seating and play areas is required.	Tree shade over seating and play areas is required. Built shelter is encouraged.	Tree shade over seating and play areas is required. If the tree shade is not effective, built shelter and shade is required.
Drinking water	Preferred.	Required. Drinking fountain or water dispenser should be an accessible model and placed on an accessible route.	
Rubbish bins	Not required.	Required.	
Barbecue facilities	Not required.	Negotiable.	Required. Should be an accessible model and placed on an accessible route.
Toilets	Not usually provided at this level.	Negotiable, but must be wheelchair accessible if provided. Ideally shared with other facilities.	Accessible toilets are required.
Car parking	Not required.	Desirable.	Required.
Bike racks	Desirable.	Required.	
Signs	Negotiable.	Required.	
Fences	Negotiable depending on the site.	Negotiable. A choice of fenced sites within each suburb is desirable.	A choice of fenced sites across the municipality is desirable.
Maintenance access	Required.		

Checkpoint 3: Before We Can Play

For a family living with disability, accessing play experiences in a park is a multi-layered series of challenges that begin long before they can try out a piece of play equipment. These challenges often begin as soon as they reach the parking lot, and may persist throughout the outing, preventing children and parents from properly enjoying the play facilities. Providing solutions for each of the following stages will ensure that everyone who wants to enjoy the play area may do so easily and comfortably, and will feel included and welcomed. Many of these design solutions will also enable users who are not children with disabilities, such as elderly grandparents, to enjoy the facilities with their families. Everyone will be able to enjoy your facilities with their families and friends.



Getting to the park and into the park

- o Locate parks close to accessible transport systems to make it easier for those who do not drive
- o Provide specified accessible parking close to the park entrance, designed for easy and safe unloading especially for wheelchairs. Note that some vehicles unload from the rear, and some from the side.
- o Park entries need to be clearly designated with a sign.
- o Design footpaths and sidewalks that lead seamlessly to the entry. Ensure that gateways and entries are wide enough for wheelchairs, on a continuous path of travel, and avoid raised borders or edges that form a barrier or trip hazard.
- o Provide a path system through the play space that links to external paths. Other smaller, more playful paths can also be provided as well as the main paths; these can offer a variety of more challenging levels and surfaces. If there are level changes, ensure that they are clearly delineated so that users can choose to negotiate them.
- o Make sure that all users can enter together, regardless of their disability status.
- o Check that barriers around car parks are spaced wide enough for wheelchairs to get through.
- o Ensure that entries and paths are well-maintained.
- o Maintain paths and surfaces carefully so cracks and potholes that create barriers and hazards are removed and repaired.



Disability-friendly signage and information³⁰

- o Signs need to be accessible to all playground users, including people who are blind, have low vision, and those with additional learning or cognitive impairments.
- o The most accessible sign is one which contains braille, large print, embossed print and embossed pictograms. Always accompany any pictogram with print and braille text. Some users may not know what the pictogram means without accompanying text.
- o Ensure that the sign visually contrasts with its background so that it can be located more easily by people with low vision. Print on the sign should also be in a high-contrast colour. Signs should be non-reflective.
- o Keep text short and simple.
- o Colours and images maybe be used very effectively to convey information, such as to indicate separate “play zones.” However, information should not be conveyed solely through colour or images. Provide information in print and braille as well.
- o If the park is large and if there are several choices of routes to activities and amenities, provide signs with maps and visual information that will help with orientation.
- o Place signs at a consistent heights and locations throughout the facility. Place tactile signage where it can be easily reached without obstruction, usually at a height of 120-160 cm above the floor.



Accessible amenities within the park

- o Provide disability-access toilets at higher-level destination parks. The toilets’ design must meet local access and mobility standards.
- o Ensure that each toilet has a large change bench suitable for an adult. These are a necessity for families with an older child or adult who needs assistance with toileting.
- o Shade, shelter and drinking water are especially important in hot climates. These must be designed to be fully accessible, on a continuous path system so that all users can benefit from them. These should be located close to play areas so adults can supervise playing children.
- o Shady trees have an important cooling effect and should complement built shade.
- o Provide a choice of furniture that can be used by users with a variety of mobility issues. For example, provide tables with open ends or sides so a wheelchair can fit under it. Similarly, provide seats with backs and armrests to make them more comfortable for elderly people.
- o Under built shelters, arrange furniture items so there wheelchair users can manoeuvre around the space.
- o If a fenced play area is provided, ensure that the fenced area is large enough to include these amenities. Avoid “caging in” just a small area of play equipment without the amenities of vegetation, furniture or shade.

³⁰ Adapted from the Royal New Zealand Foundation of the Blind’s “Accessible Signage Guidelines” (2018). Available at <https://blindlowvision.org.nz/how-we-can-help/businesses-and-professionals/accessible-signage-and-buildings/#SIGNAGE>



Maximise safety and security

- o Play areas that are open, with little to no unexposed areas that cannot be seen from the outside contributes to a sense of security. Design parks so that there are clear views from the street, from the fronts of dwellings, or other activated areas.
- o Place accessible seating and tables in a central location within the play space, and design the play areas around these. This makes it easier for carers to supervise their children.
- o Provide fences where necessary to protect children from hazards such as a body of water or a road. Fences also prevent children from running away from the play area unsupervised. This is particularly help for families who have more than one child needing close supervision or support. Where fences are provided, include a generous area within the fence line that includes a variety of spaces and amenities.
- o Ensure that the routes that run through the play space remain as risk-free as possible. For example, locate moving equipment such as swings carefully where children cannot run across their path.
- o Keep in mind lines of sight for parental supervision. Avoid tall central elements that may block the view across the space.
- o Include a range of equipment for children of different ages so that young children are not forced to use equipment that might be too challenging, and therefore pose a risk to them.
- o Provide various types of impact-attenuating and shock-absorbing surfaces. However, make sure that they enable easy access for people with mobility aids or poor balance, and are maintained to ensure they are not loose, or cracked.
- o Avoid big holes in the ground surface, level changes and unprotected edges that place visually impaired users at risk.
- o Regularly inspect the space and manage cleaning and repairs in a timely manner.



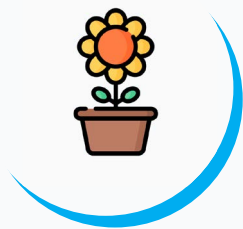
Nature-based Play Materials

Providing children and families with access to nature in a safe and controlled environment can be a strong selling point for families looking at residential property. Families today understand the tremendous positive effect that nature can have on a child's development and well-being. These emotional, cognitive and physical benefits are even greater for children with disabilities.

Integrating natural elements into the design of a play space increases both its aesthetic and play appeal. "Natural elements" includes all living things, plants and wildlife, and materials such as sand, water, pebbles, soil, durable timber, logs, rocks and stones, open grass, and trees. These provide children with rich, open-ended opportunities to explore and develop their imagination, sensory pathways and creativity, while also instilling a greater understanding and appreciation of the environment. Designed play spaces that are a mixture of both natural and man-made elements are often the most engaging as they provide a greater variety of experiences. Natural elements are excellent play materials for the following reasons:



Because these materials are not perfectly smooth, purpose-designed, evenly-spaced or predictable, they offer completely open-ended possibilities for children's imaginative use, and require decision-making, overcoming challenges, and problem solving from children.



The availability of loose parts (such as flowers, leaves, twigs, sand, and water) facilitates building, constructing, and arranging objects creatively, often while encouraging children to build empathy as well as social and communication skills.



The presence of vegetation, birds, insects and wildlife exposes children to their local environment. These elements help children build an understanding of their place in the world, discover the beauty and interconnectedness of life on earth, and learn about seasonal change and natural processes.

Checkpoint 4: Design a Play Space that will give every Child something to Love

After you've made some key decisions and properly set the stage so that all children will be able to access it safely and easily, then comes the really fun part – designing and creating an exciting and fun play experience that will appeal to children with all sorts of needs and interests. What features and opportunities can you incorporate that will give them a variety of ways to play, learn, and develop? What sensory and social experiences can you create for them? What memories of fun and togetherness do you want them to leave with?

Designing for inclusion means offering a diverse range of play options to meet the needs of a more diverse user group, including various ages and disabilities. While some experiences are specifically designed to meet specific needs

of children with particular disabilities, these experiences can be enjoyed by everyone. For example, a sensory play area designed for children with autism will also provide critical sensory development opportunities for other young children.

Ideally, an inclusive playground would also provide different levels of challenge for its users. For example, a wheelchair-accessible set of core spaces and activities should be complemented with a range of other activities that incorporate rougher surfaces, more challenging climbing, and level changes. All children would find this variety of challenges exciting, and some of these will also be used by more able wheelchair users, and by those whose carers can help extend the range of their experiences into rougher terrain.



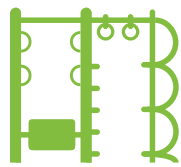
Credit: Integricity Visuals Sdn Bhd, 2021

A boy with disabilities and his sister without disabilities playing on a sensory swing together.

Seven key ingredients of good play space design

Good play spaces share the following characteristics. These may overlap one another in many aspects of design.

High Play Value



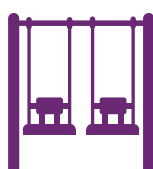
Diverse Choice of Activities and Types of Play

Wide Sensory Appeal



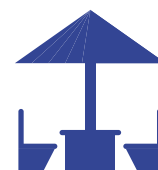
Integrated Presence of Nature

Thoughtful Layout and Arrangement of Spaces

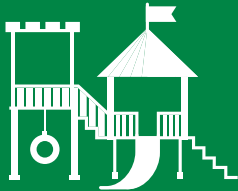


Fosters Social Interaction

Opportunities for Calm

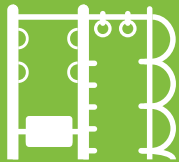


High Play Value



- A group can visit and know that everyone in the group will find something that meets their interests.
- Activities are designed for the range of ages, abilities and play interests of at least three different age groups (toddler, middle primary, and older children, teens, or adults) all within one play space.
- The space caters for children's development over time with a progression of skills and ergonomic challenges that encourage learning and mastery of new skills, without placing younger and less able children at undue risk.
- There is a good choice of play opportunities that are accessible to and inclusive for children and adults with a disability including those using wheelchairs and with autism.
- The design provides a choice of activities that encourage adults to play alongside their children or have a go. Playgrounds can be fun for adults too!

Diverse Choice of Activities and Types of Play



- A variety of physical activities that incorporate varied forms of movement at different degrees of challenge.
- Play opportunities that involve socialising, communicating, and role playing to encourage children to build their interpersonal skills.
- Open-ended materials and objects that children can interpret and play with in a variety of ways.
- Incorporate creative, sensory and cognitive experiences via spaces or elements that children can manipulate and fiddle with to build and create.
- Provide opportunities for children to explore their creativity, figure out how to use new items, participate in hands-on learning, and learn from each other.

Wide Sensory Appeal



- A space that engages the external senses such as vision (through use of colour, light, reflections, views), hearing (through use of music, echoes, sound), touch (through different textures), smell and taste.
- The space also engages the internal senses, such as the vestibular sense (the awareness of body balance and spatial orientation), and the proprioceptive sense (bodily awareness of muscles and joints) with various forms of movement, such as through opportunities to hang upside down, spin, rock, slide, swing etc.

Integrated Presence of Nature



- Deliberately include plants and natural materials as an important part of the design to increase the space's aesthetic and sensory appeal.
- Provide opportunities for hands-on play, including exploration of and engagement with loose materials.
- Incorporate opportunities to promote and instil values of environmental stewardship and education.

Thoughtful Layout and Arrangement of Spaces



- The park's spatial layout has been designed to have a choice of intimate spaces, respite and retreat spaces, large open spaces, busy spaces and quiet spaces, with subtle divisions between them.
- The layout is designed to minimise safety hazards, such as by preventing children from being able to run in front of moving equipment, and will also reduce conflicts between busy and noisy moving activities, and quieter spaces with more sedentary activities.
- Compatible activity spaces that have beneficial and complementary relationships are located closer to one another, so the play can extend between the two.

Fosters Social Interaction



- The playground can accommodate the expected numbers and range of users without feeling too crowded.
- Spaces and activities vary in size and scale ranging from intimate to large, to suit different group sizes and playing styles.
- Play opportunities, seating and amenities are selected, designed and placed to foster cooperative social interaction.
- The design builds in opportunities for social interaction for carers and children as they watch interesting key activities such as flying foxes, challenge courses and ball games.
- The space fosters positive social interactions and community-building opportunities for adults as well as children.

Opportunities for Calm



- Provide specially-designed areas for children to retreat to if they feel socially or emotionally overwhelmed, or are facing sensory overload. This becomes a place for them to recalibrate.
- These areas can be a cubby hole that is part of a playhouse, or a seated area away from the play structures. However, it is critical to keep these within parents' line of sight to ensure that they can still be monitored.

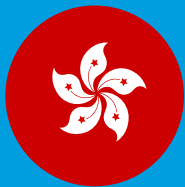
Best Practice 4: Don't Reinvent the Wheel



Credit: Integricity Visuals Sdn Bhd, 2021

Parents with their children both with and without disabilities playing together in the inclusive playground.

While the task of building an inclusive playground may seem daunting, rest assured that there are numerous resources, guidelines and examples out there created specifically to make this process easier. Instead of learning from your own mistakes, which can be painful and expensive, learn from the mistakes and successes of the numerous inclusive playgrounds that have already been built. In this chapter, we look at some inclusive playgrounds from around the world.



Case Study: **Tuen Mun Park Children's Playground, Hong Kong**



Case Study: **Golden Grove Inclusive Playground, Australia**



Case Study: **Bishan-Ang Mo Kio Park Inclusive Playground, Singapore**



Case Study: **Inclusive Playground at the City of Elmina, Shah Alam, Malaysia**

Case Study:

Tuen Mun Park Children's Playground, Hong Kong³¹



Credit: Leisure And Cultural Services Department

A Climbing Tower Located In Tuen Mun Park Playground, Suitable For Children From 2 To 12 Years Old.

Where

Tuen Mun Park, Tuen Mun Heung Sze Wui Road, Tuen Mun, Hong Kong. Tuen Mun Park is the largest town park in Hong Kong's New Territories, and is served by two railway stations and numerous bus routes.

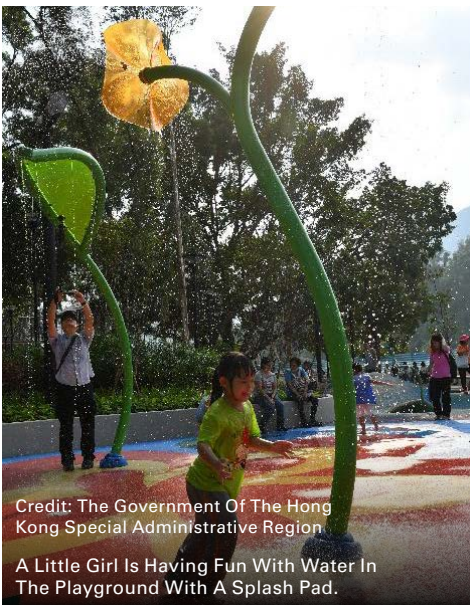


Credit: The Government Of The Hong Kong Special Administrative Region

Various Types Of Slides For The Enjoyment Of Children With Different Physical Abilities.

When

Construction broke ground in July 2016, and the park was open to the public in December 2018.



Credit: The Government Of The Hong Kong Special Administrative Region

A Little Girl Is Having Fun With Water In The Playground With A Splash Pad.

How

In collaboration with the Leisure and Cultural Services Department (LCSD) and the Architectural Services Department, the Playright Children's Association Play Space Association, a local NGO, organised an "Inclusive Play Space Design Ideas Competition" in 2015. The winning concepts from the competition were adopted and built by the Architectural Services Department and the LCSD. The Tuen Mun Park was built under a pilot scheme, and the LCSD elicited feedback on it from relevant concern groups, organisations, and district councils. Since then, the LCSD has assisted Playright and other NGOs in rolling out a three-year Community Build Playground project at four major LCSD parks from September 2017 to August 2020.

³¹ Information taken from The Government of the Hong Kong Special Administrative Region Press Release: "Inclusive Playground in Tuen Mun Park to open on December 3." Available at www.info.gov.hk/gia/general/201811/29/P2018112900330.htm?fontSize=1



Credit: Leisure And Cultural Services Department

A Roller Slide Tower With A Climbing Net And Suspension Bridge, Suitable For Children From 2 To 12 Years Old.

Design features:

This children's playground was the first barrier-free play space for children in Hong Kong incorporating two natural elements, water and sand, in its design. The playground is comprised of two portions: the Southern Portion and the Northern portion, with seven play zones. The overall layout of the playground and its play components were specifically designed for children with different physical abilities, including wheelchair users.

The Northern Portion is designed as a Water Lily Park with three zones: the Flower Dew Plaza, the Contour Play Zone and the Musical Zone. The Flower Dew Plaza is a water play area with flower-shaped splash pads and water cascade facilities that children can play in freely. This zone also uses light and shadow effects to create unique sensory experiences for children. Equipped with balancing facilities like spinning plates and a trampoline, the undulating Contour Play Zone provides challenges to children practising their balancing skills. The Musical Zone, with its giant musical instruments such as chimes and drums, stimulates children's hearing senses and musical development.

The Southern Portion comprises four zones under the design theme of "Reptile Fun" as inspired by the Reptile House in the park. The four zones are the Egg Hunter area, Reptile Paradise, the Spinning Zone and the Sensory Zone. A sand pit and a sand play table at the Egg Hunter area encourage children to "egg-hunt" with each other, while promoting creativity and social interaction. In the Reptile Paradise, children can enjoy challenges on the climbing tower and nets with different heights and difficulty levels, as well as have fun on different types of slides. In the Spinning Zone and the Sensory Zone, various types of swaying and spinning play equipment, sensory walls and other tactile movable parts appeal to children's senses of sight and touch.

A swing area adjacent to the Southern Portion of the playground features two sets of swings including a nest swing, a swing seat and a parent-child swing to cater for the needs of different users. On the parent-child swing, parents can ride on the swing face-to-face with their children.

Case Study:

Golden Grove Inclusive Playground, Australia³²

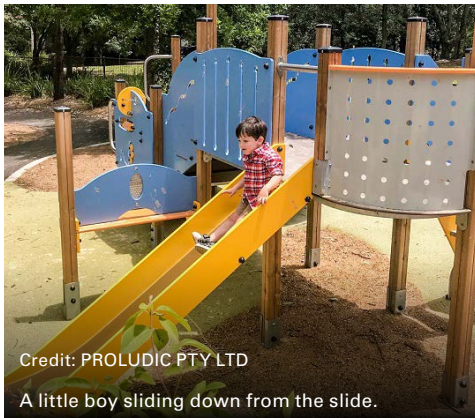


Credit: Kellie, 2018

The Golden Grove Playground

Where

Golden Grove Playground, Bicentennial Park, West Pymble, NSW, Australia

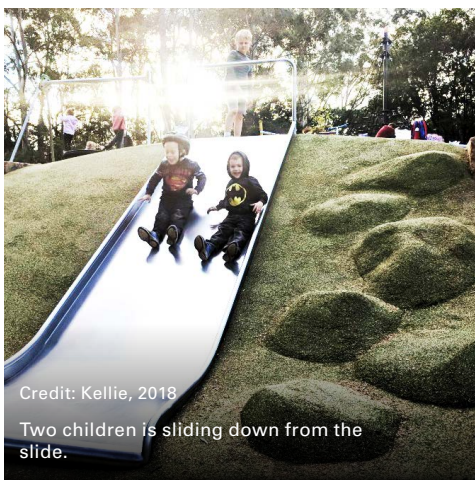


Credit: PROLUDIC PTY LTD

A little boy sliding down from the slide.

When

The final concept plan for upgrades to the existing Golden Grove Playground was approved at a council meeting on 6th December 2016. The upgrade was completed and the playground opened to the public on 27th March, 2018.



Credit: Kellie, 2018

Two children is sliding down from the slide.

How

The playground's upgrade was administered as part of the Ku-ring-gai Council's adopted Capital Works Programme. Residents were invited to comment on the proposed playground concept plan to enable the Council to finalise the design. The Council's landscape architectural team collaborated with Proludic, a designer of play and sports areas, and was built by Regal Innovations, a local landscape contractor. The Golden Grove Playground Upgrade achieved a Commended Award at the 2018 Kidsafe National Playspace Design Awards, in the Public Playgrounds Category A < \$500k.

³²Information taken from the Ku-ring-gai Council, "Golden Grove playground upgrade, Bicentennial Park" (available at www.kmc.nsw.gov.au/Current_projects_priorities/Works_and_upgrades/Recently_completed_projects/Golden_Grove_playground_upgrade_Bicentennial_Park); the Proludic Case Study, "NSW – Golden Grove Inclusive Playground Case Study" (available at www.proludic.com.au/play-areas/case-studies/nsw-golden-grove-playground/); and a ParraParents blogpost, "Bicentennial Park West Pymble – Fenced Playground, Swimming, Bushwalks" (available at: www.parraparents.com.au/parks-playgrounds/bicentennial-park-west-pymble/)



Credit: PROLUDIC PTY LTD.

A girl is observing the sensory play equipment, while a little boy is playing with the sand.

Design features:

The purpose of this major upgrade to the Golden Grove Playground was to make it more accessible and inclusive. The enhancements included new inclusive play equipment items, sensory materials and sculptures, new planting, as well as enhancements to the path network and site amenity block. The play areas are also fenced, and have been designed to ensure that there is line of sight across the large playground, so that carers may monitor different children playing at different ends of the play area. The playground is set among native trees, and incorporates a number of nature-based play elements, including logs to balance on, and large engraved sandstone blocks.

The play equipment at the playground includes a Vivarea Multi Play gym, which caters to children

aged two and above. Accessibility for children with reduced motor skills is encouraged by the presence of a ground platform with handles to facilitate easy transfer, a large platform allowing children and carers to get to the heart of the play action and a wide, secure staircase with solid fencing. Play activities located inside and outside the structure help children to develop fine motor skills, cognitive skills and provide them with sensory stimulation.

There is also additional inclusive sensory play equipment for younger children, including a Bungalow Playhouse, musical Rainbow Harp, Speed Gyro Carousel, and Pod Swing. Other play equipment includes the Pyramid Net which provides a great challenge for balance and self-control to children aged five and over.

Case Study:

Bishan-Ang Mo Kio Park Inclusive Playground, Singapore³³

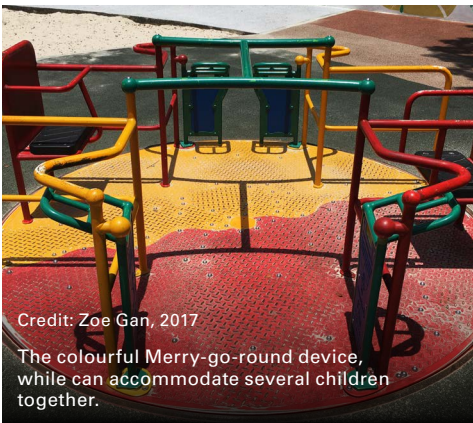


Credit: Zoe Gan, 2017

A Spherical Climbing Net Is Built On The Sand.

Where

The inclusive playground is located near the centre of Bishan-Ang Mo Kio Park, a major Singaporean park located in between two densely-populated neighbourhoods, Bishan and Ang Mo Kio. The park is centrally-located, easily accessible by public transportation, and there are numerous amenities in the area.



Credit: Zoe Gan, 2017

The colourful Merry-go-round device, while can accommodate several children together.

When

Officially opened on 22nd August, 2015



Credit: Zoe Gan, 2017

The wheelchair swing.

How

The inclusive playground was made possible by the Care & Share Movement, which was a national fund-raising and volunteerism movement led by Community Chest Singapore, the National Council of Social Services' Fund-Raising and Engagement Arm. It was also done in collaboration with the National Parks Board. The donations came from individual donors and Community Chest's corporate partners. The Bishan-Ang Mo Kio Park was the first of five inclusive playgrounds built under the Care & Share Movement, and was designed after consultation and discussion sessions with therapists and children with disabilities from six voluntary welfare organisations.

³³Information taken from the National Council of Social Service, Singapore Press Release: "Care & Share Movement Grant Enabled Bishan-Ang Mo Kio Park inclusive playground to be launched with first-of-its-kind wheelchair-accessible play equipment." Available at [www.ncss.gov.sg/Press-Room/National-Council-of-Social-Service-\(2\)/Press-Releases/Detail-Page?id=Care-Share-Movement-Grant-Enabled-Bishan-Ang-M-\(1\)](http://www.ncss.gov.sg/Press-Room/National-Council-of-Social-Service-(2)/Press-Releases/Detail-Page?id=Care-Share-Movement-Grant-Enabled-Bishan-Ang-M-(1))



Credit: Zoe Gan, 2017

A Swing With Safety Settings Can Ensure The Safety Of Children.

Design features:

The primary consideration behind the park's design is to provide opportunities for children with and without disabilities to play together. The designers have done this by providing physical structures that encourage play between children with and without disabilities, helping them to learn and accept differences, and teaching them to be more inclusive in their play and their daily social interactions.

The specialty play equipment available at the playground includes several first-of-their-kind wheelchair-accessible amenities. One of these is a wheelchair-friendly merry-go-round where wheelchair users can enjoy the thrills of spinning alongside their peers, and another is a swing on which a wheelchair can be placed and secured, allowing wheelchair users to experience the sensation of "flying" while ensuring their safety. These pieces of equipment are flush to the ground, allowing the wheelchair to be pushed onto them with ease. They also all have safety doors which will prevent the wheelchair from falling out.

There are also several tactile and sensory modifications that enhance the play experience for children with or without disabilities. A "Roller Slither Slider" provides additional tactile stimulation with rollers installed, while also eases friction for children. An accessible glider/rocker

provides enough space to accommodate up to two wheelchair users, and peers can join in. It rocks back and forth, providing vestibular stimulation. There is also an accessible sand table for creative play, and a talking bob and rhythm spinner that provide sensory stimulation.

The jungle-gym-style climber has been designed to provide various challenge levels so that children with differing abilities can climb and play together. Its low profile allows caregivers easy access to assist in transfers. The transfer points are also equipped with handrails and footholds to allow for independent access. Additionally, there is a gentle, curved "cradle" that provides a resting place when needed.

For children with autism spectrum disorder, there are several amenities that are meant to cater to their needs. The first is an adventure tube that would be fun for all children, but also provides an enclosed space for a child to "escape" the playground if they feel over-stimulated. The interior of the tube has textures and moulded-in features for tactile exploration, and there are holes in the walls of the tube to ensure that caregivers and parents can maintain supervision. Similarly, a "Cozy Cocoon" provides an enclosed space for a child to retreat into if they are over-stimulated and want to be alone.

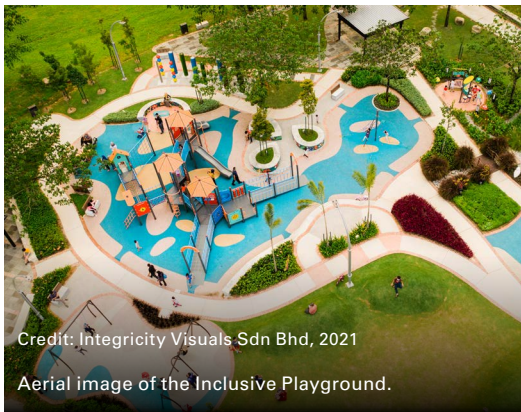
Case Study:

Inclusive Playground at the City of Elmina, Shah Alam, Malaysia



Where

The City of Elmina is a newly-developed township in Shah Alam, Selangor. This 5,000-acre township is located next to a forest reserve, and has five themed parks within its bounds. The City of Elmina Community Park has an amphitheatre, a community hall, a community garden, a picnic and event area, and an inclusive playground. There are also numerous smaller parks in the residential sections of the development.



When

The design process began in 2018. Sime Darby Property began constructing the playground in March 2020, and completed it in November of that year.



How

UNICEF Malaysia approached Sime Darby Property to collaborate on designing and building Malaysia's first fully inclusive playground. The new City of Elmina development was selected as the most promising venue for this endeavour. UNICEF provided technical expertise in the form of a Disability Programme Specialist and Inclusive Playground Landscape Architect Specialist.



Credit: Integricity Visuals Sdn Bhd, 2021

Children playing on swings with their parents. One swing is equipped with a back and harness as a safety feature.

Design features:

The City of Elmina was designed with the vision of creating an eco-conscious, nature-filled living environment that would also be complete with state-of-the-art facilities and amenities. To that end, Sime Darby Property worked with UNICEF to design and build Malaysia's first purpose-built inclusive playground. Located within the township, and adjacent to a lake and several grassy areas, the partially-fenced inclusive playground incorporates numerous natural elements into its design to create a sensory play-filled wonderland.

The playground utilises both impact-attenuating surfaces for children who need additional cushioning and paved paths with contrasting textures and colours for children who would appreciate the additional stimulation, such as wheelchair users who would enjoy a "bump through." Aside from 37 integrated play structure components and 12 loose item elements, there are more than 13 different materials and finishes that have been utilised. These structures have been designed to both accommodate and challenge children with and without disabilities. The inclusive playground at City of Elmina also uses natural elements to create unique play features. A dry pebble creek with rock features runs through part of the

playground, and becomes a discovery adventure trail that children can explore and play in. The pebbles and stones in and alongside the creek are of different textures, patterns and colours, and provide opportunities for nature-based sensory stimulation. Rocks without protrusions or sharp edges and timber logs with flattened tops were selected so that children could climb and play safely on them.

In keeping with the theme of nature-based sensory play, all the plants and trees in and around the playground were specifically chosen to provide additional sensory stimulation. Local trees with different textures, such as temak nipis (*Shorea roxburghii*), foxtail palm (*Wodyetia bifurcata*), and rukam (*Flacourtia inermis*) were chosen to both represent the local flora and pique sensory interest. Similarly, local shrubs with different textures, colours and fragrances were chosen to both decorate and enhance the space, all while giving children more items of interest to look at, play with, and learn from.

Conclusion



Credit: Integricity Visuals Sdn Bhd, 2021

A mother take cares of a disabled child who is sitting on a wheelchair.

Designing for inclusion is an opportunity to design for the future – to be on the cutting edge of Malaysian playground design.

It is an opportunity to differentiate your development and your company as one that values and uplifts communities that have been historically marginalised. Designing for people with disabilities benefits everyone, and can ensure that your organisation leads the way towards creating a more equal, equitable and inclusive environment for all Malaysian children.

Designing for inclusion is not an easy process, and requires significant political will on the part of the developers, designers, architects, and contractors.

to ensure that the needs of children with disabilities and people with disabilities are at the centre of the design process. However, it is critical to realise and remember that these design constraints are not meant to limit the design – in fact, they will expand your design, and give your playground a way to appeal to more people. It will also provide more interesting and valuable play opportunities for all children, regardless of whether or not they have a disability.

Beyond that – designing for inclusion actually makes business sense.

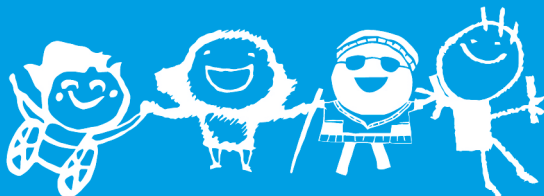
It expands existing markets, and opens up new ones. However, the greatest change will come in the minds and hearts of the people who work for you. The journey of working on such a project itself will change the people working on it – they will become more open to change and possibility. They will be forced to empathise, to put themselves in the shoes of people very different from themselves. They will have to think outside the box, and maybe even break the box and then reimagine the world around it. These new mindsets will ensure that your team and your company will always be able to innovate, to change with the times, and to build places and environments that continue to offer your customers better ways of living and playing.



Credit: Intergicity Visuals Sdn Bhd, 2021

Inclusive Playground, City of Elmina, Malaysia

For every child, Inclusion



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