



UNIVERSITI  
TEKNOLOGI  
MARA

Cawangan Perak

VINSPIREd  
Virtual Ispoh International Summit on  
Professionalism, Research and Education 2022

leGRESAFE  
2022

E-PROCEEDING OF

**1<sup>st</sup> INTERNATIONAL  
E-CONFERENCE ON  
GREEN & SAFE CITIES  
2022**

“Sustaining the  
Resilient, Beautiful and Safe Cities  
for a Better Quality of Life”

20 & 21 SEPTEMBER 2022

Organisers:



THE UNIVERSITY  
OF QUEENSLAND  
AUSTRALIA



Co-organisers:

OFFICE OF RESEARCH, INDUSTRIAL LINKAGES, COMMUNITY &  
ALUMNI (PJM&A), SERI ISKANDAR CAMPUS  
DEPARTMENT OF BUILT ENVIRONMENT STUDIES & TECHNOLOGY (JABT),  
FACULTY OF ARCHITECTURE, PLANNING & SURVEYING (FSPU)

<https://myse.my/gresafecities2/leGRESAFE/>



**e-PROCEEDING OF**  
1<sup>st</sup> INTERNATIONAL E-CONFERENCE ON  
**GREEN & SAFE CITIES**

“ **Sustaining the Resilient, Beautiful and Safe  
Cities for a Better Quality of Life** ”

**ORGANISED BY**

Gresafe\_Cities RIG  
The University of Queensland, Australia  
Kampus Hijau UiTM Perak

**CO-ORGANISED BY**

Research, Industrial Linkages, Community  
& Alumni Network (PJIM&A)

© Unit Penerbitan UiTM Perak, 2022

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise; without permission on writing from the director of Unit Penerbitan UiTM Perak, Universiti Teknologi MARA, Perak Branch, 32610 Seri Iskandar Perak, Malaysia.

Perpustakaan Negara Malaysia

Cataloguing in Publication Data

No e ISBN: 978-967-2776-13-0

Cover Design: Muhammad Falihin Jasmi

Typesetting : Ts Dr Azizah Md Ajis

## ORGANISING COMMITTEE

Patron	: Prof. Sr. Dr Md Yusof Hamid
Advisor	: Assoc. Prof. Ts Dr Norhafizah Abdul Rahman
Chairman 1	: Assoc. Prof. Ts Dr Siti Rasidah Md Sakip
Chairman 2	: Assoc. Prof. Sr Dr Nur Azfahani Ahmad
Secretary 1	: Ms Nur'Ain Ismail
Secretary 2	: Ms Nurhidayah Samsul Rijal
Treasurer 1:	: Dr Nor Nazida Awang
Treasurer 2	: Dr Nadiyah Mat Nayan

### MAIN SECRETARIAT

Invitation & Sponsorship	: Ts Dr Ida Nianti Md Zin (L) Dr Nor Eeda Ali Ms Nur'Ain Ismail Ms Nurhidayah Samsul Rijal Ts Ahmad Haqqi Nazali Abdul Razak
Participation, Registration & Certificates	: Dr Atikah Fukaihah Amir (L) Ms Marina Abdullah
Graphic & Printing	: Mr Muhammad Falihin Jasmi (L) LAr Ruwaidah Borhan
Promotion & Website	: Ts Nur Hasni Nasrudin (L) Ts Sr Dr Asmat Ismail
Information technology (IT & AV) & Media	: Mr Aizazi Lutfi Ahmad (L) Mr Muhammad Anas Othman Mr Tuan Sayed Muhammad Aiman Sayed Abul Khair
Scientific Reviewers & Publication	: Assoc. Prof. Sr Dr Thuraiya Mohd (L) – Sc. Reviewer Assoc. Prof. Dr Sallehan Ismail (L) - Journal Assoc. Prof. Sr Dr Siti Aekbal Salleh Assoc. Prof. Dr Kharizam Ismail Assoc. Prof. Ts Dr Siti Akhtar Mahayuddin Assoc. Prof. Sr Dr Nur Azfahani Ahmad Assoc. Prof. Sr Dr Natasha Khalil Dr Puteri Rohani Megat Abdul Rahim Ts Dr Azizah Md Ajis Sr Dr Asmalia Che Ahmad Dr Dzulkarnaen Ismail Dr Lilawati Ab Wahab Ms Marina Abdullah
Event Manager & Moderator	: Ts. Ahmad Haqqi Nazali (L) IDr Dr Othman Mohd Nor TPr Dr Kushairi Rashid Dr Mohd RofdziAbdullah Ar Haji Azman Zainonabidin
Banquets & Charities	: Ms Noor Faiza Rasol (L) Mr Afzanizam Muhammad Ms Siti Rohamini Yusoff

## THE INDUSTRIAL PLAYER'S INSIGHT ON CURRENT CONDITIONS OF PUBLIC PLAYGROUND FOR CHILDREN WITH DISABILITIES

Nor Suzila Lop<sup>1</sup>, Lilawati Ab Wahab<sup>2\*</sup>, Kharizam Ismail<sup>3</sup>, Mahanim Hanid<sup>4</sup>,  
Nurul Asyikin Mohd Radzi<sup>5</sup>

\*Corresponding Author

<sup>1,2,3</sup> Department of Quantity Surveying, Department of Built Environment Studies and Technology, Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, Seri Iskandar, 32610 Perak, Malaysia

<sup>4</sup> Faculty of Built Environment, Universiti Malaya, 50603, Kuala Lumpur, Malaysia

<sup>5</sup> Faculty of Architecture Planning and Surveying, Universiti Teknologi MARA, Shah Alam, Selangor, Malaysia

\*lilawati@uitm.edu.my

### *Abstract*

Over the last decade, children affairs risen to the top of government agendas at various times. Children today are the leader of tomorrow. Under public policy, every child is entitled to equal benefits against in regards to some issues. While equality demands everyone to be treated the same, children with disabilities (CWDs) frequently experience exclusion due to a disabling play environment. This exclusion is proven by previous research stating that CWDs engage in significantly less physical activity than their typically developing peers. Until recently, not much attention has been paid to the construction of playgrounds for children with disabilities. Cultivating appropriate inclusion in the play environment necessitates industry player awareness. On the other hand, the notion of children with disabilities playing is complex and multidisciplinary. Therefore, a focus group involving nine experts from industrial players that come from diverse backgrounds (i.e landscape architect, president of playground safety association of Malaysia, academician, and president of *Persatuan Orang Cacat Penglihatan Islam Malaysia*) was conducted to investigate the current conditions of public playground for disabled children. The results show that there are seven issues that have been identified during the focus group discussion on the current conditions of public playgrounds for CWDs in Malaysia in identifying the shortcomings that can be enhanced in designing playgrounds for CWDs. The issues are accessibility and mobility, safety factors, maintenance factors, compliance with provision / standard, suitability and usability of the play equipment, creating good environment, and low demand and supply of play equipment. Therefore, “loopholes” have been identified to facilitate the industrial players in designing right and ample space for CWDs playground in Malaysia.

**Keywords:** *Children with Disabilities (CWDs), Current Conditions, Playground.*

### INTRODUCTION

Recently, Malaysian Prime Minister, Dato' Sri Ismail bin Yaakob, introduced the Malaysian Family concept, which emphasizes the values of inclusivity and diversity (BERNAMA, 2021). This includes children's play rights, which are frequently overlooked, as well as the suppression of play rights for children with disabilities. Although the importance of play and recreation in the lives of all children has long been recognized by the international

community through the United Nations Convention on the Rights of the Child (UNCRC) Article 31, the interpretations of the rights are vague in the construction.

Indeed, according to Md. Saaid (2016), playgrounds in Malaysia have not much changed in character in the previous 20 years, which results in limited play value and participation among children with disabilities. Besides, UNICEF (2018) research has indicated that only 1% of the country's playgrounds are built with the intent to be accessible for disabled children. Most of the available playgrounds exhibited a rigid design that adhered to the minimum base of the playground standard. Despite the fact that playgrounds are supposed to be inclusive of children of all abilities, most playground designs fail to take the needs of children with disabilities into consideration. Melik and Althuizen (2020) pointed out that the presence of disabled children in public spaces has been largely overlooked due to a lack of awareness among playground providers. Jafari (2014) also reiterates that the integration of Universal Design to promote inclusive play is still lacking due to poor knowledge and understanding among designers and policy makers as well as their negative attitude towards children with disabilities. Additionally, the government has formulated policies and guidelines on the construction of playgrounds, albeit the length and substance of these policies varied extensively, the provision of inclusive play in these policies and guidelines was often absent (Ling et al., 2019).

CWDs are classified as a heterogeneous group made up of individuals with a wide range of personality traits, abilities, attitudes, and preferences that are seen among children of all ages and backgrounds in the general community. Speaking of play for children with disabilities as a population is thus problematic, as it is important to note that children with disabilities frequently face challenges in daily life greater than those of other children, and those challenges are associated with physical and emotional. By drawing upon literature from a wide range of disciplines, Lester and Rusell (2008) describe play for children with disabilities as a complex, multilayered, and diverse phenomenon, which cannot be explained by a single discourse. Inadequate planning of playgrounds for the needs of disabled children leads to very important barriers.

According to Trocka-Leszczynska and Jablonska (2020), landscape architects, architects, engineers, sports scientists, and occupational therapists are the main players in redefining the term "inclusive play." Partnership or collaboration among playground providers, disability groups, and health sectors could better facilitate children with disabilities in public playgrounds. Therefore, this paper drifted to investigate the current conditions of public playground for disabled children by identifying the shortcomings that can be enhanced in designing playgrounds for CWDs.

## **LITERATURE REVIEW**

### **Children with Disabilities (CWDs)**

Disabilities are a multifaceted phenomenon, and models of disability help people to make sense of their emotional reactions to disability, process their thoughts, organize their knowledge about disability, and make decisions and judgements that are relevant to it. Meloni et al. (2015) are among those examining models of child disability that look at whether children's representations of disability are influenced by cultural variables (e.g., social activity, parental education, and complex adjusted variables) or by cognitive constraints. Apparently, in order to grasp the complexity of play, it seems necessary to evaluate the needs of children with disabilities. American Psychiatric Association (2000); and Connors and Stalker (2007), mentioned that CWDs experience four (4) main things, which include: 1) impairment; 2) impaired social interaction; 3) restricted repetitive and 4) stereotyped patterns of behavior, interests, and activities.

Language around disability was complex and subjective. Most of the time, the community and service providers tend to recognize children with disabilities as being "not normal," "limited" or "less" than normal people (Moore & Bedford, 2017). While majority of the scholars define disability as a mental or physical impairment that interferes with one's capacity to carry out daily activities. However, the International Classification (ICIDH) system has distinguished the terms of impairment, disability, and handicap as shown in Table 1.

**Table 1**  
*Definition of Terms*

<b>Term</b>	<b>Definition</b>
Impairment	The functional limitation caused by physical, mental, or sensory impairment
Disability	The loss or limitations of opportunities to participate in the normal life of the community on an equal level with others, due to physical or social barriers
Handicap	The disadvantage suffered because of impairment and disability

*(Sources: International Classification of Impairments, Disabilities and Handicaps (ICIDH), 1980)*

According to Pan (2008), physical barriers from the surroundings create disability from impairment. People with disabilities have poor motor control that can cause movement and postural irregularities in various sections of their bodies. Physical barriers such as inaccessible pathways and play equipment on playgrounds will subsequently cause fatigue and discomfort among children with disabilities. This is proved by Connors and Stalker (2007) who discovered that children with disabilities have frequent chest infections, tire easily, are in pain, and have trouble performing recreational activities.

Social impairment - According to Wing and Gould (1979), abnormalities in social interaction can be found in some children with disabilities, especially in mentally retarded children. This social impairment involves abnormalities in language development, which include both speech and gesture, and a behavioural repertoire consisting primarily of repetitive and stereotyped activities (Joseph et al., 2013). Most children with disabilities on playgrounds tend to show passive interactions. They did not make social interaction spontaneously but amiably accepted approaches and did not resist if other children dragged them into their games.

In addition, research shows that CWDs, especially physically disabled children, have fewer chances to play with things in their surroundings (Brown & Burger, 1984; Clarke, 2006). This means that the child's exchange of information with his or her surroundings is far less. The child then misses out on a lot of aspects that children without disabilities enjoy. As a result, the child may withdraw from social situations and become more reliant on adults than necessary. Besides, according to Clarke (2006) the interaction of several factors, a child with limited mobility may develop secondary psychological and social handicaps such as low self-esteem, isolation, and marginalization.

Impaired communication – Besides, research also had discovered that children with developmental and physical disabilities often experience severe communication impairment (Sigafos, 2000; Wing & Gould, 1979). The phrase severe communication impairment refers to situations in which an individual's speech is temporarily or permanently insufficient to meet his or her communication demands and the inability to talk is not largely related to a hearing impairment. Sigafos (2000) described that inability to develop communicative competence among children with disabilities lead to an aberrant behaviour of these children when

socializing with other children on playground such as becoming aggressive, gain stereotypic behavior and become tantrums.

Repetitive behaviour - According to Oliver et al. (2003), this restricted, repetitive pattern of behaviour, interest or activities are commonly experienced by children with developmental disabilities. For example, it was discovered that around 40% of a sample of 3 to 10 years old children with down syndrome exhibited motoric repetitive behavior such as hand and finger mannerisms, non-functional play, and a typical sensory interest (Neil & Jones, 2016). Besides, according to Joseph et al. (2013) stereotypy in children with disabilities might entail rhythmic and uncontrolled repetitive behavior such as hand-flapping, body rocking, head rolling, as well as oral stereotypy in which children with disabilities repeat meaningless sound or words. Such stereotypic behavior may create social stigma and could interfere the formation of social interaction with other peers. CWDs interact with their peers on limited basis and may intentionally strive to socially isolate themselves.

### **Industrial Player's Insight on the Public Playground for CWDs**

Literature suggests that a lot of research has been focused on ensuring the safety of playgrounds and how playgrounds influence the physical activity of children (Qazi, 2013). Burke (2015) noted that most landscape designers do not seem to do not appear to design playground as there always repetition of playground design across the country. Besides, some scholars also argue that playground are not exciting, have become dull and monotonous not only for children with not only for children with disabilities but also for ordinary children because the playground area does not contain special elements such as challenging activities, games, and other activities that children with disabilities would enjoy (Joe L.Frost, 2006). Because of this, children are thereby deprived of experiences with inclusive options that allow them to play, learn, and explore with other children.

Besides, according to recent study by Aly et al. (2019) , children with disabilities are struggle to find peers to play with and their relationships with friend of same age are often limited or non-existent. In playground, children with disabilities are observed playing alone or with an adult more often than CWDs. These children are seen to miss out the opportunity to participate in both physical and social environment on the playgrounds. As quote by Shell (1994), "*Most people who care about child development know nothing about design, and most people who design know nothing about child development*".

Through the literature reviews, a number of authors wrote eloquently about the value of play among CWDs and the significance of inclusive playground to support play among CWDs (Lynch et al., 2019; Maxwell et al., 2008; Moore, 2019; Qazi, 2013). But according to Ling et al. (2019), playgrounds environment has been criticized for being designed for only physically fit children. Few are willing to design or construct public playground or deviate from standard practice of MS966; 2017 or American Society for Testing and Material (ASTM). While parents and children with disabilities seek for play opportunity on playground, Black and Ollerton (2022) mentioned that enabling inclusivity in the playground design is not an easy undertaking. Ataol et al. (2022) also added that the participations of very young children with variety abilities is challenging since their knowledge about their health status and environment is limited. Their visibility of playground design is heavily mediated by their caregivers and parents.

Furthermore, there are no active intertwined events of designers with medical expert in assisting the development of inclusive playgrounds (Ataol et al., 2022; Joe L.Frost, 2006). In the given context, every individual in the frame has different point of view and different way in interpreting the inclusive environment. Therefore, this explain the dissolution of inclusive playground among children with disabilities.

## **Current Conditions of Children Playground in Malaysia**

Current condition of children's playground according to Talay et al. (2010), to meet children with disabilities' needs, the provision of appropriate space and material to play is significant. However, a large portion of almost all existing playgrounds in Malaysia is not suitable to be used by children with disabilities from many aspects. The fact that the playground design and the play equipment are not intended for children with disabilities with limited mobility are given as obstacles (Talay et al., 2010). One of the reasons that cause limited mobility in playgrounds to children with disabilities is the ground cover. Sand or gravel was usually used as surface material. This type of material usually causes difficulty for children with disabilities to reach the playground, especially the wheelchair user, as sand seems impossible for them to traverse (Ayatac, 2017). Besides, in a study by Prellwitz (2007a), these children expressed that most playground pieces of equipment were unreasonably small to maneuver around if they had some sort of mobility device. For example, disabled children with wheelchairs may be facing difficulties in entering and getting out of the playhouse because of the playhouse size. Thus, considering space in the playground design is fundamental to enable these physically challenged children to utilize the equipment and explore the playground. Besides, a study conducted by Jafari, (2014) highlight that CWDs participate in fewer activities and interact less often than other children as play equipment provided on the playground are not usable to these population. Most of the time, these children with disabilities can only enjoy open space surrounding the playground rather than playing with the playground components.

According to Ripat and Becker (2012), building a playground for disabled children is not easy. Many standard playground activities such as swinging, climbing, and others may require physical challenges. This subsequently explained why the usability of public playgrounds for children with disabilities is limited. In addition, unlike ordinary children's playground, playground for children with disabilities may require additional safety consideration. Zain and Mokhtar (2012) highlighted that in Malaysia, about 3000 cases of injuries happen at the playground every three months, and this commonly involved children between 5-9 years of age. 75% of injuries that occur on playgrounds resulted from falling while playing, and 50% of all playground injuries were equipment related (Md. Saaid, 2016). This somehow explains why majority of parents who have disabled children become overcautious or overprotective when it comes to their kid's safety, especially on the playground.

## **METHODOLOGY**

A focus group discussion (FGD) was successfully held on 30 October 2021 through virtual online session (i.e. Google Meet platform). This FGD aimed to identify the suitability of the current condition of public playground for disabled children. The FGD participants were asked to provide their insight on the current condition of the public playground in Malaysia and way to overcome the issues. A total of 9 industrial players related to playground practitioners representing the President Playground Safety Association of Malaysia (PSAM), Local Authority's Representative, Landscape Architect, president of *Persatuan Orang Cacat Penglihatan Islam Malaysia* and academicians were invited. To facilitate the cross-fertilization of ideas, the FGD participants were received the question to be discuss early in order to ensure all the FGD participants aware and ready for discussion. The data collected were then transcribed and analysed using Atlas.ti@8 qualitative software. The findings are presented in a tabulation format.

## **RESULTS AND DISCUSSION**

The research findings presented in Table 2 presents the current conditions of the public playground. Based on the results, there are seven (7) issues on current conditions of public playground for CWDs in Malaysia were identified, there are 1) Accessibility and mobility, 2)

Safety Factors, 3) Maintenance of play equipment, 4) Compliance with provision/ Standard, 5) Suitability and usability of the play equipment for CWDs, 6) Creating good play environment, 7) Low demand and Supply of play equipment.

Among the major factors discussed by most FGD participants are concerned on the *accessibility and mobility* of CWDs to enter and play at the public playground. This factor is derived from three (3) issues; lack of ramp provided at current playground for CWDs with wheelchair, problems on access to the playground, and access from one play equipment to another play equipment is difficult due to lack of directional signs. The issues on accessibility and mobility will affect most CWDs where they are not able to enjoy and play in the playground like other normal children. As stated by Talay et al. (2020); and Prellwitz (2007), most CWDs have difficulty when entering and playing some equipment due to the limited space and mobility for them to play. This issue needs more attention from industrial players when designing the playground to ensure all children have the same opportunity to play comfortably and safely. Apart from that, *safety factors* are among the issues discussed by the participants concerning the conditions of the current public playground in Malaysia. This safety factor is referring to the design of playgrounds and equipment which most of the public playground may lack of emphasis on safety features to users especially to CWDs. As revealed by most participants in this FGD session, this conditions ultimately will cause a danger to users especially to CWDs. This is supported by Zain and Mokhtar (2012) that, there are lot of cases involves injuries among children aged 5 to 9 years while playing in the playground.

**Table 2**

*Feedback on current conditions of the CWDs playground.*

No	Broad Themes	Sub-themes	FGD Participants (Experts)								
			P1	P2	P3	P4	P5	P6	P7	P8	P9
1.	Compliance with provision/ Standard	<ul style="list-style-type: none"> <li>Current provision should enough cater no. of children to play at one time</li> </ul>	√	√	√						√
		<ul style="list-style-type: none"> <li>The equipment provided must be suitable for use by normal children and CWDs</li> </ul>	√	√	√						√
2.	Suitability and usability of the play equipment for PWDs	<ul style="list-style-type: none"> <li>The current design is more emphasis on the function of play equipment to children according to the type of disabilities.</li> </ul>		√	√						
		<ul style="list-style-type: none"> <li>The playground should be design to maximum utilisation.</li> </ul>	√		√						
		<ul style="list-style-type: none"> <li>Some play equipment cannot be used by children with disabilities. They can only access around the play equipment.</li> </ul>				√		√			√
3.	Creating good play environment	<ul style="list-style-type: none"> <li>Creating a child-friendly play environment</li> </ul>	√		√						
		<ul style="list-style-type: none"> <li>Playground layout sometimes causes a play environment among children is limited</li> </ul>								√	√

		<ul style="list-style-type: none"> <li>Lack of ramp provided at current playground for PWDs with wheelchair to access the playground</li> </ul>		√					√		
4.	Accessibility and mobility	<ul style="list-style-type: none"> <li>Problems with access to the playground for children with disabilities (wheelchair)</li> </ul>		√				√	√	√	√
		<ul style="list-style-type: none"> <li>Access from one play equipment to another play equipment is difficult and lack of directional signs</li> </ul>						√	√	√	√
5.	Safety Factors	<ul style="list-style-type: none"> <li>Design of playground and equipment should emphasise on the safety to the users especially to PWDs</li> </ul>		√	√	√	√				√
		<ul style="list-style-type: none"> <li>Safety issues are also closely related to the level of maintenance of play equipment performed by the local authority</li> </ul>						√			√
6.	Low demand and supply of play equipment	<ul style="list-style-type: none"> <li>The demand for the use of play equipment for the disabled causes a low supply of equipment</li> </ul>		√							
		<ul style="list-style-type: none"> <li>Preventive maintenance: Most of the play equipment are not maintain well</li> </ul>		√	√	√	√	√			√
7.	Maintenance for play equipment	<ul style="list-style-type: none"> <li>Corrective maintenance: When there is severe damage to the play equipment, only repairs are made</li> </ul>		√	√	√	√	√			√

Likewise, the *maintenance on play equipment* as highlighted among the participants is very important to be executed to avoid any accidents or injuries during play time. As mentioned by participants P4 and P6, most of the playground are not well maintenance where severe damage occurs tend to bring to accidents and injuries. This was expressed by participants (P1) that “*in practical there are two (2) types of maintenance that should be executed on the current playground in Malaysia namely preventive and corrective that needs to be executed periodically to ensure the safety of users.*” (P1). Therefore, it is important to make regular maintenance on playground and play equipment to ensure all children can enjoyed the play equipment comfortably and safely.

Participants also viewed *compliance with provisions or standards* as one of the issues that need to be complied with to ensure that the design and space of the public playground could accommodate the maximum number of children playing at one time. The findings revealed that the participants are concerned about the space and layout of the playground so that children can play safely and comfortably. Thus, compliance with provisions and standards during design stage will make public playground can be usable to all children including children with disabilities.

The other point highlighted by the participants are on the *suitability and usability of play equipment for CWDs*. Most of the playground lack of providing suitable play equipment for the use of CWDs. As mentioned by the participants P2 and P3, the current design is less emphasised on the function of play equipment. Some of the equipment cannot be utilised by the children with different disabilities due to restriction and obstruction that limit the access to

such play equipment. The findings show that, the playground should be design to the maximum utilisation so that it can be used by all children including CWDs.

Other factors expressed by the FGD participants regarding the current conditions of playground are *creating good play environment* and *low demand and supply of play equipment*. These factors are considered significant, even though the discussion around these factors was limited among FGD participants.

## CONCLUSION

Investigating issues on the current playgrounds is one of the important efforts in identifying shortcomings in existing public playground in order to provide insight to industrial players in designing the practical playgrounds without ignoring CWDs rights. Through empirical research and research contributions, it can be concluded that the right of children with disabilities to play at playground is crucial and should be taken seriously. Thus, design and layout of the playground should consider the needs and usability of the CWDs. Seven (7) issues that have been highlighted from the FGD participants will significantly facilitate the industrial players in designing and providing a functional playground to meet the needs of different playground users. Accessibility and mobility, safety factor and maintenance factor are among the issues that have been raised by most FGD participants. It can be concluded that appropriate action from local authority and industrial players needs to be taken to ensure the right to play of children with disabilities is not neglected.

## ACKNOWLEDGMENT

This research was funded in part by grants from Fundamental Research Grant Scheme (FRGS) Under the Malaysian Ministry of Higher Education (MOHE). Project code: FRGS/12019/SS06/UiTM/02/15.

## REFERENCES

- Aly, M. M., Allen, D. J., & Archambeau, A. A. (2019). Designing Playgrounds for All Children: All-Inclusive Adventure Playground for the City of Arlington, Texas. American Psychiatric Association. (2000). Diagnostic And Statistical Manual Of Mental Disorders (Text revision) (DSM-IVTR). American Psychiatric Association. Inc.
- Ataol, Ö., Krishnamurthy, S., Druta, O., & Wesemael, P. (2022). Towards Inclusive Urban Environments For Infants And Toddlers: Assessing Four Urban Neighbourhoods In Istanbul With Mothers. *Children & Society*. <https://doi.org/10.1111/chso.12566>
- Ayatac, H. (2017). No "Obstacles" In Playgrounds That Are Not Only Accessible but Also Inclusive,' *International Journal of Architecture & Planning*, 4(2), pp. 1–14. DOI: 10.15320/ICONARP.2016120233.
- Black, R., & Ollerton, J. (2022). Play Space Users' Experience Of A Socially Inclusive Playspace: The Case Study Of Livvi's Place, Port Macquarie, New South Wales, Australia. *World Leisure Journal*, 64(1), 3–22. <https://doi.org/10.1080/16078055.2021.1894230>
- Brown, J. G., & Burger, C. (1984). Playground Designs and Preschool Children's Behaviour. *Journal of Environment and Behaviour*, 16(1), 599. <https://doi.org/10.1177/0013916584165004>
- Burke, J. (2015). Enabling Play: Insider Accounts of Disabled Children's Playworld in Accessible Playgrounds (Issue July).
- Clarke, D. H. (2006). Preventing Social Exclusion of Disabled Children and Their Families.
- Connors, C., & Stalker, K. (2007). Children's Experiences Of Disability: Pointers To A Social Model Of Childhood Disability. *Journal of Disability & Society*, 22(1), 37–41. <https://doi.org/10.1080/09687590601056162>

- Jafari, M. (2014). Assessing Universal Design Principle Application on Children Playground at Lake Titivangsa Park, Kuala Lumpur.
- Joe L.Frost. (2006). The Dissolution of Children's Outdoor Play: Causes and Consequences. Tessaroselandscapes.<http://tessaroselandscapes.com.au/wp-content/uploads/2016/03/joefrostthedissolutionofchildrensoutdoorplaycausesconsequences.pdf>
- Joseph, L., Thurm, A., Farmer, C., & Shumway, S. (2013). Repetitive Behavior And Restricted Interests In Young Children With Autism: Comparisons With Controls And Stability Over 2 Years. *Journal Of Autism Research*, 6(6), 584–595. <https://doi.org/10.1002/aur.1316>
- Moore, K., & Bedford, J. (2017). Childhood Disability in Malaysia. United Nations Children's Fund (UNICEF). [www.unicef.my](http://www.unicef.my)
- Lee, S., Odom, S. L., & Loftin, R. (2007). Social Engagement with Peers and Stereotypic Behavior of Children with Autism. In *Journal of Positive Behavior Interventions* (Vol. 9, Issue 2).
- Ling, C. K., Azmeer, R. A., Dolah, M. S., Ramli, S. H., Bolong, J., Serdang, U. P. M., & Serdang, U. P. M. (2019). Applicability of Malaysian Standards (Ms 966) In Benefiting Health and Safety of Children in Malaysia. *Journal of Alam Cipta*, 12(2).
- Lynch, H., Moore, A., Edwards, C., & Horgan, L. (2019). Advancing Play Participation For All: The Challenge Of Addressing Play Diversity And Inclusion In Community Parks And Playgrounds. *Journal of Occupational Therapy*, 1(11). <https://doi.org/10.1177/0308022619881936>
- Maxwell, L. E., Mitchell, M. R., Evans, G. W., Maxwell, L. E., Mitchell, M. R., & Evans, G. W. (2008). Effects of Play Equipment and Loose Parts on Preschool Children's Outdoor Play Behavior: An Observational Study and Design Intervention. *Journal of Children, Youth and Environment*, 18(2), 36–63.
- Md.Saaid, A. H. (2016). Exploring Aspect of Design and Safety of Children Playgrounds in Malaysia.
- Melik, R. V. A. N., & Althuizen, N. (2020). Inclusive Play Policies: Disabled Children and Their Access to Dutch Playgrounds. *Journal of Economic and Social Geography*, 0(0), 1–14. <https://doi.org/10.1111/tesg.12457>
- Meloni, F., Federici, S., & Dennis, J. L. (2015). Parents' Education Shapes, But Does Not Originate, The Disability Representations Of Their Children. *PLoS ONE*, 10(6). <https://doi.org/10.1371/journal.pone.0128876>
- Moore, A. (2019). Community Parks and Playgrounds Community Parks and Playgrounds: Intergenerational Participation through Universal Design Final Report For The Centre for Excellence in Universal. <https://doi.org/10.13140/RG.2.2.22422.60486>
- Neil, N., & Jones, E. A. (2016). Repetitive Behavior in Children with Down Syndrome: Functional Analysis and Intervention. *Journal of Developmental and Physical Disabilities*, 28(2), 267–288. <https://doi.org/10.1007/s10882-015-9465-x>
- Oliver, C., McClintock, K., Hall, S., & Oliver, C. (2003). Risk Markers Associated With Challenging Behaviours In People With Intellectual Disabilities: a meta-analytic study. *Journal of Intellectual Disability Research*, 47(6), 405–416.
- Pan, C. Y. (2008). Objectively Measured Physical Activity Between Children With Autism Spectrum Disorders and Children Without Disabilities During Inclusive Recess Settings in Taiwan. *Journal of Autism and Developmental Disorders*, 38(7), 1292–1301. <https://doi.org/10.1007/s10803-007-0518-6>
- Prellwitz, M. (2007a) Playground Accessibility and Usability for Children with Disabilities Experiences of Children, Parents, And Professionals. The Luleå University of Technology
- Qazi, H. A. (2013). The Relationship Between Quality of Parks and Playgrounds and The

- Relationship Between Quality of Parks and Playgrounds and Park-Based Physical Activity in Children Park-Based Physical Activity in Children.
- Ripat, J. and Becker, P. (2012) 'Playground Usability: What Do Playground Users Say?', *Journal of Design and Built Environment* 19(1), pp. 144–153. DOI: 10.1002/oti.1331.
- Sigafoos, J. (2000). Division on Autism and Developmental Disabilities Communication Development and Aberrant Behavior in Children with Developmental. *Journal of Education and Training in Mental Retardation and Developmental Disabilities*, 35(2), 168–176.
- Talay, L., Akpınar, N. and Belkayali, N. (2010) 'Barriers To Playground Use For Children With Disabilities: A Case From Ankara, Turkey,' *Journal of Agricultural Research*, 5(May), pp. 848–855. DOI: 10.5897/AJAR09.779.
- Trocka-Leszczynska, E., & Jablonska, J. (2020). Ergonomics for Children. *Advances in Intelligent Systems and Computing*, 966, 23–33. [https://doi.org/10.1007/978-3-030-20151-7\\_3](https://doi.org/10.1007/978-3-030-20151-7_3)
- Wing, L., & Gould, J. (1979). Severe Impairments of Social Interaction and Associated Abnormalities in Children: Epidemiology and Classification. *Journal of Autism and Developmental Disorders*, 9(1).
- Zain, N. M., and Mokhtar, S. A. I. (2012) *Playground Safety, My Health*, Kementerian Kesihatan Malaysia. Available at: <http://www.myhealth.gov.my/en/playground-safety/> (Accessed: 20 November 2019)

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim  
Rektor  
Universiti Teknologi MARA  
Cawangan Perak



Tuan,

**PERMOHONAN KELULUSAN MEMUAT NAIK PENERBITAN UiTM CAWANGAN PERAK  
MELALUI REPOSITORI INSTITUSI UiTM (IR)**

Perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa pihak kami ingin memohon kelulusan tuan untuk mengimbas (*digitize*) dan memuat naik semua jenis penerbitan di bawah UiTM Cawangan Perak melalui Repositori Institusi UiTM, PTAR.

3. Tujuan permohonan ini adalah bagi membolehkan akses yang lebih meluas oleh pengguna perpustakaan terhadap semua maklumat yang terkandung di dalam penerbitan melalui laman Web PTAR UiTM Cawangan Perak.

Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

“BERKHIDMAT UNTUK NEGARA”

Saya yang menjalankan amanah,

**SITI BASRIYAH SHAIK BAHARUDIN**  
Timbalan Ketua Pustakawan

*nar*

*Setuju.*

*27.1.2023*

PROF. MADYA DR. NUR HISHAM IBRAHIM  
REKTOR  
UNIVERSITI TEKNOLOGI MARA  
CAWANGAN PERAK  
KAMPUS SERI ISKANDAR