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## **FAILURE OF SOCIAL INCLUSION IN PUBLIC SPACE: A CASE STUDY OF CHILDREN'S INCLUSIVE PLAYGROUND AND THEIR ENGINEERING STANDARDS IN HONG KONG**

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### **ABSTRACT**

The paper reviews the engineering standards of playgrounds and discusses the failure of social inclusion in children's playgrounds through the case study of Hong Kong. As the play equipment in playgrounds in Hong Kong follows the international playgrounds safety standards ASTM F1487 and EN 1176-1, these standards are reviewed. Based on the review and the current situation of social inclusion in playgrounds, this paper suggests that it is important and necessary to include social inclusion concept into engineering standards so that the stakeholders are reminded to consider both the physical and social needs of the children with disabilities.

**Keywords:** Social inclusion, public space, inclusive playground, engineering standards.

### **INTRODUCTION**

In view of the global concerns about the needs and the rights of the deprived, the disabled and the minority groups, many well-developed countries has established different kinds of inclusive policies to ensure that all citizens are able to enjoy the benefits provided by the government and actively participate in the society. In correspondence to the policies, governments has also renovated different kinds of public facilities and established different campaigns to promote inclusiveness. Children's playground is one of the major public facilities that inclusiveness is concerned. It is essential to allow children with different capabilities to enjoy play equipment in playgrounds, as play is an essential element in children's daily life. Children can develop their physical, cognitive and emotional abilities, and social and problem-solving skills (Brett, Moore, and Provenzo, 1993). According to the Convention of the Rights of the Child (United Nations, 1990), the Article 31 stated that all children have the right to play and enjoy their leisure time by participating in different kinds of recreational activities. All children, regardless of their capabilities, should be able to enjoy play and play equipment in public playground. As most of the families in densely populated city such as Hong Kong may not own a private playground, the provision of inclusive public play equipment is crucial to encourage play inclusion of children with different capabilities.

The provision of inclusive play equipment is meant to allow children with different capabilities can enjoy the playtime. However, while the majority of children playing in playground are without disabilities, it is sometimes difficult for children with disability to play and join other children at play. Whether the facilities are able to provide opportunities for social inclusion in inclusive playground is crucial. Inclusive play can only occur in this circumstance, and playground with inclusive play equipment can only be truly inclusive.

Currently, although most of the playground facilities are conformed to the international standards such as ASTM and EN, it is still questionable whether social inclusion is adequately concerned. In Hong Kong, although some playgrounds include inclusive play equipment, it is unknown whether children with different capabilities would play together in the playground. Taking Hong Kong as a case study, the paper examines and discusses the failure of social inclusion among inclusive playground facilities through reviewing the engineering standards. Hong Kong is selected as the case study because it is a well-known densely populated city where public playground plays an important role in children's childhood, and it is also a developed city that other inclusive facilities for people with different capabilities, for examples, tactile paths, Braille maps for the visually impaired, and ramps for the wheelchair, are adequately provided in public areas.

## **PUBLIC PLAYGROUNDS IN HONG KONG**

Hong Kong public playgrounds are managed by the Leisure and Cultural Service Department (LCSD) and the Housing Authority and Housing Department. Most of the inclusive play equipment installed by the management departments is modular, and they are Composite Play Structure (CPS) as stated in the US playground safety standard ASTM F1487. The name CPS implies that the play equipment and the inclusive features are similar to each other in different playgrounds. For instance, in Figure 1, slides and climbing frames are incorporated into one CPS, and they are also the two most popular play equipment of CPSs. Apart from the CPS, swing is another facility present in playgrounds but it is not incorporated into CPS (Figure 2).



Fig. 1 - Composite play structure in Quarry Bay Park inclusive children's playground in Hong Kong (photograph by authors)

Not all of the CPSs are inclusive. According to the website of the LCSD website, about 70% of the children's playgrounds are inclusive (LCSD, 2015). However, in a previous study, it is found that one of the 'inclusive' playground does not have any inclusive facilities (Siu, Wong, & Lam, 2017). The Hong Kong Committee for UNICEF also found that only 4.5% of the playgrounds in Hong Kong has inclusive facilities (Hong Kong Committee for UNICEF, 2018). Inclusive play equipment is inadequate in Hong Kong in the first place.

Among the 4.5% of the inclusive playgrounds, inclusive play is not observed. These playgrounds may not be truly inclusive. Based on the observation on children's play in an inclusive playground conducted in a study of inclusive play (Siu and Wong, 2017), no children with disabilities was playing in the playgrounds, and inclusive play was not found,

despite the provision of the inclusive play equipment. Although the Legislative Council of Hong Kong has already recognized the issue (The Legislative Council Commission, 2017) and a new inclusive playground will be constructed at Tuen Mun Park, it is still unknown whether the new play equipment is able to accommodate children with different abilities and encourage inclusive play socially.

All of the play equipment in the existing playground is imported from the US and Europe, and recently from South Korea and China. They are all conform to the ASTM F1487 or EN 1176 playground safety standards depending the origin of the design. Although Hong Kong has its own guidelines and design manual for designing inclusive playgrounds (Playright, 2016), the existing playgrounds do not conform to them. The play equipment in the inclusive playground at Tuen Mun Park is the new playground which follows the inclusive design manual. It is initially designed by children through a participatory design process and adopted by the Architectural Services Department. It is still unknown how the play equipment there conforms to the engineering standards. Nevertheless, the ASTM and EN standards are reviewed to study and examine the failure of social inclusiveness among CPS in the existing playground.



Fig. 2 - Swings in Sai Tso Wan children's playground in Hong Kong  
(photograph by authors)

## **ENGINEERING STANDARDS OF PLAY EQUIPMENT**

### **ASTM standard (and the Standard for Accessible Design)**

Several ASTM standards are related to playground equipment, e.g., ASTM F1487 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use, ASTM F2373 Standard Consumer Safety Performance Specification for Public Use Play Equipment for Children 6 Months through 23 Months, and ASTM F1292 Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment. The standard, i.e., ASTM F1487, is reviewed because it is the most general one with a widest coverage of play equipment for public use. However, the major concern of the standard is about safety, and it is often that only the minimum requirements about the size or height of the specific parts in play equipment are stated. For instance, it states that “the internal diameter of tube slides shall be 23 inches (580mm) or greater” (ASTM International, 2011, Section 8.5.4.7). The requirement for inclusion and inclusive play is not explicitly stated in the standard. Other requirements stated in the standard also do

not have any signs related to inclusion or inclusive play. For instance, it states that “the guardrail or protective barrier at a platform entrance/exit opening shall have an opening with a maximum horizontal dimension of 15 inches (380mm)” (ASTM International, 2011, Section 8.4.6). Seemingly, social inclusion or inclusive play is not concerned in the standard.

Section 10 of the standard is about accessibility. It refers to the DOJ 2010 Standard for Accessible Design for the accessibility of the playground. The DOJ 2010 Standard for Accessible Design is thus reviewed (Department of Justice, 2010). Although the requirements only consider the accessibility of the play areas and facilities, the advisory note 240.2.1 (Department of Justice, 2010, p. 100) clearly suggests how the ground level play components:

*“Ground level play components accessed by children with disabilities must be integrated into the play area. Designers should consider the optimal layout of ground level play components accessed by children with disabilities to foster interaction and socialization among all children. Grouping all ground level play components accessed by children with disabilities in one location is not considered integrated.” (Department of Justice, 2010, p. 100)*

“Interaction and socialization among all children” in the advisory note suggests that the standard promotes social inclusion in playing. Although the advisory note just explains the requirements, it is clear that the standard has addressed the needs of social inclusion.

Other requirements also concern children with disabilities, however; social integration or inclusion is not explicitly mentioned.

### **EN standard**

The European standard EN 1176 series addresses all issues related to playground equipment and surfacing. It includes the requirements and text methods for swings, slides, cableways, carousels, rocking equipment, full enclosed play equipment and spatial network. It also provides guidance on installation, inspection, maintenance and operation for the playground equipment. The general requirement and test method, EN1176-1, is reviewed in this section. It is meant for playground equipment for all children with different abilities (European Committee for Standardization, 2008). It is related to the general safety requirements and text methods of playground equipment and surfacing. Similar to the ASTM F1487, the EN 1176-1 provides the minimum requirements about the size or height to ensure that the play equipment is safe for children to use. For instance, the surfaces for running or walking should not contain gaps greater than 30mm (European Committee for Standardization, 2008, p. 26). Accessibility for children with disability is not specifically mentioned in this standard, and no other standard is referred regarding the issues of social inclusion.

### **DISCUSSION**

Both the ASTM F1487 and the EN 1176-1 do not address the issue of social inclusion. However, the former has referred the issue to the DOJ 2010 which is issued by the Department of Justice. It should be expected that play equipment which follows the ASTM F1478 also follows the standards of DOJ 2010 regarding the play areas. However, social inclusion in Hong Kong playgrounds is still not found, although the play equipment conformed to ASTM F1478 is used in the existing playgrounds. It is noted that the key point regarding social inclusion at play that advisory note of the DOJ 2010 suggests emphasizes the allocation and the distribution of the inclusive play equipment in a playground but not its provision. The last sentence of the advisory note stated that “group all ground level play

components accessed by children with disabilities in one location is not considered integrated” (Department of Justice, 2010, p. 100). In other words, the key to facilitate a social inclusive playground depends on how the inclusive play equipment is allocated. Although some of the play equipment in Hong Kong is purchased from the US and it should be conformed to the ASTM F1487, the contents related to social inclusion in the DOJ 2010, i.e., how the play equipment should be allocated, may be ignored when designers design the entire play area in Hong Kong. The concern of social inclusion for playground in DOJ 2010 is not significantly addressed when playgrounds are designed, despite the referral of DOJ 2010 in the ASTM F1487. This highlights the essentiality to concern social inclusion and inclusive play in the engineering standards directly so that not only engineers but also designers as well as architects are aware of the issues in a direct and straightforward fashion.

## **CONCLUSION**

This paper highlights the issues of social inclusion of the disabled in public space in Hong Kong. Playground is taken as a case study to investigate the social inclusiveness, as it is one of the major public spaces where inclusiveness is crucial for the development of children with different abilities. In a previous study related to social inclusion in playground, no inclusive play was observed, despite the provision of inclusive playground equipment. The paper attempts to address the issue through the perspective of engineering standards, and discusses the inadequacy of addressing the issue in the ASTM F1487 and EN 1176-1. It further suggests that the reason why the existing playgrounds in Hong Kong failed to provide a social inclusive play space for children with different abilities is due to the oversight of the contents in the DOJ 2010 while applying ASTM F1487. Thus, the allocation and the distribution of the inclusive equipment in a playground, which should be carefully considered in a truly inclusive playground, may have drawn less attention than its provision. The discussion shows that it is important and necessary to include social inclusion concept into engineering standards so that the stakeholders are reminded to consider both the physical and social needs of the children with disabilities.

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